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Bank Ownership and Lending Behavior

School of Accounting and Finance
Master's Thesis in Finance
Master's Degree Programme in Finance

Vaasa 2026

UNIVERSITY OF VAASA

School of Accounting and Finance

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Title of the Thesis: Bank Ownership and Lending Behavior

Degree: Master of Finance

Programme: Masters Degree Programme

Supervisor: Timo Rothovius

Year: 2026 **Pages:** 69

ABSTRACT:

This paper examines the impact of the ownership structure of Finnish banks and lending behavior from 2015 to 2024. It analyzes three forms of ownership: government-owned banks, cooperative banks, and banks controlled by foreign entities. This study investigates two research questions: the influence of ownership type on loan growth and the relative stability of lending practices between state-owned and cooperative banks compared to foreign-owned banks during economic downturns. The research employs panel data from six Finnish banks and performs pooled OLS regressions, augmented by robustness checks by EGLS estimation. The model comprises macroeconomic variables, bank-specific financial indicators, and interaction terms for economic recessions to elucidate the variations in lending behavior based on ownership type and temporal context. The results show that the type of ownership does not have a statistically significant effect on loan growth. The European Central Bank sets the policy rate, but how much money each bank has affects how much they lend more. The results do not corroborate the primary hypotheses of Agency Theory or Developmental State Theory within the Finnish setting. They propose that regulatory harmonization and institutional convergence could diminish ownership-related disparities in lending behavior. This paper enhances the literature on bank ownership, financial intermediation, and lending stability by providing evidence from unique banking sector from Finland. It offers policy-relevant findings regarding the significance of ownership and lending behavior.

KEYWORDS: Bank ownership, lending behavior, financial stability, institutional isomorphism, Finnish banking, panel data analysis, Pooled OLS

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1 Introduction

The structure of bank ownership has a big effect on how they manage their business, what risks they are willing to take, and what their long-term goals are. These institutional traits have a direct effect on how banks lend money, which helps the economy flourish and makes it easier for people to get loans (La Porta et al., 2002; Micco & Panizza, 2006).

The global banking industry has changed a lot in the recent few decades because of regulatory convergence, technology innovation, and deregulation. In our world that is always changing, banks need to be able to adapt to changes in the economy, competition, and rules. Ownership models are highly crucial for this. There are different ways that state-owned banks, cooperative institutions, private commercial banks, and foreign-owned subsidiaries are run and rewarded (Claessens et al., 2001; Micco et al., 2007).

Levine (2005) illustrated in his seminal work, "Finance and Growth: Theory and Evidence," that bank lending can promote economic growth and function as an intermediary. Levine does not directly examine the ownership structure of banks or its direct influence on strategic direction; this relationship is inferred from the comprehensive banking literature. Jensen and Meckling (1976) adeptly situate agency theory within the realms of governance and risk; yet, they do not directly analyze loan behavior or economic stability.

Research shows that state-owned banks often use countercyclical lending techniques, which means they lend money when private banks stop lending (Micco et al., 2004; Sapienza, 2004). This helps keep the credit cycle from going too far. Cooperative banks have stable lending practices because they care about the long-term health of the community and its members (Iannotta et al., 2013). This is because they believe that members should come first. On the other hand, private commercial banks and banks owned by foreigners care more about making money and growing the value of their stocks. When the economy is functioning well, people are more likely to lend money and be careful with their own money (Crystal et al., 2001; La Porta et al., 2002).

Finnvera is a government-owned business, OP Financial Group and the Savings Banks Group are cooperative groups, while Nordea and Danske Bank are commercial banks owned by people from other countries. This version shows us how the way ownership is structured affects lending behavior in the EU's single regulatory framework (Groeneveld, 2020).

The Finnish setting remains largely unexplored, despite a plethora of international literature on the correlation between bank ownership and lending practices. A knowledge gap persists on comparative dynamics within a singular jurisdiction, as previous research has primarily concentrated on overarching European trends or ownership categories. This thesis aims to thoroughly analyze the impact of various ownership structures on lending behavior in Finland from 2014 to 2024.

collecting the economy going again depends on collecting money from banks. This is because it assists people, businesses, and investment initiatives (Levine, 2005). Private and foreign-owned banks, on the other hand, frequently making money and growing the wealth of their shareholders first which makes it more probable that they will lend money in a way that is both procyclical and risk-averse (La Porta et al., 2002; Micco et al., 2007).

The research utilizes various theoretical frameworks to illustrate the ownership structure impact on the operational dynamics of banks. The literature on global financial integration (Obstfeld & Taylor, 2004; Lane & Milesi-Ferretti, 2007) emphasizes the influence of cross-border capital mobility and international banking connections on the lending decisions of foreign-owned banks.

Agency theory (Jensen & Meckling, 1976) elucidates the influence of managerial incentives and principal–agent conflicts on risk-taking and lending strategies, especially in profit-maximizing commercial banks. Institutional theory (DiMaggio & Powell, 1983) posits that banks functioning within a cohesive regulatory framework may gravitate towards analogous practices, irrespective of their ownership structure. These frameworks collectively provide a comprehensive basis for comprehending the impact

of ownership on incentives, governance frameworks, and strategic lending practices within the Finnish banking sector.

This study investigates the primary research question: "How does the ownership structure of banks affect lending behavior in Finland?" It examines two objectives: To examine whether loan growth differs across cooperative, state-owned, and foreign-owned banks in Finland. To investigate whether lending stability during defined economic downturn periods differs systematically across these ownership types, with a focus on the COVID-19 pandemic and the 2023–2024 recession. It tests H_1 (cooperative banks have higher loan growth than commercial banks) and H_2 (state-owned/cooperative banks have more stable lending during crises) using Agency Theory, Developmental State Theory, and Institutional Theory. The findings conceptually augment the financial intermediation literature and practically inform FIN-FSA/ECB macroprudential policy, albeit limited by a small scope.

1.1 Problem Statement and Research Question

There exists a notable empirical deficiency about the Finnish banking sector, despite an abundance of international studies on bank ownership and lending practices. There is a limited of research that directly, empirically, and systematically compares the lending behavior concerning growth levels and cyclical stability among state-owned, cooperative, and private-foreign ownership models in the Finnish market, despite studies like those by Koskenkylä & Vesala (2014) highlighting the overall stability of the Finnish system. Existing studies often set Finland within broader European frameworks or focus on specific ownership structures, so obscuring the intricate relationships among these various models within a unified legal jurisdiction. Finland's distinctive banking framework has not undergone a concentrated, quantitative, domestic examination of the theoretical discourse about the procyclicality of private banks, the countercyclical capacity of state-owned banks, and the robustness of cooperative banks.

This thesis has been driven by the underlying research question to address the identified gap:

"How does bank ownership structure affect lending behavior in Finland ?"

The extent of loan growth and its stability during economic downturns are two separate facets of lending behavior analyzed to operationalize this subject.

1.2 Research Objectives

Research questions posed by this study directly follow from the empirical gap identified in the field of Finnish banking research and theoretical implications derived from the principles of Agency Theory, Developmental State Theory, and Institutional Theory (Jensen & Meckling, 1976; Amsden, 2003; DiMaggio & Powell, 1983). Although there is a great deal of knowledge obtained in the international literature about the impact of ownership structure on lending practices (La Porta et al., 2002), it is clear that no systematic examination of this relationship has been carried out in Finland, and especially through comparison of various forms of ownership within one country (Groeneveld, 2020; Koskenkylä & Vesala, 2014). In Finland, there is a unique combination of different types of banks – public, cooperatives, and foreign commercial banks – operating under one common regulatory system in Europe.

The main purpose of the current research is the scientific analysis and comparison of loans growth for the state, cooperative, and foreign-owned banks operating in Finland. The above research objective is based on the theoretical assumption that bank ownership structure affects the incentive, risk, and strategy of managers. Agency theory assumes that profit-maximizing commercial banks may apply conservative lending policies (Jensen & Meckling, 1976); Developmental State theory suggests that state-owned banks can set themselves larger developmental goals (Amsden, 2003); cooperative banks, driven by the interests of their members, can focus on relationship lending (Iannotta et al., 2013). To confirm or refute the stated hypotheses, a Pooled OLS regression will be estimated using dummy variables for ownership and other necessary controls.

The second research objective seeks to investigate whether there exist significant differences between ownership types in terms of loan stability during recessions,

especially with reference to the outbreak of the COVID 19 pandemic (2020-2021) that caused an immense drop in Finnish GDP (Statistics Finland, 2022, National Accounts) as well as to the 2023-2024 economic recession, where negative growth rates were recorded for consecutive periods by both the Bank of Finland and the OECD (Bank of Finland, 2024, Economic Outlook; OECD, 2024, Finland Country Note). Based on theories, state-owned banks can be considered countercyclical due to government policies (Sapienza, 2004), while cooperative banks are expected to maintain their stable lending activity due to member governance as well as their relational obligations towards them. On the other hand, foreign-owned banks can demonstrate high levels of procyclicality because of the requirements of their parent companies to replenish capital, as well as due to their global risks transmission (Micco & Panizza, 2006).

In general, these goals attempt to determine whether ownership is still an important determinant of loaning behavior in a heavily regulated and stable banking environment. These findings have major implications for the areas of financial stability policy, macroprudential regulation, and banking strategy. In conclusion, this research project examines the key research objectives in the following two distinct ways:

1. To examine loan growth differs across cooperative, state-owned, and foreign-owned banks in Finland.

2. To investigate whether lending stability during defined economic downturn periods differs systematically across these ownership types, focusing on the COVID-19 pandemic and the 2023–2024 recession.

1.3 Hypothesis

This study's hypotheses are grounded in the theoretical frameworks presented in the literature review and seek to evaluate the overall influence of ownership structure on loan growth, as well as the differential responses of banks during economic downturns. The two hypotheses are grounded in established theoretical anticipations regarding incentives, governance frameworks, and risk appetites across various ownership categories.

H_1 : Loan growth for cooperative banks is higher than for commercial banks.

According to Agency Theory, foreign-owned commercial banks use more conservative lending procedures because they want to maximize shareholder value (Jensen & Meckling, 1976). Developmental State Theory asserts that state-owned banks pursue broader developmental goals (Amsden, 2003). Cooperative banks, which are built on values that put members first, work to make loans available all the time (Iannotta et al., 2013).

This hypothesis investigates whether ownership structure substantially forecasts credit distribution behavior in Finland. If H_1 is correct, then means that ownership-specific incentives still affect lending behavior, even though there is a set of rules that everyone has to follow.

Developmental State Theory asserts countercyclical lending by state banks (Sapienza, 2004), however Institutional Theory suggests cooperative stability resulting from member interactions (DiMaggio & Powell, 1983). Global Banking Integration Theory suggests that foreign banks might decrease lending during crises because of capital requirements set by their domestic banks (Cull & Martínez Pería, 2010).

H_2 : Compared with foreign-owned banks, state-owned and cooperative banks maintain more stable lending behavior during downturns in Finland.

Looking into H_2 helps us figure out if having a variety of owners makes the system more resilient and if different types of ownership can help stabilize the economy when things go wrong. The results have direct effects on macroprudential policy and the frameworks for financial stability. The results have an immediate impact on macroprudential policy and the structures that keep the economy stable.

1.4 Significance of Study

Investors and financial analysts would benefit from a thorough understanding of how ownership characteristics affect risk-return profiles and credit cycle sensitivity in

different banking models. The study provides evidence-based insights into the impact of various ownership arrangements on lending practices and market positioning for financial institutions considering structural modifications or strategic partnerships.

The paper holds substantial importance for policymakers and regulatory bodies at both national and European tiers. The study offers empirical data essential for developing effective macroprudential policies and frameworks for financial stability for the Finnish Financial Supervisory Authority (FIN-FSA), the European Central Bank (ECB), and other regulatory entities (FIN-FSA, 2023). The development of targeted regulatory solutions that use the unique benefits of various ownership types can be guided by an examination of whether ownership models exhibit intrinsic stabilizing traits during economic downturns.

The results are especially significant for formulating macroprudential policies, such countercyclical capital buffers, that take into account how different types of ownership affect lending patterns (BCBS, 2010).

The results also back up what policymakers are currently talking about: how important it is to have a variety of ownership arrangements to keep the financial system stable and let the economy thrive over time, even when credit cycles are different (Groeneveld, 2020).

1.5 Limitations of the Study

This study substantially improves the understanding of bank ownership and lending practices in Finland; nonetheless, certain limitations must be acknowledged when interpreting its findings.

The limitation of this study is mainly concern with sample size. The study employs a balanced panel dataset from six major Finnish banks, which, while representative of the three primary ownership types in the Finnish banking sector, restricts the statistical power of the regression analysis and diminishes the generalizability of the findings. The restricted quantity of cross-sectional units leads to considerable uncertainty in

estimating ownership dummy variables, and subtle ownership effects that could be discerned in larger samples may not attain statistical significance in this scenario. Future research may address this limitation by expanding the sample to include smaller cooperative banks, regional savings banks, and other financial institutions operating in the Finnish market.

A secondary constraint related to the estimating process. The Pooled OLS method, although suitable due to the time-invariant properties of the ownership dummy variables, fails to consider all unobserved bank-specific factors that may affect lending behavior. Factors like as management quality, internal risk culture, customer base composition, and prior loan relationships are not captured by the observable variables in the model, and their omission may bring unobserved variability into the estimations. Advanced dynamic panel estimators, such as the Generalized Method of Moments, may somewhat alleviate this difficulty in future studies by incorporating the temporal persistence of lending behavior and the potential endogeneity between profitability and loan growth.

Potential ownership influences categories of lending such as household mortgage lending, small and medium firm funding, or corporate loans cannot be analyzed in isolation. Ownership effects may exist within loan categories but are concealed when only overall loan growth is examined. Future study analyzing loan category distinctions would yield a more detailed and comprehensive understanding of how ownership affects credit allocation decisions.

The findings are specific to the Finnish banking context and should not be readily transferred to other countries without careful analysis of institutional differences. Finland's involvement in the European Banking Union, its strong cooperative banking heritage, and its historically stable regulatory landscape make it a distinctive case that may not represent the banking systems of countries with weaker institutions, less developed regulatory frameworks, or more diverse ownership structures.
The research is limited to financial variables obtained from annual reports and official macroeconomic publications. Supplementary data, including loan quality indicators

such as non-performing loan ratios, detailed interest margin information, or off-balance-sheet exposures, could enhance the analysis and yield a more thorough evaluation of how ownership affects both the volume and the risk profile of lending activities across various ownership types.

1.6 Structure of the Thesis

This thesis comprises five chapters, and each one helps the research go from theory to practice. The plan is for each chapter to build on the one before it, starting with describing the study problem and ending with demonstrating and interpreting the empirical findings.

Chapter 1 shows when the study starts. It tells you why and how to check into bank ownership and lending policies in Finland. It also talks about the research issue and what kind of gap in research the study is trying to fill. This section talks about the research objectives and hypotheses, why the study is important for both academic literature and real-world policy, and the significant challenges with the research strategy. At the end of the chapter, there is a list of the parts of the thesis.

In Chapter 2, a lot of the theory and empirical research on bank ownership and lending behavior is looked at in detail. The first part of the chapter looks at the main theories that support the study. These include the Agency Theory, the Public Choice Theory, the Developmental State Theory, the Institutional Theory, and the Global Banking Integration Theory. Then, it looks at evidence from around the world that shows a link between ownership structure and lending behavior. Finally, it focuses on data from Nordic and Finnish countries. At the end of the chapter, the specific study gap in Finnish banking that this thesis fills is described.

In Chapter 3, the data and methods used in the empirical study are shown. It talks about how the samples were chosen, the data sources that were used to create the panel dataset, and how all the variables were made, such as the dependent variable, ownership dummies, slowdown indicators, interaction terms, and control variables. This

chapter explains the empirical method used to test each hypothesis, explains why the Pooled OLS estimator with robust standard errors was chosen, explains the EGLS robustness assessments, and talks about the diagnostic tests that were used to make sure the regression assumptions were correct.

Chapter 4 discusses about the investigation and what it found. The first part of the analysis looks at the descriptive statistics and the trends in loan growth for the six banks that were picked from 2015 to 2024. Next, we display the results of the association analysis. After that, we show the results of the regression for both hypotheses. The basic model shows how ownership affects the growth of loans, whereas the extended model shows how lending stability changes when the economy is bad. The findings of the EGLS robustness test are similar to the baseline values. At the end of the chapter, there is a conversation that shows how real-world data fits with what was said in Chapter 2.

Chapter 5 sums up the idea and finishes it. This paper summarizes the key empirical findings, discusses their theoretical and practical consequences, and describes what the study contributes to the academic discourse on financial intermediation and the practical comprehension of Finnish banks' lending practices. This section discusses about the study's problems and offers suggestions for how more research should be done to enhance and add to the results below.

2 Literature Review

2.1 Theoretical Review

This chapter focuses on review of the theoretical and empirical literature bank ownership and lending behavior. A literature review synthesizes, categorizes, and contrasts previous studies to convey the current understanding of a subject. There are three main parts to this chapter. The first part explains the theoretical foundation and gives a full picture of the main ideas about how ownership affects banking strategy. The second part looks at real-world studies and looks at how the main parts are related to each other in different situations. The chapter finishes by clearly stating the research gap that this thesis seeks to fill. Different important theoretical frameworks explain how ownership structure affects lending behavior. These theories explain the different reasons and limits that state-owned, cooperative, and private commercial banks have to deal with.

A literature review synthesizes, categorizes, and contrasts previous research to articulate the current understanding of a topic. There are three main parts to this chapter. The first part explains the theoretical foundation and gives a full picture of the main ideas about how ownership affects banking strategy. The second part looks at real-world studies and looks at how the main parts are related to each other in different situations. The chapter finishes by clearly stating the research gap that this thesis seeks to fill. Different important theoretical frameworks explain how ownership structure affects lending behavior. These theories explain the different reasons and limits that state-owned, cooperative, and private commercial banks have to deal with.

2.1.1 Agency Theory

Jensen and Meckling (1976) Agency Theory is very important for understanding private commercial banks. It focuses on the principal-agent problem that comes from splitting up ownership and control. The goals of managers (agents) and shareholders (principals)

may not be the same. For instance, managers can desire to build their own empires or avoid taking risks, which isn't good for shareholders.

Governance strategies dynamically associate managerial compensation and job security with profitability metrics like Return on Equity (ROE) to align these interests. This gives banks a strong incentive to engage in procyclical lending behavior, which amplifies the business cycle by aggressively expanding credit during economic booms to maximize returns and sharp contract lending during downturns to minimize losses and protect capital (Crystal et al., 2001).

2.1.2 Public Choice and Developmental State Theories

Public Choice Theory (Shleifer & Vishny, 1994) posits that politicians may manipulate state-owned banks to achieve political aims, such as directing lending to politically connected businesses or areas, especially during election periods. This might lead to a "soft budget constraint" (Kornai et al., 2003), where banks expect the government to bail them out. This means they are less strict about lending and may not use resources in the best way, which can hurt efficiency (La Porta et al., 2002).

On the other hand, Developmental State Theory (Amsden, 2003) found state-owned banks as important for long-term economic growth and stability. From this point of view, people should act in a way that goes against the cycle. During a crisis, state-owned banks must make more credit available to support vital industries and stabilize the economy, even if it means losing money in the short term (Sapienza, 2004).

2.1.3 Institutional Theory

According to institutional theory (DiMaggio & Powell, 1983), organizational behavior is influenced not only by concerns of efficiency but also by social norms, values, and cultural-cognitive factors within the institutional context. Cooperative banks operate within a framework of mutuality and member benefit. Their governance structure operates on a "one member, one vote" principle and maintains robust connections with local communities. This fosters a long-term perspective and reliance on relationship

banking. This institutional framework forecasts stable, acyclical lending, as the bank's success is fundamentally linked to the long-term financial well-being of its member-customers, hence shielding its loan supply from short-term market fluctuations (Groeneveld, 2014; Iannotta et al., 2013).

2.1.4 Global Banking Integration Theory

Foreign banks can make the global financial system more efficient and competitive, and they are also important parts of it. In Finland, lending behavior is affected by both local conditions and the parent bank's strategic location and financial health. This could lead to a "flight to home" effect during international crises, when capital is sent back to the country of origin. Their lending is therefore more procyclical and unstable than that of domestic banks, regardless of local economic conditions (Cull & Martínez Pería, 2010).

2.2 Empirical Review

2.2.1 Global Evidence on Ownership and Lending

A cross-national study (Micco et al., 2007) found that state-owned banks in developing countries lent more money during election years, which supports the Public Choice hypothesis. Sapienza (2004) revealed that Italian government-owned banks generally charged reduced interest rates on loans to politically connected communities. Data also backs up the countercyclical role; these banks often keep credit flowing during recessions, even if it's not as efficiently and with a higher percentage of loans that don't pay back (Cornett et al., 2010).

On the other hand, procyclicality is a normal element of banks that are privately or foreign-owned. Ferri et al. (2014) and Cull & Martínez Pería (2010) claim that these banks tend to lend more to bigger, more creditworthy enterprises, which disadvantages small and medium-sized businesses (SMEs). They also make it harder to secure loans when the economy is bad. Cooperative banks are quite strong. Iannotta et al. (2013) say that European cooperative banks are less likely to fail and have more stable sources of income than commercial banks. They can keep lending stable even when the economy shifts

since they employ relationship banking and a model that focuses on members (Groeneveld, 2020).

2.2.2 Conflicting Evidence and Contingent Realities

The empirical landscape is diverse. A country's level of institutional development, level of regulation, and type of economic shock often affect how people own and lend money. The following table summarizes the main contradicting results and possible explanations.

Table 1 Combining Divergent Empirical Results on Bank Lending and Ownership

Ownership Type	Predicted Behavior	Supporting Evidence	Contradictory Evidence & Contingent Factors
State-Owned	Countercyclical	Micco et al. (2007): Increased lending in downturns in developing countries.	(Cornett et al., 2010): NPLs are higher and efficiency is lower. Contingency: Public Choice theory predominates in nations with weak institutions, while Developmental State theory is more likely to prevail in those with strong institutions.
Cooperative	Stable, Acyclical	Iannotta et al. (2013): Lower chance of and consistent revenue in Europe.	(Groeneveld, 2020): May experience growth limitations and be susceptible to localized shocks. Contingency: Diverse cooperative networks exhibit the highest levels of stability. Cooperatives that are small and lack diversity may be vulnerable.
Commercial/ Foreign	Procyclical	Cull & Martínez Pería (2010): "Flight to home" during global crises.	(Claessens et al., 2001): In times of stability, productivity and competition may enhance. Procyclicality is especially evident during international crises. Well-capitalized private banks may increase their market share during domestic recessions.

2.2.3 Evidence from the Nordic and Finnish Context

The Nordic banking system offers a unique institutional context for analyzing the influence of ownership structure on lending practices. The Nordic countries are distinct from numerous other regions due to their robust regulations, stable economies, and banks owned by various entities, including cooperatives, private individuals, and international investors. Due to these characteristics, the region serves as an excellent case study for examining how ownership affects the allocation of credit.

Jokipii and Milne (2011) examine European banks, including those in the Nordic region, and find that the management of capital buffers is affected by the type of ownership. They conclude that commercial banks exhibit greater procyclical behavior, while cooperative banks tend to sustain more consistent capital buffers across the business cycle.

Koskenkylä and Vesala (2014) illustrate that Finland successfully navigated the 2008 financial crisis due to its diverse ownership structure, which featured robust cooperative and foreign-owned banks. The study by Jokipii and Milne (2011) on European banks revealed that ownership type impacts capital management, subsequently influencing lending capacity.

Migliardo and Forgione (2018) examine the impact of ownership structure on bank performance in the EU-15 nations. They analyze data from 1,459 banks and discover that the type of shareholders and the concentration of ownership both have an effect on profitability, risk, and technical efficiency. Their conclusion indicates that banks with substantial block shareholders are generally more profitable, less risky, and more efficient, thereby reinforcing the notion that concentrated ownership can mitigate agency issues.

Meadowcroft (2011) analyze whether governments should be apprehensive of boom-and-bust cycles and contends that economic instability is not invariably best mitigated by substantial state intervention. The article talks about how macroeconomic

management has its limits and how the government can help smooth out cyclical changes.

Bank of Finland (2021) report shows private banks were more careful during the COVID-19 outbreak Conversely, the state-owned Finnvera boosted its lending and guarantees in response to the issue as part of the strategy of government. The OECD (2024) reports a decline in GDP and suboptimal investment levels. The recession from 2023 to 2024 provides a novel perspective on these behaviors and serves as a natural experiment for assessing loan stability across various ownership types.

Davydov (2018) discovered a nonlinear correlation between state ownership and lending behavior. The impact of government involvement varies according on the level of ownership present. During the crisis, government-owned banks augmented lending and reduced interest rates. Conversely, the Russian banking system experienced a decline in loan growth and a rise in interest rates. Conversely, private and foreign-owned banks reacted to increased liquidity and credit risk by restricting loan availability. The results indicate that substantial state ownership can operate as a stabilizing influence and foster loan growth during economic recessions when market-oriented institutions withdraw.

Studies following the 2008–2009 financial crisis indicate that Norwegian state-influenced banks were more effective in sustaining the credit supply compared to exclusively private banks, bolstered by strong capitalization and government-backed liquidity measures (Valseth, 2017).

Private banks like Nordea, SEB, Handelsbanken, and Swedbank own most of Sweden's banks. The government only owns a few banks, such SBAB mortgage bank. This structure, which is based on the market, leads to more procyclical lending patterns that are typical of private banking systems (Ingves, 2010).

The financial crisis from 2008 to 2010 significantly impacted Denmark, leading to the failure or restructuring of several private banks. During this period, cooperative and savings banks demonstrated superior resilience to adverse economic conditions

compared to private commercial banks, which maintained credit availability (Hansen, 2012).

The Bank of Greenland (GrønlandsBANKEN), characterized by a mixed ownership structure and significant public-sector influence, predominates the banking sector in Greenland. Studies demonstrate that Greenlandic banks prioritize loans for development, particularly in the local business, housing, and fishing sectors (Andersen, 2018). The government's involvement, while limiting aggressive expansion, ensures a stable credit supply. The economy's limited scale and absence of competition promote conservative lending behaviors.

Davydov (2018) findings indicate that state ownership serves dual functions inside financial systems. In the financial crisis, state-owned banks in Russia contributed to economic stabilization by increasing lending. This intervention may also induce moral hazard by encouraging individuals to engage in riskier behavior. This supports the notion that the government may exacerbate or alleviate financial instability.

Casu, Chiaramonte, and Cucinelli (2026) found that the NSFR redirected lending towards shorter maturities, whereas LTRO and TLTRO funding assisted banks in maintaining medium and long-term credit availability.

Lie and Thomassen (2016) elucidate the rationale behind Norway's adherence to low-interest rate policies from 1945 to 1986. They demonstrate that these policies were influenced by a combination of political priorities, financial regulations, and institutional limitations.

2.3 Research Gap

There is still a crucial void in the context of Finnish banking despite a sizable amount of international literature. There is a dearth of research that directly, empirically, and methodically compares the lending behavior of state-owned, cooperative, and private commercial banks within the Finnish market in terms of growth levels and cyclical

stability, even though studies like those by Koskenkylä and Vesala (2014) have correctly highlighted the overall stability of the Finnish system.

Most studies that are currently available either concentrate on a particular ownership type in Finland or use Fin-land as a single data point in a sizable cross-country panel, which eliminates the subtlety of its distinct institutional environment. A focused, within-country investigation of Finland's tripartite banking structure has not definitively tested the arguments regarding the procyclicality of private banks, the countercyclical role of state-owned banks, and the stability of cooperative banks. These correlations can be greatly impacted by variables including market structure, historical background, and national regulatory frameworks, which can provide a variety of results.

Quantitative examination of how ownership structure affects lending behavior in Finland to address the gap of this thesis. By analyzing the relationship between the dependent variable (Loan Growth) and the important independent variables (State Ownership, Cooperative Ownership, Private Ownership), controlling bank-specific and macroeconomic factors, it will produce definitive, context-specific evidence. Financial policy in Finland and other advanced, small, open economies will be influenced by this research, which will also provide insightful information for academic theory.

3 Data and Methodology

3.1 Introduction

This chapter outlines the empirical approach for analyzing the impact of bank ownership structure on lending behavior in Finland. It talks about the econometric models used to evaluate the two primary hypotheses, as well as the research approach, how data was collected, and how variables were made :

H_1 **:** Loan growth for cooperative banks is higher than for commercial banks.

H_2 **:** Compared with foreign-owned banks, state-owned and cooperative banks maintain more stable lending behavior during downturns in Finland.

3.2 Sample Description and Data Sources

The empirical analysis employs a balanced panel dataset of six major Finnish banks from 2015 to 2024, resulting in 60 bank-year observations. The sample was selected to reflect the principal ownership structures in the Finnish banking sector and to enable a comparative analysis of state-owned, cooperative, and foreign-owned banks. We got bank-specific financial data by hand from annual reports and financial statements. We got macroeconomic data from the Bank of Finland and the European Central Bank's official publications.

Finnvera Plc and Municipality Finance Plc are both state-owned banks that are part of the sample. They are both involved in public-sector lending and development funding. OP Financial Group and the Savings Group are demonstrations of the cooperative industry. They show how cooperative banking in Finland is centered on members and relationships. Nordea Bank Abp and Danske Bank A/S are both foreign-owned banks that operate in Finland as subsidiaries or branches of larger multinational banks. These banks were chosen because they are good examples of the main types of ownership in the Finnish banking system and their data is reliable for the complete study period. The years 2015 to 2024 are a good time to look at things because they include both solid

years and two big downturns: the COVID-19 period and the recession of 2023–2024. This facilitates the examination of the correlation between various ownership structures and lending practices under varying macroeconomic circumstances.

3.3 Variable Construction

It explains how the variables used in the empirical investigation were created. These are the dependent variable, the main independent variables, the downturn indicator, the interaction terms, and the control variables at the bank level and the macroeconomic level. Section 3.2 talks about how all the variables are produced from data from official macroeconomic sources and annual financial statements.

The dependent variable is the growth of loans, which is the percentage change in each bank's total gross loans over the course of a year. This is how the variable is figured out:

$$\text{LoanGrowth}_{it} = \left(\frac{\text{Loans}_{it} - \text{Loans}_{it-1}}{\text{Loans}_{it-1}}\right) \times 100$$

This indicator is often used in banking research to measure how banks lend money since it shows how the amount and direction of banks' loan supply changes over time. If the numbers are positive, it means that loans are getting bigger. If the values are negative, it means that loans are getting smaller.

The main independent variables are ownership dummy variables that show how the Finnish banking sector is owned by three different groups. The cooperative dummy is one for OP Financial Group and the Savings Group and zero for all other groups. The foreign dummy is one for Nordea Bank Abp and Danske Bank A/S, while it is zero for all other banks. Finnvera Plc and Municipality Finance Plc are state-owned banks that serve as the reference group in the baseline regression models. The coefficients on the ownership dummies represent the average difference in loan growth between state-owned banks and cooperative or foreign-owned banks, taking into account the other factors that were included.

To test the second hypothesis, a downturn dummy is created with a value of one for the years 2020, 2021, 2023, and 2024, which are the years that the analysis says are downturn years. The value for all other years is 0. The years listed are the same as the COVID-19 epidemic and the recession that followed in 2023–2024. Finland's economy was poorer and there was more uncertainty throughout both of these crises. After that, two interaction terms are constructed by multiplying the downturn dummy by the cooperative and foreign ownership dummies. These interaction elements make it easier to find out if the lending policies of cooperative and foreign-owned banks are different from those of state-owned banks when the economy is bad.

There are several control elements at the banking level and the macroeconomic level. The size of a bank is measured by the natural logarithm of its total assets, profitability is measured by the return on assets, and capital adequacy is measured by the Tier 1 capital ratio. At the macroeconomic level, GDP growth is included to control the overall state of the economy, and the ECB policy interest rate is included to show the state of monetary policy. These control variables work together to lessen the effects of bank-specific and macroeconomic factors on lending behavior, making it easier to see how ownership structure affects lending behavior.

3.4 Correlation Analysis

A Pearson correlation matrix was examined prior to doing a regression analysis to identify any bivariate correlations and any multicollinearity concerns. The two macroeconomic controls, GDP growth and the ECB interest rate, were the most closely related (-0.43). The other correlations between independent variables were all less than the typical level of 0.7. This level of correlation is not strong enough to make people worry about multicollinearity, and it is predicted because of monetary policy that goes against the cycle. In Section 4.3 of the findings chapter, we exhibit and discuss about the whole correlation matrix.

3.5 Empirical Strategy

Addressing H1: Loan growth for cooperative banks is higher than for commercial banks.

The following base-line pooling OLS model is estimated to determine whether ownership structure affects lending behavior:

This equation examines whether ownership type influences loan growth while accounting for macroeconomic and bank-level variables:

$$\text{LoanGrowth}_{it} = \alpha + \beta_1 \text{GDP}_t + \beta_2 \text{ECBRate}_t + \beta_3 \text{ROA}_{it} + \beta_4 \text{Tier1}_{it} + \beta_5 \text{LogAssets}_{it} + \beta_5 \text{ECB rate}_{it} + \gamma_1 \text{ForeignDummy}_i + \gamma_2 \text{CooperativeDummy}_i + \varepsilon_{it}$$

LoanGrowthit=α+β1GDPt+β2ECBRatet+β3ROAit+β4Tier1it+β5LogAssetsit+γ1ForeignDummyi+γ2CooperativeDummyi+εit

H1 is supported by significant coefficients on cooperative or foreign, which show that ownership structure influences lending behavior.

Addressing H2: To investigate whether lending stability during defined economic downturn periods differs systematically across these ownership types, with a focus on the COVID-19 pandemic and the 2023–2024 recession.

The model is expanded with interaction factors to see if state-owned and cooperative banks lend more steadily during recessions:

$$\begin{aligned}\text{LoanGrowth}_{it} = {} & \alpha + \beta_1 \text{Cooperative}_i + \beta_2 \text{Foreign}_i + \beta_3 \text{Downturn}_t \\ & + \beta_4 (\text{Cooperative}_i \times \text{Downturn}_t) + \beta_5 (\text{Foreign}_i \times \text{Downturn}_t) \\ & + \text{Controls} + \varepsilon_{it}\end{aligned}$$

The assertion that cooperative banks maintain consistent lending is corroborated by a positive or minimal coefficient on Cooperative × Downturn.

The negative and significant coefficient on Foreign × Downturn supports H2, indicating procyclical lending behavior by foreign banks.

3.6 Estimation Approach

This study employs a Pooled Ordinary Least Squares (OLS) estimation method with resilient (White) standard errors to address heteroskedasticity. Panel data often use fixed or random effects models; however, the Hausman test did not provide significant evidence supporting fixed effects ($p > 0.10$). More importantly, ownership dummies, which are the main interest variables, don't change over time for any bank. Consequently, quantifying the underlying linkages under investigation would be unfeasible, as fixed effects would encompass these variables. For this research design, pooled OLS is the most appropriate and theoretically robust estimator.

3.7 Robustness Checks

Additional analyses were carried out to make sure the empirical findings were robust and to address any econometric issues. To account for heteroskedasticity among banking institutions, Panel Estimated Generalized Least Squares (EGLS) with cross-section weights was utilized. This approach validates the consistency of the parameter estimations by generating efficient estimators under cross-sectional heteroskedasticity (Wooldridge, 2010).

3.8 Diagnostic Testing

To make sure the empirical results were accurate, full diagnostic testing were done. These tests were the Jarque-Bera test for normality of the residuals and the Likelihood Ratio test for heteroskedasticity. When the conventional regression assumptions were broken, the right steps were taken to fix the problem, such as using robust standard errors in Pooled OLS estimation.

3.9 Analytical Tools

The analysis employed the following software tools:

EViews 12: The primary econometric study, which contains diagnostic tests (heteroskedasticity, normality), identifying robust standard errors, and estimating pooling OLS.

Microsoft Excel: Getting rid of data you don't need, putting it in order, and figuring out derived variables like the growth rates of loans.

4 Empirical Results

This chapter emphasizes the empirical findings of the investigation. First, there are descriptive statistics and correlation analysis. Then, there are the regression results for the two hypotheses, and finally, there are robust tests.

4.1 Descriptive Statistics

This chapter analyzes empirical evidence about the impact of bank ownership on lending policy in Finnish banks from 2015 to 2024. Descriptive statistics elucidate the financial and macroeconomic backdrop of the sample by delineating the principal characteristics of the utilized variables. This is very important to complete before doing more detailed econometric research.

Table 2 Descriptive Statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
LOAN_GROWTH_VALUE	0.037	0.034	0.17	-0.12	0.05
TIER_1_CAPITAL_RATIO	42.22	20.10	132.70	17.30	35.61
ROA	0.51	0.55	3.20	-5.90	0.94
LOG_ASSETS	3.66	3.10	6.47	0.96	2.024
GDP_Growth	0.87	0.97	3.30	-2.49	1.69
ECB_INTEREST_RATE	0.84	0.00	4.50	0.00	1.51

Table 2 shows the descriptive statistics for the main variables used in the study. The mean annual loan growth rate of 3.7%, with a median of 3.4% and values ranging from -12% to 17%, illustrates that banks' credit expansion varied a lot during the study period. The mean Tier 1 capital ratio is 42.22%, while the standard deviation is 35.61%, which

means that banks have varied ways of making money. The average return on assets (ROA) is 0.51%, with a low of -5.9% and a high of 3.2%. This means that most banks make a good amount of money, but some have lost or gained a lot of money in specific years.

Finland's GDP grows at an average rate of 0.87%, although it can go up or down anywhere from -2.49% to 3.3%. The average bank size, based on the log of assets, is 3.66. The average ECB interest rate is 0.84%, however it changes a lot. The standard deviations for most variables reveal that there were big differences across Finnish banks and the economy over the time period investigated. From 2015 to 2024, banking and the economy were very different and hard to anticipate, as seen in the table.

4.2 Loan Growth Trends

This section gives an overview of the annual loan growth for a few selected Finnish banks from 2015 to 2024. Some of the organizations are OP Cooperative, Finnvera Plc, Danske Bank, Nordea Bank Abp, and a representative from the Saving Group. The investigation employed data from Fitch Connect and Orbis at the level of institutions.

4.2.1 Municipality Finance Plc

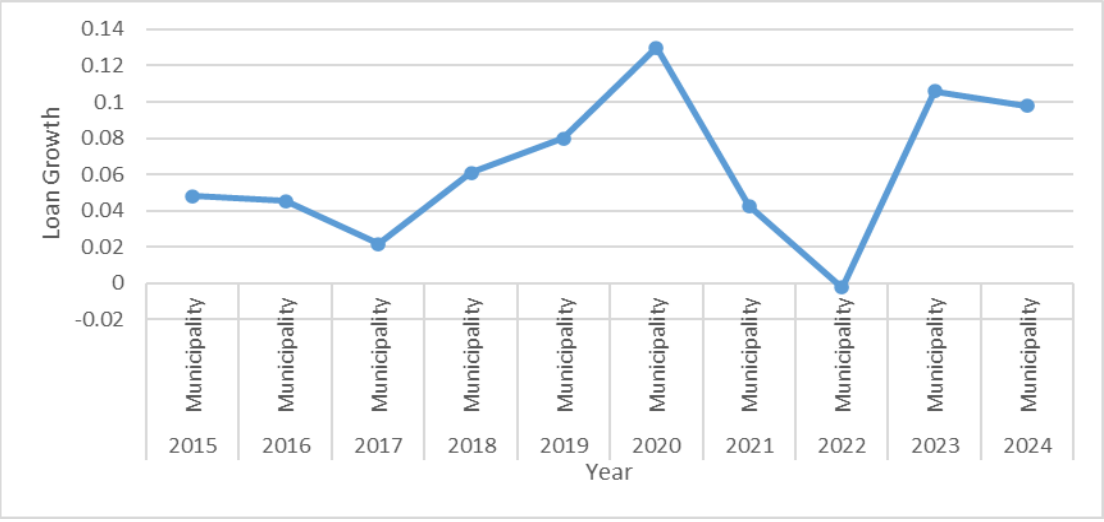

Figure 1. Annual Loan Growth for the Municipality (2015-2024).

Figure 1 shows that Municipality Finance Plc (MuniFin) loans grew from 2015 to 2024. MuniFin is a publicly traded company that works with Finnish municipalities. Because of this, its funding tactics are more about policy than making money. From 2015 to 2017, the number of loans grew by 5% to 2%, but by 2020, it had grown by 14%, mainly due to government spending related to the epidemic. Growth slowed down in 2022 (−1%) but started up again in 2023 (12%) and stayed robust in 2024 (10%).

4.2.2 Finnvera Plc

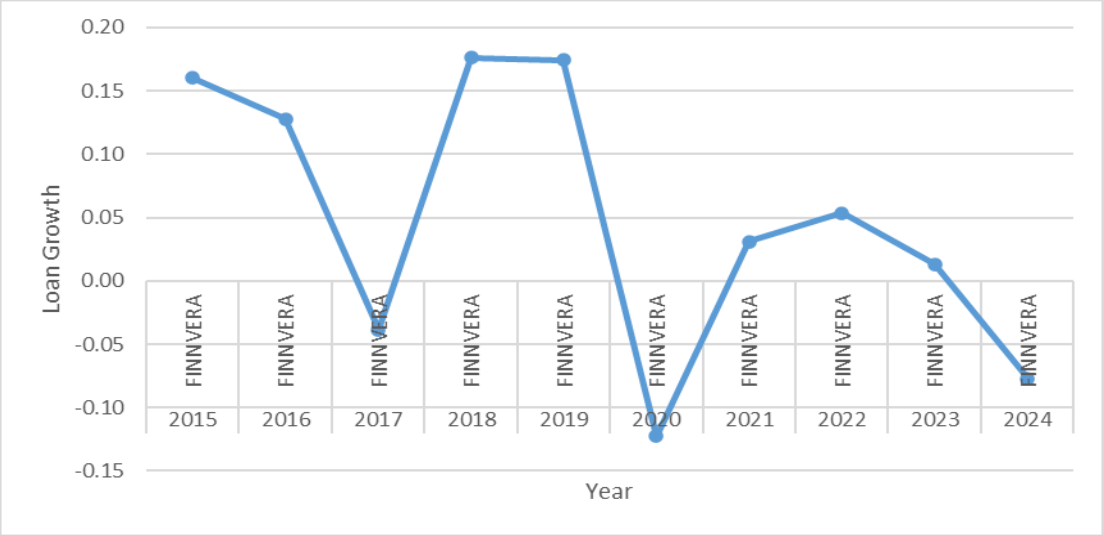

Figure 2 . Annual Loan Growth for Finnvera Plc (2015-2024).

Figure 2 illustrates that it is not very stable. The institution expanded a lot in 2015 (16%) and 2018–2019 (18%), but drastic decline in 2020 (-12%). This pattern shows that the economy isn't doing well and can be harmed by big events like the COVID-19 epidemic. It also fits with Finnvera's mission of going against the grain. In the years that followed, things got a little better, but in 2024, growth went back down.

4.2.3 Nordea Bank Abp

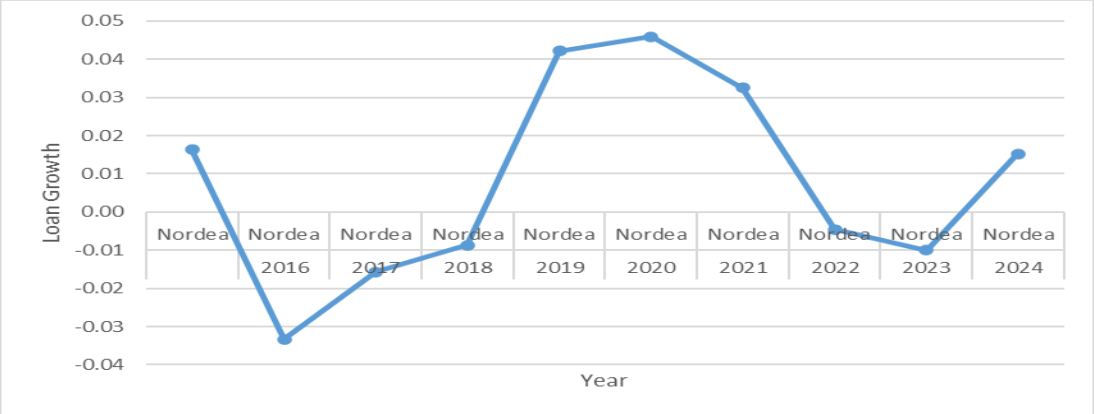

Figure 3. Annual Loan Growth for the Nordea Bank Abp (2015-2024).

Figure 3 demonstrates how Nordea's loans have changed over time. There are small rises and falls. It's important to note that Nordea's growth was negative in 2022–2023 and in 2017 (-3.5%). The highest jump (4.8%) was in 2020, which could have been because of smart growth or favorable market conditions. In general, lending practices are conservative.

4.2.4 Danske Bank

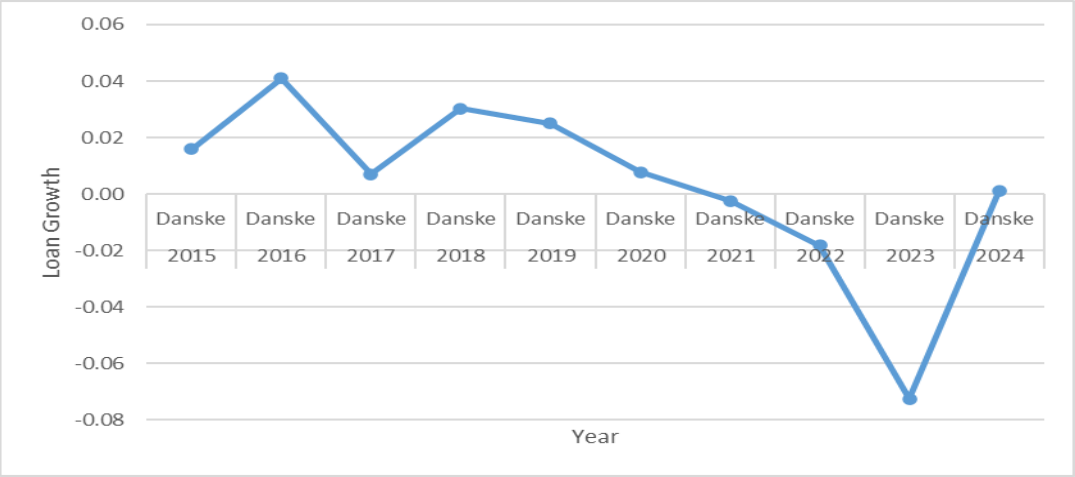

Figure 4. Annual Loan Growth for the Danske Bank (2015-2024).

Figure 4 indicates that Danske Bank's loans grew steadily until 2021, when they started to drop dramatically. The lowest point was in 2023 (-7.5%), and there was a small

recovery in 2024. The drop could be due to internal reorganization, problems with regulations, or a drop in demand for loans.

4.2.5 Saving Group

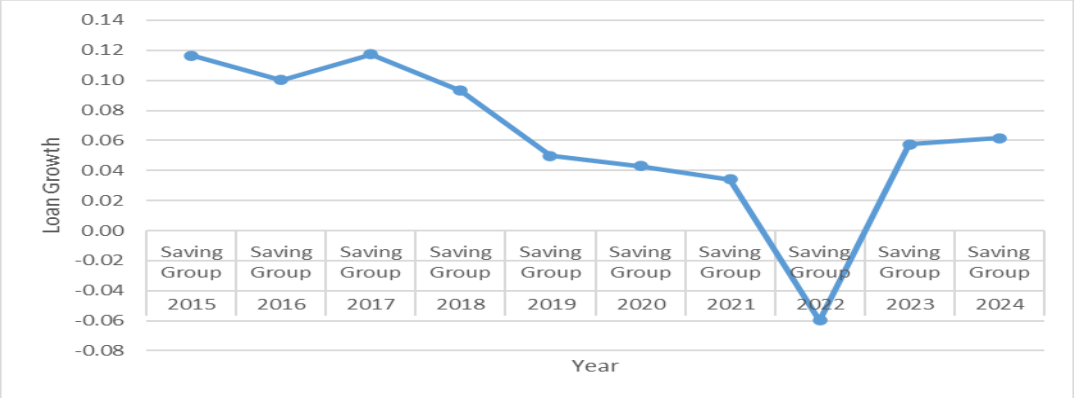

Figure 5. Annual Loan Growth for the Saving Group (2015-2024).

From 2015 to 2017, the Saving Group's loans reached quickly, hitting a high of 12% in 2017. In 2022, growth was negative, with a constant reduction of 6%. The rebound that transpired in 2023–2024 shows that loan activity rose again. It may be because the economy was getting better or because the plan altered.

4.2.6 OP Cooperative

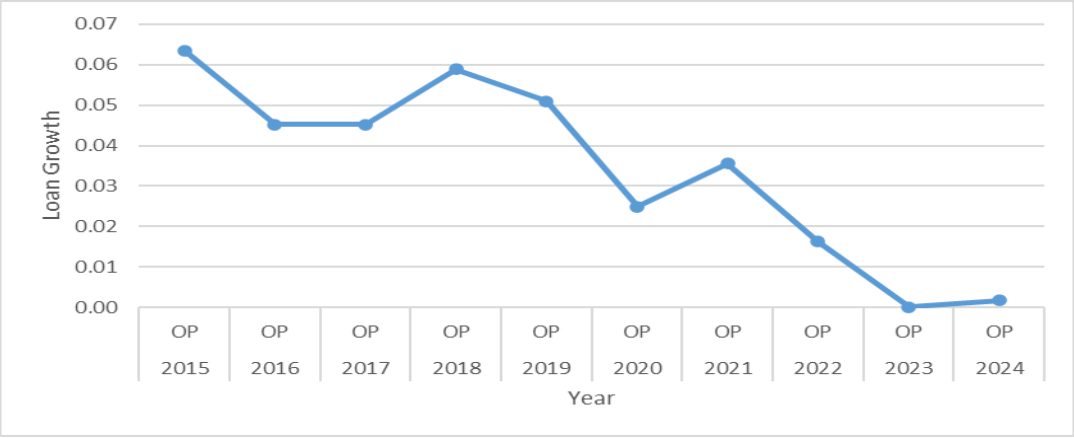

Figure 6. Annual Loan Growth for the OP Cooperative (2015-2024).

Figure 6 shows that OP Cooperative's loan growth slowly went down over the period being studied. From 2015 to 2023, growth rates dropped steadily from above 6.5% to

virtually 0%. There is a small recovery in 2024. This drop could be caused by stricter loan laws, an increasing dislike of risk, or changes in the way cooperative banks do business.

4.3 Correlation Analysis

A Pearson correlation matrix was created to investigate the bivariate correlations between the important variables and to evaluate potential multicollinearity issues before doing regression analysis.

Table 3 Pearson Correlation Matrix

Variable	LOAN_GROWTH	ECB_INT_RATE	GDP	ROA	LOG_ASSETS	TIER_1_CAPITAL_RATIO
LOAN_GROWTH	1.000					
ECB_INT_RATE	-0.22	1.000				
GDP	0.11	-0.38	1.000			
ROA	0.30	0.20	0.18	1.000		
LOG_ASSETS	-0.35	0.10	-0.017	-0.05	1.000	
TIER_1_ CAPITAL_RATIO	0.14	0.16	-0.11	-0.13	-0.14	1.000

The correlation matrix in Table 3 above provides numerous significant initial observations. Bank-Specific Factors and Loan Growth: ROA and the dependent variable, LOAN_GROWTH has a slightly positive correlation (0.300). This means that banks that make more money usually see their loans rise quicker, which is in line with what theory says. On the other side, there is a somewhat negative correlation (-0.387) with LOG_ASSETS, which means that the study found that larger banks had slower loan growth over the whole time period.

The macroeconomic situation and the growth of loans: There is a complicated relationship between macroeconomic limits and the expansion of loans. As expected, there is a weak negative relationship (-0.244) with the ECB_INT_RATE. This supports the premise that greater finance costs make credit less available and less needed. The correlation between GDP and LOAN_GROWTH (0.090) is very weak and not significant, which means that, in this case, there was not much of a direct linear relationship between Finland's general economic growth and bank-level lending growth.

To check for multicollinearity, the correlations between all of the independent variables should be less than 0.7, which is the typical limit. GDP and ECB_INT_RATE (-0.430) are the two macroeconomic variables that are most closely associated. This is logical due to countercyclical monetary policy. It is not expected that multicollinearity would significantly affect following regression results, given that correlations with other explanatory variables are minimal (for example, all correlations with ROA and LOG_ASSETS are < |0.3|).

4.4 Regression Results Testing Hypothesis 1 (H_1)

Table 4 Baseline Regression Results – The Impact of Ownership on Loan Growth (H_1)

Dependent Variable: LOAN_GROWTH_VALUE

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0.1123**	0.0524	2.142	0.037
ROA	0.0228***	0.0077	2.969	0.005
ECB Interest Rate	-0.0125**	0.0052	-2.392	0.020
Log Assets (Size)	-0.0100	0.0146	-0.689	0.494
Tier 1 Capital Ratio	-0.0002	0.0006	-0.384	0.702
GDP Growth Rate	-0.0035	0.0045	-0.788	0.434
Foreign Dummy	-0.0346	0.0731	-0.473	0.638
Cooperative Dummy	-0.0493	0.0378	-1.304	0.198
R-squared	0.330			
Adjusted R-squared	0.240			
F-statistic	3.658			
Prob(F-statistic)	0.0028			
Observations	60			

Note: The estimation method is Panel Least Squares with robust standard errors. The baseline (reference) category is State-Owned banks. *, **, * denote statistical significance at the 10%, 5%, and 1% levels, respectively.*

The pooled OLS results for Hypothesis 1 are shown in Table 4, with state-owned banks as the group to compare. You may compare more than simply cooperative and state-owned banks with this model because it incorporates dummies for both types of

ownership. The foreign dummy stands for Nordea Bank Abp and Danske Bank, while the cooperative dummy stands for OP Financial Group and the Savings Group. The results show that neither ownership dummy is statistically significant. This suggests that the type of ownership doesn't have a big effect on loan growth when you look at both bank-specific and macroeconomic factors.

Overall Model Fit:

The F-statistic is 3.658 and the p-value is 0.0028, which means that the model is statistically significant as a whole. This means that the independent factors are to blame for most of the change in loan growth at the 1% level. The R-squared value of 0.330 means that the model can explain around 33% of the differences in the sample's loan growth. The Adjusted R-squared score of 0.240 means that adding more predictors doesn't change the model very lot. This level of explanatory power is in line with other panel studies in the banking literature, which show that ownership and macroeconomic variables often account for 20% to 40% of loan variation. This is particularly applicable in well-regulated banking systems, where institutional convergence may render ownership dummies less effective in elucidating loan variance.

Assessment of Control Variables :

The Return on Assets shows how profitable a company is, is positive and statistically significant at the 1% level, with a coefficient of 0.0228 ($p = 0.005$). This means that banks are more likely to lend money if they can make more money. This fits with the assumption that banks that can make more money are better at growing their loan portfolios while still meeting capital adequacy rules. The result is in line with earlier studies that show that a bank's ability to get loans is greatly affected by its ability to make its own capital.

The coefficient for the ECB interest rate is -0.0125 ($p = 0.020$), which is statistically significant at the 5% level. This finding is consistent with traditional monetary transmission theory, which asserts that increases in the policy rate raise banks' funding costs while simultaneously reducing borrowers' credit demand, resulting in a slowdown

in loan growth across the sector. This discovery is particularly relevant in the Finnish context, given the significant ECB rate increases recorded in 2022 and 2023, which correspond with the noted deceleration in loan growth illustrated by the descriptive trends.

The logarithm of total assets shows that the size of a bank has a negative coefficient of -0.0100, but this is not statistically significant (p = 0.494). The negative direction indicates that larger banks in the sample typically expand their loan portfolios at a diminished pace, potentially indicative of the more cautious lending practices of systemically significant institutions facing heightened regulatory oversight. The Tier 1 Capital Ratio is also not statistically significant (p = 0.702), which means that in this sample, having more capital than the minimum required by law doesn't seem to lead to significantly higher loan growth. This could be because all the banks in the sample were well capitalized during the entire period. The GDP growth rate is also statistically insignificant (p = 0.434), which is an important finding that suggests that, in Finland, bank-level lending decisions are more directly affected by monetary policy conditions and internal profitability than by overall economic growth.

Test of Hypothesis 1 - Effects of Ownership:

The main result of this regression is about the ownership dummy variables. The coefficient for the foreign dummy is -0.0346 (p = 0.638), and the coefficient for the Cooperative dummy is -0.0493 (p = 0.198). Neither coefficient attains statistical significance at conventional thresholds, suggesting that after accounting for profitability, monetary policy, size, capital adequacy, and economic growth, neither foreign-owned nor cooperative banks demonstrate loan growth rates that are statistically distinct from those of state-owned banks in normal economic conditions.

These outcomes result in the failure to reject the null hypothesis related to H_1. There is no statistically significant evidence indicating that ownership structure affects lending behavior in Finland during normal economic conditions. The negative signs on both ownership dummies suggest that cooperative and foreign banks may be growing their

loan portfolios a little more slowly than state-owned banks. However, this difference is not statistically significant because of the standard errors.

This finding contradicts of international research that consistently recognizes key ownership implications for lending behavior. Institutional Theory (DiMaggio & Powell, 1983) posits that banks operating under identical regulations and statutes consistently adhere to uniform practices, irrespective of leadership. The European Banking Union and Finland's Financial Supervisory Authority work together to make sure that all businesses lend money in the same way. This diminishes the efficacy of ownership dummies in illustrating significant disparities in lending behavior among studies that examine a broader spectrum of institutions across nations. This conclusion lays the groundwork for the examination of Hypothesis 2, which investigates whether ownership effects intensify in challenging economic conditions, wherein the distinct objectives and motives of each ownership group are expected to be most evident.

4.5 Regression Results – Lending Stability During Downturns

Table 5 Regression Results – Lending Stability During Downturns (H_2 Model)

Dependent Variable: LOAN_GROWTH_VALUE

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0.1061*	0.0565	1.876	0.067
ROA	0.0225*	0.0080	2.827	0.007
ECB Interest Rate	-0.0126**	0.0061	-2.061	0.045
Log Assets (Size)	-0.0100	0.0153	-0.657	0.514
Tier 1 Capital Ratio	-0.0001	0.0007	-0.185	0.854
GDP Growth Rate	-0.0030	0.0065	-0.463	0.645
Foreign Dummy	-0.0317	0.0776	-0.409	0.684
Cooperative Dummy	-0.0467	0.0404	-1.154	0.254
Downturn Year	-0.0066	0.0396	-0.167	0.868
Foreign × Downturn	0.0113	0.0409	0.276	0.784
Cooperative × Downturn	0.0149	0.0429	0.347	0.730
R-squared	0.332			
Adjusted R-squared	0.195			
F-statistic	2.433			
Prob(F-statistic)	0.019			
Observations	60			

Note: The estimation method is Panel Least Squares. The baseline (reference) category is State-Owned banks in a non-downturn year. *, **, * denote statistical significance at the 10%, 5%, and 1% levels, respectively. **

Table 5 shows a downturn dummy and interaction terms for cooperative and foreign ownership that are added to the baseline model. This means that the model looks at banks that are owned by the government, banks that are owned by cooperatives, and banks that are owned by other countries. Nordea Bank Abp and Danske Bank are two banks that are owned by people from other countries. The insignificant interaction variables show that neither cooperative nor foreign-owned banks perform differently than state-owned banks during times of economic depression.

To test Hypothesis 2 (H_2), which states that state-owned and cooperative banks retain more steady lending behavior during downturns than foreign banks, Table 4 shows the findings of an enhanced regression model that includes inter-action factors. By including a Downturn Year dummy and its interactions with the ownership dummies, this model expands on the baseline specification and enables us to distinguish between the varied lending behaviors of each ownership type during times of economic stress.

The explanatory power of the set of explanatory variables is confirmed by the model's continued statistical significance (F-statistics = 2.433, p-value = 0.019). Remarkably, the control variables are consistent with the baseline model; the ECB Interest Rate (-0.0126, p=0.045) and ROA (0.0225, p=0.007) retain their predicted signs and statistical significance, supporting the dependability of these linkages. Adding variables that do not individually exhibit substantial significance is predicted to result in a minor decrease in Adjusted R-squared when compared to the baseline model.

Test of Hypothesis 2: Differential Crisis Response

The Foreign × Downturn coefficient is not statistically significant (0.0113, p=0.784), which is a good thing. This means that foreign banks' lending policies don't change in any statistically meaningful way during economic downturns compared to normal times. The evidence contradicts the initial hypothesis, which predicted a negative and substantial coefficient (showing strong contraction).

The Cooperative × Downturn coefficient (0.0149, p=0.730) is also positive, but very small and not statistically significant. This means that cooperative banks don't modify how they lend money when the economy is poor, just like they do when things are normal.

The Downturn Year dummy is the most essential portion of the Reference Category (State-Owned Banks) since it indicates how downturns only affect state-owned banks. This coefficient (-0.0066, p=0.868) is also not important.

The principal result derived from this research is the non-rejection of the null hypothesis. There is no statistically significant evidence indicating that any ownership type alters its lending practices differently from others during recessions. We cannot confirm that foreign banks exhibit greater procyclicality or that cooperative/state-owned banks display increased countercyclicality in relation to each other due to the minimal interaction factors. This "non-finding," on the other hand, is important. The fact that banks of all sorts kept their lending growth rates steady during the downturns in 2020, 2021, 2023, and 2024 shows that the Finnish banking industry is strong.

4.6 Robustness Check: EGLS Estimation

A supplementary analysis was performed using Panel Estimated Generalized Least Squares (EGLS) with cross-section weights to confirm the robustness of the initial findings and to address the heteroskedasticity detected in the diagnostic tests. This analytical approach yields precise parameter estimations among cross-sectional heteroskedasticity (Greene, 2018). The EGLS estimate results for the basic model are shown in Table 5.

Table 6 EGLS Robustness Check – Baseline Model (H_1)

Dependent Variable: LOAN_GROWTH_VALUE

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0.1575	0.0862	1.827	0.0735
GDP Growth Rate	-0.0022	0.0027	-0.809	0.4221
Log Assets (Size)	-0.0248	0.0142	-1.749	0.0862
Tier 1 Capital Ratio	0.0004	0.0006	0.630	0.5312
Return on Assets (ROA)	0.0197	0.0106	1.867	0.0676
ECB Interest Rate	-0.0120	0.0031	-3.914	0.0003
State-Owned Dummy	-0.0449	0.0715	-0.628	0.5328
Cooperative Dummy	-0.0842	0.0640	-1.317	0.1938
Model Statistics				
R-squared	0.4503			
Adjusted R-squared	0.3763			
F-statistic	6.085			
Prob(F-statistic)	0.000033			

*Note: Estimation method: Panel EGLS with cross-section weights. *** p<0.01, ** p<0.05, * p<0.1*

Table 6 shows the EGLS robustness check for the basic model. The findings corroborate the pooled OLS conclusion that ownership type does not substantially influence loan growth, as both the state-owned and cooperative ownership coefficients remain

insignificant, and foreign-owned banks continue to be included in the foreign ownership category utilized in the broader model specification.

The EGLS estimation yields several significant insights regarding the robustness of the primary findings:

The EGLS results corroborate the first Pooled OLS findings for Hypothesis 1 (H_1). The coefficients for the state-owned and cooperative bank dummies, which are both statistically insignificant (p-values of 0.533 and 0.194, respectively), further substantiate that ownership structure does not consistently influence lending growth in the Finnish banking sector under standard economic conditions.

Second, no matter what method is used to create the estimate, the relative importance of the important factors stays the same. The ECB interest rate still shows a strong negative relationship with loan growth (coefficient = -0.0120, $p < 0.01$). This shows how essential monetary policy is for deciding how much money to lend. The size of a bank (Log Assets) and its profitability (ROA) are only minimally statistically significant ($p < 0.10$), which means they can be used to forecast how likely a bank is to lend money.

The model has a good amount of explanatory power, with an R-squared value of 0.450. This means that the independent variables explain about 45% of the changes in loan growth. The F-statistic ($p = 0.000033$) shows that the regressors are statistically significant together.

In conclusion, the study's primary finding indicates that ownership structure does not exert a statistically significant influence on loan growth within the Finnish context. However, monetary policy and bank-specific characteristics significantly affect lending behavior, as corroborated by the EGLS robustness check. The reliability of these results is underscored by the convergence observed across multiple estimation methodologies.

Table 7 EGLS Estimation – Extended Model with Interaction Terms (H_2)

Dependent Variable: LOAN_GROWTH_VALUE

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0.1534	0.0895	1.714	0.0928
GDP Growth Rate	-0.0002	0.0041	-0.047	0.9630
Log Assets (Size)	-0.0232	0.0147	-1.577	0.1211
Tier 1 Capital Ratio	-0.0001	0.0008	-0.116	0.9083
Return on Assets (ROA)	0.0199	0.0108	1.843	0.0713
ECB Interest Rate	-0.0131	0.0036	-3.631	0.0007
State-Owned Dummy	-0.0166	0.0775	-0.214	0.8312
Cooperative Dummy	-0.0768	0.0657	-1.170	0.2476
Downturn Year	0.0454	0.0419	1.083	0.2841
Cooperative × Downturn	-0.0352	0.0457	-0.769	0.4457
Foreign × Downturn	-0.0356	0.0406	-0.877	0.3845
Model Statistics				
R-squared	0.4556			
Adjusted R-squared	0.3445			
F-statistic	4.101			
Prob(F-statistic)	0.000391			

*Note: Estimation method: Panel EGLS with cross-section weights. The baseline category is state-owned banks in non-downturn periods. *** p<0.01, ** p<0.05, * p<0.1*

Table 7 shows how well the EGLS test works for the model that incorporates the long-term decrease. State-owned banks are the reference group again, while different ownership variables stand for cooperative banks and banks owned by people from other countries. People from other countries own shares in both Danske Bank and Nordea Bank Abp. The insignificant interaction variables for Cooperative × Downturn and Foreign × Downturn demonstrate that there is no statistically significant variation in lending behavior among ownership types during downturns, hence supporting the primary conclusion derived from Table 5.

The EGLS estimation of the expanded model yields several significant findings regarding Hypothesis 2:

First, the interaction terms between ownership dummies and the slump period still do not show any statistical significance. The coefficients for Foreign × Downturn (-0.0356, $p = 0.385$) and Cooperative × Downturn (-0.0352, $p = 0.446$) do not meet the criteria for statistical significance at conventional levels. This result corroborates the conclusion that no ownership type demonstrates statistically significant variations in lending behavior during economic downturns when compared to state-owned banks, aligning with the initial Pooled OLS findings.

Second, the major effect of the downturn period is likewise statistically negligible (coefficient = 0.0454, $p = 0.284$) and captures the difference lending behavior of state-owned banks (the reference group) during crises. This implies that, according to this specification, even state-owned institutions do not show appreciably different lending patterns during downturns from regular periods.

Third, the enlarged model keeps crucial aspects consistent. The ECB interest rate still has a strong negative effect on loan growth (coefficient = -0.0131, $p < 0.01$), although bank profitability (ROA) is still only slightly significant ($p < 0.10$). Other control factors that are still not statistically significant include GDP growth, capital sufficiency, and bank size.

The F-statistic for the model is 4.101 and the p-value is 0.000391. This means that both of these numbers are statistically important. A score of 0.456 on the R-squared scale means the test was successful. A big part of the study's main results about how stable downturns are is supported by the EGLS estimate of the extended model. It was found that lending practices in Finnish banks stay the same during economic downturns, no matter who owns the banks. This is backed by the fact that there were no statistically significant interaction effects across a number of estimate approaches. Several types of economic data support the idea of system-wide resilience rather than patterns of stability that change depending on who runs the system.

4.7 Diagnostic Test

Comprehensive diagnostic tests were carried out to see whether the basic assumptions of the econometric models guarantee the validity and reliability of the regression results. Tests for residual normality and heteroskedasticity are presented in this section.

4.7.1 Test for Heteroskedasticity

The Likelihood Ratio (LR) test for cross-section heteroskedasticity particularly evaluated the existence of heteroskedasticity, defined by the non-constant variance of error terms across observations. Table 8 shows that the null hypothesis of homoskedastic residuals is clearly false. The test statistic is 47.92 with 6 degrees of freedom, which is statistically significant at the 1% level (p-value = 0.0000).

Table 8 Likelihood Ratio Test for Heteroskedasticity

Test Statistic	Degrees of Freedom	p-value	Conclusion
47.92	6	0.0000	Reject null hypothesis - Heteroskedasticity present

Table 8 result suggests that the error variances vary considerably among the panel's banking institutions

4.7.2 Test for Normality of Residuals

Jarque-Bera test was used to find out if standardized residuals are normally distributed. This is a very important assumption for t-statistics and F-statistics to work in regression analysis. Table 9 shows that the test statistic of 2.435 and the p-value of 0.296 mean that we can't reject the null hypothesis that the residuals are evenly spread out at standard levels of significance.

Table 9 Jarque-Bera Test for Normality of Residuals

Test Statistic	p-value	Skewness	Kurtosis	Conclusion
2.435	0.296	-0.325	3.743	Fail to reject null - Residuals are normally distributed

Table 9 shows the normality test results, which were very good, as well as the modest skewness (-0.325) and kurtosis value near 3 (3.743), show that the regression estimates are statistically reliable and the hypothesis tests done during this study are valid.

4.8 Discussion

The regression results indicate that ownership structure does not exert a statistically significant influence on loan growth within the Finnish banking sector, however profitability and monetary policy are critical drivers. This finding has numerous theoretical and practical implications when examined through the lenses of Agency Theory, Developmental State Theory, and Institutional Theory.

Ownership Structure and Lending Behavior

The absence of significant disparities in loan growth among foreign-owned, cooperative, and state-owned banks suggests that the Finnish banking system operates within a predominantly uniform institutional and regulatory environment. Finnish banks, regardless of their ownership, appear to respond uniformly to macroeconomic situations

and policy signals, unlike many foreign contexts where ownership diversity leads to varied lending behaviors.

Agency Theory (& Meckling, 1976) posits that both domestic and international banks consistently participate in procyclical lending, augmenting credit availability during economic booms and diminishing it during contractions, all with the objective of profit maximization. This doesn't happen very often in Finland, as seen by the very low ownership coefficients. The Financial Supervisory Authority (FIN-FSA) keeps a careful check on the European Central Bank's (ECB) policies and macroprudential framework. This keeps private banks from taking on too much risk and makes sure that what they do is in accordance with the main purpose of keeping the economy stable.

Developmental State Theory (Amsden, 2003; Sapienza, 2004) posits that state-owned banks should facilitate public investment during economic recessions via countercyclical funding. The findings suggest that even state-owned entities such as Finnvera and MuniFin adhere to responsible lending practices; yet, their legal obligations do not robustly endorse this notion. Even so, their actions could help things settle down through targeted actions, but not in a way that makes overall loan growth stand out from other types of ownership.

DiMaggio and Powell's institutional theory (1983) explains why this happened. All cooperative banks in Finland, state-owned banks, and banks with branches in other countries follow the same rules and standards. The principles and practices are based on honesty, openness, and the shared goal of long-term stability. These institutional forces undoubtedly lead to isomorphic behavior, which means that companies with diverse ownership structures must follow the same rules and lending standards to be legal.

Profitability, Monetary Policy, and Credit Growth

The theoretical prediction that profitability increases a bank's ability and desire to offer credit is supported by the positive and statistically significant association between Return on Assets (ROA) and loan growth. Profitable banks are better able to meet capital adequacy standards, grow their balance sheets, and absorb credit risk.

On the other hand, the powerful impact of monetary policy on lending decisions is underscored by the ECB interest rate's negative and significant coefficient. Policy rate increases directly result in higher funding costs and lower credit demand, which slows the expansion of loans. Given their close ties to European financial markets, this link emphasizes how sensitive Finnish banks are to the larger eurozone monetary environment.

It is interesting to note that GDP growth and capital ratios were statistically insignificant, indicating that profitability and interest rates have a greater direct influence than macroeconomic expansion and capital buffers. This could be explained by the comparatively conservative capital structure of the Finnish banking sector and the predominant impact of monetary policy from 2015 to 2024, which includes historically low interest rates and COVID-19-related policy interventions.

Lending Stability During Downturns

According to the second hypothesis, state-owned and cooperative banks would lend more steadily than foreign-owned banks during recessions. For all ownership types, however, the interaction terms for downturn years were statistically insignificant. This suggests that throughout times of crisis like 2020–2021 and 2023–2024, all banks, regardless of ownership, maintained similar lending habits.

This outcome shows the robustness and coordination of the Finnish financial system, even though it is at contradiction with findings from other countries (Micco & Panizza, 2006; Ferri et al., 2014). Ownership-driven countercyclical operations were less necessary during both crises because the Finnish government and the ECB conducted significant budgetary and liquidity measures. So, instead of not being able to find ownership effects, the fact that there isn't any difference between ownership types could mean that the system is stable across the board.

Consequences for Policy and Practice

For financial practitioners and policymakers, these findings have several implications. First, the convergence of lending behavior across ownership types indicates that ownership-based differences in credit availability can be effectively mitigated by robust macroprudential frameworks and regulatory uniformity. The ECB's strategy for unified banking supervision inside the European Monetary Union is supported by this result.

Second, the findings highlight the significance of interest rate management and profitability as crucial levers for maintaining credit growth. Policies that increase profitability and capital efficiency should be given top priority by regulators and bank executives since they directly result in more consistent lending availability.

likewise, the success of Finland's banking model where diverse ownership coexists with institutional cohesion and effective oversight is highlighted by the evidence of sector-wide resilience.

Limitations and Future Research

The study has limitations that should be noted despite its merits. Statistical power is limited by the small sample size of six banks, which may also obscure subtle owner-ship effects. Future studies might add smaller cooperative or specialty banks to the dataset. Furthermore, using dynamic panel models like the GMM estimator would assist in capturing loan behavior persistence and resolving possible endogeneity problems. To gain a deeper understanding of how ownership affects both lending volume and quality, future research should examine loan category breakdowns (e.g., household vs. corporate lending) or risk-adjusted performance metrics.

5 Summary and Conclusion

5.1 Summary of Findings

This thesis examined its impact of bank ownership structure on lending practices in Finland from 2015 to 2024. The study utilized a balanced panel dataset from six prominent Finnish banks, encompassing state-owned, cooperative, and foreign-owned entities. It tested two primary concepts using a Pooled Ordinary Least Squares regression model with strong standard errors. The initial hypothesis suggested that the ownership structure of banks significantly influences loan growth rates in Finland. The following hypothesis suggested that state-owned and cooperative banks have more stable lending policies during economic recessions than banks that are foreign-owned.

The empirical research relied on three independent theoretical frameworks: Agency Theory (Jensen & Meckling, 1976), Developmental State Theory (Amsden, 2003), and Institutional Theory (DiMaggio & Powell, 1983). These frameworks collectively assert that diverse ownership structures yield distinct incentive mechanisms, governance orientations, and strategic priorities, resulting in significant variations in lending behavior, particularly during periods of economic instability, as exemplified by the COVID-19 pandemic of 2020–2021 and the recession of 2023–2024.

The empirical results, however, do not support either explanation. The ownership dummy variables for cooperative and foreign ownership yielded statistically insignificant coefficients in both the baseline and extended regression models. This means that when you take into consideration bank-specific and macroeconomic factors, the growth rates of loans don't differ much between ownership types. Similarly, the interaction terms between ownership dummies and the downturn period dummy yielded no statistically significant coefficients, suggesting no evidence that any ownership type responds differently to economic stress in terms of lending behavior. The Pooled OLS and EGLS robust estimation methods confirmed these null results, which made them more reliable.

This study found that Return on Assets (ROA), which measures profitability, has a positive and significant effect on loan growth, while the ECB policy interest rate has a negative and significant effect. These results show that the main factors that affect lending behavior in the Finnish banking sector are the bank's own earnings potential and the overall monetary policy environment, regardless of who owns the bank.

5.2 Discussion and Interpretation

The lack of statistically significant ownership effects constitutes the primary finding of this study, necessitating careful interpretation in consideration of both the theoretical frameworks utilized and the specific institutional context of Finland. The finding contradicts a significant body of international evidence, which generally indicates that state-owned banks operate countercyclically, cooperative banks uphold stable and acyclical lending practices, and private or foreign-owned banks demonstrate procyclical behavior motivated by the pursuit of shareholder value (Micco et al., 2007; Iannotta et al., 2013; Cull & Martínez Pería, 2010). The Finnish evidence does not contradict these theoretical expectations; instead, it illustrates that the circumstances in which ownership effects occur are dependent on the overarching institutional and regulatory framework.

The results are most effectively described by Institutional Theory (DiMaggio & Powell, 1983), particularly the notion of institutional isomorphism, which posits that organizations functioning within an identical regulatory and normative framework will gravitate towards analogous practices, irrespective of their formal ownership structure. Finnish banks of all ownership types are subject to the same supervisory framework enforced by the Financial Supervisory Authority and the European Central Bank. The Basel III framework and the European Banking Union also require them to have the same amount of capital. This uniformity in laws has a major impact on how individuals give money, which makes it harder for owners to offer unique incentives. It would be easier to see these incentives in regions with less regulation or organizations that aren't as well-organized.

The lack of ownership-driven gaps throughout the designated downturn periods supports this conclusion. During the COVID-19 pandemic and the 2023–2024 recession, coordinated fiscal and monetary policy interventions, such as government-backed guarantee schemes, ECB liquidity initiatives, and loan repayment restrictions, provided systemic support that effectively replaced ownership-specific countercyclical measures. The Finnish banking sector's resilience appears to be influenced by a broader context, rather than being simply attributable to changes in ownership, policy, or government.

The positive and significant impact of profitability on loan growth aligns with the expectation that banks with enhanced internal capital generation are more capable of expanding their lending portfolios while ensuring regulatory capital adequacy. The negative and significant impact of the ECB interest rate corroborates the conventional monetary transmission mechanism, wherein elevated policy rates escalate funding costs while concurrently diminishing credit demand, thereby inhibiting loan growth throughout the system. The statistical insignificance of GDP growth, bank size, and the Tier 1 Capital Ratio indicates that, within the Finnish context during the study period, macroeconomic expansion and capital buffers exceeding regulatory minimums do not independently influence variations in bank-level lending growth when profitability and monetary conditions are accounted for.

5.3 Theoretical and Practical Contributions

This research provides multiple contributions to both the academic literature and the practical understanding of bank lending behavior in Finland. The paper is the first focused domestic empirical examination of the relationship between bank ownership structure and lending behavior in the Finnish banking sector. The study utilizes Agency Theory, Developmental State Theory, and Institutional Theory concurrently, offering a more comprehensive analytical framework than singular theoretical approaches, thus facilitating a more sophisticated interpretation of the null findings. The findings enhance the theory of financial intermediation by illustrating that institutional isomorphism, influenced by regulatory convergence within the European Banking Union, can effectively mitigate ownership-specific behavioral disparities that are extensively

documented in more institutionally diverse or less-regulated banking contexts. This discovery adds to the increasing body of research looking at the conditions that make ownership effects on lending behavior most likely to happen. It also suggests that the level of regulatory development and institutional homogeneity in the host country is an important factor that changes the outcome.

From a practical perspective, the results have multiple implications for various stakeholder groups. The evidence that Finland's harmonized supervisory framework leads to similar lending behavior across different types of ownership serves as empirical support for the European Banking Union's unified supervision approach, according to financial regulators and policymakers at both the national and European levels. It shows that robust macroprudential frameworks may be better at keeping credit stable across the banking sector than ownership-based actions. The fact that profitability and monetary circumstances are the key things that determine loan growth indicates that bank executives and strategy planners should pay more attention to how well the bank runs and how it manages its capital than to who owns the bank. Investors and financial professionals may see the fact that lending patterns are becoming increasingly similar across different types of ownership as a sign that the Finnish banking system is stable and that the risks of ownership are becoming less diverse. This has an effect on how credit risk is calculated and how strategies are created for diversification portfolios that include assets from Finnish banks.

5.4 Conclusion

This thesis acknowledges that the ownership structure of banks does not exert a statistically significant influence on lending behavior in Finland from 2015 to 2024. This study finds no empirical evidence to support either hypothesis. H_1, which asserted that ownership structure substantially influences loan growth levels, is rejected, as the ownership dummy variables for cooperative and foreign-owned banks produced statistically negligible coefficients across all model configurations. H_2, which posited that state-owned and cooperative banks exhibit greater lending stability during economic downturns than foreign-owned banks, is similarly rejected, as the ownership-downturn

interaction terms produced no statistically significant coefficients in both the Pooled OLS and EGLS estimation methods.

State-owned, cooperative, and foreign-owned banks show similar rates of lending growth and similar ways of responding to economic stress. This is because Finland has a unified institutional and regulatory environment that makes all banks behave in the same way when it comes to credit supply. This study identifies the primary determinants of loan growth as bank-level profitability, assessed through Return on Assets, and the ECB policy interest rate. This confirms that internal financial performance and the transmission of monetary policy are the principal factors influencing credit expansion in the Finnish banking sector, regardless of ownership type.

These findings provide a significant theoretical contribution by illustrating that in advanced, well-regulated financial systems marked by substantial institutional convergence, the ownership-specific incentive structures and governance orientations highlighted by Agency Theory and Developmental State Theory may be effectively superseded by the cohesive influences of a unified regulatory environment. The Finnish banking sector attains resilience in economic downturns through coordinated fiscal stimulus, ECB liquidity support, and harmonized macroprudential policy, rather than through ownership-driven countercyclical behavior. This finding enhances the theory of financial intermediation by demonstrating that regulatory convergence within the European Banking Union serves as a significant moderating factor that diminishes the behavioral variability commonly linked to ownership diversity.

This means that politicians shouldn't try to make banks more stable by changing who owns them. Instead, they should preserve strict rules for banks, make sure the banking business is profitable, and make sure that macroeconomic policy responses are coordinated during times of stress. The Finnish Financial Supervisory Authority and the European Central Bank are currently working on macroprudential frameworks that take into account how different types of banks function. These results are very important for them.

It is important to remember that this study has several limitations when looking at the result section. The six banks in the sample are the main owners in Finland; however, the sample size is small, thus the conclusions aren't as strong. It also doesn't explain how smaller savings or cooperative groups work. You can't see how ownership affects other sorts of loans, like housing and business loans, if you only look at the total amount of loans.

Additionally, the Pooled OLS estimator, while appropriate given the time-invariant nature of the ownership dummies, neglects the temporal stability of lending behavior. Subsequent research should address these deficiencies by expanding the sample to include smaller institutions, employing dynamic panel estimation methods such as the GMM estimator to alleviate potential endogeneity, and examining risk-adjusted lending metrics to provide a more thorough insight into the impact of ownership on both the volume and quality of credit distribution within the Finnish banking sector.

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Appendices

Appendix 1. Descriptive Statistics

	GDP_GR...	LOAN_GR...	ROA_____	LOG_ASSETS	ECB_INTE...	TIER_1_C...
Mean	0.875000	0.036617	0.510167	3.668698	0.840000	42.22583
Median	0.975000	0.034900	0.545000	3.105961	0.000000	20.10000
Maximum	3.300000	0.176100	3.200000	6.470000	4.500000	132.7000
Minimum	-2.490000	-0.122500	-5.900000	0.963000	0.000000	17.30000
Std. Dev.	1.692786	0.057999	0.949595	2.024220	1.513681	35.61119
Skewness	-0.425260	0.140000	-4.823914	0.279101	1.441659	1.122823
Kurtosis	2.441714	3.657067	36.95171	1.510904	3.498506	2.635427
Jarque-Bera	2.587668	1.275341	3114.498	6.322492	21.40508	12.93960
Probability	0.274217	0.528522	0.000000	0.042373	0.000022	0.001550
Sum	52.50000	2.197000	30.61000	220.1219	50.40000	2533.550
Sum Sq. Dev.	169.0659	0.198469	53.20210	241.7505	135.1826	74821.24
Observations	60	60	60	60	60	60

Appendix 2. Correlation Matrix

	GDP_GR...	LOAN_GR...	ROA_____	LOG_ASSETS	ECB_INTE...	TIER_1_C...
GDP_...	1.000000	0.112918	0.189295	-0.017478	-0.382410	-0.117186
LOAN...	0.112918	1.000000	0.290998	-0.356423	-0.229002	0.143378
ROA_...	0.189295	0.290998	1.000000	-0.053882	0.201673	-0.135668
LOG_...	-0.017478	-0.356423	-0.053882	1.000000	0.107171	-0.144266
ECB_I...	-0.382410	-0.229002	0.201673	0.107171	1.000000	0.167315
TIER_...	-0.117186	0.143378	-0.135668	-0.144266	0.167315	1.000000

Appendix 3. Panel Least Squares Regression Output

Dependent Variable: LOAN_GROWTH_VALUE
Method: Panel Least Squares
Date: 11/12/25 Time: 14:06
Sample: 2015 2024
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.112339	0.052448	2.141904	0.0369
ROA_____	0.022780	0.007673	2.968693	0.0045
ECB_INTEREST_RATE	-0.012460	0.005210	-2.391636	0.0204
LOG_ASSETS	-0.010047	0.014587	-0.688741	0.4940
TIER_1_CAPITAL_RATIO_____	-0.000212	0.000552	-0.384179	0.7024
GDP_GROWTH_RATE	-0.003543	0.004494	-0.788409	0.4340
FOREIGN_DUMMY	-0.034607	0.073137	-0.473181	0.6381
COOP_DUMMY	-0.049297	0.037796	-1.304283	0.1979

R-squared	0.329924	Mean dependent var	0.036617
Adjusted R-squared	0.239722	S.D. dependent var	0.057999
S.E. of regression	0.050572	Akaike info criterion	-3.007288
Sum squared resid	0.132989	Schwarz criterion	-2.728042
Log likelihood	98.21864	Hannan-Quinn criter.	-2.898060
F-statistic	3.657597	Durbin-Watson stat	1.520041
Prob(F-statistic)	0.002780		

Appendix 4. Panel EGLS Regression Output (H_1)

Dependent Variable: LOAN_GROWTH_VALUE
Method: Panel EGLS (Cross-section weights)
Date: 11/13/25 Time: 12:47
Sample: 2015 2024
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.157527	0.086245	1.826512	0.0735
GDP_GROWTH_RATE	-0.002182	0.002696	-0.809122	0.4221
LOG_ASSETS	-0.024778	0.014168	-1.748872	0.0862
TIER_1_CAPITAL_RATIO_____	0.000400	0.000635	0.630371	0.5312
ROA_____	0.019748	0.010579	1.866605	0.0676
ECB_INTEREST_RATE	-0.012047	0.003078	-3.914265	0.0003
STATE_DUMMY	-0.044882	0.071481	-0.627887	0.5328
COOP_DUMMY	-0.084247	0.063989	-1.316583	0.1938

Weighted Statistics

R-squared	0.450305	Mean dependent var	0.037336
Adjusted R-squared	0.376307	S.D. dependent var	0.057113
S.E. of regression	0.049323	Sum squared resid	0.126502
F-statistic	6.085412	Durbin-Watson stat	1.514619
Prob(F-statistic)	0.000033		

Unweighted Statistics

R-squared	0.294535	Mean dependent var	0.036617
Sum squared resid	0.140013	Durbin-Watson stat	1.495979

Appendix 5. Extended Panel Regression Output Including Downturn Interaction

Dependent Variable: LOAN_GROWTH_VALUE
Method: Panel Least Squares
Date: 11/12/25 Time: 14:38
Sample: 2015 2024
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.106085	0.056534	1.876485	0.0666
ROA_____	0.022497	0.007959	2.826767	0.0068
ECB_INTEREST_RATE	-0.012606	0.006118	-2.060515	0.0447
LOG_ASSETS	-0.010042	0.015279	-0.657211	0.5141
TIER_1_CAPITAL_RATIO_____	-0.000121	0.000654	-0.184710	0.8542
GDP_GROWTH_RATE	-0.003018	0.006514	-0.463260	0.6452
FOREIGN_DUMMY	-0.031731	0.077556	-0.409136	0.6842
COOP_DUMMY	-0.046652	0.040412	-1.154422	0.2539
FOREIGN_DOWNTURN	0.011267	0.040887	0.275554	0.7840
COOP_DOWNTURN	0.014873	0.042920	0.346527	0.7304
DOWNTURN_YEAR	-0.006627	0.039649	-0.167141	0.8679

R-squared	0.331820	Mean dependent var	0.036617
Adjusted R-squared	0.195457	S.D. dependent var	0.057999
S.E. of regression	0.052023	Akaike info criterion	-2.910121
Sum squared resid	0.132613	Schwarz criterion	-2.526158
Log likelihood	98.30364	Hannan-Quinn criter.	-2.759932
F-statistic	2.433355	Durbin-Watson stat	1.532650
Prob(F-statistic)	0.019192		

Appendix 6. Panel EGLS Regression Output (H2)

Dependent Variable: LOAN_GROWTH_VALUE
Method: Panel EGLS (Cross-section weights)
Date: 11/13/25 Time: 13:09
Sample: 2015 2024
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.153419	0.089494	1.714299	0.0928
GDP_GROWTH_RATE	-0.000191	0.004102	-0.046656	0.9630
LOG_ASSETS	-0.023150	0.014677	-1.577375	0.1211
TIER_1_CAPITAL_RATIO	-9.08E-05	0.000784	-0.115818	0.9083
ROA	0.019882	0.010786	1.843276	0.0713
ECB_INTEREST_RATE	-0.013145	0.003620	-3.631327	0.0007
STATE_DUMMY	-0.016608	0.077487	-0.214332	0.8312
COOP_DUMMY	-0.076818	0.065653	-1.170052	0.2476
DOWNTURN_YEAR	0.045419	0.041939	1.082974	0.2841
COOP_DOWNTURN	-0.035167	0.045744	-0.768781	0.4457
FOREIGN_DOWNTURN	-0.035643	0.040620	-0.877479	0.3845

Weighted Statistics

R-squared	0.455598	Mean dependent var	0.037146
Adjusted R-squared	0.344495	S.D. dependent var	0.056561
S.E. of regression	0.050025	Sum squared resid	0.122622
F-statistic	4.100696	Durbin-Watson stat	1.536364
Prob(F-statistic)	0.000391		

Unweighted Statistics

R-squared	0.267288	Mean dependent var	0.036617
Sum squared resid	0.145421	Durbin-Watson stat	1.532311