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Essays on European Banks Dividend Policy and Ownership - An Agency Theory Perspective

José Nuno Teixeira de Abreu de Albuquerque Sacadura

Thesis specially presented for the fulfilment of the degree of Doctor in Management - Specialization in Quantitative Methods Applied to Management

Supervisors:

PhD, Sónia Margarida Ricardo Bentes, Associate Professor with Aggregation, ISCAL - Instituto Politécnico de Lisboa
PhD, Nuno Rafael Barbosa de Jesus Ferreira - Assistant Professor – ISCTE – Instituto Universitário de Lisboa

December, 2023

BUSINESS
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Dedication

To the memory of my grandfather José, always present in my mind

To Becas and my parents for their love and support

"True ignorance is not the absence of knowledge, but the refusal to acquire it."

Karl Popper

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Resumo

Um dos temas de investigação mais relevante nas últimas décadas é o dilema dos dividendos. Este problema despertou o interesse de vários economistas desde o trabalho seminal de Miller e Modigliani (1961). Num mundo perfeito, quando a política de investimento de uma empresa é mantida constante, a política de dividendos é irrelevante para o acionista. Assim, um dividendo maior implica uma menor retenção de resultados e de ganhos de capital, mantendo a riqueza total do acionista inalterada. No entanto, e ao contrário do teorema da irrelevância dos dividendos de Miller e Modigliani, as empresas seguem estratégias deliberadas de pagamento de dividendos (Lintner, 1956). Esta evidência levanta uma questão: porque é que as empresas pagam dividendos? Apesar da investigação realizada, ainda não existem todas as respostas para o puzzle dos dividendos. A literatura aponta para diversas explicações, como efeitos fiscais e de clientela, sinalização e assimetria de informação, custos de agência, ciclo de vida e catering. Frequentemente ignorados na literatura sobre dividendos, os bancos europeus são particularmente importantes, pois representam cerca de 20% da capitalização bolsista do mercado europeu (em 2023). Merecem uma análise segregada, dado os altos níveis de alavancagem em que operam, a existência de garantia sobre os depósitos e vários níveis de assimetria de informação entre *stakeholders* que podem justificar diferentes políticas de dividendos. Esta Tese tem como objetivo estudar a política de dividendos dos bancos europeus sob a ótica da teoria da agência. Para tal, apresentamos uma breve revisão da literatura e três ensaios empíricos que fornecem novas evidências sobre este tema particular. O primeiro ensaio estabelece a relação entre a política de dividendos dos bancos europeus e a sua estrutura acionista do ponto de vista da origem da sua nacionalidade. O segundo ensaio documenta a influência do Estado, no papel de acionista, na política de dividendos dos bancos europeus, e, finalmente, o terceiro ensaio mostra novas evidências sobre a recente pandemia da COVID-19 e os dividendos bancários. As três análises empíricas são realizadas utilizando uma extensa amostra de dados em painel, que inclui 221 bancos, de 31 países europeus, durante os anos 2007 a 2021. Neste período, identificamos um total de 76.655 acionistas, incluindo informação sobre o montante da sua posição, tipo de /investidor, classificação sectorial, nacionalidade e origem geográfica.

Palavras chave: Dividendos, Estrutura acionista, Teoria da agência

JEL Codes: C33, G21, G35

Abstract

An important area of emphasis in research over the past decades has been the dividend puzzle. This problem has occupied the attention of financial economists since Miller and Modigliani (1961) seminal work. In a frictionless world, when the investment policy of a firm is held constant, its dividend policy has no consequences for shareholders wealth. Thus, higher dividends lead to lower retained earnings and capital gains, leaving total shareholders' wealth unchanged. Contrary to Miller and Modigliani's prepositions, corporations follow deliberate dividend payout strategies (Lintner, 1956). This evidence raises a question: why firms pay dividends? Despite much study, researchers still do not have all the answers to the dividend puzzle. The literature points to various theories such as taxes and clientele effects, agency costs, asymmetric information, behaviour, life cycle, and catering.

Often forgotten in the dividend literature, European banks are particularly important as they represent almost 20% of the total European market capitalization (as of 2023). They also merit a separate analysis as they have high leverage ratios, deposit insurance (both of which might provide equity holders, or managers, with perverse incentives), and different levels of information asymmetry that can provide a rationale for distinct dividend policies and clienteles.

This Ph.D. thesis aims to study the dividend policy of European Banks from an agency cost theory perspective. For that purpose, we present a broad literature review and three empirical essays that provide new evidence on this particular topic. The first essay provide evidence regarding the relationship between the dividend policy of European banks and their ownership structure from a shareholder nationality point of view. The second essay documents the influence of government ownership in the dividend policy of European Bank, and finally, the third essay, provide new evidence concerning the recent COVID-19 crisis and bank dividends in Europe.

The three empirical analyses are conducted using a comprehensive panel data sample of 221 banks, from 31 European countries, covering the 2007-2021 period. In this period, we identified a total of 75.655 shareholders, including information such as their ownership share position, investor type, sector classification and country of origin.

Keywords: Dividends, Ownership, Agency Theory

JEL Codes: C33, G21, G35

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Glossary of Acronyms

ADF - Augmented Dickey–Fuller test

AR - Arellano-Bond

CAPM – Capital Asset Pricing Model

ECB − European Central Bank

EFRM – Exponential Fractional Regression Model

ESG – Environmental, social and governance

ESMA − European Securities and Market Authorities

FD-GMM – First Difference Generalized methods of moments

FEM - Fixed effect model

FRM – Fractional Regression Model

GMM – Generalized method of moments

IFRS – International Financial Reporting Standards

LSDV - Least square dummy variable

MM – Miller and Modigliani

OLS – Ordinary Least Squares

QMLE – Quasi-maximum likelihood estimate

R&D − Research and development

S&P – Standard and Poors

SYS-GMM – System Generalized methods of moments

US – United States

WHO - World Health Organization

1. INTRODUCTION

"What should the individual investor do about dividends in his portfolios?"
"What should the corporation do about dividend policy?"
"The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together."

Fischer Black 1976

Chapter 1: Introduction

The following paragraphs of this chapter outline the background gap analysis, research problems, objectives, hypotheses, results, literature contribution and structure of this thesis.

1.1. Theoretical Background

Since the seminal work from Miller and Modigliani (1961), the dividend puzzle still intrigues academics and practicians. Under complete information, full rational agents and no market friction, the dividend policy is irrelevant for the shareholders wealth. When firms pay dividends, on the one hand the shareholders get cash, but on the other hand the firm's assets are reduced. Consequently, what the shareholders gain in the form of cash dividend, they lose in the form of their claims on the assets. So, there is neither a gain nor a loss, and the value of the firm will remain unaffected. Despite the Miller-Modigliani Irrelevance Theory, dividends seem to be important to both firms and investors, which arises a puzzle, when an attempt is made to reconcile the irrelevance proposition and the observed market practises. Over the last sixty years, several researchers studied the dividend puzzle and emphasised reasons for a firm to pay dividends, make them relevant. Some authors highlighted the informational content of dividends, according to the signaling hypothesis, investors can infer information about a firm's future earnings through the signal coming from dividend announcements (Ross, 1977; Bhattacharya, 1979; John and Williams, 1985; DeAngelo et al. 2009; Kahle and Stulz, 2017; Nie and Yin, 2022); others underline that investor prefer the certainty of dividends now than the uncertainty capital gains tomorrow, also known as the bird-in-the hand hypothesis (Lintner, 1956; Gordon,1959; Walter, 1963); other group of authors consider the different stages of a firm life cycle, in which at the early

stage exists scope for future growth and consequently, a significant requirement for capital and a lower dividend (Fama and French, 2001; Grullon et al., 2002; De Angelo et al., 2006; Coulton and Ruddock, 2011).

Furthermore, researchers point to a tax preference clientele, when in several countries, income from dividends was taxed at higher rates than capital gains, thus, leading a preference for lower dividends (Litzenberger and Ramaswamy, 1979; Baker and Powell, 1999; Kalay and Michaely, 2000; Baker et al., 2002; Singhania, 2006), while other authors pinpoint the agency costs hypothesis.

Under the Modigliani and Miller perfect world, there are no conflicts of interests between managers and shareholders. In practice, however, this assumption is unreasonable where firm owners are distinct from firm managers, and both interests are not necessarily aligned. Managers might conduct actions that are costly to shareholders, such as consuming excessive benefits or over-investing in managerially rewarding but unprofitable business. Therefore, shareholders incur in agency costs associated with monitoring managers' behavior. In this context, dividends payments might serve to align the interests and mitigate the agency problems aroused between managers and shareholders, by reducing the discretionary funds available to managers (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986; Alli et al., 1993). Other papers underline the agency conflicts between shareholders and bondholders (Jensen and Meckling, 1976; Jory et al., 2017) and among large and small shareholders (Shleifer and Vishny, 1997; Claessens et al., 2000; La Porta et al., 2000; Faccio et al., 2001; Farinha, 2003; Jeon et al., 2011; Lam et al., 2012; Renneboog and Szilagyi, 2020; Bataineh, 2021).

In sum, despite extensive research and numerous theories proposed, there is still no consensus on dividend policy. The puzzle of dividend behavior remains unsolved, with different theories offering partial explanations but none providing a comprehensive framework. As a consequence, further research is needed to better understand the factors that influence the dividend decisions.

1.2. **Research Questions and its significance to Knowledge**

1.2.1. About Dividends and Bank Ownership

The banking industry is a critical component of a country's economic strategic infrastructure. As financial intermediaries between savers and borrowers, banks facilitate the flow of funds in the economy. They gather deposits from individuals and businesses and channel those funds towards productive activities, such as lending to businesses and individuals for investments, consumption, and infrastructure development. This process stimulates economic growth and drives job creation. Moreover, they provide a secure and reliable payment system that enhances economic activity, consumer confidence, and supports business operations. They also provide a range of services, including insurance and hedging instruments tools, essential for a firm risk management. And more important, they are the Central Bank 'vehicle' to transmit the monetary policy to the economy. Given these reasons, the banking industry acts as a backbone of a country's economic strategic infrastructure, supporting economic growth, stability, and development.

Thus, we need to know who are its shareholders and how are they aligned with national interests. Distinguishing between domestic and foreign ownership in banks helps safeguard national security interests and ensure the stability of the financial system. It allows governments to assess and manage potential risks associated with foreign ownership, such as undue influence or vulnerabilities in times of economic stress. Moreover, it allows for a nuanced approach to regulation and supervision that addresses the specific characteristics and risks associated with each ownership category. Different ownership structures may require distinct regulatory frameworks, enabling appropriate safeguards, capital requirements, and risk management measures to maintain a stable and well-functioning banking sector. Additionally, banks with strong domestic ownership are more likely to have a vested interest in supporting the growth of the domestic economy, lending to local businesses, and financing key strategic sectors. This can contribute to job creation, infrastructure development, and overall economic well-being.

Knowing the importance of dividends as a mitigator of conflicts between shareholders, and under the agency cost perspective, we address the following research questions:

- Does ownership structure nationality affect the dividend policy of European Banks?
- How are benefits distributed among domestic and foreign shareholders?
- Do foreign shareholders steal profits from domestic shareholders?

The reason to study this problem is reinforced, due to the regulatory recommendations and whether is important or not, to keep strategic decision-making centers in the hands of domestic shareholders.

1.2.2. About Dividends and Government Ownership

Government ownership of banks is common in Europe. Governments often own a significant portion of bank's equity through direct or indirect ownership. The reasons for government ownership vary, but may include the need to provide banking services to underserved regions, support economic development, or promote financial stability. In some cases, governments may take ownership of banks as a result of a financial crisis, as was the case during the 2008 global financial crisis. When governments own banks, they have a direct interest in the banks' financial performance. This includes the banks' ability to generate profits and pay dividends to their shareholders.

However, there are trade-offs to government ownership of banks and its impact on bank dividends. When government entities own banks, they may be more likely to prioritize social objectives, such as providing access to financial services or supporting small businesses, over maximizing profits. This may lead to lower dividends paid to shareholders, including the government. Moreover, government ownership can create conflicts of interest between the government's role as a regulator and its role as a shareholder. For example, governments may be reluctant to enforce regulations that could negatively impact the banks they own, such as imposing higher capital requirements or restricting certain types of lending. This could lead to lower financial stability and lower dividends for shareholders.

In some cases, governments may use their banks' ownership to intervene in particular operations or decision-making processes. This could lead to inefficiencies, such as increased bureaucracy, and lower profitability, which would ultimately result in lower dividends for shareholders, and in last resort, for the taxpayer. Bearing this idea, we address the following research questions:

- Does government ownership influence the dividend policy of European Banks?

1.2.3. About Dividends and the Covid 19 pandemic

The COVID-19 pandemic has had a profound impact on the global economy, and the European banking sector has not been immune to its effects. One area of concern has been banks dividends, which the European Central Bank (ECB) has recommended to limit during the pandemic (Recommendation ECB/2020/19). For banks, dividends can be an important way to reward shareholders for their investment and signal confidence in the bank's financial stability. However, in times of economic uncertainty, such as during the pandemic, dividends can also pose risks to a bank's financial health. In response to these risks, the ECB recommended in 2020, that banks limit dividends and share repurchases during the pandemic. The ECB's guidance was intended to ensure that banks have sufficient capital to weather the economic impact of the pandemic, including potential loan losses and other financial risks. The ECB also noted that limiting dividends could help support lending to businesses and households, which may be struggling during the pandemic. While the ECB's recommendation was not mandatory, many banks in Europe have voluntarily followed the guidance. For example, in July 2020, the largest banks in the Eurozone announced that they would suspend dividend payments until January 2021, in response to the pandemic. This move was widely seen as a signal of solidarity with the wider community and recognition of the importance of stability in the financial system. There are some who have criticized the ECB's recommendation, some argue that limiting dividends could hurt shareholders and reduce incentives for investment in the banking sector, others note that banks in other regions, such as the United States, did not limit dividends to the same extent as European banks during the pandemic.

Even though, in February 2023, European banks are revealing in their highest profits since before the financial crisis, benefiting from an unprecedented pace of rate increases that's driving a surge in lending income. Several European biggest lenders reported so far, boosted net lending revenue by 16% to a record €120.8 billion last year, fuelling their highest profits since 2007 and setting off a cascade of dividend increases and share repurchases in 2022. This is a contrast to the recent ECB recommendation to suspend dividends.

Bearing in mind the recent COVID-19 developments, we would like to address the following research questions:

- How the recent COVID-19 pandemic influenced the European banks dividend payout?

1.3. **Objectives and main findings**

The main purpose of this research is to analyze the dividend policy of European Banks from an agency theory point of view. For this purpose, we built a sample of 221 European banks from 31 countries during the 2007-2021 period. We collected information from 75.655 bank's shareholders, including their ownership share position at each year end, investment type, sector classification, investment value, and country of origin.
In order to answer and clarify the questions presented in the previous sections, this thesis is composed by three independent essays interconnected through the concept of dividend policy under the agency theory lens.

In the first essay, "DOES OWNERSHIP NATIONALITY STRUCTURE AFFECTS THE DIVIDEND POLICY OF EUROPEAN BANKS?", we study the relationship between ownership nationality concentration and the dividend payout ratio of European Banks from an agency cost theory point of view.

Our essay presents various innovations. First, we use a new hand-collected dataset on ownership structure combining data from Eikon-Datastream, Bloomberg, official stock exchanges notices and banks websites. Second, we use several different proxies to measure the impact of domestic and foreign ownership concentration on the dividend policy. Third, we consider the effect of share repurchases on dividends. And finally, our estimations use both static and dynamic panel data models to address endogeneity issues.

We suggest that nationality matters and that different investors impact the payout policy differently. The results obtained from our empirical models show asymmetric results. We find a positive relationship between dividend payout and domestic shareholder concentration, and a negative relationship between dividend payout and foreign shareholder concentration. Taking into account the argument that dividends are a substitute for shareholder monitoring, this is consistent with our findings that domestic (or local) shareholders are more interested in a higher payout to reduce monitoring costs. On the contrary, taking into account the rent extraction hypothesis, we find that foreign investors

are more interested in a lower payout, suggesting an extraction of private benefits not shared by other investors, such as product cross selling or technology sharing.

The second essay, "DIVIDEND PAYMENTS OF EUROPEAN BANKS: RECENT TRENDS AND THE ROLE OF GOVERNMENT OWNERSHIP?", studies the relationship between government ownership and the dividend policy of European banks. Our essay contributes to the literature in several ways. Firstly, we extend the literature on dividend policy by examining the particular role of state ownership in determining dividend policy of European Banks. Often forgotten in the literature, European banks represent almost 20% of the total European market capitalization (as of 2023). They also merit a separate analysis as they have high leverage ratios, deposit insurance (both of which might provide equity holders, or managers, with perverse incentives), and different levels of information asymmetry that can provide a rationale for distinct dividend policies and clienteles. Secondly, we use a 15 years panel data sample, comprising information from several sources, namely Eikon-Datastream, Bloomberg, official stock exchanges notices and banks websites. Thirdly, we use different proxies do measure the government ownership concentration in the dividend policy of European banks and finally, we establish a comparison between the dividend payment trend in the last COVID19 crisis and the 2007 Lehman crisis.

We suggest that government ownership concentration impacts the European Banks dividends. We show that government ownership concentration has a negative impact on dividend payers, consistent with the agency theory. Findings show that a higher government ownership concentration is negatively related with banks dividends, suggesting that governments are more likely to prioritize other objectives than maximizing dividends when a major shareholder. This finding is consistent with the rent hypothesis from agency theory in which minority shareholders are less likely to be able to force large shareholders to disgorge cash out of the firm. Moreover, we find that the total fraction of European banks that pay dividend declined after the 2007 Lehman crisis. However, like in the US, most European banks that cut dividends did not do so until 2009, suggesting that European banks were reluctant to cut dividends. This trend was different during the COVID-19 crisis, were banks suspended or reduced dividends immediately in 2020, following the ECB dividend recommendation.

The third essay, "DIVIDEND PAYOUT OF EUROPEAN BANKS DURING COVID-19", studies the impact of the recent COVID-19 pandemic on the dividend policy

of European Banks and the applicability of Fama and French's (2001) characteristics of dividend payers (size, profitability and growth opportunities) in this period of uncertainty. We innovate and contribute to the literature in several ways. Firstly, we extend the recent COVID-19 pandemic to dividends literature in European Banks. Secondly, we use a dependent variable that includes both total cash dividends and share repurchases. Thirdly, we test the Fama and French (2001) characteristics of dividend payers in a pandemic crisis. Finally, we use an exponential-fractional regression model (EFRM), based on a transformation of logit model as proposed by Ramalho et al. (2018), in order to maximize the efficiency of the regression model, due to the bounded nature of the dependent variable. We find strong evidence of a negative relationship between the dividend payout ratio and the COVID-19 pandemic. Moreover, we find that bank size is positively associated with the dividend payout, suggesting that larger banks tend to pay higher dividends to mitigate agency costs.

1.4. **Thesis structure**

This PhD thesis is composed by six chapters covering a total of three essays. Chapter one includes this introduction, theoretical background and main conclusion of the thesis. Chapter two includes an overview of the dividend literature, with a particular attention to the agency cost theory. Chapter three (first essay: Does the nationality of ownership structure affects the European Banks dividend policy?) covers the relationship between the dividend payout and the ownership structure, during the 2007-2021 period. Chapter four (second essay: Dividend payments of european banks: recent trends and the role of government ownership?) focuses on the government role as shareholder of European banks and how they may impact their dividend policy. Chapter five (third essay: "Dividend payout of european banks during Covid-19") observes the effect of the coronavirus pandemic in dividend payout and the applicability of Fama and French (2001) dividend payers characteristics, and finally, chapter six concludes this thesis.

2. LITERATURE REVIEW

Chapter 2: Literature Review

2.1. The Dividend Irrelevance Theory

Miller and Modigliani's (1961) dividend irrelevance theorem form one of the foundations of modern corporate finance theory. The MM theorem indicates that, in a perfect world with investment policy fixed, the dividend policy is optimal, as it implies an identical stockholder wealth. When firms pay dividends, on the one hand the shareholders get cash, but on the other hand the firm's assets are reduced. Consequently, what the shareholders gain in the form of cash dividend, they lose in the form of their claims on the assets. So, there is neither a gain nor a loss, and the value of the firm will remain unaffected.

The central lesson commonly drawn from MM theorem is that investment policy alone determines stockholder wealth in frictionless markets, and the payout decision has no impact on firm value (Allen and Michaely, 2003). In order to reach this conclusion, Miller and Modigliani (1961) make some assumptions:

- Perfect capital markets, which requires free available information to all investors (symmetrical and costless information), no differences between taxes on dividends and capital gains, no buyer or seller of securities is large enough for his transactions to have a significant impact on prices and no transaction costs incurred when securities are traded;
- All market participants have rational behaviours, preferring higher wealth to lower wealth, and not neutral to increased gains;
- Absence of uncertainty risk, which considers that all investors have full knowledge of the firm's investment opportunities;

The Miller and Modigliani assumptions support the irrelevance of dividends, where the investor is indifferent between dividends and retention-generated capital gains. According to this approach, the market price of a share is dependent on the earnings of the firm and not on the dividend paid by it. In order to demonstrate the dividends irrelevance of principle, Miller and Modigliani (1961) present the following. Assume that the return rate of a stock, at moment I (r_t) is given by equation (1.0.):

$$r_t = \frac{d_t + p_{t+1} - p_t}{p_t} \quad (1.0.)$$

where, d_t is equal to the dividend paid by the stock at moment *t;* p_t is equal to the price of the stock at moment *t* (just before the dividend payment) and p_{t+1} is equal to the price of the stock after the dividend payment. We can rewrite the equation to (1.1.):

$$p_t = \frac{1}{1+r_t}(d_t + p_{t+1}) \quad (1.1.)$$

Considering, the market value of a firm in moment t (V_t), is equal to the number of shares at period *t* (N_t), multiplied by its market price (p_t) and the total amount paid to investors as dividends is equal to D_t then*:*

$$V_t = \frac{1}{1+r_t}(D_t + N_t \times p_{t+1}) \quad (1.2.)$$

Additionally, if M_{t+1} is equal to the number of new shares (if any) issued during the period *t* and sold to investors at ex-dividend closing price (p_{t+1}) then,

$$V_t = \frac{1}{1+r_t}(D_t + V_{t+1} - M_{t+1} \times p_{t+1}) \quad (1.3.)$$

Clearly, from equations 1.2. and 1.3., we can conclude that an increase in D_t will lead to a direct increase in V_t. Moreover, current dividends might also affect V_t indirectly, via V_{t+1}, the new ex-dividend market value in moment *t+1*. Since V_{t+1} depends only on possible future events, this positive effect only occurs if both V_{t+1} is a function of future dividend policy and the current dividend (D_t) transmits relevant unavailable information to what that future dividend policy would be. This suggest, that the future dividend policy of the firm is known and given for *t + 1* and all subsequent periods, and is independent of the actual dividend decision in *t*.

Lastly, dividends can also influence negatively V_t through the last factor ($-M_{t+1} \times p_{t+1}$), the value of new shares issued to outsiders during the period. Thus, the dividend decision effects market price, or the firm value, in two conflicting ways.

And that's the base of dividend irrelevance theory, the two dividend effects must always exactly offset, so that the payout policy to be followed in *t* will have no effect on the price at *t*.

In order to test this hypotheses, Miller and Modigliani (1961) included two new variables in the problem (1.4.): I_t which is equal to the desired level of the company investment during period *t*, and X_t which is the net profit of the company at time *t*.

$$M_{t+1} \times P_{t+1} = I_t - (X_t - D_t) \tag{1.4.}$$

The value of new shares issued to outsiders during the period, depends on the difference between the desired level of investment I_t and net profits (X_t) excluding dividends paid (D_t).

Substituting, we can rewrite the equation (1.3) as:

$$V_t = \frac{1}{1+r_t}(V_{t+1} - I_t + X_t) \tag{1.5.}$$

Since D_t does not appear directly in equation (1.5.), and all other variables are independent of D_t (either by assumption or nature), we can conclude that the value of the firm at time *t*, V_t, is not affected by the payout policy at time *t*.

Following the same procedure, it is possible to demonstrate that future dividend payments (D_{t+1}), can not influence the value of the firm (V_t), since the future value of the firm V_{t+1} is also independent from the dividend policy of the same period. Thus, Miller and Modigliani (1961) conclude that given a firm's investment policy, the dividend payout policy it chooses to follow will not affect either the price of its shares or the total return to its shareholders.

2.2. **The Dividend Relevance Theories**

Contrary to the Miller–Modigliani prepositions, other empirical research supports the idea that dividends are very important to the firm and also could create value. These are known as the dividend relevance theories.

2.2.1. The Walter Model

The Walter dividend model is a dividend relevance theory, that explores the relationship between a firm's dividend policy and its value. According to Walter (1963) the value of a firm is influenced by its dividend policy, and that choice can affect the shareholder's wealth. The model suggests that investors prefer to receive dividends now rather than in the future ("bird-in-the-hand hypothesis"), as they can reinvest them and earn a further return. The Walter model argues that the dividend policy and investment policy of a firm are interlinked and cannot be isolated from each other.

Moreover, the model emphasizes the importance of the relationship between a firm's rate of return and the cost of capital in determining the optimal dividend policy that maximizes shareholder wealth, suggesting that if a firm's rate of return is higher than its cost of capital, it should retain earnings and reinvest them in profitable projects, rather than paying dividends. On the other hand, if the firm's rate of return is lower than the cost of capital, it should distribute dividends to shareholders.

In order to reach this conclusion, Walter (1963) make some assumptions:

- Full investment is made through retained earnings;
- The firm's internal rate of return (r), and the cost of capital (k) are constants, even if investment value changes;
- All earnings are either distributed as dividends or reinvested;
- Initial earnings and dividends never change.;
- The firm has a very long or perpetual life.

The Walter model is as follows:

$$P_t = \frac{D}{K_e} + \frac{r \times (E - D)/K_e}{K_e} \qquad (2.1.)$$

where, P_t is equal to the market price of the stock at moment *t; D* is the dividend per share*;* r is the firm's internal rate of return; *E* is the earnings per share and K_e is equal to the cost of equity capital.

The Walter model has been widely discussed and analysed in the literature on dividend policy. Several empirical studies have examined the impact of dividend policy on stock prices and firm value, using the Walter model as a theoretical framework. For example, Singh and Tandon (2019) investigated the effect of dividend policy on stock prices in the Indian market and found that the choice of dividend policy can affect the value of a firm. Similarly, Gwilym et al. (2000) explored the relationship between dividend stability, dividend yield, and stock returns in the UK market and found an inverse correlation between the stability of past dividend policy and systematic risk.

Other studies have examined the factors influencing dividend decisions and the impact of dividend policy on shareholder wealth. Sarwar and Hassan (2021) investigated the impact of economic policy uncertainty on dividend decisions and found that board financial expertise plays a moderating role in the dividend decision-making process. Ozo and Arun (2019) studied the stock market reaction to cash dividends in the Nigerian stock market and found that the findings are useful for strategic decision-making and promoting transparency and good governance practices.

Overall, the Walter (1963) dividend model provides a theoretical framework for understanding the relationship between a firm's dividend policy and its value. Empirical studies have shown that dividend policy can have an impact on stock prices, systematic risk, shareholder wealth, and strategic decision-making. However, the literature on dividend policy is still evolving, and there are ongoing debates and discussions on the relevance and implications of dividend policy in different financial markets and contexts.

2.2.2. The Gordon Model

The Gordon dividend model relates the market value of a stock to its dividend policy. The model was proposed by Myron Gordon and has been widely used in investment analysis. According to Gordon (1959) the value of a stock is determined by the present value of its expected future dividends. The model assumes that dividends will grow at a constant rate in perpetuity and that the required rate of return for investors is greater than the growth rate of dividends. The formula for the Gordon dividend model is as follows:

$$V_t = \frac{D_{t+1}}{r-g} \tag{2.2.}$$

where, V_t equals the value of the stock in period *t*; D_{t+1} is the dividend expected to be received in the period *t+1*; *r* is the required rate of return from investors and *g* is the dividends growth rate.

The Gordon dividend model suggests that the value of a stock is directly influenced by the dividend policy. If a company increases dividend payments, the value of its stock is expected to increase. Conversely, if a company decreases or eliminates dividend payments, the value of its stock may decrease. Empirical studies have examined the implications of the Gordon dividend model in various contexts. For example, Boudoukh et al. (2007) found that measures of payout yield, which include both dividends and share repurchases, provide significant predictability in asset pricing models compared to using dividend yield. Similarly, Singh and Tandon (2019) discussed Gordon's theory on dividend policy and its relevance to stock price valuation, particularly in relation to the "bird-in-the-hand" argument, in which investors prefer dividends now then capital gains tomorrow. The Gordon dividend model has also been applied in specific industries and countries. For instance, Idi (2018) investigated the effect of dividend policy on share price volatility in the Nigerian oil and gas industry. Dong et al. (2005) explored why individual investors prefer dividends and found that dividend payments can help resolve uncertainty for shareholders. In the Indian market, the effect of dividend policy on stock prices has been studied by Singh and Tandon (2019), who discussed Gordon's theory and its relevance to investors' perceptions. It is important to note that the Gordon dividend model is based on certain assumptions, such as constant dividend growth and a constant required rate of return. These assumptions may not always hold in real-world situations, and other factors, such as market conditions and investor sentiment, can also influence stock prices. Nevertheless, the Gordon dividend model provides a framework for understanding the relationship between dividend policy and stock valuation.

In sum, the Gordon dividend model is a widely used valuation model that relates the market value of a stock to its dividend policy. The model suggests that the value of a stock is determined by the present value of its expected future dividends, assuming a constant growth rate and a required rate of return greater than the growth rate. Empirical

studies have examined the implications of the model in various contexts, highlighting the importance of dividend policy in stock price valuation. However, it is important to consider the model's assumptions and other factors that can influence stock prices in practice.

2.2.3. The signaling theory

Dividend signaling theory, also known as the signaling hypothesis or information content of dividend hypothesis, starts from relaxing the MM theorem assumption that investors and managers have the same information. According to the theory, the dividend policy of a company serves as a signal to investors about the company's future prospects and financial health, suggesting when a company increases dividends, it signals positive information to the market. This is because a higher dividend indicates that the company's management is confident about its future earnings and cash flow, and believes it can sustain the increased dividend level in the long term. As a result, investors perceive the company as being financially secure and expect higher future earnings.

On the other hand, if a company reduces or eliminates its dividend, it may signal negative information. This reduction could indicate that the company is facing financial difficulties or expects lower future earnings, causing investors to react negatively and potentially lowering the company's stock price. Thus, any change in the dividend policy may alter the market perception of the firm’s value (Ross,1977).

Dividend signaling theory has been a subject of extensive research and debate in finance literature, with different views supporting that dividend contain signals about future earnings, while others supporting those changes in the dividend policy contain no such insight. For instance, Lintner (1956) and Fama and Babiak (1968) showed that a change in profits has impact in the dividend policy, while Eades (1982) and Damodaran (2006) argued that firms do not want to decrease dividends as it is negatively viewed by the market and tends to cause a decrease in share prices.

In the past decades two hypotheses supported the dividend signaling theory: the maturity hypothesis and the free cash flow hypothesis. The maturity hypothesis affirms that an increase in dividends means not only less investment opportunities but as well less returns on assets, less future earnings prospects and less systematic risks (Grullon et al., 2002; Charitou et al., 2011).

The free cash flow hypothesis argues that the dividend policy of a firm reflects information on the investment policies of overinvestment firms (Litzenberger and Ramaswamy, 1979). Thus, if a firm increases its dividends, it could mean they lack investment opportunities and are just trying to attract new investors.

Several studies examined the relationship between dividend changes and earnings, highlighting the signaling role of dividends (Brickley, 1983; Healy and Palepu, 1988; Benartzi et al. 1997; Nissim and Ziv, 2001), while other studies found evidences that managers use dividends as a way to signal information about future earnings of a firm. Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985), Kao and Wu (1994), Fama and French (1998), Harada and Nguyen (2005) and Nguyen and Tran (2016) suggest that changes in dividends are an instrument used by managers to convey data about unexpected shocks in earnings.

Ap Gwilym et al. (2004) found evidence that nonprofitable firms are more likely to reduce dividends, when compared to profitable firms. Moreover, they showed a lower propensity do decrease dividends in the UK than in US, and the importance of leverage in determining the dividend policy. Ap Gwilym et al. (2004) also suggested that higher levels of debt are associated with a likelihood of reduction in dividend payout. Also, some evidence is found that dividend reductions are a sign that future earnings will be lower than for non-reducing firms.

Hussainey and Aal-Eisa (2009) advocate that increasing dividend payout does not convey relevant information about future earnings for decline earnings firms. Nevertheless, based on the signaling theory, it is evidenced that increasing levels of forward-looking information in annual reports can be an important for signaling future earnings.

In the UK, Bozos et al. (2011) test the dividend signaling hypothesis and the interaction of earnings and dividends under both steady and adverse economic conditions. They found a positive and significant average abnormal stock price returns around the dividend/earnings announcement's dates and a significant association between economic conditions and the information content of dividends.

Floyd et al. (2015) compares the payout policies of US industrials and banks, and found that banks have a higher and more stable propensity to pay dividends, consistent with the idea of signaling financial strength to the market.

Liu and Chen (2015) found evidence that manager change dividends for signaling previous earnings changes and for catering to dividend clienteles, while, Smith and

Pennathur (2017) advocate against signaling theory, suggesting that dividend changes may not accurately represent earnings.

Lobão et al. (2020) show that managers change dividends to signal equity-scaled earnings prospects instead of asset-scaled earnings. They also find evidence that managers change dividends for signaling previous earnings changes and may distribute dividends to reduce agency costs.

The influence of dividend announcements on stock abnormal return was studied by Hariyanto and Murhadi (2021). They examined the existence of abnormal returns after dividend announcement activity in ASEAN countries and found that abnormal returns were consistent with the signaling theory.

The impact of the COVID-19 pandemic on corporate dividend policy was also studied by (Ali, 2022). The findings showed that despite the severe turmoil caused by the pandemic, the majority of firms were able to maintain or increase dividends, signaling a desire to pursue stable dividend policies in response to the crisis.

In summary, the literature on dividend signaling theory has provided valuable insights into the relationship between dividend policy and various factors such as earnings and market reactions. However, it's still no conclusive, about the informative power of dividends and their connection with future earnings growth.

2.2.4. The agency cost theory

The agency theory of dividends is a widely examined and supported theory in the literature. It focuses on the relationship between agency costs and dividend policy in corporations. Fama (1974) and Jensen and Meckling (1976) proposed the agency theory of dividend policy, proving the relationship between dividends distribution and agency costs. According to the theory, agency costs arise due to conflicts of interest between shareholders and managers, and dividend policy can be used as a mechanism to mitigate those costs. One of the key findings in the literature is that increased dividends can lower agency costs (Rozeff, 1982). When a company pay higher dividends, it shows to shareholders that has sufficient cash flow and is less likely to engage in wasteful spending or empire building. This reduces the agency costs associated with managerial discretion and aligns the interests of shareholders and managers (Li et al., 2021).

Rozeff (1982) created a well-known empirical model for the agency costs using a large sample of US firms:

$$PAY = \beta_0 - \beta_1 INS - \beta_2 GROW1 - \beta_3 GROW2 - \beta_4 BETA + \beta_5 STOCK + \varepsilon \qquad (2.3.)$$

,where PAY is the seven-year average of US firm's dividend payout ratio, INS is the seven-year average percentage of common stock held by shareholder insiders, GROW1 is the realized average growth rate of a firm's revenues, GROW2 is the forecasted growth of sales, BETA is the firm's estimated beta coefficient reported in the Value Line Investment Survey, and STOCK is the natural log of the number of shareholders at the end of the seven-year period. In Rozeff's model, the optimal dividend payout is at the level where the sum of transaction costs and agency costs are minimized.

The two agency costs proxies considered in the model, INS and STOCK, are negative and positive, respectively. This indicates a negative relationship between the percentage of stock held by insiders and the payout ratio, and a positive relationship between the number of shareholders (dispersion of ownership) and the dividend payout ratio. Rozeff also underlined the benefits of dividends in reducing agency costs are smaller for companies with lower dispersion of ownership and/or higher insider ownership. Rozeff's (1982) results provide empirical support for the agency costs hypothesis. Ten years after, Dempsey and Laber (1992) supported Rozeff model, using a sample over the years 1981-1987.

Supporting the agency theory, Gugler (2003) emphasize the reduction in agency problems associated with the separation of ownership and control, as dividend-paying managers have fewer opportunities to behave in their own self-interest as opposed to the shareholders' interests. Likewise, Jensen (1986) suggests that shareholders' best interests may be served if cash balances not needed for investment are minimized, and that dividends are important in reducing the free cash flow. Moreover, an increment in dividend payout may help to mitigate the free cash flow under managers' control, thereby preventing them from investing it in negative NPV projects or inefficiencies. As a result, paying more dividends will reduce the agency costs between managers and shareholders. Additionally, Jensen (1986) identified debt as a substitute for dividends in reducing the agency costs of free cash flow.

Agency conflicts can take various forms, as some studies emphasize the problems between managers and shareholders, other focus on other stakeholders, such as large shareholders and minor shareholders. According to Burkart et al. (1997), dividend policy

is influenced by the ownership and control structure and is determined by ownership concentration of firms, measured as the percentage of total shares held by the controlling shareholders.

Supporting a positive relationship between dividends and ownership concentration, Easterbrook (1984) argue that dividends can be used to mitigate agency conflicts, as managers prefer to retain earnings to increase their own private consumption and interests. Thus, ownership concentration creates incentives for large shareholders to control the firm's managers behaviour, resulting in improved firm performance (Shleifer and Vishny, 1986). In other words, we can argue that high dividend payments can be used to mitigate agency conflicts; since large shareholders incur in greatest monitoring costs, they have incentives to require higher dividends in order to reduce those costs. Clearly, the relation between ownership concentration and dividend payout should be positive (Easterbrook, 1984; Daadaa and Jouini, 2018; Lee, 2022).

On the other hand, Shleifer and Vishny (1997) argue that large shareholders prefer to generate private benefits of control that are not shared by minority shareholders. An example of this private benefit is the risk of expropriation of minority shareholders (Claessens et al., 2000; La Porta et al., 2000). Faccio et al. (2001) underline the fact that in East Asian corporations, the salient agency problem is the expropriation of outside investors by the controlling shareholder. In particular, they claim that another large shareholder mitigates agency conflicts in European firms, whereas multiple controlling shareholders intensify the conflicts of interest in East Asian firms, because they tend to collude in expropriating outside shareholders by paying lower dividends.

Khan (2006) investigated the relationship between dividends and ownership structure for a panel of large quoted UK firms. The results indicated a negative relationship between dividends and ownership concentration.

Several empirical studies found evidences of a negative relationship between ownership concentration and dividends: Jensen et al. (1992) and La Porta et al. (2000) in the U.S.; Farinha (2003) in the U.K.; Gugler and Yurtoglu (2003) in Germany; Wei and Xiao (2009) and Chen et al. (2009) in China; Gonzalez et al. (2017) in Latin America; Sumail (2018) in Indonesia; Kouki and Guizani (2009) and Taleb and Ben Lahouel (2020) in Tunisia; Shah et al. (2023) in Korea, Malasya and Pakistan.

Khan (2022) discussed two theoretical premises that describe the role of ownership concentration in deciding firms' dividend payouts: the monitoring hypothesis and the rent

extraction hypothesis. The monitoring hypothesis suggests a positive link between ownership concentration and dividend payouts because of the extensive monitoring role, while the rent extraction hypothesis implies a negative relationship. Furthermore, studies have also examined the impact of ownership structure on dividend policy in specific contexts. For example, Athari et al. (2016) found that dispersed ownership structure is positively associated with dividend payout in the case of Islamic banks, while Kouki and Guizoni (2009) conclude a negative relationship between dividends and ownership concentration in Tunisia.

Harada and Nguyen (2011) studied the effect of ownership concentration on dividend policy in Japan and found that ownership concentration is associated with significantly lower dividends. In emerging markets, ownership concentration has also been found to play a significant role in dividend payout decisions. Mehdi et al. (2017) suggested that ownership concentration is significantly and negatively related to firms' dividend payouts in emerging countries. Rajput and Jhunjhunwala (2019) studied the impact of ownership structure and corporate governance on dividend policy in India, and found a significant negative relationship between family ownership and dividend payout decisions.

Afza and Mirza (2011) study the impact of firms' characteristics on dividend policy in Pakistan and found that managerial ownership, individual ownership, cash flow and size are a significant determinants of dividend behaviour. Gill and Obradovich (2012) have established that the decision to pay dividends is a positive function of the board, size, duality of the manager, and firm's internationalisations, and a negative function of institutional ownership. Sharif et al. (2010) have shown that there is a significant positive correlation between institutional ownership and the dividend payout ratio, while the relationship between dividend and individual ownership is negative. In addition, the ownership concentration, measured by the top five shareholders, affects positively the dividend payout ratio. Kim et al. (2020) explore how the effects of the change in insider ownership concentration on the dividend policy in Asian countries and find a inverse U-shaped relation between insider ownership and dividend payout.

A positive relationship between dividends and foreign institutional ownership is found in Korea (Jeon et al., 2011) and in Japan (Baba, 2009), suggesting that foreign institutional investors, who incur in greater monitoring costs, are more likely to invest in high dividend payers firms. Allen et al. (2000) report that foreign institutional investors generally demand higher dividend payout since this could be a disciplinary device that

reduces the expropriation of resources by managers (Easterbrook, 1984; Farre-Mensa et al., 2014).

Lam et al. (2012) found that foreign ownership has significant negative effects on cash dividends in China, consistent with the signalling effect, private benefits of control and the notion of reduced tunnelling activities. Bataineh (2021) shows foreign ownership is associated with a less likelihood of paying dividends in Jordan. Farouk et al. (2022) examined the effect of ownership structure and financial performance on dividend payout ratio in Nigerian listed commercial banks, and found that the existing ownership structure in commercial banks is inefficient and affects dividend payments.

Overall, the literature on the relationship between ownership concentration and dividend payout is mixed. While some studies suggest a negative relationship, others find inconclusive results or positive associations. Thus far, little academic work exists with respect to investigating the effects of shareholders concentration on bank dividend payout, and existent literature mainly focuses on US banks with dispersed ownership or smaller developing countries.

2.2.5. The clientele theory

Modigliani and Miller (1961) advised about a potential dividend clientele effect hypothesis under certain conditions. They underline that investor's portfolio preferences may be influenced by market imperfections such as transaction costs and taxes. Nonetheless, M&M, maintained that under a frictionless world, each clientele is "as good as another", thus the firm value remains unaffected and the dividend policy is irrelevant.

These assumptions are just theoretical, as investors face different tax treatments and transaction costs, which may create dividend clienteles. Investors will be attracted to firms that suit their particular situation, while firms will attract different clienteles by their dividend policy. For instance, high growth firms usually do not pay dividends to attract investors who prefer price appreciation stocks; retired investors likely prefer stability and may have a preference for stocks with high dividend payouts.

Conversely, large capitalization firms usually pay a higher dividend to attract a different clientele; young investors with a long investment horizon, may prefer stocks that reinvest their earnings for long-term stock price appreciation.

According to Elton and Gruber (1970), the clientele effect hypothesis implies that a marginal investor in a share with a high dividend yield will likely be in a low-marginal tax bracket. Consequently, the after-tax dividend value should be similar to the payment received. Thus, the share price drop on the ex-dividend date should be higher for shares with high dividend yields than for shares with low dividend yields.

Allen et al. (2000) suggested that clienteles such as institutional investors tend to be attracted to invest in dividend-paying stocks because they have relative tax advantages over individual investors. Moreover, institutional investors may be restricted, in some extent, on investment in non-dividend paying stocks.

Michaely and Vila (1996), McDonald (2001), Elton et al. (2005), Whitworth and Rao (2010), Muñoz and Rodriguez (2016) provide evidences supporting the clientele effect hypothesis in particular environments and countries.

2.2.6. The clientele theory: tax-effect hypothesis

The Miller and Modigliani perfect world excludes any tax effects. It assumes that there is no difference in taxes between dividends and capital gains. Yet, in real world taxes exist, and may have significant differences. And these differences can change investors preferences between dividends or capital gains. Thus, taxes may affect dividend payments, when managers respond to the shareholder's tax preference, in order to seek their wealth maximization. The tax-effect hypothesis suggests that low dividend payout ratios, lower the cost of capital and increase the stock price.

In other words, low payout ratios contribute to maximize the firm's value. Moreover, dividends are taxed immediately when paid, while capital gains are only due when the stock is sold. Consequently, investors prefer companies that retain most of their earnings rather than companies who pay earnings as dividends. On the contrary to the "bird-in-hand hypothesis", the tax-effect hypothesis predicts that low dividends increase the stock value.

Brennan (1970) developed an after-tax version of the capital asset pricing model (CAPM) to test the relationship between tax risk-adjusted returns and dividend yield. Brennan' s model maintains that a stock's pre-tax returns should be positively and linearly related to its dividend yield. Higher pre-tax risk adjusted returns are associated with higher dividend yield stocks to compensate investors for the tax disadvantages of these returns.

Brennan (1970) suggests that high dividend paying stocks will sell at lower prices, due to the tax disadvantage associated with dividend income. The Brennan model is as follows:

$$E(R_{i,t} - R_{f,t}) = \gamma_0 + \gamma_1 \beta_{i,t} + \gamma_2 (D_{i,t} - R_{f,t}) \quad (3.1.)$$

where, $R_{i,t}$ is the return of stock *i* at period *t*; $R_{f,t}$ is the risk-free rate at period *t;* $\beta_{i,t}$ is the systematic risk for stock *i* at period *t,* $D_{i,t}$ is the dividend yield of stock *i* at period *t.* γ_2 is the implicit tax rate of dividends. If γ_2 is significantly positive and different from zero then there is evidence of a tax effect. In this case, the investor will require a higher pre-tax risk adjusted return in order to compensate the tax disadvantage of dividends.

Several researchers try to test empirically the Brenan model with different environments and data sets. Some researchers found no evidence of such a tax effect (Black and Scholes, 1974; Miller and Scholes, 1982; Baker et al. 2002) while others provide evidence supporting the tax-effect hypothesis (Litzenberger and Ramaswamy, 1979; Blume, 1980; Litzenberger and Ramaswamy, 1982; Keim, 1985; Kalay and Michaely, 2000).

In short, the tax-effect hypothesis is based on two premises: first, a possible difference between tax rates of dividends and capital gains, second, dividends are taxed immediately while capital gains are deferred until the stock is sold. Therefore, investors will require a higher stock pre-tax return in order to compensate the taxed income from dividends. The existent literature appears to be inconclusive.

2.2.7. The catering theory

Relying on behavioral arguments, Baker and Wurgler (2004) developed the catering theory of dividends, suggesting that firms are more likely to pay dividends when the dividend premium is high, in other words, firms cater to their investors' preferences such that they pay dividends when dividend paying stocks trade at a premium, and do not pay dividends when dividend paying stocks trade at a discount. Moreover, the dividend premium plays a key role in stock price reactions to dividend announcements.

Baker and Wurgler (2004b) further developed a behavioral model in which the dividend payment decision depends on investors sentiment, expressed by the difference

between the average market-to-book-value of dividend payment firms and the average market-to-book value of non-dividend payment firms.

Several empirical studies provide support for the catering theory (Li and Lie, 2006; Ferris et al., 2006, Jiang et al., 2013; Kulchania, 2013) using different market-based proxies to capture the value of catering incentives, or, the dividend premium.

2.2.8. The life-cycle theory

The relationship between dividend payments and the company's life cycle has been the subject of debate both in theoretically and empirical research.

Mueller (1972) argued that, if large mature firms are investing too much, the stockholders may consume less due to the reduction in their dividend income. In contrast, the young firms making new stock issues will find a lower demand for their issues as stock holders cut back on their purchases of these stocks to compensate for the reduction in their dividend income. Accordingly, Mueller's argument on the decision to pay or not to pay dividends is based on the life cycle of the organization

Fama and French (2001) earlier empirical study about the dividend payment behavior of publicly-traded U.S. firms, suggested that life cycle factors play a major role in the dividend decision. Specifically, their findings show that dividend-paying firms are large, highly profitable and more mature, while firms that have never paid dividends are small and not as profitable as dividend-paying firms.

De Angelo et al. (2006) added that dividend payments reflect the financial life cycle of a firm. In the early stages, the company generally has high growth investment opportunities, while, in mature stages, the company has high free cash flow and reduced investment opportunities. Thus, the different stages will determine how the dividend policy will be carried out. In the early stages of the company's life cycle, dividends are not distributed due to the company financial needs for investment. In the adult stage, with high free cash flow and small investment opportunities, the company should pay dividends. Moreover, the life cycle theory of dividends predicts that a firm will begin paying dividends when its growth rate and profitability are expected to decline in the future. This is a contrast to the signaling theory of dividends, which predicts that a firm will pay dividends in order to signal to the market that its growth and profitability prospects have improved.

Several authors presented the life cycle hypothesis to explain dividend payments (Karami and Omrani 2011; Moghanloo and Farzinfar, 2015).

Denis and Osobov (2008) examine the propensity to pay dividends in six developed financial markets (U.S., Canada, U.K., Germany, France, and Japan) over the period 1989-2002. They suggest the likelihood of paying dividends is associated with firm size, growth opportunities, and profitability. In all six countries, the likelihood of paying dividends is strongly associated with the ratio of retained earnings to total equity. The fraction of firms that pay dividend is high when this ratio is high and low when retained earnings are negative, consistent with Fama and French (2001).

Baker and Sujata (2015) identified the life cycle explanation as one of the most dominant explanation for the dividend puzzle. Subba and Dollery (2015) also found a support for the Life Cycle explanation when paying dividends.

2.2.9. The pecking order theory

The pecking order theory was developed by Myers (1984) in order to explain firm financing decisions. Under this hypothesis, companies finance their investments, firstly, with retained earnings, secondly, with safe debts, thirdly, with risk debts and finally, with equity. According to Myers (1984), the pecking order does not explain automatically why firms pay dividends, however, once they choose to pay dividends, the pecking order will adjust. Additionally, investments opportunities have an impact on the dividend policy. In agreement with the pecking order, if a firm is looking for financing new investments reducing the dividends distributed is the easiest solution.

Using a large US data sample, Fama and French (2002) confirmed predictions shared by the pecking order model, where more profitable firms and firms with fewer investments have higher dividend payouts.

2.2.10. The behavioural theory

The behavioral theory attempt to explain why investors are attracted to dividends, based on comportment arguments. Shefrin and Statman (1984) suggests that the main element is the distinction of different mental accounts for dividends and capital gains, which led us to the behavioral life cycle model of Shefrin and Thaler (1988). According to

the model, people allocate their income in three different accounts: the current income account, the current asset account and the future income account. Based on this differentiation, dividends preferences can be mentally allocated differently:

a) Current cash dividends are placed on the current income account and therefore, there is no mental penalty for the consumption financed by dividends. Thus, impatient investors who want to consume now will prefer high dividend payer firms. On the other hand, when investors want to economize will prefer retain earnings firms. In both scenarios, the dividend policy should account for investors' time preferences (Shefrin and Statman, 1984; Becker et al., 2011)

b) Dividends are "a bird in the hand" and retained earnings only lead to uncertain future earnings, so risk averse investors prefer dividends even if retained and future earnings are reflected in stock prices. This is a psychological phenomenon, because investor can obtain the same gains by selling their stock.

c) Dividends reduce the exposure to potential future losses. These results are driven by the prospect theory, which implies that avoiding a loss is more important for investors than to acquire a gain of the same size. Due to the "loss aversion", investors may try to avoid potential future losses by increased current dividends.

Other different behavioral elements including self-control, hedonic editing, and regret aversion were used to explain why investors find dividends attractive. Shefrin (2010) examines various behavioral explanations of dividends and concludes that a combination of anecdotal and empirical evidence provides strong support for behaviorally based theory. For example, the evidence shows that older, retired, and low-income households favor dividend-paying stocks to finance consumption. By contrast, younger investors with moderate to high incomes have little need to finance consumption with dividends.

Breuer et al. (2014), using a panel analysis across 29 countries demonstrates the relation between dividends and patience, loss aversion, and ambiguity aversion.

Table 2.1. Synthesis of foundation theories on dividends

Theory	Description	Founding Authors
Irrelevance Theory	When firms pay dividends, on the one hand the shareholders get cash, but on the other hand the firm's assets are reduced. Consequently, what the shareholders gain in the form of cash dividend, they lose in the form of their claims on the assets. Thus, dividends are irrelevant.	Modigliani and Miller, 1961
"Bird-in-the-hand"	Investors prefer the certainty of dividends to the uncertainty of future capital gains.	Gordon, 1959 Walter, 1963
Signaling Theory	Company dividend announcements of an increase (decrease) in payouts are an indicator of the firm possessing strong (weak) future prospects.	Bhattacharya, 1979 John and Williams, 1985 Miller and Rock, 1985
Agency Theory	Firms pay dividends to align the interests and mitigate the agency problems between managers and shareholders, by reducing the discretionary funds available to managers. Dividends can also be used to mitigate other kind of agency problems: between large and minor shareholders, and between debtholders and shareholders.	Fama, 1974 Jensen and Meckling, 1976 Rozeff, 1982 Easterbrook, 1984 Jensen, 1986
Clientele and Tax-Effect Theory	Investors prefer that firms retain cash instead of paying dividends when tax rates are higher on dividends than on long-term capital gains.	Brennan, 1970 Elton and Gruber, 1970 Litzenberger and Ramaswamy, 1979
Catering Theory	Managers cater to investor demand for dividends by paying dividends when investors prefer dividend-paying firms and by not paying or reducing dividends when investors prefer non-dividend-paying companies. The dividend premium captures the relative market valuation of dividend payers vs non dividend payers.	Baker and Wurgler, 2004
Life-cycle Theory	The dividend payout policy depends on the life cycle of a firm. In the early stages of the company's life cycle, dividends are not distributed due to the company financial needs for investment. In the adult stage, with high free cash flow and small investment opportunities, the company should pay dividends.	Mueller, 1972 Fama and French, 2001 DeAngelo, DeAngelo and Schultz, 2006
Pecking Order Theory	Pecking order does not explain automatically why firms pay dividends, however, once they choose to pay dividends, the pecking order will adjust. Investment opportunities have an impact on the dividend policy. If a firm is looking for financing new investments reducing the dividends distributed is the easiest solution.	Myers, 1984 Fama and French, 2002
Behavioural Theory	Investors prefer dividends for psychological reasons relating to self-control, mental accounting, hedonic editing, and regret as well as on the impact of age, income, and retirement status.	Shefrin and Statman (1984) Baker et al. (2011)

Source: Author's creation

Table 2.2. Synthesis of recent empirical research on Agency theory – Dividends and Ownership Concentration

Author and Publication Date	Context	Empirical Methods	Empirical Findings	Ownership Concentration and Dividends
Kim, Kiwmaz and Oh (2020)	400 firms from 10 Asian countries, between 2011-2014, excluding financial firms	OLS Model	Inverse U-shaped relation between insider ownership and dividend payouts in Asian countries. Firms in common law countries pay higher dividends compared with Asian firms in civil law countries.	Mixed
Lee (2022)	245 Korean listed companies in years 2015, 2016 and 2017, excluding financial firms	Binary Logit Regression	Large shareholders are more likely to meet the requirements of high-dividend firms. Dividends increase with the majority shareholders' level of ownership in high-dividend firms.	Positive
Shah, Xiao and Abdullah (2023)	Korean, Chinese, Malaysian and Pakistani firms between 2010-2018, excluding financial firms	Logit Model System GMM	The ultimate owner takes advantage of the complex nexus of control layers, and chains in a pyramid ownership structure, and uses its resources to benefit instead of paying a dividend to shareholders.	Negative
Hillmann (2023)	470 German firms during 2010-2012 and 2013-2015, excluding financial firms	Difference-in-differences (DiD) Model – Event Study	Minority shareholders reduce their stakes in firms after a dividend tax reform. Minority shareholders do not have sufficient decision-making power to influence the payout policy, they can only react to a dividend tax increase by selling their shares.	Negative

Source: Author's creation

Table 2.3. Synthesis of recent empirical research on Dividends and agency theory in the Banking Sector

Author and Publication Date	Context	Empirical Methods	Empirical Findings	Agency Theory Evidence
Abreu and Gulamhussen (2013)	462 US Banks before and during 2004-2009	Tobit model	Fama and French (2001) characteristics (size, profitability and growth opportunities) explain dividend payouts before and during the financial crisis. The agency cost hypothesis explains dividend payouts before and during (more pronouncedly) the financial crisis.	Yes
Onali,Galiakhmetova, Molyneux and Torluccio (2016)	109 listed banks, during the period 2005–2013, from 15 European countries	OLS model 2SLS and 3SLS models	CEO power has a negative impact on dividend payout ratios, suggesting that they do not have the incentive to increase payout ratios to discourage monitoring from minority shareholders. Stronger internal monitoring by board of directors, as proxied by larger ownership stakes of the board members, decreases payout ratios. Government ownership reduces payout ratios.	Yes
Lepetit, Meslier and Wardhana (2017)	330 European banks during 2004-2012	OLS Model System GMM	Banks with concentrated ownership pay lower dividends, in line with the hypothesis that majority shareholders extract higher level of private benefits.	Yes
Lepetit, Meslier, Strobel and Wardhana (2018)	1325 banks from 51 countries, during 2001-2014	OLS model	Banks' dividend payouts are influenced by the relative strengths of the agency conflicts faced by their shareholders. The agency costs of equity owners are higher than agency costs of debt holders.	Yes
Koussis and Makrominas (2019)	EU and US banks from 1998-2016	System GMM	Dividend payout smoothing practises were implemented on both continents before and after 2007 crisis. Higher payout ratio smoothing for banks with lower ownership concentration and public banks.	Yes
Athari (2021)	24 Nigerian Banks from 2007-2016	Tobit model	Weak institutional settings in Nigerian banks lead to a lower dividend payout, consistent to the substitution agency model of dividends.	Yes
Lin, Huang and Lee (2023)	23 commercial banks listed in Taiwan between 2011-2019	OLS model System GMM	Proxy solicitation and ownership structure affect bank cash dividends. Proxy solicitation is positively correlated with dividends, while the interactions between proxy solicitation and ownership structure negatively affect dividends.	Yes

Source: Author's creation

3. FIRST ESSAY

"DOES OWNERSHIP NATIONALITY STRUCTURE AFFECTS THE DIVIDEND POLICY OF EUROPEAN BANKS?"

Chapter 3: DOES OWNERSHIP NATIONALITY STRUCTURE AFFECTS THE DIVIDEND POLICY OF EUROPEAN BANKS?

Abstract

Dividend policy continues to puzzle academics and practitioners in finance. In this paper we support the agency cost theory of dividends for a set of European Banks. In particular, we provide new evidence regarding the relationship between the dividend policy of European banks and their ownership structure, from an agency cost perspective.

We study the ownership structure of 221 banks across 31 European countries over the period 2007 to 2021. Our findings suggest that nationality matters and that different investors impact the payout policy differently. We find a strong positive relationship between dividend payout and domestic shareholder concentration, and a negative relationship between dividend payout and foreign shareholder concentration. To the best of our knowledge this is the first paper that studies the impact of ownership nationality concentration on the dividend payout of European banks during the last fifteen years. The results are robust to various specifications tests and address the endogeneity bias.

Key words: payout policy, ownership concentration, dividends

JEL Codes: C33, G21, G35

3.1. **Introduction**

Banks have always played an active role in the economic and social development of countries by having the ability to select investment projects, manage risks, and decide who has access to capital and what activities are financed. They also provide a range of services, including insurance and hedging instrument tools, essential for risk management. And more important, they are the monetary policy channel from Central Banks.

As a backbone of a country's economic strategic infrastructure, banks also have different shareholders whose priorities may not be aligned with the public interest.

Distinguishing between domestic and foreign ownership concentration helps safeguard national security interests and ensure the stability of the financial system. It allows governments to assess and manage potential risks associated with foreign ownership, such as undue influence or vulnerabilities in times of economic stress. Moreover, it allows for a nuanced approach to regulation and supervision that addresses the specific characteristics and risks associated with each ownership category. Different ownership structures may require distinct regulatory frameworks, enabling appropriate safeguards, capital requirements, and risk management measures to maintain a stable and well-functioning banking sector. Additionally, banks with strong domestic ownership are more likely to have a vested interest in supporting the growth of the domestic economy, lending to local businesses, and investing in key sectors. This can contribute to job creation, infrastructure development, and overall economic well-being.

While there is an extensive literature analyzing whether dividend policies are used as a corporate mechanism to reduce agency conflicts in the case of non-financial firms, few empirical papers analyze it for financial firms, despite being of great importance for both policymakers and regulators. Also, we cannot forget that the distribution of earnings as dividends reduces banks' ability to generate capital internally, and can thereby transfer default risk to their creditors, the deposit insurer and potentially, ultimately, the taxpayer.

Thus, this paper contributes to the literature by examining the agency theory in the dividend payment policy of European Banks from an ownership nationality concentration point of view.

Our study presents various innovations. First, we use a new hand-collected dataset on ownership structure for 221 banks in 31 European countries, during 15 years, combining data from Eikon - Datastream, Bloomberg, official stock exchanges notices and banks

websites. Second, we use several different proxies to measure the impact of domestic and foreign ownership concentration on the dividend policy. Third, we consider the effect of share repurchases on dividends. And finally, our estimations use both static and dynamic panel data models.

The findings of this paper suggests that nationality matters, and impact the dividend payout differently. Domestic shareholders exhibit a significant preference for increased dividend payout. Foreign shareholders, on the other hand, have a preference for capital retention or a lower dividend payout, consistent with private benefits, such as technology and services sharing or products cross selling, not shared by other shareholders.

These results are robust to various econometric specifications addressing the effects of unobserved bank heterogeneity and potential endogeneity between ownership variables and dividend policy.

The remainder of this paper is structured as follows: Section 2 outlines the theoretical motivation for this paper and presents a review of prior literature. Section 3 describes the research methodology, bank sample and data used in this empirical analysis and summary descriptive statistics. Section 4 presents the empirical testing and robustness tests, while Section 5 summarises the conclusions and suggests further research.

3.2. **Theoretical background and literature review**

Following the seminal work of Miller and Modigliani (1961) on the dividend policy relevance, a number of theoretical models have been developed to answer the question: "Why firms pay dividends? Despite much study, researchers still do not have all the answers to the dividend puzzle. The literature points to various theories such as based on agency cost arguments (Eastebrook, 1984; Jensen, 1986), on clientele and tax motives (Brenan 1970; Elton and Gruber, 1970), on signalling (John and Williams, 1985; Miller and Rock, 1985), on life-cycle factors (DeAngelo et al., 2006), catering incentives (Baker and Wurgler, 2004a) and behavioural factors (Turner et al, 2013).

Following the agency theory of dividends, some studies emphasize the ownership concentration problem, which arises from conflicts between managers and shareholders, and from conflicts between minor and large shareholders.

Supporting a positive relationship between dividends and ownership concentration, Easterbrook (1984) suggests that dividends can be used to mitigate agency conflicts, as managers prefer to retain earnings to increase their private consumption and

interests. In effect, we know that ownership concentration creates incentives for large shareholders to control the firm's management, which overcomes the free-rider problem associated with dispersed ownership, where small shareholders do not have enough incentives to incur monitoring costs for the benefit of other shareholders. Thus, active monitoring from shareholders puts pressure on managers to better align themselves with the objective of creating shareholder value, resulting in improved firm performance (Shleifer and Vishny, 1986). In other words, we can argue that high dividend payments can be used to mitigate agency conflicts; since large shareholders incur the greatest monitoring costs, they have incentives to require higher dividends in order to reduce those costs. Clearly, the relationship between ownership concentration and dividend payout should be positive (Easterbrook, 1984; Daadaa and Jouini, 2018; Lee, 2022).

On the other hand, Shleifer and Vishny (1997) argue that large shareholders prefer to generate private benefits of control that are not shared by minority shareholders. An example of this private benefit is the risk of expropriation of minority shareholders (Claessens et al., 2000; La Porta et al., 2000). Thus, the relationship between dividends and ownership concentration should be negative. Faccio et al. (2001) underline the fact that in East Asian corporations, the salient agency problem is the expropriation of outside investors by the controlling shareholder. In particular, they claim that another large shareholder mitigates agency conflicts in European firms, whereas multiple controlling shareholders intensify the conflicts of interest in East Asian firms, because they tend to collude in expropriating outside shareholders by paying lower dividends.

Several empirical studies found evidences of a negative relationship between ownership concentration and dividends: Jensen et al. (1992) and La Porta et al. (2000) in the U.S.; Farinha (2003) and Khan (2006) in the U.K.; Gugler and Yurtoglu (2003) in Germany; Wei and Xiao (2009) and Chen et al. (2009) in China; Gonzalez et al. (2017) in Latin America; Sumail (2018) in Indonesia; Kouki and Guizani (2009) and Taleb and Ben Lahouel (2020) in Tunisia; Shah et al. (2023) in Korea, Malasya and Pakistan.

Khan (2022) described the two theoretical premises that describe the role of ownership concentration in deciding firms' dividend payout: the monitoring hypothesis and the rent extraction hypothesis. The monitoring hypothesis suggests a positive link between ownership concentration and dividend payout because of the extensive monitoring role, while the rent extraction hypothesis implies a negative relationship. Furthermore, studies have also examined the impact of ownership structure on dividend policy in specific

contexts. For example, Athari et al. (2016) found that dispersed ownership structure is positively associated with dividend payout in the case of Islamic banks. Afza and Mirza (2011) study the impact of firms' characteristics on dividend policy in Pakistan and found that managerial ownership, individual ownership, cash flow and size are a significant determinants of dividend behaviour.

Rajput and Jhunjhunwala (2019) studied the impact of ownership structure and corporate governance on dividend policy in India, and found a significant negative relationship between family ownership and dividend payout decisions.

Gugler and Yurtoglu (2003) show that the concentration of large shareholder voting power is positively related to dividend payout in German firms. Sharif et al. (2010) show a significant positive correlation between institutional ownership and the dividend payout ratio, while the relationship between dividend and individual ownership is negative. Additionally, the ownership concentration, measured by the top five shareholders, affects positively the dividend payout ratio.

A positive relationship between dividends and foreign institutional ownership is found in in Japan (Baba, 2009) and Korea (Jeon et al., 2011), suggesting that foreign institutional investors, who incur in greater monitoring costs, are more likely to invest in high dividend payers' firms. Allen et al. (2000) report that foreign institutional investors generally demand higher dividend payout since this could be a disciplinary device that reduces the expropriation of resources by managers (Farre-Mensa et al., 2014).

On the other hand, Ferreira et al. (2010) conduct a cross-county analysis of dividend clienteles and find a negative relationship between foreign institutional ownership and dividend payout, during the period 2000-2007. Lam et al. (2012) found that foreign ownership concentration has significant negative effects on cash dividends in firms China, consistent with the signalling effect, private benefits of control and the notion of reduced tunnelling activities.

In the banking industry, the agency problems are particularly important due to a highly leveraged capital structure and diverse stakeholders, including managers, shareholders, depositors and, in last resort, the taxpayers. Bank managers are subject to the supervision of different stakeholders, so the agency problem is more complex (Casey and Dickens, 2000; Onali et al., 2016).

Basse et al. (2014) show that European banks, due to facing a severe financial crisis, cut or omit dividends to enhance their financial strength. Lepetit et al. (2017) show that

dividend payouts are negatively associated with ownership concentration structure for European banks with high levels of opacity. Lepetit et al. (2018) reveal that banks' dividend policy depends on the relative strength of agency conflicts faced by their shareholders and creditors.

Bataineh (2021) shows that foreign ownership is associated with a less likelihood of paying dividends in Jordan, on the contrary, Tnushi et al. (2023) found a positive and strong impact of foreign ownership concentration on dividend payout ratio in Nigerian commercial banks.

Overall, the literature on the relationship between ownership concentration and dividend payout is mixed. While some studies suggest a negative relationship, others find inconclusive results or positive associations. Thus far, little academic work exists with respect to investigating the effects of shareholders nationality concentration on European banks dividend payout. Based on this, we study the following hypotheses:

H1: Domestic ownership concentration has no significant effect on the dividend policy

H2: Foreign ownership concentration has no significant effect on the dividend policy

3.3. **Research design and methodology**

3.3.1. Data Sample

To construct the data sample, we retrieved financial information from Eikon Datastream, and Refinitiv ESG ownership reports. We selected all listed securities in European exchanges, qualified as banks by Eikon Datastream, as our main bank list. For the sake of comparability, we focus on banks compliant with IFRS accounting standards. We considered consolidated data but also use unconsolidated data when consolidated balance sheets are not available. All banks in our sample publish their annual financial statements at end of the calendar year. After excluding banks with missing data, a total number of 221 listed banks across 31 European countries satisfy the criteria. The geographic distribution of our sample is similar to the related literature. The analysis period is from 2007 to 2021 and the required information, if available, is collected annually over

this 15-year period for each sample bank. Our panel data covers the 2007 to 2021 period, beginning just before the Lehman Brothers crisis until the recent Covid-19 pandemic.

While dividends and other financial and balance sheet data is collected from Datastream, ownership information is collected from Refinitiv ESG ownership reports. For each available year and bank, we obtained an ownership report. We collected the following information per shareholder position: investor name; percentage of total shareholder equity capital; value of shareholder position; turnover; investor type; investor sub-type; net asset value; country of origin; geographic region. We obtained a total of 75.655 shareholders' equity positions across the full dataset. Missing ownership information was also checked with Bloomberg and hand collected, if available, from each bank annual financial report, website and exchange commission official notices, making this a unique dataset. We use the last observation on ownership within each year-end and obtained information on all the banks previously selected from Datastream.

Both dividend payments and share repurchase are examined and double checked for any outlier value.

3.3.2. Variables definition

The dividend payout ratio is calculated as the ratio between common dividends (cash) paid to investors and net income before preferred dividends. Even though we do not consider share repurchases as a substitute for dividends (Grullon and Ikenberry, 2000; Grullon and Michaely, 2002; Denis and Osobov, 2008; Hirtle, 2014), we retrieved all share repurchase information for the sample. We then compute the total dividend paid as the sum of total cash dividends paid and shares repurchases. Finally, we calculated the payout ratio considering share repurchases (PAYOUT) as a proxy for the dividend policy. This variable is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends and is used as the most common proxy for bank dividend payments (Abreu and Gulamhussen 2013; Onali, 2014; Lepetit et al., 2017; Lepetit et al., 2018; Trinh et al., 2022; and Liang et al.,2023).

We investigate whether the ownership nationality concentration affects the dividend policy. For each available year and bank, we constructed the following proxies for domestic ownership: DOMESTIC1 is the sum of the percentage of all ownership positions held by domestic shareholders for the given year. DOMESTIC2 is a dummy

variable that takes the value of 1 if the domestic ownership concentration is higher than 25%. DOMESTIC3 is equal to the sum of ownership concentration of the top 3 domestic investors. DOMESTIC4 is equal to sum of ownership concentration of the top 10 domestic investors.

For each available year and bank, we constructed the following proxies for foreign ownership: FOREIGN1 is the sum of the percentage of ownership positions held by foreign shareholders. FOREIGN2 is a dummy variable that takes the value of 1 if the foreign ownership concentration is higher than 25%. FOREIGN3 is equal to the sum of ownership concentration of the top 3 domestic investors. FOREIGN4 is equal to sum of ownership concentration of the top 10 domestic investors.

Besides ownership, several factors may influence dividend policy, namely, size, growth opportunities, leverage, and profitability. We expect that the bank size is positively related to dividends, because large banks are more likely to pay dividends than smaller ones (Abreu and Gulamhussen, 2013; Lepetit et al. 2018) hence, to distinguish banks on the basis of size, we calculated the natural logarithm of the assets (SIZE). We expect dividend payers to be more profitable than banks that do not pay dividends (von Eije and Megginson, 2008; Shao et al., 2010; Chronopoulos et al., 2023), so we use as a proxy for profitability the ratio between net income and assets (PROFIT).

Deshmukh (2003) suggests that the pecking order models developed by Myers and Majluf (1984) imply that growing firms retain profits to ensure that their investment plans are funded. This growth opportunities phenomenon results in lower dividends for industrial firms (Fama and French, 2001; Mitton, 2004). Banks are in many ways different from non-financial firms, so in order to proxy growth opportunities we use the market-to-book ratio (GROWTH).

Thripathy et at. (2021) suggest that the total payout is associated with bank financial health. Following Fama and French (2001), even though the capital ratios of banks are regulated, we use the bank capital ratio (CAPITAL) as a proxy to control leverage and financial health.

3.3.3. Empirical Model

With panel data, the used model consists of n cross-sectional units, denoted by i = 1, ..., N, observed at each of T time periods, t = 1,..., T. In data set, the total observation is

$i \times T$. The basic framework for the panel data is defined as per the following regression model (Brooks, 2019):

$$Y_{i,t} = \alpha + \beta' X_{i,t} + \varepsilon_{i,t} \quad (4.1.)$$

,where:

$Y_{i,t}$ is the response of the *i*-th individual unit for the *t*-th time; β': is the slope coefficient vector of size $1 \times N$; $X_{i,t}$ is the observation of exogenous variables from the *i*-th individual for the *t*-th time; α is the intercept coefficient and $\varepsilon_{i,t}$ is the residual in period *t,* $\varepsilon_{i,t} \sim IIDN(0, \sigma^2)$. The fixed-effect model (FEM) uses the least square dummy variable (LSDV) technique. FEM assumes that the intercept is different for each individual, although the slope coefficient is constant.

In functional form, the model used is as following:

$$Dividends = f(\text{Bank-specific variables, Ownership variables}) \quad (4.2.)$$

,for each bank i in year t, we regress the PAYOUT, which is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends; on SIZE, which is equal to the natural logarithm of the net assets and is a proxy for size; on PROFIT, which is the proxy for profitability and is measured by the ratio of net income to assets; on GROWTH, which is equal to the price-to-book ratio (comparing a company's equity book value to its current market price); on CAPITAL, which is the capital ratio of the bank and is equal to ratio of the equity book value to assets and the alternatively variable OWNERSHIP, defined in section 3.3.2.
The model used is as follows:

$$PAYOUT_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 OWNERSHIP_{i,t} + \varepsilon_{i,t} \quad (4.3.)$$

Following Dougherty's (2016) method of regression model choice and aiming at determining the best method between fixed and random-effects, both models are regressed and the Hausman test is conducted, with the null hypothesis being that difference in

coefficients is not systematic. As consequence of the Hausman test and each bank specific characteristic, we choose the fixed effects model.
In banking literature, fixed and random effects models are normally used for panel data. However, it is argued that persistence of bank dividend payout over time could affect next year's payout. To address this issue, we use a dynamic panel data model.

Dynamic panel data models are divided into two categories (Greene, 2017): first, the autoregressive panel data models, in which the lagged values of the dependent variable are included as independent variables, and second, the distributed lag panel data models in which the lagged values of the independent variables are included as independent variables.

Arellano and Bond (1991) develop the difference of generalized method of moments (FD-GMM) model by differencing all regressors in order to solve the problems in auto-regressive models. The difference GMM (FD-GMM) considers the lagged values of the independent variable as an instrumental variable by taking the first differences of the variables. However, in the case of unbalanced panel data or when *t* is small, there is data loss in the first difference transformation.

In order to address this issue, Arellano and Bover (1995) and Blundell and Bond (2000) developed the system GMM (SYS-GMM) using the Orthogonal Deviations Method. With this method, the difference between the current period and the previous period is not counted, instead the average of the future values of the variable is used. As a consequence, the data loss caused by the difference GMM (FD-GMM), especially in data sets which are unbalanced, is minimized. Roodman (2006), among others, argue that both difference and system GMM estimators are suitable for situations with "small T and large N" panels, independent variables not strictly exogenous, fixed individual effects, heteroskedasticity and autocorrelation.

Our sample has both cross-sectional and time-series characteristics. Given the problems of heteroscedasticity in cross-sectional data, autocorrelation in time-series data, and possible endogeneity problems, we estimated first-difference GMM and system GMM to examine the effects of ownership on bank dividend policy.
Equation (4.4.) is the estimation equation in which original values are introduced, and the lag term of the dependent variable is used as instrumental variable.

$$PAYOUT_{i,t} = \beta_0 + \beta_1 PAYOUT_{i,t-1} + \beta_2 CONTROLS_{i,t} + \beta_3 OWNERSHIP_{i,t} + \alpha_i + n_t + \varepsilon_{i,t} \quad (4.4.)$$

Equation (4.5.) is the first-difference transformation equation, in which first-difference values of variables are introduced, and the lag term of the first difference dependent variable is used as an instrumental variable. The model is as follows:

$$\Delta PAYOUT_{i,t} = \beta_0 + \beta_1 \Delta PAYOUT_{i,t-1} + \beta_2 \Delta CONTROLS_{i,t} + \beta_3 \Delta OWNERSHIP_{i,t} + \Delta\eta_t + \Delta\varepsilon_{i,t} \quad (4.5.)$$

In the above equations (4.4.) and (4.5.), PAYOUT stands for the sum of common dividends and share repurchases divided by net income before preferred dividends, CONTROLS denotes the control variables, namely, SIZE, PROFIT, GROWTH, and CAPITAL, OWNERSHIP denotes the alternatively ownership variable defined in previous section. In addition, *i* denotes the sample bank, *t* denotes the time, α denotes the bank fixed effect, η denotes the time effect, and ε denotes the residual term. All controls were winsorised at the top and bottom 0.5 % percentiles to control for extreme outliers.

FD-GMM and SYS-GMM are made under the assumption that data is stationary. If data is not stationary, the regression results may be spurious. For this reason, we need to test for unit roots in the series. One of the best known and most commonly used unit root test is Dickey–Fuller test (Dickey and Fuller, 1979). After the model was established, it was determined that all panel variables were stationary with the ADF-Fisher Type for unbalanced panel data. Therefore, according to these results, the stationary assumption required for the regression analysis is not violated.

3.3.4. Descriptive and correlation statistics

Table 3.1. show the descriptive statistics and summarize the basic features of all variables used in this study. Based on the results in Table 3.1., we obtained 3,004 yearly observations from 221 banks during 15 years (2007-2021). Our dependent variable, PAYOUT, dividend measured as the dividend payout ratio, averages 0.2825, while the standard deviation is 0.28 suggesting some volatility in dividend payments. European banks have a higher concentration of domestic shareholders than foreign shareholders. The average value of domestic ownership in European Banks is 30.8% whereas the foreign ownership is 18.4%.

This higher concentration of domestic shareholders is confirmed using the top 3 and top 10 shareholders. In average, the top 3 domestic investors held 25% of the share capital of European banks. This percentage is reduced when analysing the top 3 foreign investors to 13.6%.

Table 3.1. Descriptive statistics of the variables

	Definition	Observations	Mean	Median	Standard Deviation	Kurtosis
Dependent Variable						
PAYOUT	sum of common dividends and share repurchases divided by net income before preferred dividends	3,004	0.2825	0.2425	0.2820	2.4249
Ownership Variables						
DOMESTIC 1	sum of total capital percentage held by domestic shareholders	3,004	0.3080	0.2328	0.2861	1.9179
DOMESTIC 2	domestic ownership concentration is > 25%	3,004	0.4886	0.0000	0.4999	1.0020
DOMESTIC 3	sum of total capital percentage held by Top 3 domestic investors	3,004	0.2505	0.1492	0.2598	2.5191
DOMESTIC 4	sum of total capital percentage held by Top 10 domestic investors	3,004	0.2907	0.2095	0.2784	2.0882
FOREIGN 1	sum of total capital percentage held by foreign shareholders	3,004	0.1842	0.0681	0.2415	4.7122
FOREIGN 2	dummy variable assuming 1, if foreign ownership concentration is > 25%	3,004	0.3458	0.0000	0.4757	1.4199
FOREIGN 3	sum of total capital percentage held by Top 3 foreign investors	3,004	0.1362	0.0424	0.2165	7.5929
FOREIGN 4	sum of total capital percentage held by Top 10 foreign investors	3,004	0.1588	0.0578	0.2258	6.1634
Control Variables						
SIZE	Natural logarithm of total assets	3,004	23.065	23.099	2.0820	2.0000
PROFIT	Net income over total assets	3,004	0.0093	0.0070	0.0122	110.95
GROWTH	Price to book value ratio	3,004	1.061	0.9120	0.7712	20.5908
CAPITAL	Total equity book value over total assets	3,004	0.092	0.0887	0.0416	12.7893

Additionally, we estimate the pairwise correlations between the variables. Correlation analysis, also known as bivariate, is primarily concerned with the finding out whether a relationship exists between variables and the magnitude of that relationship. Table 3.2. reports the pairwise correlations for domestic ownership, while Table 3.3. reports the pairwise correlations for foreign ownership.

Table 3.2. Pairwise correlations – Domestic Ownership

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PAYOUT	1								
(2) SIZE	0.107***	1							
(3) PROFIT	0.184***	-0.193***	1						
(4) GROWTH	0.098***	0.512***	-0.142***	1					
(5) CAPITAL	-0.012	-0.508***	0.509***	-0.330***	1				
(6) DOMESTIC1	0.127***	-0.112***	-0.018	-0.041**	-0.007	1			
(7) DOMESTIC2	0.141***	-0.126***	-0.026	-0.083***	-0.015	0.877***	1		
(8) DOMESTIC3	0.074***	-0.066***	-0.043**	-0.050***	-0.018	0.945***	0.793***	1	
(9) DOMESTIC4	0.106***	-0.100***	-0.026	-0.055***	-0.009	0.990***	0.851***	0.976***	1

*** *p<0.01, ** p<0.05, * p<0.1*

Following the results from Table 3.2., DOMESTIC variables have a significantly positive correlation with the dividend policy, while Table 3.3. suggests FOREIGN variables have a significantly negative correlation with the dividend payout.

Table 3.3. Pairwise correlations – Foreign Ownership

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PAYOUT	1								
(2) SIZE	0.107***	1							
(3) PROFIT	0.184***	-0.193***	1						
(4) GROWTH	0.098***	0.512***	-0.142***	1					
(5) CAPITAL	-0.012	-0.508***	0.509***	-0.330***	1				
(6) FOREIGN1	-0.025	0.210***	0.160***	0.090***	0.054***	1			
(7) FOREIGN2	-0.143***	0.202***	0.065***	0.138***	0.012	0.749***	1		
(8) FOREIGN3	-0.075***	0.041**	0.185***	-0.037**	0.145***	0.927***	0.689***	1	
(9) FOREIGN4	-0.053***	0.115***	0.179***	0.012	0.109***	0.980***	0.737***	0.983***	1

*** *p<0.01, ** p<0.05, * p<0.1*

3.4. **Empirical Results**

The static panel data results of equation (4.3.) using alternatively proxies for domestic ownership are presented in Table 3.4., while using proxies for foreign ownership are presented in Table 3.5. The homoscedasticity assumption is violated (Wald test is significant), therefore results are reported using robust estimates of standard error.

Our results show that banks' dividend payout ratios are influenced by the relative strengths of the agency costs of equity. We find a positive and significant coefficient associated with the domestic ownership variables: DOMESTIC1, DOMESTIC2, DOMESTIC3 and DOMESTIC4, at a one percent level of confidence. These results suggest that domestic ownership concentration is associated with a higher dividend payout, supporting the monitoring hypothesis, where dividends are used as mechanism to mitigate agency costs arising from the conflicts between managers and shareholders.

We also find a negative and significant coefficient associated with foreign ownership variables: FOREIGN2 and FOREIGN3, at a one percent level of confidence. Result shows an inverse association between foreign ownership and dividend payout, supporting the rent extraction hypothesis. One possible explanation is that because the largest European banks and insurance companies have strategic positions or partnerships in several foreign banks, it is possible to extract private benefits not shared by other investors, such as cross-selling of products and information technology sharing.

In order to check endogeneity issues, we use the dynamic panel data model of equation (4) with a lagged term of the dependent variable. Table 3.6. show the results of the dynamic model estimation using both first-difference GMM and system GMM for domestic ownership, while Table 3.7. show the same results of the dynamic model using foreign ownership. Dynamic model results are tested for robustness. We use Arellano-Bond AR(2) to test for second order serial correlation in the first-differenced residuals. Under the null hypothesis there is no serial correlation. To test for the validity of the instruments, we consider Hansen test for overidentification. Under the null hypothesis the instruments are valid.

The estimates of both static and dynamic panel data models present almost the same significant coefficients and report broadly similar results and are robust to specification tests.

3.4.1. Dividend payout and domestic ownership using static model

Estimates of coefficients of the annual time-series regression at the domestic level of:

$$PAYOUT_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 OWNERSHIP_{i,t} + \varepsilon_{i,t}$$

where PAYOUT is the proxy for the dividend policy and is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends for a specific bank *i* in year *t*. SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Domestic ownership is alternatively defined as follows: DOMESTIC1 is the sum of the ownership detained by domestic shareholders; DOMESTIC2 is a dummy variable that takes the value of 1 if the domestic ownership concentration is greater than 25%; DOMESTIC3 is equal to the sum of ownership concentration of the top 3 domestic investors; DOMESTIC4 is equal to the sum of ownership concentration of the top 10 domestic investors. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 includes robust fixed effects.

Table 3.4. Dividend payout and domestic ownership using static model

	(1)	(2)	(3)	(4)
SIZE	0.0252***	0.0263***	0.0262***	0.0251***
	(0.00608)	(0.00602)	(0.00613)	(0.00613)
PROFIT	2.122***	2.147***	2.131***	2.111***
	(0.435)	(0.436)	(0.436)	(0.436)
GROWTH	-0.0240	-0.0226	-0.0241	-0.0243
	(0.0149)	(0.0148)	(0.0150)	(0.0150)
CAPITAL	-0.147	-0.107	-0.119	-0.136
	(0.163)	(0.163)	(0.164)	(0.164)
DOMESTIC1	0.0875***			
	(0.0209)			
DOMESTIC2		0.0319***		
		(0.0112)		
DOMESTIC3			0.0631***	
			(0.0240)	
DOMESTIC4				0.0784***
				(0.0217)
Bank FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Number of Banks	221	221	221	221
Observations	3,004	3,004	3,004	3,004
R-squared	0.016	0.014	0.014	0.016

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.4.2. Dividend payout and foreign ownership using static model

Estimates of coefficients of the annual time-series regression at the foreign level of:

$$PAYOUT_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 OWNERSHIP_{i,t} + \varepsilon_{i,t}$$

where PAYOUT is the proxy for the dividend policy and is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends for a specific bank *i* in year *t*. SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Foreign ownership is alternatively defined as follows: FOREIGN1 is the sum of the ownership detained by domestic shareholders; FOREIGN2 is a dummy variable that takes the value of 1 if the domestic ownership concentration is greater than 25%; FOREIGN3 is equal to the sum of ownership concentration of the top 3 domestic investors; FOREIGN4 is equal to the sum of ownership concentration of the top 10 domestic investors. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 includes robust fixed effects.

Table 3.5. Dividend payout and foreign ownership using static model

	(1)	(2)	(3)	(4)
SIZE	0.0261***	0.0307***	0.0297***	0.0282***
	(0.00619)	(0.00601)	(0.00610)	(0.00615)
PROFIT	2.065***	2.134***	2.179***	2.113***
	(0.437)	(0.435)	(0.435)	(0.437)
GROWTH	-0.0825	-0.0285	-0.0409	-0.0618
	(0.163)	(0.163)	(0.163)	(0.163)
CAPITAL	-0.0238	-0.0209	-0.0253*	-0.0250*
	(0.0150)	(0.0147)	(0.0150)	(0.0150)
FOREIGN1	0.0453			
	(0.0304)			
FOREIGN2		-0.0489***		
		(0.0119)		
FOREIGN3			-0.133***	
			(0.0350)	
FOREIGN4				-0.0270
				(0.0329)
Bank FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Number of Banks	221	221	221	221
Observations	3,004	3,004	3,004	3,004
R-squared	0.016	0.014	0.014	0.016

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.4.3. Dividend payout and domestic ownership using GMM

Estimates of coefficients of the annual time-series regression at the domestic level of:

$$PAYOUT_{i,t} = \beta_0 + \beta_1 PAYOUT_{i,t-1} + \beta_2 CONTROLS_{i,t} + \beta_3 OWNERSHIP_{i,t} + \alpha_i + n_t + \varepsilon_{i,t}$$

where PAYOUT is the proxy for the dividend policy and is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends for a specific bank *i* in year *t*. CONTROLS are the control variables, namely, SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Domestic ownership is alternatively defined as follows: DOMESTIC1 is the sum of the ownership detained by domestic shareholders; DOMESTIC2 is a dummy variable that takes the value of 1 if the domestic ownership concentration is greater than 25%; DOMESTIC3 is equal to the sum of ownership concentration of the top 3 domestic investors; DOMESTIC4 is equal to the sum of ownership concentration of the top 10 domestic investors. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 shows the estimated results of dynamic panel data regression using the first difference generalized method of moments (FD-GMM). Columns 5 to 8 shows the estimated results of dynamic panel data regression using the two-step system generalized method of moments (SYS-GMM).

Table 3.6. Dividend payout and domestic ownership using dynamic model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag PAYOUT	0.222***	0.224***	0.217***	0.220***	0.318***	0.321***	0.318***	0.317***
	(0.0408)	(0.0413)	(0.0405)	(0.0407)	(0.0335)	(0.0341)	(0.0337)	(0.0335)
SIZE	-0.0526*	-0.0397	-0.0469*	-0.0519*	0.0261	0.0368	0.0342	0.0269
	(0.0270)	(0.0262)	(0.0267)	(0.0271)	(0.0234)	(0.0232)	(0.0236)	(0.0235)
PROFIT	0.369	0.444	0.432	0.396	0.0611	0.134	0.125	0.0812
	(1.042)	(1.090)	(1.066)	(1.049)	(1.005)	(1.049)	(1.034)	(1.011)
GROWTH	-0.132*	-0.131*	-0.135*	-0.134*	-0.0650	-0.0719	-0.0735	-0.0671
	(0.0778)	(0.0783)	(0.0794)	(0.0788)	(0.0605)	(0.0622)	(0.0617)	(0.0609)
CAPITAL	0.0408	0.189	0.0887	0.0472	0.175	0.290	0.241	0.183
	(0.364)	(0.363)	(0.363)	(0.364)	(0.360)	(0.353)	(0.359)	(0.360)
DOMESTIC1	0.189***				0.183***			
	(0.0540)				(0.0566)			
DOMESTIC2		0.0639**				0.0641**		
		(0.0267)				(0.0274)		
DOMESTIC3			0.176***				0.142**	
			(0.0605)				(0.0620)	
DOMESTIC4				0.189***				0.180***
				(0.0571)				(0.0597)
Observations	2,559	2,559	2,559	2,559	2,781	2,781	2,781	2,781
Number of banks	221	221	221	221	221	221	221	221
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2) p-value	0.7415	0.8047	0.7780	0.7432	0.7546	0.6972	0.7023	0.7485
Hansen J Overid (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wald Chi2	61.36***	56.62***	59.23***	60.41***	114.30***	110.19***	108.85***	112.59***

We use AR(2) to test for second order serial correlation in the first-differenced residuals. Under the null hypothesis there is no serial correlation.To test for the validity of the instruments, we consider Hansen tests for overidentification. Under the null hypothesis the instruments are valid.

Standard errors are robust to heteroscedasticity and reported in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.4.4. Dividend payout and foreign ownership using GMM

Estimates of coefficients of the annual time-series regression at the foreign level of:

$$PAYOUT_{i,t} = \beta_0 + \beta_1 PAYOUT_{i,t-1} + \beta_2 CONTROLS_{i,t} + \beta_3 OWNERSHIP_{i,t} + \alpha_i + n_t + \varepsilon_{i,t}$$

where PAYOUT is the proxy for the dividend policy and is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends for a specific bank *i* in year *t*. CONTROLS are the control variables, namely, SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Domestic ownership is alternatively defined as follows: FOREIGN1 is the sum of the ownership detained by domestic shareholders; FOREIGN2 is a dummy variable that takes the value of 1 if the domestic ownership concentration is greater than 25%; FOREIGN3 is equal to the sum of ownership concentration of the top 3 domestic investors; FOREIGN4 is equal to the sum of ownership concentration of the top 10 domestic investors. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 shows the estimated results of dynamic panel data regression using the first difference generalized method of moments (FD-GMM). Columns 5 to 8 shows the estimated results of dynamic panel data regression using the two-step system generalized method of moments (SYS-GMM).

Table 3.7. Dividend payout and foreign ownership using dynamic model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag PAYOUT	0.222***	0.225***	0.215***	0.221***	0.319***	0.318***	0.315***	0.318***
	(0.0402)	(0.0403)	(0.0401)	(0.0401)	(0.0349)	(0.0346)	(0.0340)	(0.0346)
SIZE	-0.0178	-0.00931	-0.0193	-0.0180	0.0465**	0.0602**	0.0522**	0.0488**
	(0.0251)	(0.0247)	(0.0256)	(0.0252)	(0.0228)	(0.0235)	(0.0226)	(0.0228)
PROFIT	0.478	0.341	0.378	0.441	0.199	0.0405	0.0974	0.172
	(1.119)	(1.084)	(1.062)	(1.101)	(1.088)	(1.043)	(1.044)	(1.079)
GROWTH	-0.135*	-0.139*	-0.121	-0.129*	-0.0844	-0.0937	-0.0820	-0.0847
	(0.0781)	(0.0780)	(0.0774)	(0.0778)	(0.0617)	(0.0632)	(0.0626)	(0.0620)
CAPITAL	0.410	0.502	0.403	0.413	0.407	0.556	0.462	0.430
	(0.371)	(0.377)	(0.373)	(0.371)	(0.347)	(0.365)	(0.360)	(0.351)
FOREIGN1	-0.161**				-0.0103			
	(0.0778)				(0.0712)			
FOREIGN2		-0.114***				-0.101***		
		(0.0263)				(0.0275)		
FOREIGN3			-0.442***				-0.219***	
			(0.101)				(0.0809)	
FOREIGN4				-0.245***				-0.0646
				(0.0853)				(0.0757)
Observations	2,559	2,559	2,559	2,559	2,781	2,781	2,781	2,781
Number of banks	221	221	221	221	221	221	221	221
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2) p-value	0.8529	0.8643	0.8550	0.8738	0.6866	0.6420	0.6493	0.6690
Hansen J Overid (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wald Chi2	59.78***	74.31***	69.33***	63.14***	105.66***	122.05***	116.02***	106.62***

We use AR(2) to test for second order serial correlation in the first-differenced residuals. Under the null hypothesis there is no serial correlation.To test for the validity of the instruments, we consider Hansen tests for overidentification. Under the null hypothesis the instruments are valid.

Standard errors are robust to heteroscedasticity and reported in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.5. **Conclusions**

Since the seminal work from Miller and Modigliani (1961), the dividend puzzle still fascinates academics and practicians. Under complete information, full rational agents and no market friction, the dividend policy is irrelevant for the shareholders wealth. However, common practices shows that dividends matter and can create value.

Several theoretical studies were made in the last decades examining the factors that can cause a firm to pay dividends. Despite all prior research and analyses performed and findings, the present study's results contribute to the literature by using a comprehensive panel data on European banks during 15 years, which can provide a better understanding of its shareholders behaviour. A total of 75.655 shareholders from 221 different banks, during the 2007-2021 period were identified in terms of its type and nationality.

The bank's size, profitability, growth opportunities and capital are used as control variables, as defined in prior dividends literature. Dividends paid and share repurchase are considered to calculate the dividend payout ratio, our dependent variable.

We analyse the effect of ownership concentration on the European banks' dividend policy, taking into account the nationality of the shareholder (either domestic or foreigner). A review of the recent literature confirmed that researchers have not yet studied the relationships between the above ownership form and the dividend policy of European banks.

The results obtained from our empirical model show asymmetric results. These results are confirmed both by the static model and dynamic models.

We find a positive relationship between the dividend payout and the concentration of domestic investors, and a negative relationship between the dividend payout policy and the concentration of foreign investors.

Taking into account the argument that dividends are a substitute for shareholder monitoring, this is consistent with our findings that domestic (or local) shareholders are more interested in a higher payout to reduce monitoring costs. On the contrary, we find that foreign investors are more interested in a lower payout, consistent with the rent hypothesis.

Overall, ownership concentration appears to a play a critical role in European banks' dividend policies, mainly due to the agency conflicts between national and foreign shareholders.

4. SECOND ESSAY

"DIVIDEND PAYMENTS OF EUROPEAN BANKS: RECENT TRENDS AND THE ROLE OF GOVERNMENT OWNERSHIP"

Chapter 4: DIVIDEND PAYMENTS OF EUROPEAN BANKS: RECENT TRENDS AND THE ROLE OF GOVERNMENT OWNERSHIP

Abstract

We study the impact of government ownership concentration on banks dividends policy for a sample of 221 European listed banks for the period 2007–2021. We show that government ownership concentration has a negative impact on dividend payout ratio, consistent with the agency theory. Findings show that higher government ownership concentration is negatively related with banks dividends, suggesting that governments are more likely to prioritize other objectives, such as providing access to financial services or supporting small businesses and bank safety, than maximizing dividends. Our results are strong and robust to various specification tests. Moreover, we find that the total fraction of European banks that pay dividend declined after the 2007 Lehman crisis. However, like in the US, most European banks that cut dividends did not do so until 2009, suggesting that European banks were reluctant to cut dividends. This trend was different during the COVID-19 crisis, were banks suspended or reduced dividends immediately in 2020, following the ECB dividend recommendation.

Key words: payout policy, corporate governance, ownership concentration, dividends

JEL Codes: C33, G21, G35

4.1. **Introduction**

Dividends and government ownership are two important aspects of corporate governance. Dividend policy refers to the decision-making process of how much and when to distribute profits to shareholders in the form of dividends. Government ownership, on the other hand, refers to the extent to which a company is owned or controlled by the government.

Government ownership of banks is common in Europe. Governments often own a significant portion of the equity of banks through direct or indirect ownership. The reasons for government ownership of banks vary but may include the need to provide banking services to underserved regions, support economic development, or promote financial stability. In some cases, governments may take ownership of banks as a result of a financial crisis, as was the case during the 2008 global financial crisis. When governments own banks, they have a direct interest in the banks' financial performance. This includes the banks' ability to generate profits and pay dividends to their shareholders.

However, there are trade-offs to government ownership of banks and its impact on bank dividends. When governments own banks, they may be more likely to prioritize social objectives, such as providing access to financial services or supporting small businesses, over maximizing profits. This may lead to lower dividends paid to shareholders, including the government. Moreover, government ownership of banks can create conflicts of interest between the government's role as a regulator and its role as a shareholder. For example, governments may be reluctant to enforce regulations that could negatively impact the banks they own, such as imposing higher capital requirements or restricting certain types of lending. This could lead to lower financial stability and lower dividends for shareholders.

In some cases, governments may use their ownership of banks to intervene in the banks' operations or decision-making processes. This could lead to inefficiencies, such as increased bureaucracy, and lower profitability, which would ultimately result in lower dividends for shareholders.

In this paper, we contribute to the literature by examining the role of a particular shareholder, the government, in determining the dividend policy of European Banks from an agency theory perspective.

We focus on the role of state ownership for three main reasons: first, the increased government ownership in European banks following the 2008 Lehman crisis; second, the existent conflict of interest between the state as a bank shareholder, and its ultimate owners,

namely citizens (Shleifer and Vishny, 1997) and third, the potential agency conflicts between the state as a shareholder and other minor shareholders.

Our study presents various innovations, contributing to the literature in several ways. Firstly, we extend the literature on dividend policy by examining the particular role of state ownership in determining dividend policy of European Banks. Often forgotten in the literature, European banks are particularly important as they represent almost 20% of the total European market capitalization (as of 2023). They also merit a separate analysis as they have high leverage ratios, deposit insurance (both of which might provide equity holders, or managers, with perverse incentives), and different levels of information asymmetry that can provide a rationale for distinct dividend policies and clienteles. Secondly, we use a new hand-collected dataset on bank ownership structure for 221 European banks in 31 countries, during 15 years, combining data from Datastream, Bloomberg, official stock exchanges notices and banks websites. And finally, we consider the effect of share repurchases on dividends and use different proxies do measure the influence of government ownership in the dividend policy of European banks.

We find strong and robust evidence that dividend is negatively related to government ownership concentration. Specifically, we show that a higher degree of government ownership is associated with a lower propensity to pay dividends in European Banks. This finding is consistent with the rent hypothesis from agency theory in which minority shareholders are less likely to be able to force large shareholders to disgorge cash out of the firm. We also find a positive impact on the dividend policy if government is a minor shareholder.

The remainder of this paper is structured as follows: Section 2 outlines the theoretical motivation for this paper and presents a review of prior literature. Section 3 describes the research methodology, bank sample and data used in this empirical analysis and summary descriptive statistics. Section 4 presents the empirical testing and robustness tests, while Section 5 summarises the conclusions and suggests further research.

4.2. **Theoretical background and literature review**

In a perfect world, whether a firm pays dividends or not, it will not influence the valuation of the firm. When firms pay dividends, on the one hand the shareholders get cash, but on the other hand the firm's assets are reduced. Consequently, what the shareholders gain in the form of cash dividend, they lose in the form of their claims on the assets. So, there is neither a gain nor a loss, and the value of the firm will remain unaffected (Miller and Modigliani, 1961). Contrary to the Miller–Modigliani propositions, other empirical research supports the idea that dividends are very important to the firm and also could create value. Some researchers emphasize the informational content of dividends, because the Miller–Modigliani Irrelevance Theory assumes that the market *knows* the random return stream of the firm and values this stream to set the value of the firm. Any change in the dividend policy may alter the market perception of the firm's value (Ross, 1977). According to this line of thought, an increase in the dividend announcement would be considered a favorable signal (Bhattacharya, 1979). Moreover, John and William (1985) developed a signaling model, arguing that dividends are paid to reduce the underpricing of the securities issued to raise new external financing.

Other researchers emphasize the reduction in agency problems associated with the separation of ownership and control, as dividend-paying managers have fewer opportunities to behave in their own self-interest as opposed to the shareholders' interests (Easterbook, 1984; Gugler, 2003). Likewise, Jensen (1986) suggests that shareholders' best interests may be served if cash balances not needed for investment are minimized, and that dividends are important in reducing the free cash flow (Jensen et al., 1992). Several hypotheses have been tested, but there is no consensus. In general, the dividend policy is often mixed up with investment and financing decisions. For instance, a firm probably will pay low dividends if it is optimistic about growth opportunities and wishes to retain earnings for expansion. However, another firm may finance its own expansion by borrowing, which will release cash for dividends. In other words, a firm can direct its dividend policy toward maintenance of a payout ratio or it can tailor the policy to its financing needs. Furthermore, the theoretical and empirical literature points to other factors that condition the dividend policy of the firms: the profitability of the company, the stability of its earnings, its rate of growth, the opportunities for investment, and its financial or governing structure.

The banking dividend policy is an under-researched area. Early studies focus on the signalling power of bank dividends (Bessler and Nohel, 2000; Forti and Schiozer, 2015). More recently, bank dividend policy has been investigated because of possible risk-shifting behavior (Kanas, 2013; Onali, 2014). Abreu and Gulamhussen (2013) confirm the importance of size, profitability, growth opportunities, and agency costs in determining bank dividend policy both before and during the financial crisis.

In comparison with private firms, agency problems are exarcebeted in stated owned enterprises due to the presence of various agents. Concretly, the government appoints the board of directors, who represents the shareholder interest by monitoring managers. This agency problem may distor the frequency and intensity of dividend payouts (Jain and Krishnapriya, 2020).

Several researchers show that state ownership is associated with a less likelihood of paying dividends and have a significantly negative impact on dividend payout ratio, Al-Najjr and Kilincarslan (2016) in Turkey, Barsri (2019) in Indonesia, Onali et al. (2016) in some european countries.

Following the agency theory, the monitoring hypothesis suggests a positive relationship between government ownership and dividends, as banks with higher government ownership tend to pay higher dividends in order to cover monitoring costs. Moreover, and considering the signalling theory, dividend payment indicates to the shareholders how well a bank is performing. Therefore, in banks with partial state ownership, the relationship between dividends and state ownership should be positive. Based on these arguments, our first hypothesis is as follows:

H1: The dividend payments of banks are positively related to government ownership

On the contrary, following the rent hypothesis in which minor shareholders are less able to force major shareholders to disgorge cash through dividends, the relationship between dividends and state ownership should be negative. As major shareholders are more interested in obtaining private benefits or other particular objectives than receiving dividends. In banking, monitoring can come from the government as well as outside shareholders. The government has incentives to monitor bank dividend policy so as to minimize the likelihood that excessive dividend payouts lead to inadequate equity capital buffers. For this reason, there is a clear conflict of interest between the government and

outside shareholders as the government has a preference for lower dividend payouts while outside shareholders prefer higher payouts.
Based on this view, the alternative hypothesis is as follows:

H2: The dividend payments of banks are negatively related to government ownership

4.3. **Research design and methodology**

4.3.1. Data Sample

To construct the data sample, we retrieved financial information from Eikon Datastream, and Refinitiv ESG ownership reports. We selected all listed securities in European exchanges, qualified as banks by Datastream, as our main bank list. For the sake of comparability, we focus on banks which uses IFRS accounting standards. After banks with missing data are excluded, a total number of 221 listed European banks across 31 countries satisfy the criteria. The geographic distribution of our sample is similar to the related literature. The analysis period is from 2007 to 2021 and the required information, if available, is collected annually over this 15-year period for each sample bank. Our panel data covers the 2007 to 2021 period, beginning just before the Lehman Brothers crisis until the recent Covid-19 pandemic. We obtained of 3,004 bank-level yearly observations.

While dividends and other financial market information is collected from Datastream, ownership information is collected from Refinitiv ESG ownership reports. For each available year and bank, we obtained an ownership report. We collected the following information per shareholder position: investor name; percentage of total capital shareholder position; amount of shareholder position; turnover; investor type; investor sub-type; net asset value; investment style; country of origin; geographic region. We obtained a total of 75,655 shareholder positions across the full dataset. Missing ownership information was also checked with Bloomberg and hand collected, if available, from each bank annual report, website and exchange commission official notices, making this a unique dataset. We use the last observation on ownership within each year-end and obtained information on all the banks previously selected from Datastream.

Even though we do not consider share repurchases as a substitute for dividends (Grullon and Ikenberry, 2000; Grullon and Michaely, 2002; Denis and Osobov, 2008;

Hirtle, 2014), we retrieved all share repurchase information for the sample. We then compute the total dividend paid as the sum of total cash dividends paid and shares repurchases, as some banks may do not pay any dividend but have a ongoing share repurchase program.

Similar to recent literature on dividend policy (Jacob and Lukose, 2018; Barros et al., 2020), we use the dependent variable PAYER, that takes the value of one for banks paying dividends or share repurchases in the given year and zero otherwise, as a dummy variable proxying the dividend policy decision.

Additionally, for each available year and bank, we constructed the following proxies for government ownership: GOVERNMENT1 is the sum of the ownership positions held by government or related entities, as qualified by Refinitiv Eikon. GOVERNMENT2 is a dummy variable that takes the value of 1 if there are government entities as bank shareholders. GOVERNMENT3 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 25%. GOVERNMENT4 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 50%.

Control variables are obtained from more recent literature on dividend policy as follows:

- *SIZE* is the natural logarithm of assets, and it's a proxy for bank size. We expect that the bank size is positively related to dividends, because large banks are more likely to pay dividends than smaller ones (Farinha 2003; Abreu and Gulamhussen, 2013; Lepetit et al. 2018);
- *PROFIT* is the ratio between net income and assets. We expect dividend payers to be more profitable than banks that do not pay dividends (von Eije and Megginson, 2008; Shao et al., 2010; Botoc and Pirtea, 2014; Chronopoulos et al., 2023)
- *GROWTH* is the market-to-book ratio (Barros et al., 2020). Fama and French (2001) and Mitton (2004) indicate that growth has a negative impact in industrial firms. Even though the banking industry is different from industrial firms, we expect a negative relationship with dividend payments;
- *CAPITAL* is the ratio between total equity capital divided by total assets, and is a proxy to control leverage (Fama and French, 2001; Johari et al., 2020; Thripathy et al., 2021).

4.3.2. Empirical Model

The main objective of our analysis is to examine banks' choice of dividend policy and its relationship with government ownership. Considering that our dependent variable Y is a binary variable described in the previous section, and as in other studies on dividend policy (Barros et al., 2021), we opted to use a logistic regression model. This approach has the advantage of predicting the probability of a particular level of the dependent variable, whereas a linear probability model predicts values at the mean of the dependent variable. We employ the following logit model:

$$PAYER_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + +\beta_5 GOVERNMENT_{i,t} + \varepsilon_{i,t} \quad (5.1.)$$

, where the subscripts refer to bank *i* at time *t*. The coefficients are estimated based on unbiased standard errors under heteroscedasticity. We also included year fixed effects to account for differences in payout across time. For robust purposes, we also run a standard probit model with fixed effects and an OLS model with a different proxy for dividend payments, the ratio of dividends to total equity.

All controls were winsorised at the top and bottom 0.5 % percentiles to control for extreme outliers. Table 4.1. provides detailed definitions of all the variables in this study and the descriptive statistics for all the variables, while Table 4.2. presents a univariate analysis relevant to the first inspection of the forces within our sample.

Table 4.1. Descriptive statistics

	Definition	Observations	Mean	Median	Standard Deviation	Kurtosis
Dependent Variable						
PAYER	dummy variable that takes the value of 1 if a bank paid dividends or made share repurchases	3,004	0.6470	1.0000	0.4780	1.3783
Ownership Variables						
GOVERNMENT 1	sum of the ownership positions held by government entities	3,004	0.0507	0.0000	0.1531	17.0580
GOVERNMENT 2	dummy variable that takes the value of 1 if there are government entities as bank shareholders	3,004	0.4659	0.0000	0.5000	1.0180
GOVERNMENT 3	dummy variable that takes the value of 1 if government ownership concentration is higher than 25%	3,004	0.0681	0.0000	0.2520	12.7493
GOVERNMENT 4	dummy variable that takes the value of 1 if government ownership concentration is higher than 50%	3,004	0.0490	0.0000	0.2159	18.4621
Control Variables						
SIZE	Natural logarithm of total assets	3,004	23.0650	23.0990	2.0820	2.0000
PROFIT	Net income over total assets	3,004	0.0093	0.0070	0.0122	110.9500
GROWTH	Price to book value ratio	3,004	1.0610	0.9120	0.7712	20.5908
CAPITAL	Total equity book value over total assets	3,004	0.0920	0.0887	0.0416	12.7893

Table 4.2. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PAYER	1								
(2) SIZE	0.160***	1							
(3) PROFIT	0.196***	-0.193***	1						
(4) GROWTH	0.114***	0.512***	-0.142***	1					
(5) CAPITAL	-0.015	-0.508***	0.509***	-0.330***	1				
(6) GOVERNMENT1	-0.065***	0.180***	-0.099***	0.092***	-0.108***	1			
(7) GOVERNMENT2	0.107***	0.573***	-0.001	0.273***	-0.185***	0.355***	1		
(8) GOVERNMENT3	-0.056***	0.135***	-0.079***	0.042**	-0.080***	0.929***	0.290***	1	
(9) GOVERNMENT4	-0.059***	0.081***	-0.082***	0.030*	-0.063***	0.907***	0.243***	0.839***	1

**** p<0.01, ** p<0.05, * p<0.1*

4.3.3. Payout propensities

Table 4.3. report the fraction of banks that pay dividends and repurchase from 2007 through 2021. We report the percentages of banks that pay dividends and repurchases and that do not pay dividends or repurchase (non-payers). Figure 1 plots the fraction of banks that pay dividends over the sample period.

Table 4.3. Dividend and Non-Dividend Paying Banks during 2007-2021

Year	Number of Banks	Dividend Payers	Non Dividend Payers	% Dividend Payers	% Non Dividend Payers
2007	170	119	51	70%	30%
2008	171	121	50	71%	29%
2009	180	105	75	58%	42%
2010	182	110	72	60%	40%
2011	188	126	62	67%	33%
2012	201	118	83	59%	41%
2013	202	125	77	62%	38%
2014	203	127	76	63%	37%
2015	205	130	75	63%	37%
2016	210	148	62	70%	30%
2017	217	156	61	72%	28%
2018	218	157	61	72%	28%
2019	221	163	58	74%	26%
2020	221	110	111	50%	50%
2021	215	145	70	67%	33%
Total 2007-2021	3,004	1,960	1,044	65%	35%

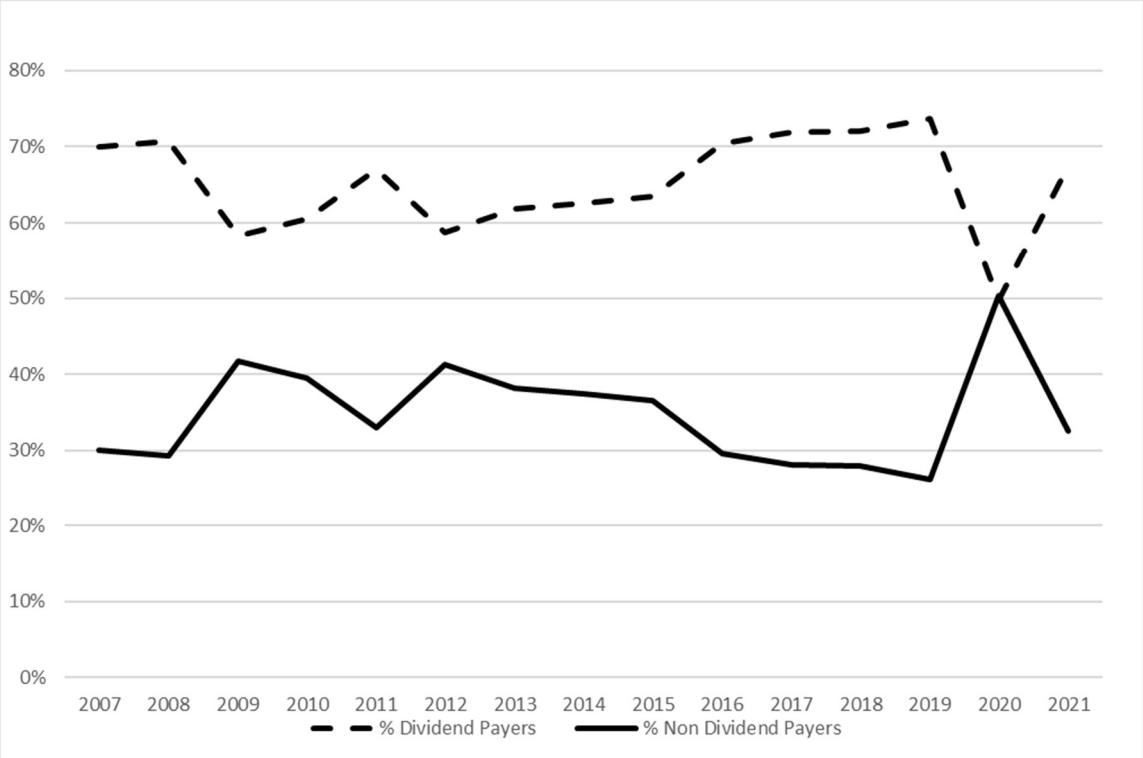


Figure 1 - Fraction of European banks paying dividends based on Refinitiv Datastream from 2007 to 2021. Sample includes all banks with non-missing earnings and dividends in each year.

The fraction of European banks that pay dividend declined, following the Lehman brother's crisis, from 70% in 2007 to 59% in 2012. As in the US (Floyd et al., 2015), most

European banks that cut dividends did not do so until 2009, even though the crisis began to take hold in 2007 and had clearly affected bank earnings in 2008. This suggests that banks were reluctant to cut dividends.

After 2012, this trend reversed, and the fraction of banks paying dividends increased slowly from 59% in 2012 to 74% in 2019, just before the recent Covid-19 crisis. During the pandemic and following ECB dividend recommendations, the percentage of banks paying dividends fell sharply to 50%, lower than the 2007 Lehman crisis. In 2021, bank earnings rebounded and dividends payers increased to 67%, levels almost identical before the pandemic crisis.

4.4. **Empirical Results**

The research question in this study aims to understand the influence of government entities in determining dividends of European banks. We begin by analyzing the impact of several different government ownership concentration variables on banks' dividend policy.

The results of the logit model are presented in Table 4.4. The Hausman test validates the fixed-effect model, so results are presented with year-fixed effects.

In estimations 1, 3 and 4 in Table 4.4., government ownership is a constraint of dividend policies, looking at the decision to pay dividends. In fact, a higher government ownership concentration is significatively negative correlated with the dividend payment decision.

The most relevant dividend literature suggested a negative correlation for non-financial firms and government ownership (Ben-Nasr, 2015), and our conclusion is no different. However, we find that the presence of a government ownership in banks, by itself, has a positive influence on the payout decision. And this is consistent, as if the government is not a strategic investor, then will act like other institutional player interested in receiving dividends. Controls align with the existing literature, pointing out the importance of the bank size, profitability, growth opportunities and capital in defining the dividend payout decision.

As our dependent variable is a dummy, we used the standard logit model with fixed-effect specifications to control for time-variant characteristics (year). For robust purposes, we also run a standard probit model (Table 4.5.) and an alternative variable to measure the dividend payout, the ratio of dividends to total equity. Table 6 show that we obtain similar results, using a standard OLS random effects and fixed effects. Using a different proxy for

dividends, the ratio of dividends to total equity, our results suggest the same conclusions. /Government concentration variables (GOVERNMENT1, GOVERNMENT3 and GOVERNMENT4) show a negative and significant correlation with dividend payments, while GOVERNMENT2 show a positive and significant correlation.

Considering the control variables, SIZE presents a positive and significant coefficient, consistent with the existent literature, meaning that bigger and more matured banks have a higher propensity to pay dividends than smaller banks. PROFIT suggests that dividend payers are more profitable than banks that do not pay dividends, this relationship is also well established in the finance literature. GROWTH, measured by the market-to-book ratio, presents a negative coefficient, meaning that lower expectations about bank's future growth leads to a lower dividend. Finally, CAPITAL is also positive for dividend payers, as banks with stronger equity capital are more capable of paying dividends.

4.4.1. Dividend payout and government ownership – Logit Model

Estimates of coefficients of the annual time-series regression level of:

$$PAYER_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 GOVERNMENT_{i,t} + \varepsilon_{i,t}$$

where PAYER is a dummy variable that takes the value of 1 if the bank paid any dividend. SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Government ownership is alternatively defined as follows: GOVERNMENT1 is the sum of the ownership positions held by government entities, as qualified by Refinitiv Eikon. GOVERNMENT2 is a dummy variable that takes the value of 1 if there are government entities as bank shareholders. GOVERNMENT3 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 25%. GOVERNMENT4 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 50%. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 shows the estimated results of standard logit panel data regression.

Table 4.4. Government Ownership and Dividends – Logit Regression Model

	(1) PAYER	(2) PAYER	(3) PAYER	(4) PAYER
SIZE	1.735***	1.731***	1.747***	1.721***
	(0.301)	(0.303)	(0.300)	(0.302)
PROFIT	105.8***	114.7***	106.0***	106.7***
	(13.65)	(14.13)	(13.67)	(13.66)
GROWTH	-0.681**	-0.496	-0.683**	-0.702**
	(0.327)	(0.317)	(0.333)	(0.330)
CAPITAL	12.50***	12.45***	12.67***	12.33***
	(4.281)	(4.188)	(4.302)	(4.281)
GOVERNMENT1	-1.679*			
	(0.915)			
GOVERNMENT2		1.330***		
		(0.264)		
GOVERNMENT3			-1.621***	
			(0.606)	
GOVERNMENT4				-1.251*
				(0.775)
Year FE	Yes	Yes	Yes	Yes
Observations	3,004	3,004	3,004	3,004
Pseudo R2	0.2362	0.2511	0.2391	0.2357
LR Chi2	369.53	392.82	374.11	368.81

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4.2. Dividend payout and government ownership – Probit Model

Estimates of coefficients of the annual time-series regression level of:

$$PAYER_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 GOVERNMENT_{i,t} + \varepsilon_{i,t}$$

where PAYER is a dummy variable that takes the value of 1 if the bank paid any dividend. SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Government ownership is alternatively defined as follows: GOVERNMENT1 is the sum of the ownership positions held by government entities, as qualified by Refinitiv Eikon. GOVERNMENT2 is a dummy variable that takes the value of 1 if there are government entities as bank shareholders. GOVERNMENT3 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 25%. GOVERNMENT4 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 50%. The sample period is from 2007 to 2021. Robust *t*-statistics are in parentheses. Columns 1 to 4 shows the estimated results of standard probit panel data regression.

Table 4.5. Government Ownership and Dividends – Probit Regression Model

	(1)	(2)	(3)	(4)
	PAYER	PAYER	PAYER	PAYER
SIZE	0.463***	0.348***	0.465***	0.456***
	(0.0646)	(0.0678)	(0.0650)	(0.0646)
PROFIT	3.855**	2.734	3.887**	3.720**
	(1.787)	(1.801)	(1.790)	(1.787)
GROWTH	-0.217	-0.170	-0.216	-0.226*
	(0.134)	(0.133)	(0.135)	(0.134)
CAPITAL	65.83***	70.12***	65.98***	66.53***
	(5.863)	(6.021)	(5.868)	(5.862)
GOVERNMENT1	-1.102**			
	(0.434)			
GOVERNMENT2		0.615***		
		(0.125)		
GOVERNMENT3			-0.862***	
			(0.268)	
GOVERNMENT4				-0.689**
				(0.331)
Year FE	221	221	221	221
Observations	3,004	3,004	3,004	3,004

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4.3. Dividend payout and government ownership – OLS model

Estimates of coefficients of the annual time-series regression level of:

$$DIVEQ_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 GOVERNMENT_{i,t} + \varepsilon_{i,t}$$

where DIVEQ is the ratio between total dividends paid and the equity market value. SIZE is the natural logarithm of the net assets and is a proxy for size. PROFIT is a proxy for profitability and is measured by the ratio of net income to assets. GROWTH is equal to the price-to-book ratio. CAPITAL is the capital ratio of the bank and is equal to the ratio of the equity book value to assets. Government ownership is alternatively defined as follows: GOVERNMENT1 is the sum of the ownership positions held by government entities, as qualified by Refinitiv Eikon. GOVERNMENT2 is a dummy variable that takes the value of 1 if there are government entities as bank shareholders. GOVERNMENT3 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 25%. GOVERNMENT4 is a dummy variable that takes the value of 1 if government ownership concentration is higher than 50%. The sample period is from 2007 to 2021. Columns 1 to 4 include random effects, columns 5 to 8 include year fixed effects.

Table 4.6. Government Ownership and Dividends – Alternative Dependent Variable

	DIV/EQUITY (1)	DIV/EQUITY (2)	DIV/EQUITY (3)	DIV/EQUITY (4)	DIV/EQUITY (5)	DIV/EQUITY (6)	DIV/EQUITY (7)	DIV/EQUITY (8)
SIZE	0.00176**	0.000017	0.00171**	0.00164**	0.00239*	0.00409***	0.00238*	0.00242*
	(0.000703)	(0.000747)	(0.000702)	(0.000701)	(0.00139)	(0.00145)	(0.00139)	(0.00140)
PROFIT	0.913***	0.933***	0.917***	0.920***	0.764***	0.787***	0.767***	0.770***
	(0.0566)	(0.0563)	(0.0566)	(0.0566)	(0.0584)	(0.0583)	(0.0584)	(0.0584)
GROWTH	-0.00285	-0.00239	-0.00286	-0.00293*	-0.00856***	-0.00776***	-0.00826***	-0.00874***
	(0.00176)	(0.00174)	(0.00176)	(0.00176)	(0.00280)	(0.00280)	(0.00281)	(0.00281)
CAPITAL	-0.0722***	-0.0849***	-0.0728***	-0.0734***	-0.0911***	-0.104***	-0.0920***	-0.0925***
	(0.0208)	(0.0208)	(0.0208)	(0.0208)	(0.0223)	(0.0223)	(0.0223)	(0.0223)
GOVERNMENT1	-0.0165***				-0.0246***			
	(0.00565)				(0.00654)			
GOVERNMENT2		0.00943***				0.00803***		
		(0.00165)				(0.00175)		
GOVERNMENT3			-0.00926***				-0.0128***	
			(0.00354)				(0.00418)	
GOVERNMENT4				-0.00777*				-0.0128**
				(0.00418)				(0.00501)
Number of Banks	221	221	221	221	221	221	221	221
Observations	3,004	3,004	3,004	3,004	3,004	3,004	3,004	3,004

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

4.5. **Conclusions**

In order to contribute to the agency theory literature, we choose to test the influence of government ownership in the European banking dividend policy. We explore how government ownership, measured by different concentration variables, influences the dividend policy of European banks. Our multinational sample comprises 221 listed banks from 31 European countries during the period 2007 to 2021. We show that government ownership concentration is significantly and negatively correlated with dividend payers. Our finding is consistent with existent literature and support the rent hypothesis, in which larger shareholders are more interested in other particular objectives than receiving dividends.

The banking industry is a strategic resource and play an active role in the economic and social development of a country. When the government has a higher ownership concentration can appoint the majority of the board of directors, who represent the government interest as a shareholder, and influence dividend payments. Under the agency theory, our findings suggest that the government is more interested in fulfilling other objectives such as providing access to financial services to underdeveloped regions, supporting small business, or bank safety over paying dividends.

The change of econometrics technique to address potential endogeneity problems and the robustness tests do not alter the direct impact of government ownership on dividend payments. Moreover, we find that the total fraction of European banks that pay dividend declined after the 2007 Lehman crisis. However, like in the US, most European banks that cut dividends did not do so until 2009, suggesting that European banks were reluctant to cut dividends. This trend was different during the COVID-19 crisis, were banks suspended or reduced dividends immediately in 2020, following the ECB dividend recommendation.

5. THIRD ESSAY

"DIVIDEND PAYOUT OF EUROPEAN BANKS DURING COVID-19"

Chapter 5: DIVIDEND PAYOUT OF EUROPEAN BANKS DURING COVID-19

Abstract

The dividend policy is one of the most discussed topics in modern finance. How a firm choose to pay or not dividends is still an open question debated by researchers. In this paper, we contribute to the literature by investigating the impact of COVID-19 on the dividend payout of European Banks. Using a sample of 221 banks from 31 european countries during the 2015-2021, we find strong evidence of a negative relationship between the dividend payout ratio and the COVID-19 pandemic. Moreover, we test the applicability of Fama and French's (2001) characteristics of dividend payers (size, profitability and growth opportunities). Regression results shows that bank size is positively associated with the dividend payout, suggesting that larger banks tend to pay higher dividends to mitigate agency costs.

Key words: COVID-19, payout policy, dividends

JEL Codes: C33, G21, G35

5.1. **Introduction**

The COVID-19 pandemic has had a profound impact on the global economy, and the European banking sector has not been immune to its effects. One area of concern has been banks dividends, which the European Central Bank (ECB) has recommended to limit during the pandemic (Recommendation ECB/2020/19). For banks, dividends can be an important way to reward shareholders for their investment and signal confidence in the bank's financial stability. However, in times of economic uncertainty, such as during the pandemic, dividends can also pose risks to a bank's financial health. In response to these risks, the ECB recommended in 2020 that banks limit dividends and share repurchases during the pandemic. The ECB's guidance was intended to ensure that banks have sufficient capital to weather the economic impact of the pandemic, including potential loan losses and other financial risks. The ECB also noted that limiting dividends could help support lending to businesses and households, which may be struggling during the pandemic. While the ECB's recommendation was not mandatory, many banks in Europe have voluntarily followed the guidance. For example, in July 2020, the largest banks in the Eurozone announced that they would suspend dividend payments until January 2021, in response to the pandemic. This move was widely seen as a signal of solidarity with the wider community and recognition of the importance of stability in the financial system. There are some who have criticized the ECB's recommendation, however. Some argue that limiting dividends could hurt shareholders and reduce incentives for investment in the banking sector (Luu et al., 2023). Others note that banks in other regions, such as the United States, did not limit dividends to the same extent as European banks during the pandemic (Hardy, 2021).

In this paper we study the impact of COVID-19 pandemic in the dividend policy of European Banks. Moreover, we test the applicability of Fama and French's (2001) characteristics of dividend payers (size, profitability and growth opportunities). The sample includes 221 european banks from 31 countries, during 2015-2021, for a total of 1543 observations.

A major finding of our study is that the dividend policy in European Banks was affected by the pandemic. Findings also indicate that Fama and French's (2001) characteristics of dividend payers are valid for this period. That is, the larger banks tend to pay more dividends to mitigate agency costs problems.

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The remainder of this paper is structured as follows: Section 2 outlines the theoretical motivation for this paper and presents a review of prior literature. Section 3 describes the research methodology, bank sample and data used in this empirical analysis and summary descriptive statistics. Section 4 presents the empirical testing and robustness tests, while Section 5 summarises the conclusions and suggests further research.

5.2. **Theoretical background and literature review**

Since Linter (1956) seminal study on dividends, companies have shown concern about a stable dividend policy. Finance literature is replete of evidence that firm managers are reluctant to cut dividends (Fama and French, 2001; Baker et al., 2002; Floyd et al. 2015). Moreover, financial investors value a stable dividend payout ratio and firms that follow a smooth dividend path (Leary and Michaely, 2011). Several theories have been proposed to explain this phenomenon: the signaling theory (John and Williams, 1985; Miller and Rock, 1985) proclaim that the dividend policy of a company serves as a signal to investors about the company's future prospects and financial health; the agency theory (Easterbrook, 1984; Jensen, 1986) state that the dividend policy is used to mitigate conflicts between shareholders and managers; the clientele theory (Elton and Gruber, 1970) show that investor's dividends portfolio preferences may be influenced by market imperfections such as taxes and transaction costs; the life cycle theory indicate that dividend payments depends on the life cycle of the firm (DeAngelo et al., 2006).

The surge of the COVID-19 pandemic was a shock to global Economy. Many companies reduced or suspended dividends to preserve cash during the economic uncertainty caused by the pandemic. However, the impact varied across industries, while some like technology and healthcare had a better performance, others, like travel and hospitality were severely affected. As a consequence of the pandemic uncertainty, a stream of empirical dividend literature has emerged.

Ali (2022) examined a sample of non-financial firms from G-12 countries and found that although the proportion of dividend cuts and omissions was higher during the pandemic, the majority of firms could either maintain or increase dividends. Consistently, Mazur et al. (2020) suggested that the majority of S&P 1.500 firms, maintained or increased dividends during the COVID-19. With a different set of 1.400 US firms, Krieger et al. (2021) examined the impact of dividend cuts and find that the proportion of firms cutting or omitting dividends was three to five times higher during the second quarter of 2020 than other quarter since 2015.

Moreover, firm profitability and debt are determinants of dividend cuts. During the COVID-19 crisis almost $30bn were saved by US firms through dividend suspensions in 2020 (Pettenuzzo et al., 2023).

The impact of the pandemic was not equal among all countries, Tinungki et al. (2022) carried out a study on Indonesian companies. They concluded that during the crisis, firms tried to maintain dividends and send a positive signal to investors, improving trade conditions in the financial markets. Ntantamis and Zhou (2022) examined the dividend and share repurchase policy in G-7 countries during the crisis and found that the scale of adjustments and the choice of payout channels varied across countries, while firms in the United Kingdom, Germany, France and Italy experienced a widespread cut in dividends, in the US and Canada, firms cut cash payout more via share repurchases.

5.3. **Research design and methodology**

5.3.1. Data Sample

Our research on the determinants of the dividend policy uses a bank level sample based on the listed banks in 31 European exchanges. Data was collected from Thompson Reuters Datastream and the period of study runs from 2015 to 2021. We selected all listed securities in European exchanges, qualified as banks by Datastream, as our main bank list. For the sake of comparability, we focus on banks compliant with IFRS accounting standards. We considered consolidated data but also use unconsolidated data when consolidated balance sheets are not available. All banks in our sample publish their annual financial statements at end of the calendar year. After excluding banks with missing data, a total number of 221 listed banks across 31 European countries satisfy the criteria. The geographic distribution of our sample is similar to the related literature. The final unbalanced sample covers 1543 bank-year observations from 221 unique banks. Table 1 shows the descriptive statistic of our sample.

5.3.2. Dependent Variable

The dividend payout ratio is calculated as the ratio between common dividends (cash) paid to investors and net income before preferred dividends. Even though we do not consider share repurchases as a substitute for dividends (Grullon and Ikenberry, 2000; Grullon and

Michaely, 2002; Denis and Osobov, 2008; Hirtle, 2014), we retrieved all share repurchase information for the sample. We then compute the total dividend paid as the sum of total cash dividends paid and shares repurchases. Finally, we calculated the payout ratio considering share repurchases (PAYOUT) as a proxy for the dividend policy. Our dependent variable is equal to the sum of common dividends and share repurchases divided by net income before preferred dividends and is used as the most common proxy for bank dividend payments (Abreu and Gulamhussen, 2013; Onali, 2014; Lepetit et al., 2018) and it's bounded between 0 and 1.

5.3.3. Covid-19 Dummy Variable

The Covid-19 pandemic, also known as the coronavirus pandemic, was first identified in an outbreak in the Chinese city of Wuhan in December 2019. Attempts to contain it failed, allowing the spread of the virus worldwide in 2020. The World Health Organization (WHO) declared the public health emergency on 30 January 2020. With more than 771 million cases reported and almost 7 million confirmed deaths, as of October 2023, is one of the deadliest pandemics in world history. The coronavirus pandemic caused an unprecedent social and economic disruption worldwide, leading to the largest global recession since the Great Depression in 1929. Several lockdowns, travel restrictions, border quarantines were adopted throughout the years of 2020 and 2021.

In order to control for the coronavirus pandemic, we created a dummy variable COVID19 that takes the value of 1 if the year is equal to 2020 and 2021.

5.3.4. Control Variables

The existent literature points to several factors that may influence dividend policy, namely, size, growth opportunities, leverage, and profitability. We expect that the bank size is positively related to dividends, because large banks are more likely to pay dividends than smaller ones (Farinha, 2003; Abreu and Gulamhussen, 2013; Lepetit et al. 2018); hence, to distinguish banks on the basis of size, we calculated the natural logarithm of the assets (SIZE). We expect dividend payers to be more profitable than banks that do not pay dividends (von Eije and Megginson, 2008; Botoc and Pirtea, 2014; Chronopoulos et al., 2023), so we use as a proxy to profitability the ratio between net income and assets (PROFIT). Growth opportunities are proxied by the market-to-book ratio (GROWTH). Fama and French (2001) and Mitton

(2004) indicate that growth has a negative impact in industrial firms. Similar to the U.S. banks, we expect a negative relationship between the dividend payout by European banks and growth opportunities. Following Fama and French (2001), even though the capital ratios of banks are regulated, we use the ratio between total equity capital and total assets (CAPITAL) as a proxy to control leverage (Johari et al., 2020; Thripathy et at., 2021).

Table 5.1. Descriptive Statistics

	Definition	Observations	Mean	Median	Standard Deviation	Kurtosis
Dependent Variable						
PAYOUT	sum of total dividends paid plus share repurchases divided by net income before preferred dividends	1,543	0.2900	0.2501	0.2813	2.2034
Variables						
SIZE	Natural logarithm of total assets	1,543	23.1261	23.2145	2.0593	1.9897
PROFIT	Net income over total assets	1,543	0.0096	0.0072	0.0122	119.8864
GROWTH	Price to book value ratio	1,543	1.0471	0.9044	0.7170	22.5499
CAPITAL	Total equity book value over total assets	1,543	0.0971	0.0965	0.0402	118,564
COVID19						
COVID19	dummy variable that takes the value of 1 if year=2020 or 2021	1,543	0.2852	0.0000	0.4516	1.0933

Table 5.2. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) PAYOUT	1					
(2) SIZE	0.156***	1				
(3) PROFIT	0.134***	-0.224***	1			
(4) GROWTH	0.135***	0.501***	-0.136***	1		
(5) CAPITAL	-0.084***	-0.534***	0.489***	-0.357***	1	
(6) COVID19	-0.112***	0.02	-0.052**	0.01	0.006	1

**** p<0.01, ** p<0.05, * p<0.1*

5.3.5. Exponential Fractional Regression Model

In dividend literature, the most common linear regression model is given by:

$$Y_{i,t} = \alpha_i + \theta X_{i,t} + \varepsilon_{i,t} \quad (6.1.)$$

with pooled, random effects and fixed effects panel data estimators. Despite researchers are more interested in the signal and significancy of the estimators, when the dividend payout ratio is used as the dependent variable, authors ignore the bounded nature of the factional response, which can generate predictions outside the unit interval. And this is a particular problem, when several observed dependent variable values are close or at the boundaries of the interval.

In order to solve the problem of the factional response of the dependent variable, Papke and Wooldridge (1996) defined the standard fractional regression model (FRM) used in the cross-sectional context:

$$E(y_i|x_i) = f(x_i\theta) \tag{6.2.}$$

where θ is the vector of parameters to be estimated and *f* is a nonlinear function, mainly in a logit or probit specification, bounded at the interval [0;1]. The standard FRM model does not require special data transformations and allows a direct estimate of the conditional expected value of the dependent value. The parameters estimation of the standard FRM is based on the semi-maximum likelihood method (QMLE) which produce robust and efficient estimates under general linear model conditions.

Extending equation (2) to fixed effects panel data, we obtain the following model:

$$E(y_i|\alpha_i x_{i,t}) = f(x_{i,t}\theta + \alpha_i) \tag{6.3.}$$

where α_i is the time-invariant unobserved heterogeneity.

However, in equation (3) estimators are not straightforward to obtain, due to the presence of unobservables in the function *f*. Papke and Wooldridge (2008), for balanced panel data, and Wooldridge (2010), for unbalanced panel data, developed correlated random effects probit estimators, but their approaches require normality of individual effects and do not allow for consistent estimation of parameters. This seminal paper was followed by several extensions (Ramalho et al., 2010, 2011; Ramalho and Ramalho, 2017; Ramalho, 2019).

Moreover, Loudermilk (2007), for balanced panels, and Elsas and Florysiak (2015), for unbalanced panels, suggested the use of double-censored tobit models. However, they also required distributional assumptions for the individual effects, and normal, homoscedastic

distribution assumption for the error term of the underlying tobit model.

Ramalho et al.(2018) propose the exponential-fractional regression model (EFRM) based on a transformation of logit or complementary loglog (cloglog) model into a form of exponential regression with multiplicative fixed effects. EFRM estimation have several advantages, namely consistent parameters assessment, do not require distributional assumptions on unobservables, robustness to time-variant heterogeneity, accommodate boundary values of the dependent variable, appliance to balanced and unbalanced panels, usable with dynamic panel data models, require only weak exogeneity of all regressors and accommodate cases of endogenous explanatory variables without requiring the specification of their reduced form.

The propose of this paper is to study the impact of COVID-19 on the dividend payout of European Banks, so adapting from equation (6.3.) we propose the following regression model:

$$PAYOUT_{i,t} = f(x_{i,t}\theta + \alpha_i + v_{i,t}) \tag{6.4.}$$

where θ are the parameters to be estimated; $v_{i,t}$ is time-varying unobserved heterogeneity and f is a logit specification, $f(.)=\frac{\exp(.)}{1+\exp(.)}$. Notice that all heterogeneity is included in the function and no other random component is allowed.

Transforming equation (6.4.) in an exponential regression with multiplicative effects, including observed and unobserved characteristics, we can rewrite the model as:

$$PAYOUT_{i,t} = f_1[\exp(x_{i,t}\theta + \alpha_i + v_{i,t})] \tag{6.5.}$$

where $f_1(a) = \frac{a}{1+a}$ for a logit model. Considering $h_1(.) = f_1(.)^{-1}$, then equation (6.5.) can be expressed as:

$$h_1(PAYOUT_{i,t}) = \exp(x_{i,t}\theta + \alpha_i + v_{i,t}) \tag{6.6.}$$

where $h_1(PAYOUT_{i,t})=\frac{Payout_{i,t}}{1-Payout_{i,t}}$, and the dependent variable $PAYOUT_{i,t}$ is restricted to the interval [0, 1). Depending on the assumptions made on α_i,

$$\frac{h_1(PAYOUT_{i,t})}{\exp(x_{i,t}\theta)} - 1 = \exp(\alpha_i + v_{i,t}) - 1 \tag{6.7.}$$

or,

$$\frac{h_1(PAYOUT_{i,t})}{\exp(\alpha_i + x_{i,t}\theta)} - 1 = \exp(v_{i,t}) - 1 \tag{6.8.}$$

One of the important features of EFRM for the dividend payout, is the ability to handle zero observations for the dependent variable, as some clusters of European Banks do not pay dividends in uncertain times such as the COVID-19. Moreover, in our 7 years data sample, we do not have banks with a dividend payout equal to 100%.

Accordingly, Ramalho et al. (2018) proposed six alternative panel data GMM estimators for the EFRM model, depending on the assumptions about the correlation between α_i and $v_{i,t}$, all of them being defined by a set of orthogonality conditions between a function of the time-varying unobservables, in which $v^* \equiv v^*(y_{i,t}; x_{i,t}; \alpha_i; \theta)$, and a set of m instrumental variables, denoted by z:

$$E(z'v^*) = 0 \tag{6.9.}$$

The vector z can include both explanatory variables $x_{i,t}$ and their lags or other external instruments. Because equation (6.6.) is the expression of an exponential regression model, the quasi-and mean difference transformations can be applied. In particular, Ramalho et al. (2018) proposed the GMMww estimator based on the following set of moment conditions:

$$\left\{x'_{i,t-1}\left[\frac{H_1(y_{i,t})}{\exp(x_{i,t}\theta)} - \frac{H_1(y_{i,t-1})}{\exp(x_{i,t-1}\theta)}\right]\right\} = 0 \tag{6.10.}$$

This is the most flexible estimator proposed, because $x_{i,t}$ may contain endogenous covariates, lagged values of the response variable and assumes weak exogeneity. In this paper, estimations were determined by the FRM model method using 'frmd' package from R software

(Ramalho, 2019).

5.4. **Empirical Results**

Before proceeding the estimations with the 'frmd' package, we perform the model specification test (Ramsey-Reset Test) to analyse if the model is well specified.

For robust checking purposes, we also estimate a generalized estimating equation (GEE) with a logit specification and a standard logit random effects model.

Table 5.3. presents the panel data regression results using three different models, standard LOGIT random effects model LOGIT, generalized estimating equation (GEE) with a logit specification and EFRM model, using GMMww estimator, with a logit specification.

Table 5.3. Dividend Payout and COVID19 pandemic

	LOGIT - RE	GEE - Logit	GMMww
SIZE	0.5823***	0.1015*	0.7487*
	(0.1514)	(0.0558)	(0.63924)
PROFIT	74.7806***	3.9752	234.5781**
	(19.8744)	(3.8850)	(43.8542)
GROWTH	0.10401	-0.0004	0.5442
	(0.3749)	(0.1291)	(1.4330)
CAPITAL	-3.8180	-0.7160	-19.5915
	(5.7167)	(2.0331)	(20.5381)
COVID19	-1.3792***	-0.0272***	-1.0766**
	(0.0106)	(1.3420)	(0.61977)
Number of Banks	221	221	221
Observations	1,543	1,543	1,543
Wald Chi(5)	78.45***	18.46***	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Following Table 5.3., COVID19 has a negative and significant effect on the dividend payout ratio, using all the three model specifications, suggesting that the dividend payout decreased during the pandemic years of 2019 and 2020.

We also found that SIZE is positively associated with dividend payout, so that larger banks tend to pay higher dividends to mitigate agency costs problems.

5.5. **Conclusions**

After the breakout of the COVID-19 pandemic, the European Central Bank took a

particular interest in the dividend policies of banks due to an expected deterioration of assets quality, which was considered a threat to the stability of the financial sector. Banks had to choose between paying dividends to its investors or retain earnings to accommodate potential losses and further capital needs.

Unlike the 2008 Lehman financial crisis, during the coronavirus pandemic, the European Central Bank recommend that banks should not make dividend payments to prevent weaken balance sheets.

We investigate the dividend policy of European banks during the 2015-2021 period. Using a sample of 221 banks from 31 european countries, we find strong evidence of a negative relationship between the dividend payout ratio and the COVID-19 pandemic, suggesting that the ECB recommendations were adopted.

Moreover, we test the applicability of Fama and French's (2001) characteristics of dividend payers (size, profitability and growth opportunities). Regression results shows that bank size is positively associated with the dividend payout ratio, suggesting that larger banks tend to pay higher dividends to mitigate agency costs, which is consistent with the empirical setting, where larger banks are more strongly affected by the principal-agent problems.

The results presented in the paper are robust to the three empirical models tested. We also find no significant relationship between dividend payout and future growth, suggesting that banks, during this period, were more focuses in compliance with ECB recommendations and current profitability, then in future growth opportunities.

6. CONCLUSIONS

Chapter 6: THESIS CONCLUSION

Despite the Dividend Irrelevance Theory, empirical evidence shows the significant importance of dividends in the world of finance and investment. For shareholders, dividends play a vital role in providing a consistent and predictable stream of income, particularly valuable for retirees and income-oriented investors. For companies, dividends can serve as a powerful tool for different purposes such as to signal a company's financial health, reduce agency costs or catering investors.

This thesis consists of three essays investigating the importance of dividends in the european banking industry. The first essay (Chapter 3) empirically investigates the impact of ownership nationality concentration on dividend payments. It bases its theoretical framework under the agency theory hypothesis, which emphasize the value of dividends in mitigating agency conflicts. Using a dataset covering 221 banks from 31 European countries, during 15 years, from 2007 to 2021 and ownership information from 76.655 unique shareholders, we found evidences that nationality matters and impact the dividend payout differently. We found a positive and significant relationship between dividend payout and domestic ownership concentration and a negative and significant relationship between dividend payout and foreign ownership concentration. Taking into account the monitoring hypothesis, we can argue that our findings suggest that domestic (or local) shareholders are more interested in a higher dividend payout to reduce monitoring costs. On the contrary, supporting the rent extraction hypothesis, foreign shareholders are more interested in a lower payout, consistent with a private extraction of benefits, not shared by other investors, such as technology sharing, product cross selling or regional outsourcing.

The second essay (Chapter 4) focuses on the role of the government entities. Concretely, studies the relationship between government ownership and the dividend policy of European banks. Governments often own an equity of banks, through direct or indirect ownership, due to several reasons that may include the need to provide banking services to underserved regions, support economic development, or even, as a result of a financial crisis.

The dataset used identifies government entities bank equity shares, during 2007-2021, across 31 european countries. We found that government ownership concentration has a negative impact on dividend payers. We show that government ownership concentration has a negative impact on dividend payout ratio, consistent with the agency theory. Findings also show that a higher government ownership concentration is negatively related with banks dividends, suggesting that governments are more likely to prioritize other objectives than

maximizing dividends when a major shareholder. This finding is consistent with the rent hypothesis from agency theory in which minority shareholders are less likely to be able to force large shareholders to disgorge cash out of the firm. Moreover, we find that the total fraction of European banks that pay dividend declined after the 2007 Lehman crisis. However, like in the US, most European banks that cut dividends did not do so until 2009, suggesting that European banks were reluctant to cut dividends. This trend was different during the COVID-19 crisis, were banks suspended or reduced dividends immediately in 2020, following the ECB dividend recommendation.

The last essay (Chapter 5) studies the impact of the recent COVID-19 pandemic on the dividend policy of European Banks and the applicability of Fama and French's (2001) characteristics of dividend payers (size, profitability and growth opportunities) in this period of uncertainty. Using an exponential fractional regression model, due to the bounded nature of the dependent variable, we find strong evidence of a negative relationship between the dividend payout ratio and the COVID-19 pandemic. The results imply that the ECB regulatory recommendations during the coronavirus crisis have led banks to restrict dividends by more than in the absence of such restrictions. Moreover, we find that bank SIZE is the most relevant characteristic of dividend payers during the crisis, suggesting that the bigger banks, which incur in higher monitoring costs, pay more dividends in order to reduce agency problems.

After more than 60 years from the seminal works of Miller e Modigliani (1961) and Lintner (1956), the dividend puzzle still fascinates researchers. In this thesis, we shed new lights to the topic, emphasizing the pivotal role of dividends in the banking sector and their significance under the agency theory. As we look ahead, further research in this field is needed, and can explore the impact of regulatory exchanges on dividend policies, analyze the evolving role of technology in dividend distribution, and investigate the implications of environmental, social, and governance (ESG) criteria on dividend decision-making within the banking industry. This knowledge will be instrumental in guiding financial institutions and policymakers in making informed decisions that strike the right balance between distributing dividends and ensuring the health and resilience of the banking sector.

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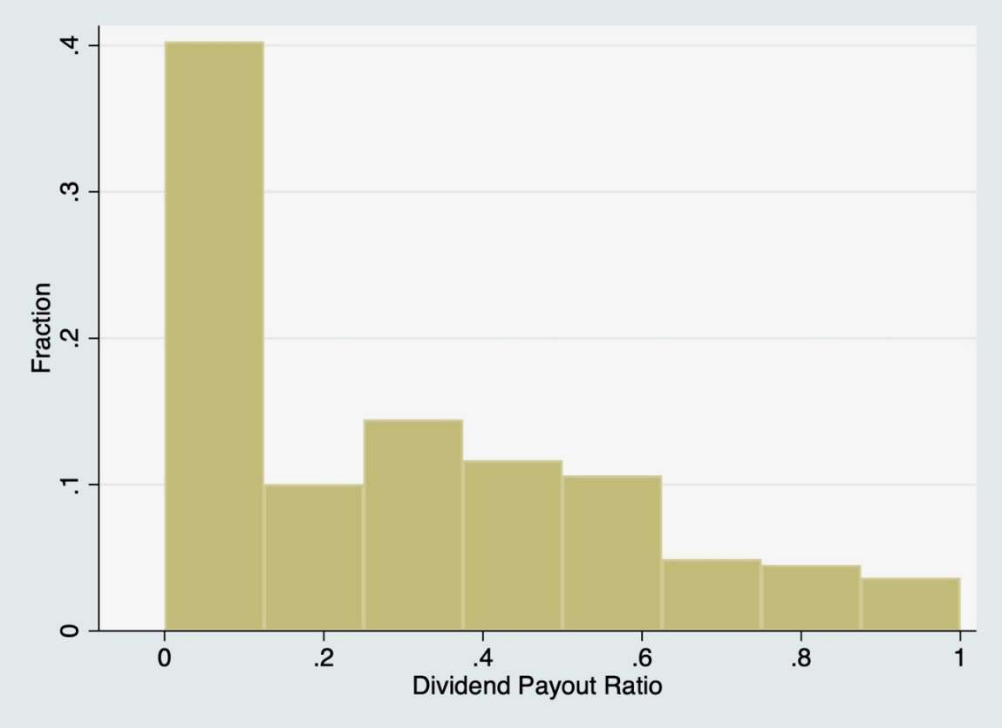
8. APPENDIX

Appendix

List of Countries included in the three essays

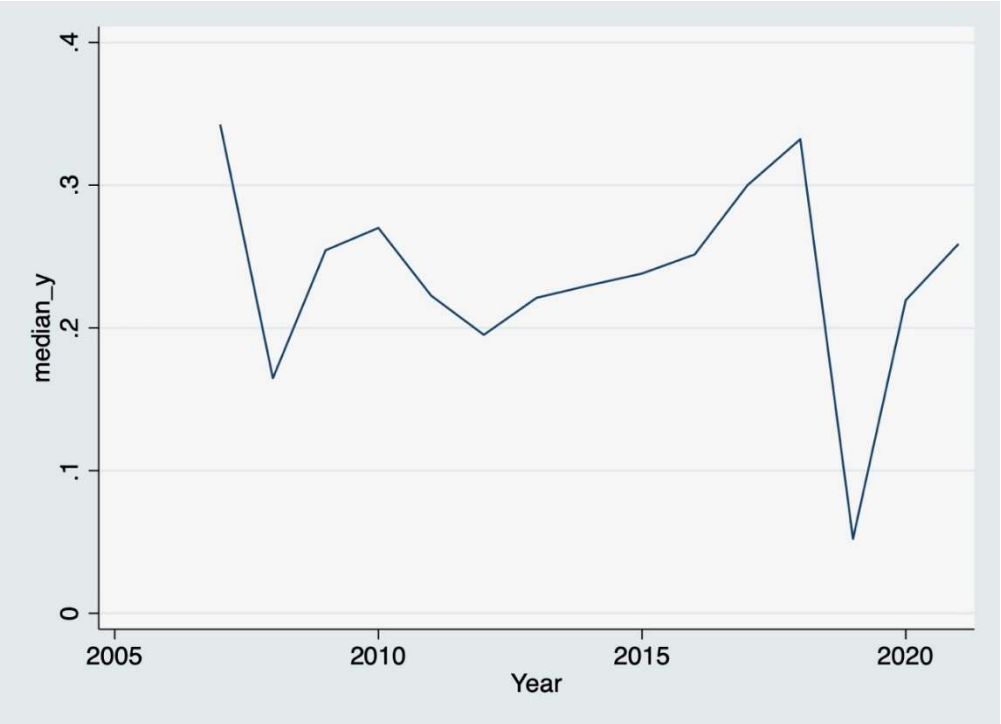
Countries	
Austria	Italy
Belgium	Liechtenstein
Bulgaria	Lithuania
Croatia	Luxembourg
Cyprus	Malta
Czech Republic	Netherlands
Denmark	Norway
Estonia	Poland
Finland	Portugal
France	Romania
Germany	Slovakia
Greece	Slovenia
Hungary	Spain
Iceland	Sweden
Ireland	Switzerland
	United Kingdom

Figure 2 - Distribution of dividend payout ratio of European Banks in a pooled sample (2007-2021)



Source: Eikon Datastream

Figure 3 - Median Dividend Payout ratio during 2007-2021



Source: Eikon Datastream

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Essays on European Banks Dividend Policy and Ownerhip – An Agency Theory Perspective

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