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## ► To cite this version:

Phan Huy Hieu Tran, Thu Ha Tran, Ji-yong Lee. How employee share ownership plans impact firms' market value: A conflict of interest theory approach. *European Management Review*, 2023, 21 (2), pp.358-375. 10.1111/emre.12584 . hal-04678289

**HAL Id: hal-04678289**

**<https://hal.science/hal-04678289v1>**

Submitted on 30 Aug 2024

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# How employee share ownership plans impact firms' market value: A conflict of interest theory approach<sup>1</sup>

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## Abstract

We investigated whether the market places a higher value on banks with employee share ownership plans (ESOPs) than on those without them. Using a variety of empirical models, we found that ESOPs increased the market value of banks. However, this positive effect occurred only when banks were transparent or located in countries with strong shareholder protection. Our findings demonstrated that if banks were opaque or shareholder protection was weak, outside investors' concerns about managerial entrenchment in widely held banks and behind-the-scenes relationships between majority shareholders and managers in closely held banks outweighed the perceived benefits of ESOPs. Our study contributes to the literature by proposing a novel approach to study the effects of ESOPs through the prism of conflict of interest theory. Our findings also shed light on stakeholders' rationales for opposing or adopting ESOPs.

*JEL Classification:* G21; G32; G34

*Keywords:* Corporate Governance; Banks; Employee ownership; ESOP; Market Value

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<sup>1</sup> We are grateful to Michael Morley, Bill Lee and four anonymous referees for helpful comments on previous versions of this paper; the usual disclaimer applies.

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**Conflict of interest**

The authors declare that they have no conflict of interest.

**Author contribution statement**

Phan Huy Hieu Tran & Thu Ha Tran conceived and designed the project; acquired the data, conducted empirical models, and interpreted the results.

Phan Huy Hieu Tran, Thu Ha Tran, and Ji-Yong Lee wrote and revised the paper.

**Data Availability Statement**

Data subject to third party restrictions: Our econometric analysis is conducted using an original database built using two datasets: Bankscope and Bloomberg, both of them can only be accessed via subscription services. The licences for Bankscope and Bloomberg have licence restrictions that would not permit that type of dataset being publicly shared.

## 1. Introduction

Attention to the corporate governance of banks has increased significantly since the financial crisis of 2007–2008. Failures and weaknesses in corporate governance mechanisms are considered major causes of the crisis (Kirkpatrick, 2009; Mülbert, 2010). Reform in the corporate governance of banks has taken place at an international level (OECD, 2009 for OECD countries; McCreevy, 2008 for EU countries; Walker, 2009 for the United Kingdom). One of the mechanisms in the European Commission’s 2012 action plan to reform corporate governance was the implementation of employee share ownership plans. Our aim in this study is to investigate whether banks that implement employee share ownership plans have stronger corporate governance than their peers by mitigating information asymmetry between insiders and outsiders, and thus, resulting in a reduction in agency conflicts and higher market values.

Employee share ownership plans (ESOPs) allow executive and non-executive employees to own stocks (shares) of the company at which they are employed. While there are many different types of ESOPs (Glimstedt et al., 2010), they share one core feature. Through ESOPs, stocks with or without stock options are granted to employees, depending on their contribution to company performance. As a result, employees become shareholders and have the right to vote on and participate in decision-making processes. Thus, these well-informed employee-shareholders can play an important role in monitoring and overseeing management (European Commission, 2014), especially for banking firms since banking activities are inherently complex and more opaque than non-financial firms (Morgan, 2002).

Following its introduction in the European Commission’s action plan in 2012, ESOP adoption has continued to grow, and by 2020, 94% of all large European companies had employee share ownership, of which 88% had an ESOP - a record figure (Mathieu, 2021)<sup>2</sup>. The survey of European Federation of Employee Share Ownership (Mathieu, 2021) showed that

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<sup>2</sup> The survey of European Federation of Employee Share Ownership (Mathieu, 2021) is based on the EFES database of the 2,826 European companies gathering 95% of employment in all European listed companies.

while only 3.22% of the companies surveyed were banks, up to 10 banks were in the Top 100 European companies by capitalization held by employees. Indeed, Holland & Knight (2017) argues that ESOPs can be considered as a powerful tool for closely-held banks to augment their capital, which is particularly relevant for European banking industry where bank ownership concentrated on a small number of shareholders is common.

Studies on ESOPs have relied on various approaches, including property rights (Rooney, 1988), incentive contracts (Flanagan, 1984), and human resource management frameworks, to explain the positive effects of employee ownership on labor productivity (Sengupta & Yoon, 2018; Yoon & Sengupta, 2019), employment stability (Kurtulus & Kruse, 2017), and corporate innovation (Chang et al., 2015) and performance (Fang et al., 2015; Kang & Kim, 2019; Kim & Patel, 2017; Meng et al., 2011; Park & Song, 1995; Ren et al., 2019). However, no studies have examined employee share ownership plans as a corporate governance mechanism that can reduce conflicts between agency insiders (managers in widely held firms and majority shareholders in closely held firms) and outsiders (minority shareholders). Since ESOPs turn managers and employees into minority shareholders, they cause significant shifts in the balance of power between insiders and outsiders. Therefore, we propose a novel approach to study ESOPs that considers them game-changers that significantly shift the balance of power among stakeholders, as outside investors must account for the potential impact of the ESOP on their bargaining power in valuing a company.

This paper contributes to the literature on ESOP adoption in several ways. First, to the best of our knowledge, our study is the first to measure the impact of ESOP adoption on reducing agency conflicts between stakeholders via changes in corporate market values. Understanding the influence of ESOPs on the balance of interests among managers, majority shareholders, and minority shareholders will provide scholars and practitioners with a more realistic picture of the multifaceted conflicts between them. Second, we focused on banks

because they are more opaque than non-financial firms, and bank investors face higher levels of information asymmetry than others (Flannery et al., 2013; Miller et al., 2021). Conflicts of interest between insiders and outsiders are therefore more severe in banks than in non-financial firms, which reduces the effectiveness of some governance mechanisms, such as executive compensation based on performance (Adams & Mehran, 2003) and hostile takeovers (Adams & Mehran, 2003; Prowse, 1997). Given these particularities, research was needed on the effectiveness of corporate governance mechanisms, such as ESOP adoption among banks specifically. Third, our findings provide evidence for an effective role of market discipline in monitoring the corporate governance of banks, supporting the initiatives of Pillar 3 of the Basel 3 frameworks and the new resolution mechanisms of Financial Stability Board (FSB, 2013) in enhancing the role of investors as monitoring agents in the banking industry. Our results provide evidence that market discipline is effective in monitoring ESOP implementation in banks. Outside investors will place a higher value on the bank if they consider the bank's decision to adopt ESOPs as a mechanism to align the interests of management and shareholders and reduce monitoring costs. In contrast, they will penalize the bank by reducing the bid value if they believe the bank is using ESOPs as a strategy to conduct minority shareholder expropriation.

Using a unique hand-collected dataset on ESOP adoption in annual reports of 119 listed banks in 16 European countries over 15 years (2005–2019) and taking into account the potential endogeneity problem between corporate governance and bank market value, we used the legal framework score for ESOPs in each country published by the European Commission as an instrumental variable to establish causality of ESOPs. We took into account different degrees of agency conflicts that might impact the magnitude of the impacts of ESOP adoption on banks' market valuation. As agency conflicts vary between widely held banks and closely held banks, we extended our research by examining this impact as a function of bank ownership structure. Furthermore, we examined whether a high degree of opacity might provide greater

opportunities for expropriation, which would limit the impact of the ESOP adoption mechanism. This is particularly relevant for banks, which are inherently more opaque than other firms (Morgan, 2002). We also investigated whether the level of minority shareholder protection could influence the impact of ESOP adoption on the market value of banks. We found that ESOPs have a statistically significant and positive effect on the market value of banks. Our results did not depend on bank ownership structure. However, this positive effect occurred only if banks were transparent or located in countries with strong shareholder protection.

The remainder of the paper is organized as follows. Section 2 presents the literature review and key hypotheses. Section 3 describes our sample, defines the variables, presents the instrumental variable used to address the endogeneity problem, and explains the methodology. Section 4 presents the empirical results. Section 5 evaluates the results' robustness, and Section 6 presents our conclusions and suggests avenues for future research.

## **2. Literature review and key hypotheses**

### *Channels of impact of ESOPs on firms' market value - Theoretical Framework*

Our study relies on two theoretical frameworks to explain the impact of ESOPs on the market value of banks: agency theory and signaling theory. According to agency theory (Jensen & Meckling, 1976; Fama & Jensen, 1983; Krueger, 1991), the separation between ownership and control is at the root of conflicts of interest between owners (principals) and managers (agents). Managers who can decide how to use assets that do not belong to them have an incentive to extract private benefits. This problem is reinforced when monitoring costs are high or shareholders have little legal power to replace inefficient managers. Agency theory also indicates that conflicts of interest occur not only between owners and managers but also between different groups of shareholders. Majority shareholders with sufficient voting power to replace managers have an incentive to maximize their own benefits at the cost of minority

shareholders (Shleifer & Vishny, 1997). Managers who are granted ownership through ESOPs become a group of minority shareholders. This leads to a change in the relationship between shareholders and managers and between majority and minority shareholders. As a result, the market prices companies with or without ESOPs differently.

The second theoretical framework, signaling theory, was developed by Leland and Pyle (1977). It suggests that because of the asymmetry in information possessed by outside investors and entrepreneurs (who possess inside information), the market observes the actions of entrepreneurs (which speak louder than words) to value the firm. There is ample evidence in existing literature for the role of signaling in firm valuation. According to Certo et al. (2009), the high level of information asymmetry of an IPO company entering the public market for the first time may lead to discounts in offer prices. Colovic et al. (2021) and Deb (2013) argued that, facing the asymmetric information problem, investors will look for other signals that will allow them to assess the deal and company value. The signals can be the fraction of equity retained by the original shareholders (Downes & Heinkel, 1982); founder status (Certo et al., 2001), the composition of top management team (Higgins & Gulati, 2006), and the third-party affiliations (Gulati & Higgins, 2003). Similarly, we conjecture that when managers are willing to invest in shares of the company at which they work, this sends a positive signal to outside investors about the true quality of the firm. The market places value on the firm that reflects the information transferred by such signals. According to this theory, implementing ESOPs directly affects the market value of firms.

#### *Channels of impact of ESOPs on firms' market value - Empirical evidence*

So far, we base on agency theory and signaling theory to conjecture the channel of impact between the implementation of ESOP and the market value of the firm by reducing information asymmetry between insiders and outsiders. This channel of impact is, indeed, supported by evidence from the empirical literature. Bova et al. (2015) used a sample of 22,452



US firm-year observations for a period from 1999 - 2007 to examine “the role of employee ownership in shaping management’s incentive to disclose information to the market”. They provided empirical evidence for “a positive link between employee ownership and voluntary disclosure” and suggest that “employee ownership may play a role in improving a firm’s corporate governance, by improving its transparency with investors and other stakeholders”. Moreover, their results showed that “employee ownership appears to benefit the firm by not only aligning goals between the firm and its employees, but by also increasing disclosure from the firm to all of its stakeholders by mitigating the firm’s need to keep information opaque”<sup>3</sup>. Adwan et al. (2022) focused on the impact of non-executive employee ownership and financial reporting quality. Using a sample of firms listed in Europe between 2006 and 2017, they found “a positive association between non-executive employee ownership and financial reporting quality”. They stated that “employee ownership could bring to the accounting information quality by aligning the interests of employees with those of the shareholders, and therefore reducing the incentives to manipulate financial statements.” Overall, empirical evidence showed that employee ownership in general and non-executive employee ownership in particular significantly improve corporate transparency by enhancing voluntary disclosure and financial reporting quality.

Both theory and empirical evidence indicate that implementing ESOPs reduces asymmetric information between insiders and the market. The more information investors can access, the lower their investment risk in a company's stock. As a result, investors are likely to place a higher value on companies with ESOPs. Therefore, we generated the following hypothesis:

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<sup>3</sup> In their study, Bova et al. (2015) used several proxies to capture different dimensions of discretionary disclosure. They constructed nine individual disclosure proxies: five management guidance-based measures, two conference call metrics, two annual report readability scores, and also an aggregate measure for voluntary disclosure. Across these ten disclosure proxies, they showed strong evidence that a firm’s incentive to disclose information is increasing with employee ownership.

***Hypothesis 1. ESOPs have a positive effect on the market value of banks.***

*ESOPs and ownership structure*

Agency theory indicates that conflicts of interest differ between banks with dispersed or concentrated ownership structures. In widely held companies, conflicts of interest exist between managers and shareholders, as managers' primary interest is to maximize job security; they behave in a risk-averse manner that is contrary to the interests of shareholders, who are more risk-tolerant and seek to maximize profits (Amihud & Lev, 1981). Chang's (1990) study provides evidence that ESOPs can be adopted to defend the positions of incumbent managers. Moreover, when there is a lack of majority shareholders with sufficient power to monitor managers in widely held companies, managerial entrenchment becomes a more serious problem, as managers and non-executive employees can create alliances to protect their private interests. Hellwig (2000) argued that because incumbent managers who try to buttress their positions will regularly find allies, the manager–worker relation is a “natural alliance.” Masulis et al. (2020) and Pagano & Volpin (2005) found that managers can transform employees into a “shark repellent” through long-term labor contracts. In turn, employees can act as “white squires” for the incumbent managers to protect their high wages. Aubert et al. (2014) argued that both good and bad managers have an incentive to implement employee ownership. However, while good managers use employee ownership as a reward management tool, low-performing managers use employee ownership as an entrenchment mechanism. Consequently, if there are no other control mechanisms, voting rights on ESOP shares can provide incentives for managers to abuse their privileges of perquisite consumption without fear of displacement. As a result, outside shareholders suffer from a reduction in the value of their holdings.

This indicates a dilemma facing shareholders in widely held banks: they have an incentive to adopt ESOPs as a mechanism to align managers' interests with their own and reduce monitoring costs; however, they may also be concerned that the lack of large

shareholders with the power to control abusive managerial behaviors will exacerbate managerial entrenchment and make it difficult to replace underperforming shareholder-managers (Gamble, 2000; O'Boyle et al., 2016).

In closely held banks, large shareholders have sufficient voting power to replace ineffective managers if the banks are unprofitable (Hill & Snell, 1988). In such cases, rather than between managers and shareholders, conflicts of interest exist between majority and minority shareholders, as large shareholders have incentives to maximize their benefits at the expense of minority shareholders (La Porta et al., 1999; Manzanque et al., 2016; Shleifer & Vishny, 1997). This is consistent with the study of Kirchmaier & Grant (2010) showing that “dominant shareholders destroy value”. In such a situation, outside investors also face a dilemma related to ESOPs: they can use them to induce managers to join their side; thus, their interests will be defended by managers who have also become minority shareholders. However, investors are also concerned about the behind-the-scenes relationships between managers and large shareholders. If majority shareholders can appoint bank managers through their representatives on the board of directors, these managers will then act in the interests of majority shareholders (Davies, 2000; Sáez & Riaño, 2013). Such behind-the-scenes relationships between managers and large shareholders facilitate minority expropriation; thus, while the cost to implement ESOPs is shared by all shareholders, outside investors may consider them a strategy that large shareholders use to secure managers' loyalty.

Although some studies indicate that the market reacts more positively to ESOPs when blockholders are present (Bethel et al., 1998; Chang, 1990; Park & Song, 1995), we argue that outside investors face dilemmas in both widely held and closely held banks. In widely held banks, shareholders have to weigh the benefit of ESOPs as a mechanism to reduce the cost of supervising managers against the drawbacks of managerial entrenchment. In closely held banks, outside investors may regard ESOPs as a strategy to turn managers into minority shareholders

to minimize the risk of minority expropriation, but they cannot ignore concerns about behind-the-scenes relationships between large shareholders and managers. Therefore, we generated the following hypothesis:

***Hypothesis 2. Ownership structure is not a determining factor in the relationship between ESOPs and the market value of a bank.***

*ESOPs and the severity of agency conflicts*

As ESOPs shift the balance of power among stakeholders, factors that determine the extent of conflicts of interest, such as bank opacity and shareholder protection, play an important role in shaping the market's expectation about ESOPs. On the one hand, a high level of corporate opacity may facilitate the expropriation behaviors of insiders, as it decreases outside investors' capacity to detect them. Several studies have found a significant relationship between firm opacity and dividend payouts (Brockman & Unlu, 2011; Eije & Megginson, 2008; Lepetit et al., 2017; Li & Zhao, 2008), which suggests that a high degree of opacity facilitates insiders' opportunistic behaviors, such as paying out small dividends to increase the amount of free cash flow left for expropriation. On the other hand, strong shareholder protection constrains insiders' expropriation behaviors. La Porta et al. (2007) demonstrated that in countries with better shareholder protection, minority shareholders force companies to disgorge cash, thus precluding insiders (managers and majority shareholders) from expropriating them. This is consistent with the findings of Lepetit et al. (2018), who found that corporate dividend policies depend on the legal protection of shareholders. We therefore conjecture that the market values banks with ESOPs by taking into account the degree of bank opacity and the level of shareholder protection in the country in which the bank is located.

In widely held banks, outside investors' main concern about ESOPs is managerial entrenchment. However, this concern is reduced if a bank is transparent since "a transparent disclosure environment weakens the connection between reported accounting performance and

unobservable economic performance, which enables the market to distinguish good managers from bad ones” (Brockman & Unlu, 2011). In such circumstances, strong shareholder protection gives minority shareholders more voting power to constrain the opportunistic behaviors of bad managers. Thus, if a bank is opaque or located in a country with weak shareholder protection, the market will regard an ESOP as a managerial entrenchment strategy. However, if a bank is transparent or shareholder protection is strong, the market will consider an ESOP to be a mechanism that enhances bank governance.

In closely held banks, the concerns of outside investors about behind-the-scenes relationships between large shareholders and managers are alleviated if a bank is transparent or located in a country with strong shareholder protection. In a transparent disclosure environment, where the opportunistic behaviors of majority shareholders can be observed by outside investors, it is difficult for majority shareholders to appoint their people to managerial positions. Furthermore, with strong shareholder protection, outside investors can prevent majority shareholders from appointing bad managers whom they believe will only work for the interests of majority shareholders. Therefore, we conjecture that if a bank is transparent or shareholder protection is strong, the market will see an ESOP as a mechanism to align managers’ interests with those of minority shareholders. By contrast, if a bank is opaque or located in a country with weak shareholder protection, the market will be concerned that behind-the-scenes relationships between large shareholders and managers could outweigh an ESOP’s benefits.

Although the mechanism differs between widely held and closely held banks, we believe that the benefits of ESOPs outweigh their costs when banks are transparent or shareholder protection is strong, irrespective of the bank’s ownership structure. Therefore, we generated the following research hypothesis:

*Hypothesis 3: The market values banks with ESOPs positively only if they are transparent or located in a country with strong shareholder protection, irrespective of their ownership structure.*

### **3. Methodology**

#### **3.1. Sample selection procedure**

We extracted the list of all commercial banks and bank holding companies from the Bankscope database. We limited our analysis to 16 European countries<sup>4</sup> in which listed companies are required to disclose ESOP implementation in annual reports. This yielded a list of 119 commercial banks and bank holding companies. We manually collected data on ESOPs from these firms' annual reports spanning 15 years (2005–2019).

Listed banks report two types of employee financial participation: employee ownership and profit-sharing plans. The fundamental difference between them is that profit-sharing plans grant monetary rewards, while employee ownership plans grant stocks and stock options (Pérotin & Robinson, 2003). Thus, it is not profit-sharing, but employee ownership plans that turn employees into employee-owners of the company. In our analysis, we focused only on employee ownership plans, as these plans could significantly alter the bargaining power of outside investors.

Financial and ownership structure data were also extracted from the Bankscope database. We also used market data from the Bloomberg database. After excluding observations with missing values, our final sample consisted of 119 banks, of which the average proportion of banks that adopted ESOPs increased from 13% in 2005 to 48% in 2019 (see Online support material - Appendix A for a breakdown by country and year).

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<sup>4</sup> The 16 countries were Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

### 3.2. Variables Operationalization

#### *Dependent variable*

We used Tobin's Q ratio (*Tobin\_Q*) as a proxy of stock market valuation, following the existing literature (e.g., Andres & Vallelado, 2008; Dahya et al., 2008). This ratio is computed as the book value of assets minus the book value of equity plus the market value of equity divided by the book value of assets.

In robustness tests, we used two alternative measurements of the market value of banks instead of Tobin's Q: cost of equity (CoE), following King (2009) and Barnes & Lopez (2006) and shareholder market return (SMR), following Andres & Vallelado (2008) (see Section 5.2).

#### *Variable of interest*

The variable of interest, *ESOP*, is a dummy variable that indicates whether a bank implemented an employee ownership plan in a given year. It equals one if the bank granted stocks or stock options to employees through its employee ownership plan during a given year and equals zero otherwise.

#### *Widely held vs. closely held banks*

We used a threshold of holding 20% of outstanding shares to identify controlling shareholders,<sup>5</sup> consistent with existing studies (Claessens et al., 2002; Faccio & Lang, 2002; La Porta et al., 1999). A bank is defined as closely held if it has at least one controlling shareholder, whereas a widely held bank is defined as one in which no shareholder exceeds the 20% threshold. We constructed the dummy variable *d\_Control*, which equals 1 for closely held banks and 0 for widely held banks. In addition, an alternative threshold of 10% of outstanding shares was used in our robustness tests (see Section 5.3).

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<sup>5</sup> In this study, a controlling shareholder is only a direct shareholder, not an ultimate shareholder.

### *Severity of conflicts of interest*

Empirical studies have shown that insiders' opportunistic behaviors, such as expropriating minority shareholders, are strongly influenced by two important factors: the level of opacity and shareholder protection (e.g., Brockman & Unlu, 2011; Eije & Megginson, 2008; Lepetit et al., 2017; Lepetit et al., 2018; Li & Zhao, 2008). We measured the level of bank opacity using the approach of Lepetit et al. (2017). We created an opacity index (*Opacity*) using four components: EF (error forecast) is the analyst forecast error, which measures asymmetric information between insiders and outsiders about the company' financial situation. EM (earnings management) measures the degree of earnings management, which shows the level of accounting opacity. MF (market funding) measures the level of a bank's exposure to the market, which is computed by taking the negative value of the ratio of total market funding (including both short- and long-term funding) to total assets. The last component is (Loan), which is the ratio of total loans to total assets.

For each component, we arranged the entire sample by deciles. Each component of each bank is associated with a value from 1 to 10, corresponding to its decile rank. For each bank, we summed up all four of these proxies. Then, we divided the sum by four to scale the opacity index. The opacity index ranged from 1 to 10. The higher the index, the lower the transparency.

We applied the RADI (Revised Anti-Director Index) of La Porta et al. (1998) and Djankov et al. (2008) to measure each country's shareholder protection. This index was created to measure minority shareholder rights—i.e., the legal protection of shareholders to prevent insiders' expropriation behaviors. The index varies from 0 to 6. Countries with the strongest shareholder protection have a RADI of 6. In our sample, the index varied from 2 (Greece and Italy) to 5 (the United Kingdom).

### **3.3. Empirical strategy**



We conducted a panel data regression analysis to examine the effects of ESOPs on the market value of banks. The basic econometric model is as follows:

$$TobinQ_{it} = \beta_0 + \beta_1 * ESOP_{it} + \sum_m \theta_m Bank\_Control_{it} + \sum_n \tau_n Country\_Control_{jt} + \sum_k \gamma_k FE_{jt} + \varepsilon_{ij} \quad (1)$$

where subscript  $i$  denotes the bank,  $j$  denotes the country,  $t$  denotes the year ( $t =$  from 2005 to 2019), and  $\varepsilon$  is the idiosyncratic error term.

In our regressions, we added the following bank-level control variables: bank size, growth of assets, capital structure, loan ratio, and risk. Bank size ( $Size_{ijt}$ ) was measured as the logarithm of the total assets of the banks. We expected a positive sign for large firms that benefit from scale economies, which may improve their market value (e.g., Hall & Weiss, 1967; Pathan & Faff, 2013). Growth of assets ( $Growth_{ijt}$ ) was measured as the difference in total assets between year  $t-1$  and year  $t$  divided by the total assets in year  $t-1$ . We used the ratio of equity to total assets ( $Capital_{ijt}$ ) as a proxy for bank capital structure. The ratio of loans to total assets ( $Loan_{ijt}$ ) was expected to have a negative sign (Andres & Vallelado, 2008). Following Hail and Leuz (2009), we used return variability—i.e., the standard deviation of monthly stock returns over the last 12 months—as a proxy for bank risk ( $Volatility_{ijt}$ ); a positive sign was expected for banks that took more risks to increase their profitability (Pathan & Faff, 2013). As previously explained, we included the dummy variable  $d\_Control_{ijt}$ , which equaled 1 for closely held banks and 0 for widely held banks, to control for bank ownership structure. We also added bank opacity ( $Opacity_{ijt}$ ) to our control variables, as we expected it to have a significant effect on the relationship between ESOPs and Tobin's Q.

We also controlled for country-level characteristics in our regression. We included the growth rate of GDP ( $GDP_{jt}$ ). We expected a positive relationship between GDP growth and the market valuation of banks. We also included an index measuring the level of minority

shareholder protection for each country ( $RADI_j$ ) and an index measuring the strength of the supervisory regime ( $SupPow_j$ ) (see Table 1 for a definition). We supposed that a higher level of minority shareholder protection or a stronger supervisory regime in a bank would reduce its agency costs and allow it to obtain a better market valuation.

#### *Endogeneity and instrumental variable*

One might be concerned that there is a reverse causal relationship between ESOPs and bank market value. Although an ESOP can affect a bank's market value, market value can be regarded as an important factor that influences a bank's decision to implement an ESOP, especially a leveraged one. In fact, a bank can finance its ESOP using its own funds (a non-leveraged ESOP), or it can borrow funds from the market to repurchase its shares to be used for the ESOP (a leveraged ESOP). Because leveraged ESOPs are financed through debt obligations, they are suitable for corporations with sufficient resources and the ability to borrow from the market, while non-leveraged ESOPs are relatively more common at smaller corporations (Gordon & Pound, 1990). Thus, there is a potential reverse causal relationship between a bank's market value and its decision to adopt an ESOP, which can produce biased results in an empirical analysis.

Furthermore, consistent with the argument of O'Boyle et al. (2016) that "the endogeneity issue in most of employee ownership studies indicates that only correlation be assumed and not causality", we propose a new instrumental variable approach to capture plausibly exogenous variations in the effects of ESOPs. We instrument the ESOP implementation of banks by the score of the legal framework for the ESOP of each country published by the European Commission. In 2014, the European Commission published "the classification of European Union Member States based on regulatory density and support

measures for employee financial participation”<sup>6</sup>. The legal framework score is an indicator of the presence or absence of regulations relating to the implementation of ESOPs (Table 1). Some countries provide detailed rules on and considerable support for ESOPs, while others have few rules or no specific regulations.

In theory, the critical condition for a relevant IV is that it must be correlated with the endogenous variable (the dummy ESOP), but it must not affect or be affected by the dependent variable (the market value of banks). On the one hand, the logic of our approach relies on the argument that a comprehensive legal framework facilitates firms’ adoption of ESOPs. As the implementation of different types of ESOPs becomes easier, more firms and their employees will participate in them. The higher the legal score, the higher the percentage of firms with ESOPs. This logic is true for both non-financial and financial firms. Therefore, we conjecture a significant and positive correlation between the legal framework score and the dummy ESOP. This is also consistent with Tran’s (2020) empirical study. On the other hand, the level of the legal framework for ESOP is a macro indicator. Changes in the score of the legal framework are determined by policymakers through a long law-making process. Thus, there is no logical argument for a possible correlation between the score of the regulatory framework and the market value of the bank.

One might still be concerned if a higher legal framework score for ESOPs reflects a higher level of financial support (e.g., tax breaks) by the government to firms with ESOPs, then the legal framework score for ESOPs will have a significant impact on the market value of the firm, violating the IV validity condition that the IV (legal framework score) must be not mechanically correlated with the dependent variable (Tobin's Q). Because only firms which

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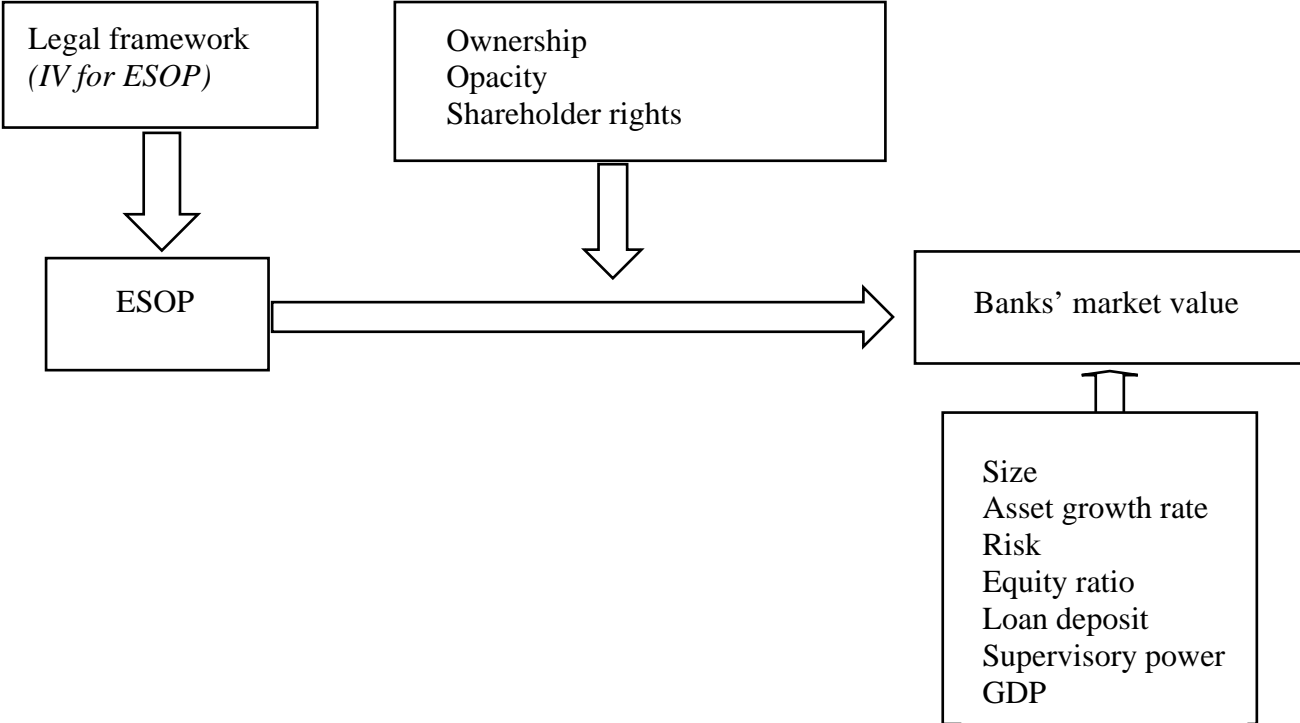
<sup>6</sup> The legal framework score is presented in the table “The classification of European Union Member States based on regulatory density and support measures for employee financial participation” in the European Commission’s report titled *The Promotion of Employee Ownership and Participation* and published in October 2014 (see <https://op.europa.eu/en/publication-detail/-/publication/c184fcde-ecd7-11e5-8a81-01aa75ed71a1/language-en/format-PDF/source-search>).

have adopted ESOPs can benefit from the ESOP financial support policy, we argue that a higher legal framework score will first strengthen a firm's incentive to have ESOPs. Once there, the decision to adopt ESOPs will affect the market value of the firm as investors can integrate the financial benefits of having ESOPs into their assessments.

Overall, our instrumental variable (IV) - the legal framework score for ESOPs - is mechanically correlated with the probability of a bank adopting ESOPs, but it is not mechanically correlated with the bank's market value. If there is an impact of the legal framework for ESOPs on the market value of banks in a country, it must not be a direct effect but an indirect effect through the banks' decision to adopt ESOPs. This, therefore, is consistent with the relevance condition of a valid instrumental variable.

Figure 1 shows the conceptual and empirical framework of our study.

**Figure 1. Conceptual and empirical framework**



We used two empirical models in our main regressions. First, we used the ordinary least-squares (OLS) regression. Second, we used two-stage least-squares (2SLS) regression to deal with the endogeneity problem. In the robustness test section, we confirm the robustness of our results using two alternative models: (1) the system generalized method of moments (GMM) model as an alternative econometric model, and (2) the dynamic panel models in which we added the lag value ( $TobinQ_{i,t-1}$ ) in the OLS and 2SLS estimators to alleviate the concern that the evolution of Tobin's Q is an economic process that could be strongly driven by its past value.

We carried out tests to verify the validity of our model specification, obtaining the Cragg-Donald Wald F-statistic to test IV weak identification, and the Lagrange Multiplier (LM) statistic to test IV under identification. The results showed that the instrument variables were valid.

We estimated the regressions with the firm random effects specification, which alleviated the concern that errors were correlated within firms. The natural alternative specification was firm fixed effects. However, the firm fixed effects specification was not feasible in our setup, given that there were banks with ownership structures and ESOPs that were invariant during the period. We also included country and year fixed effects to control for factors that change each year and in each country and that are common to all banks in a country for a given year.

The variable definitions and summary statistics are presented in Table 1. We winsorized the extreme bank-year observations at 1% of the lowest and highest values. The analysis of the correlation coefficients between the control variables showed that all variance inflation factors

(VIF) were smaller than 5 (see Online support material - Appendix B).<sup>7</sup> Therefore, there was no serious collinearity problem in our model.

[Insert Table 1]

## 4. Results

### 4.1. Impact of ESOPs on the market value of banks

Panel A in Table 2 presents the results of the means test that compares the difference in the means of Tobin's Q between different groups. We found a significant difference between the average Tobin's Q of banks with ESOPs versus those without them. Banks with ESOPs had a significantly higher Tobin's Q than banks without them. We also observed a higher Tobin's Q for the group of banks with (1) a lower degree of opacity, (2) a higher legal framework score, and (3) higher levels of shareholder protection. However, we observed no difference between the market valuations of widely held and closely held banks.

In Panel B of Table 2, we presented the results of propensity score matching to compare the Tobin's Q of banks with ESOPs and those without them. In propensity score matching (Drucker & Puri, 2005), unlike the mean t-test, where we simply compared two groups of banks with and without ESOPs, we matched each bank with ESOPs (treated group) with banks without ESOPs (non-treated group) by matching their similar characteristics. We adopted the "nearest neighbor matching" by matching three banks without ESOPs that had similar characteristics to a given bank with an ESOP. The results of the propensity score matching were consistent with the results of the mean t-test, as it showed that banks with ESOP have a higher Tobin's Q than banks without ESOPs, even after taking into account the banks' characteristics.

[Insert Table 2]

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<sup>7</sup> Appendix B shows that the correlation coefficients among control variables were low except the coefficient between *Size* and *Opacity*. Although collinearity diagnostics proved that there is no serious collinearity problem in our model, we also used the orthogonalized value of *Size* to test the robustness of our results (Section 5). The test showed that our results were robust.

Table 3 reports the impact of ESOP implementation on the market value of banks. Column 1 presents the results of OLS with country and year fixed effects. Columns 2 and 3 show the first and the second-stage results for our IV estimation.

Table 3 shows that the implementation of ESOPs is correlated with a higher Tobin's Q ratio, independently of the model and specifications used for estimation. The OLS estimates showed that ESOP adoption impacts the Tobin's Q ratio significantly (at the 1% level) and positively. However, these results may be biased due to reverse causality between ESOP implementation and the Tobin's Q ratio.

The first-stage estimates in column 2 show that there is a significant (at the 1% level) and positive relationship between ESOP adoption and the legal framework score for the ESOP. This result confirms our argument that a comprehensive legal framework will facilitate banks' adoption of ESOP. Moreover, the value of an F-statistic greater than 10 passes the "weak instrument test" of Stock and Yogo (2002). This result confirms that our IV is empirically relevant. The second-stage estimates showed that ESOPs have a statistically significant and positive effect on the Tobin's Q ratio, which supports Hypothesis 1 - that ESOPs have a positive effect on the market value of banks.

As for the control variables, we found that bank size has a significantly negative effect while having a controlling shareholder or not does not directly affect the market value of the bank.

[Insert Table 3]

#### **4.2. Effects of ownership structure**

So far, the results showed that the coefficient of the variable *d\_Control* was insignificant (Table 3). This result indicates that ownership structure has a negligible impact on a bank's Tobin's Q ratio.

We also examined whether ownership structure influences the relationship between ESOPs and the market value of banks. We expanded Equation (1) with an interaction term between *ESOP* and *d\_Control*. The results are shown in Table 4. We found that the coefficient  $\beta_1$  and the Wald test ( $\beta_1 + \beta_2$ ) were significant (at the 1% level) and positive. However, the coefficient of the interaction ( $\beta_2$ ) was insignificant. This result shows that ESOPs have a positive effect on the market value of banks, independent of their ownership structure. This result supports Hypothesis 2 - that ownership structure is not a determining factor in the relationship between ESOPs and the market value of banks.

[Insert Table 4]

### **4.3. Effects of opacity and shareholder protection**

The evidence thus far has consistently shown that the market positively values banks with ESOPs. The benefits of ESOPs alleviate outside investors' concerns about their disadvantages: managerial entrenchment in widely held banks and behind-the-scenes relationships between large shareholders and managers in closely held banks. However, one may be concerned that these findings reflect only the dominant effect of banks with low opacity and those located in countries with strong shareholder protection.

In Hypothesis 3, we predicted that the market positively values banks with ESOPs only if they are transparent or located in a country with strong shareholder protection, irrespective of their ownership structure. We used a dummy variable, *d\_Opacity*, which equaled 1 if a bank had an opacity index higher than the median of the sample and 0 otherwise. We also used a dummy variable, *d\_RADI*, which equaled 1 if the country's shareholder protection index was higher than the median of the sample and 0 otherwise.

We expanded Equation (1) with triple-interaction terms between *ESOP*, *d\_Control*, and either the dummy of bank opacity (*d\_Opacity*) or the dummy of shareholder protection (*d\_RADI*). The results are shown in Table 5. Columns (1) & (2) report the results of the triple



interaction between *ESOP*, *d\_Control*, and *d\_Opacity*. Columns (3) & (4) report the results of the triple interaction between *ESOP*, *d\_Control*, and *d\_RADI*.

[Insert Table 5]

The Wald test results in columns (1) & (2) of Table 5 show that coefficients ( $\beta_1$ ) and ( $\beta_1 + \beta_2$ ) are significant (at the 1% level) and positive, while coefficients ( $\beta_1 + \beta_3$ ) and ( $\beta_1 + \beta_2 + \beta_3 + \beta_4$ ) are insignificant. The results are similar for both the OLS and 2SLS models.

This indicates that ESOPs increase Tobin's Q only if banks are transparent (low opacity) for both widely held and closely held banks. This is consistent with our conjecture that if banks are opaque, outside investors will believe that an ESOP's disadvantages outweigh its benefits. However, when banks are transparent, the market will regard an ESOP as a mechanism to enhance a bank's performance and reduce the risk of expropriation of minority shareholders.

Similarly, the Wald test results of both the OLS and 2SLS models in columns (3) & (4) of Table 5 also show that ESOPs increase Tobin's Q only if banks are located in a country with strong shareholder protection (high RADI), irrespective of their ownership structure. Our results indicate that in countries with strong shareholder protection, minority shareholders have more legal power to monitor managers and challenge majority shareholders. Therefore, they regard ESOPs as an effective mechanism to reduce the risk of expropriation by turning managers into minority shareholders.

## 5. Robustness tests

We carry out several additional robustness checks on our empirical results<sup>8</sup>.

### 5.1. Effects of the financial crisis

We check whether the impacts of ESOPs on the market value of banks differ between normal and crisis periods. We created the dummy variable *d\_Crisis<sub>t</sub>*, which took a value of 1

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<sup>8</sup> We provide the estimation results for all robustness tests in the online support material – Appendix C (Tables from C1 to C8)

during the crisis period from 2008 to 2011 and 0 otherwise. We then augmented Equation (1) with an interaction term between the instrumented variable  $ESOP_{i,j,t}$  and the dummy variable  $d\_Crisis_t$ .

## **5.2. Alternative regression models and specifications**

In our main investigation, we used two regression models: the OLS and 2SLS regressions. In this section, we showed the results of several tests regarding the empirical model and its specifications.

### *IV estimation of dynamic model*

Since one might be concerned that the evolution of Tobin's Q is an economic process that could be strongly driven by its past value, we added the lag dependent value of Tobin's Q into the OLS and 2SLS models to alleviate this concern.

### *System GMM model*

We adopted the System GMM model (Arellano & Bover, 1995; Blundell & Bond, 1998) for Equation (1) instead of the OLS and 2SLS models.

### *Alternative measurements of Tobin's Q*

We also tested whether the results were affected by the measurement of the market value of banks. We used two alternative measurements of the market value of banks instead of Tobin's Q: cost of equity (CoE) (Barnes & Lopez, 2006; King, 2009), and shareholder market return (SMR) (Andres & Vallelado, 2008).

### *Alternative measurement of bank opacity and shareholder protection*

We computed an alternative measurement of bank opacity based on trading volumes and the bid–ask spread of bank shares, following Anderson et al. (2009).

Finally, we used an alternative measurement of shareholder protection. We adopted the methods of Dahya et al. (2008) and Rossi & Volpin (2004) to compute a combined index by

multiplying the revised anti-director rights index of Djankov et al. (2008) and the rule-of-law index from the Worldwide Governance Indicators of the World Bank<sup>9</sup>.

### **5.3. Alternative controlling ownership threshold**

We adopted an alternative threshold of 10% instead of 20% of outstanding shares used in studies conducted by La Porta et al. (1999, 2002) and Lepetit et al. (2015) to test our results.

### **5.4. Orthogonalization of variables**

Although the VIF test shows no serious multicollinearity problem in our model since all values of VIF are smaller than 5, we orthogonalized *Size* with *Opacity* to test the robustness of our results regarding multicollinearity. We used the orthogonalized values (*oSize*) instead of the original values to run our regressions again.

### **5.5. Using subsamples**

We used two alternative sub-samples. First, we excluded Denmark from the initial sample, as it has a relatively large number of banks. Second, we removed banks from Ireland and Norway, as no banks in these countries have adopted ESOPs.

The regression results of all robustness tests are presented in the online support material – Appendix C (Tables from C1 to C8). The tests showed that our results are robust.

## **6. Conclusion and discussion**

In recent decades, ESOPs have gained increasing attention from researchers and practitioners as a potential mechanism for promoting good corporate governance. The existing literature has relied on property rights theory (Hart & Moore, 1990; Wang et al., 2009), incentive contracts theory (Kőszegi, 2014), and human resource frameworks to predict and

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<sup>9</sup> Source:

[https://govdata360.worldbank.org/indicators/h02f9cb8c?country=FRA&indicator=370&viz=line\\_chart&years=1996,2020](https://govdata360.worldbank.org/indicators/h02f9cb8c?country=FRA&indicator=370&viz=line_chart&years=1996,2020)

explain the effects of ESOPs on corporate outcomes. Based on conflict of interest theory (Jensen & Meckling, 1976; Fama & Jensen, 1983; Krueger, 1991) and consistent with the interdependency between stakeholders theory (Antonacopoulou & Meric, 2005), we proposed a novel approach that considers ESOPs game-changers that significantly shift the balance of power between insiders (managers in widely held banks and majority shareholders in closely held banks) and outsiders (minority shareholders). We assert that outside investors consider ESOPs beneficial or harmful, depending on their potential impact on their bargaining power.

Our results offer important insights into the multifaceted conflicts between insiders and outsiders and the role of ESOPs in this context. In widely held banks, where conflicts of interest are between managers and shareholders, outside investors appreciate the benefits of ESOPs only if their concerns about managerial entrenchment are alleviated. In closely held banks, where conflicts of interest are between majority and minority shareholders, outside investors have a negative view of the ESOP if they believe that managers are only acting on behalf of majority shareholders. Our results provide evidence that ESOPs have a positive effect on the market value of both widely- and closely-held banks. However, this positive effect occurs only if banks are transparent or located in countries with strong shareholder protection. Consequently, bank opacity and shareholder protection, rather than ownership structure, are determinants of the relationship between ESOPs and the market value of banks.

Our study contributes to the literature by proposing a novel approach to study the effects of ESOPs through the prism of conflict of interest theory. Most previous studies have focused on the relationship between ESOPs and corporate outcomes without considering whether ESOPs change the balance of power among stakeholders. Understanding this effect can uncover the rationale behind stakeholders' decisions to adopt or oppose ESOPs.

Our study provides important policy implications for promoting ESOPs as a mechanism to enhance corporate governance. Although the European Commission has incorporated the

promotion of ESOPs into its action to reform company law and corporate governance (European Commission, 2014), our results indicate that ESOPs will be accepted by the market if bank transparency is improved and shareholder protection is reinforced. The European Commission, therefore, should encourage member states to strengthen shareholder protection regulations in order to increase the effectiveness of the ESOP initiative.

Furthermore, our study reveals important implications for bank managers. Since failures and weaknesses in bank corporate governance were blamed as one of the major causes of the financial crisis (Kirkpatrick, 2009; Mülbart, 2010), bank managers must rebuild investor confidence by enhancing bank transparency. This becomes even more important for bank managers since policymakers increasingly recognize the role of market discipline in monitoring the banking system (Bliss & Flannery, 2019)<sup>10</sup>. In such a situation, the implementation of ESOPs can be seen as a positive signal of a reliable corporate governance to the market. This, however, can only be achieved if bank transparency is improved. According to Martinez-Blasco et al. (2017), the market reacted positively to voluntary declarations of compliance with codes of corporate governance as it reflects “signalling effects for those companies more committed with transparency”. Thus, bank managers should strengthen voluntary disclosure as a strategy to send “good corporate governance” signals to the market and rebuild investor confidence.

Our work has several limitations. First, our sample only included financial institutions. Although we do not expect a significant variation in the results between financial and non-financial firms, future research should consider testing our results in a non-financial firm context, including listed and unlisted firms. Second, we focused on developed European countries in which cultural values are similar. Kang & Kim (2019) and Lee & Kim (2020) indicate that culture and psychological ownership can influence the effects of employee

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<sup>10</sup> The role of market discipline in safeguarding financial stability is incorporated in regulatory frameworks such as Pillar 3 of the Basel 2 and 3 frameworks (Bank for International Settlements, 2006) and the new resolution mechanisms designed by the Financial Stability Board (FSB, 2013).

ownership; therefore, interesting insights may emerge if future research could analyze a sample of countries with different psychological management and ownership cultures (Patel, 2016).

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