The determinants of employee stock ownership plans (ESOPs):
Evidence from European banks

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Abstract

We investigate the determinants of employee stock ownership plans (ESOPs) by analyzing the effectiveness of supportive measures (legal measure, fiscal measure and political measure) implemented by the government. Our studying also explores how the effectiveness of supportive measures is shaped by institutional environment, opacity and ownership concentration. Our findings show that the government supportive measure and each of its components impact positively and significantly (at 1% confident level) ESOPs adoption. We find that even *supervisory power* and *individualism* have no direct impacts on the decision of a bank to adopt an ESOP, they help to increase the effectiveness of supportive measures. In contrast, the direct impact of *shareholders protection* on ESOPs adoption is negative and significant but it has no significant influence on the effectiveness of supportive measures. Our results also prove that *opacity* has neither a direct nor an indirect impact on the decision of a bank to adopt an ESOP. *Ownership concentration* has a negative and significant impact of ESOPs adoption but it has no significant impact on the effectiveness of supportive measures.

1. Introduction

Employee stock ownership plans (ESOPs) are employee participation programs that provide a company's workforce with an ownership interest via holding shares of the company. From early 1990s, the European Commission has spent decades on researching and promoting ESOPs in Europe. Emphasizing on the benefits of ESOPs, the Commission encourages the EU member states to create sustainable environment for the development of ESOPs by providing supportive measures such as legal measures (building legal framework for ESOPs), fiscal measures (using tax and financial incentives for ESOPs) and political measures (enhancing the social attitudes regarding ESOPs) (The European Commission, 2014). Our paper aims to contribute an empirical evaluation of the impact of those supportive measures on promoting ESOPs, by taking into account the institutional and regulatory environment and banks' characteristics.

Promoting employee financial participation plans has long been a target of the European Commission. However, the effectiveness of the strategy to promote ESOPs has not been empirically examined. Since 1990s, the Commission had conducted and published the results of a research project that outlines the different types of ESOPs across European countries (The European Commission, 1997).[1] From then on, the Commission has concentrated on proving the positive impacts of ESOPs on firm's performance. By using large-survey data on European firms, the Commission showed evidence to prove that ESOPs enhance productivity and employment of firms (The Catholic University of Brussels, 2000; The European Commission, 2014). These results are in line with the existing empirical literature (e.g. Dhillon and Ramirez, 1994; Jones and Kato, 1995; Ding and Sun, 2001; Cin and Smith, 2002; Lampel, Bhalla and Jha, 2012). Thus, having plenty of evidence for the benefits of ESOPs, the European Commission indicates that it is important to promote ESOPs in Europe (The European Commission, 1997). The EU member States should focus on building legal framework for ESOPs, using tax and financial incentives to attract companies and employees to participate in ESOPs and running campaigns to enhance the social attitudes regarding ESOPs. Therefore, according to the Commission, the government supportive measure should play an important role in increasing the numbers of firms and employees participating in ESOPs. However, it is interesting that there is no study, even from the European Commission, has empirically examined which supportive measures are more effective to promote ESOPs. Moreover, the Catholic University of Brussels (2000) indicates "*the differences in institutional environment between countries are the greatest difficulties for the development of ESOPs*", without however

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[1] The European Commission's PEPPER I & II - Promotion of employee participation in profit and enterprise results (The European Commission, 1997).

empirically assess the impact of the institutional and regulatory environment on the effectiveness of supportive measures to boost ESOPs.

The supportive measures are recommended by the European Commission to promote ESOPs in firms in general. The Commission has not distinguished between financial firms and non-financial firms. However, financial firms, and banks in particular, are different from nonfinancial firms, due to their specific regulation, capital structure (i.e. deposit funding with high leverage), and their inherent complexity and opacity (Morgan, 2002). The effectiveness of supportive measures to promote ESOPs might be impacted by the degree of opacity as it might create more opportunities for managers to expropriate shareholders. We might expect in this context that shareholders in banks might be more responsive to establish an ESOP as it will align the interest of managers with that of shareholders. However, in European banks where concentrated ownership predominate, the agency conflict shifts away from manager versus shareholders to majority versus minority shareholders, as large shareholders have incentives to maximize their own benefits at the cost of other shareholders (Shleifer and Vishny 1997). In this context, controlling shareholders might be reluctant to adopt an ESOP in order to maintain their decision-making power.

Our paper contributes to the literature by analyzing whether the different government supportive measures (legal measure, fiscal measure and political measure) are a significant determinant of ESOPs implementation of European banks. We furthermore examine whether the institutional and regulatory environment modify the effectiveness of supportive measures, in particular the level of shareholder protection, the strength of the supervisory regime, and the degree of collectivism vs. individualism in decision making process. We also examine the impacts of ownership concentration and opacity on the decision of a bank to adopt an ESOP.

In this paper, we use data of 111 publicly traded banks across 17 European countries to conduct our investigation. We use lagged values of bank-level variables in order to solve reverse causality problem. Using logit regressions, our results show that supportive measures impact positively and significantly ESOPs adoption. These results support for the recommendation of the European Commission that the European member states should implement supportive measures to promote ESOPs adoption. We also show evidence to prove the influence of institutional environment on the effectiveness of supportive measures. Our findings show that all components of the government supportive measure impact positively and significantly ESOPs adoption. However, the fiscal measures are more effective in countries having higher levels of shareholder protection, while legal and political measures are more suitable for

countries having higher levels of individualism. We furthermore find that the degree of opacity has no significant impact on the decision of a bank to adopt an ESOP, whereas ownership concentration impacts negatively and significantly ESOPs adoption.

Our paper makes several contribution to the existing literature. We contribute to the empirical literature that investigate the determinants of ESOPs by analyzing the effectiveness of supportive measures implemented by the government. Our studying also contributes to the literature exploring how the effectiveness of supportive measures is shaped by the institutional and regulatory environment. By analyzing the determinants of ESOPs in European banking system where concentrated ownership is prevalent, we also aim to obtain a better understanding about the impact of opacity and ownership concentration on ESOPs adoption.

The rest of our paper is organized as follows. Section 2 develops hypotheses regarding the impact of supportive measures, opacity and ownership concentration on ESOPs adoption. Section 3 describes our sample and variable construction. Section 4 presents our methodology. Section 5 presents our results. Section 6 contains robustness test, and Section 7 concludes.

2. Hypotheses regarding supportive measures, opacity, ownership concentration and the probability of a bank adopting ESOPs.

The government supportive measures (legal measure, fiscal measure and political measure) are recommended by the European Commission to promote employee financial participation programs in Europe. These measures are effective to promote the adoption of ESOPs by banking firms if they have a significant impact on decisions of a bank to adopt an ESOP, leading to the following hypothesis:

H1: *The government supportive measures (Legal measures, Fiscal measures, Political measure) affect positively and significantly ESOPs adoption.*

The Commission also states that differences in institutional and regulatory environment (cultural and historical tradition in relation to financial participation) is the greatest difficulty for the development of ESOPs (Catholic University of Brussels, 2000).

In countries having higher degrees of shareholder protection, the legal system favors minority shareholders vis-a-vis managers or majority shareholders in the corporate decision making process, including the voting process. It is easier for minority shareholders to appoint a proxy to take their place at the shareholders' meeting and to vote on their behalf. Because ESOPs implementation is costly and when a bank adopts ESOPs, shareholders have to share their profits for employees and they also have to face stock dilution risk. Then, minority shareholders

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might be much cautious to vote for ESOPs adoption. In contrast, in the countries having lower degrees of shareholder protection, minority shareholders can regard ESOPs as a mechanism to turn bank employees into a group of minority shareholders. Since then, minority shareholders can reduce the risk of being expropriated by large shareholders. Therefore, we expect a negative impact of shareholder protection on ESOPs adoption. This leads us to examine the following hypothesis:

H2: *The impacts of supportive measures on ESOPs adoption are negatively influenced by shareholder protection.*

Another important aspect of institutional environment is the strength of the supervisory regime. In some countries, the bank supervisory authorities possess the power to obtain information from banks and take an assortment of actions to change the behavior of banks based on the assessments of the official supervisory authority. The supervisory agency even has power to supersede shareholder rights, remove and replace management and directors. Therefore, in those countries, bank insiders might tend to strictly follow recommendations of government authorities. Since employee participation plans are considered as an effective mechanism to improve corporate governance, they are often recommended by business law. We therefore, expect the strength of the supervisory regime to strengthen the impact of supportive measures on ESOPs, leading to the following hypothesis:

H3: *the strength of the supervisory regime strengthens the impacts of supportive measures on ESOPs.*

The degree of collectivism/individualism might also be an important factor in the decisions to adopt an ESOP. An individualistic culture promotes the exercise of individual's goals and desires and therefore, it is characterized by an emphasis on personal achievements. In contrast, collectivism is a cultural value that is characterized by an emphasis on cohesiveness among individuals and prioritization of the group over self. While the individualism values independence and self-reliance, the collectivism values pride, loyalty, and cohesiveness in their organizations or families. Therefore, the financial benefits gained from ESOPs participation would be more attractive for employees in an individualistic culture than those in a collectivist culture. In addition, in a collectivist culture, the function of ESOPs as a mechanism to enhance employees' loyalty might be not necessary. Thus, we expect that the impact of the government

supportive measures on ESOPs is stronger in countries having high levels of individualism, leading to the following hypothesis:

H4: *The impacts of supportive measures on ESOPs are stronger in countries having high levels of individualism.*

In theory, in banks having high degrees of opacity, ESOPs can be considered as a mechanism to turn managers (insiders) into a group of minority shareholders (outsiders). Thus, the presence of ESOPs would help to reduce the agency conflict between insiders and outsiders. The higher level of opacity, the more incentive of minority shareholders to adopt ESOPs. In addition, opacity might create more opportunities for managers to expropriate shareholders, thus, managers could take advantage of supportive measures for ESOPs to gain higher remuneration levels. We then examine the following hypothesis:

H5a: *Opacity affects positively the probability of a bank to adopt an ESOP.*

H5b: *Opacity influences positively the impact of supportive measures on ESOPs adoption.*

Economic theory also indicate that, the limited liability gives bank shareholders an incentive to expropriate wealth from bondholders by increasing risk. However, bank employees, in an effort to protect their jobs and career reputation, will play an important role in reducing this problem. Through ESOPs, bank employees become a group of minority shareholders. The benefits of employees then can be aligned with those of shareholders. This leads to the conclusion that, in general, bank shareholders have incentive to adopt ESOPs. However, in a banking system where concentrated ownership is prevalent such as of the Europe, there are two channels explaining the impact of ownership concentration on ESOPs adoption. First, when ownership is concentrated, the conflicts of interest is between majority and minority shareholders (Shleifer & Vishny, 1997). Thus, large shareholder might not want to adopt ESOPs which make employees become a group of minority shareholders. Second, when ownership is concentrated, controlling shareholders can easily appoint bank mangers through their representatives on the board of directors and therefore, these managers will act for the benefits of controlling shareholders (Davies, 2000 and Sáez & Riaño, 2013). In this case, controlling shareholders have less incentive to adopt ESOPs. Overall, we have a theory indicating that bank shareholders have incentive to implement ESOPs. We also have theories arguing that large shareholders in banks having concentrated ownership do not have incentive to adopt ESOPs. These conflicting theoretical predictions regarding the impact of ownership concentration on ESOP adoption lead us to examine the following hypotheses:

H6a: *Ownership concentration affects positively the decision of a bank to adopt an ESOP.*

H6b*: Ownership concentration affects negatively the decision of a bank to adopt an ESOP.*

H7: *Ownership concentration influences the effectiveness of supportive measures.*

3. Data and variable construction

Sample

We use "the classification of European Union Member States based on regulatory density and support measure for employee financial participation" of the European Commission to quantity supportive measures of each country. This classification was first published in 2014. Therefore, we choose the year 2014 to conduct our research. Our sample consists of all publicly traded commercial banks and bank-holding companies for the year 2014 of seventeen European countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom). We manually collect data from the annual reports to determine if a bank has been adopted an ESOP.

For the accounting data, we extract bank financial statement data from BvD Bankscope. We use consolidated data but also consider unconsolidated data when consolidated financial reports are not available. We also extract the ownership data from BvD Bankscope to compute a measure of ownership concentration. We combine financial data from BvD Bankscope and Bloomberg database to compute our measures of opacity. After data cleaning, we finally end up with a final sample of 111 listed banks, including 74 commercial banks and 37 bank-holding companies.

The dependent variable

We use the dummy variable *ESOP* that equals 1 if a bank has been adopted an ESOP in the year 2014 and equals 0 otherwise. We only report a bank having ESOPs in a year in two cases: First, a bank has a plan to give stock options to its employees as a part of employee participation schemes determined in the previous shareholder meeting. The number of shares employees receive will depend on the result of the bank performance. In this case, we report the bank as having an ESOP even if at the end of the year, employees have not been allocated shares due to unachieved outcome of the bank. Second, a bank has allocated shares for its employees for a given year even if there was no detailed plan in the previous shareholder meeting. The number

of banks having ESOPs in 2014 by country is shown in Table 1; we observe that, in 2014, there is 63 over 111 banks that have ESOPs (57%).

[INSERT TABLE 1]

The supportive measure indices

There are three types of the government supportive measure: legal measure, fiscal measure and political measure. We use the classification of European Union Member States based on regulatory density and support measure for employee financial participation of the European Commission (The European Commission, 2014) to measure the degree of legal, fiscal and political supports from each government for the development of ESOPs. For a country, each type of the government supportive measure is given a score that we use as a proxy for legal supportive measures (*Legal index*), fiscal supportive measures (*Fiscal index*), and political supportive measure (*Political index*).

The *Legal index* measures legal framework regarding the implementation of ESOPs. In our sample, the *Legal index* varies from 0 to 3. It equals to 0 if a country has no systematic regulation of employee financial participation programs and its general regulations neither promote nor inhibit the development of employee stock option plans. It equals 1 if a country has an isolated regulation of one aspect of employee stock option plans (usually company law). It equals 2 if a country has a systematic regulation of more than one aspect of employee stock option plans. It equals 3 if a country has a systematic regulation of more than one aspects of employee stock option plans (usually tax and company law) and one or more additional aspects (connection to securities law, labor law, social legislation, etc.).

The *Fiscal index* measures tax and financial incentives for companies and employees participating in employee stock option programs. In our sample, the *Fiscal index* varies from 0 to 4. It equals 0 if a country has no special tax incentives and its general system of taxation neither promotes nor inhibits the development of employee s. It equals 1 if a country has some tax incentives for companies and employees participating in employee programs, but their impact is not clear. It equals 2 if a country has some tax incentives and the difference between the effective tax rate on a salary increases and that on an increase in income of the same value accruing through financial participation is significant due to these specific tax incentives. It equals 3 if a country has tax incentives which are applicable to most enterprises and the criteria for these tax incentives are clearly defined and not restrictive. It equals 4 if a country has

effective tax incentives and, additionally, other instruments of fiscal support for employee stock option programs.

The *Political index* measures the attitude of the government and social partners regarding employee stock option programs. In our sample, the *Political index* varies from 0 to 3. It equals to 0 if neither government nor social partners are interested in employee programs. It equals 1 if there is only one social partner supports employee stock option programs. It equals 2 if social partners support employee programs, thus as a part of social dialogue. It equals 3 if employee stock option programs is a part of social dialogue and is substantially supported by the government.

We also sum up three component indices to have a total government supportive measure for all countries (*Global index*). This *Global index* varies from 0 to 10. The higher global indices, the stronger supports from the government and social partners for the development of employee stock option plans. Table 2 shows descriptive statistics on these indices by country.

[INSERT TABLE 2]

Institutional variables

We consider three institutional and regulatory environment characteristics which might influence the impact of supportive measures on the decision of a bank to adopt an ESOP.

We use the revised anti-director rights index *(RADI)* following Djankov, Porta, Lopez-de-Silanes and Shleifer (2008) to capture the shareholder protection level of each country. This index varies from 0 (for weak protection countries) to 5 (for strong protection countries).

We use the *supervisory power* index (The World Bank 2003) to measure the strength of the supervisory regime of each country. This index ranges from 0 to 16. A high supervisory power index indicates wider and stronger authority for bank supervisors.

To measure the cultural differences in decision-making process, we use the *individualism* index (Hofstede, 2001). This index indicates the distinction between collective (group-based) and individual-based decision making of a country.

Opacity

We use two methods to measure the degree of bank opacity. First, we use market data to compute an index of opacity (*opacity index*) following Anderson, Duru and Reeb (2009). We calculate the natural logarithm of the average daily trading volumes during the fiscal year, and bid-ask spread as the difference of ask price and bid price over the average of bid and ask prices.

We rank each of these proxies from the value of 1 (for banks with high trading volume, or small bid-ask spread) to the value of 10 (for banks with low trading volumes, or high bid-ask spreads). Then we take the average of these two proxies to capture the opacity level of each bank, with the most transparent bank has a value of 1 and the most opaque bank has a value of 10. Higher opacity indicates that there is higher information asymmetry between bank managers and shareholders.

Second, we computed a composite opacity index (*composite opacity index*) following Lepetit, Meslier and Wardhana (2017). We construct four components of opacity. The first component (EF) measures the disconnection between insiders' and outsiders' information about firms' financial condition by computing the analyst forecast error. The second component (EM) is related to the opacity of financial statement. This component measures accounting opacity and is computed by the degree of earnings management of banks. The third component is the negative of the ratio of short term and long term market funding to total assets (MF) which shows degree of banks' exposure to the market. The last component is the proportion of loans in total assets (Loan). Then, we associate each component with the value of 1 to 10 corresponding to the decile of 1 to 10. After that, we sum four proxies, then divide it by four to scale our composite index. This index ranges from 1 to 10.

In this paper, we use the *opacity index* in our main investigation. Then, we use the *composite opacity index* to test the robustness of our results.

Ownership concentration

We follow Renneboog (2000) and Goergen and Renneboog (2001) to measure ownership concentration of a bank. This measurement is computed as the sum of square of all direct shareholders' voting rights. We name it as *the ownership concentration index*. The higher the *ownership concentration index*, the higher degree of concentrated ownership.

Control variables

We use a large set of control variables that might have an impact on the decision to adopt ESOPs of a bank. We measure bank size (*Size*) through the natural logarithm of total assets and use the return on equity (*ROE*) to measure the profitability. We expect large and more profitable banks are more likely to adopt ESOPs. Large banks can use ESOPs as an incentive programs to enhance employee productivity and they also can adopt ESOPs to create an image of a responsible firm which cares about its employees. Moreover, large banks has financial sources

to afford for the cost of ESOPs implementation. It is also understandable that shareholders of a profitable bank are more generous to grant shares for the employees.

We expect that the higher net loans on total assets ratio (*NetLoan_TA*), the less likely the bank adopts ESOPs. Having high net loan ratios indicate that banks concentrate on lending to customers more than on investing in financial assets. Those banks are expected to function as retail banks. These banks provide services and financial products to consumers and business clients and particularly, they usually have a high employee turnover rate. In such environment, bank employees might not be interested in participating in ESOPs in which they have to wait for years to be able to receive full value of their stocks.

We expect equity to total asset ratio (*EQ_TA*) impacts negatively on the probability of a bank having ESOPs. In economic theory, financing by equity is more costly than using debt instruments. When a bank has a high level of equity ratio, it will has less incentive to increase its scale of equity. Then, this bank has less likely to adopt ESOPs.

We expect that banks have low degrees of default risk (*Zscore* ratio is high) are more likely to adopt ESOPs. ESOPs are usually adopted as long-term incentive schemes in which shareholders set the targets for the bank's managers in a long-term vision rather than concentrating on short-term outcomes. Moreover, bank employees have privileged information about bank performance and thus, they will only participate in ESOPs when they are optimistic about future of the bank. We compute *Zscore* ratio to measure a bank's solvability following Laeven and Levine (2009); Agusman, Dominic and Kenton (2011); Lepetit and Strobel (2013) and Lepetit and Strobel (2015). Z-score is defined as: $Zscore_{it} = (\Pi ROA + EQTA_{it})/SDROA$

Where ROA is the 3-year rolling window average return on assets defined as the ratio of net income to average total assets. EQTA represents the average ratio of equity to total assets and SDROA stands for the 3-year rolling window standard deviation of the return on assets. All the ratios are in percentages. A higher Z-score indicates that the bank is more stable, and thus, it has a lower risk of insolvability. Because Z-score is skewed, we use the natural logarithm of Z-score to measure bank's insolvency risk.

Endogeneity issues

There are previous studies providing evidence that ESOPs impacts positively and significantly on firm performance. We then use the lagged variable as an instrument for return on equity variable. In addition, we also notice that ESOPs increases scale of equity and therefore, it affects total assets of a bank. Therefore, we use the lagged variables of bank-level variables to solve

the reverse causality problem between ESOPs and variables including *size*, *equity ratio, net loan to total assets* and *Zscore*. It is clear that the ESOPs which a bank decides to adopt in 2014, cannot affect the financial performance results of that bank in 2013. Therefore, the lagged values of *size*, *return on equity ratio*, *equity on total assets ratio*, *net loans on total assets ratio* and *Zscore* are exogenous with ESOPs adoption.

Summary statistics

Table 3 provides the summary definitions, the data sources and the expected signs of the coefficients associated with the independent variable of the variables. Table 4 shows matrix of correlations between variables before and after orthogonalisation. We find that there are high correlations between *size* and *equity to total assets* and between *return on equity* and *Zscore*. Therefore, we orthogonalize *size* by *equity to total assets* and *return on equity* by *Zscore*. After orthogonalisation, the correlations between independent variables are decreased. We use orthogonalized values of *size* and *return on equity* for our regressions.

[INSERT TABLE 3]

4. Methodology

Specification to test hypotheses H1, H5a, H6a & H6b

We use logit models to investigate the impacts of supportive measures (*Global index, Legal index, Fiscal index* and *Political index*), the degree of *opacity*, *ownership concentration* and institutional characteristics on the probability of a bank to adopt an ESOP:

$$\text{Pro }\{ESOP_i = 1\} = \Phi\ (\alpha + \beta_1 * \text{SupportiveMeasures}_j + \sum_{k=2}^{6} \beta_k * \text{Control}_i$$

$$+ \beta_7 * \text{Opacity}_i + \beta_8 * \text{OwnershipConcentration}_i$$

$$+ \beta_9 * \text{Institutional}_j)$$

(1)

Where Pro $\{ESOP_i = 1\}$ denotes the probability of a bank adopting ESOPs. $ESOP_i = 1$ means that the ith bank has been adopting an ESOP in 2014.

$SupportiveMeasures_j$ represents one of a supportive measure: *Global index*, *Legal index*, *Fiscal index*, or *Political index*. Because *Legal, Fiscal* and *Political index* are three components of *Global index* and they are highly correlated, we estimate logit model by including them one by one.

$Institutional_j$ represents an institutional characteristic which is either the revised anti-director rights *(RADI)* index or the *supervisory power index* or the *individualism index* of the jth country. We use these variables to control for the institutional characteristic, therefore we estimate the model by including them one by one.

$\Phi(.)$ denotes the cumulated logistic distribution function. Maximum likelihood estimators of the coefficients (α, β_1, β_2, β_k) are used and robust Huber-White covariance matrix estimation allows for possible misspecification of the error term distribution.

Specification to test hypotheses H2; H3; H4, H5b, H7

We further analyze whether the degree of institutional characteristics (*Individualism*, *Shareholder protection (RADI)*, *Supervisory power*), *opacity* and *ownership concentration* could influence the impact of supportive measures on the probability of a bank adopting ESOPs. For this, we augment equation (1) with the interaction terms between the cluster dummy variables $High\_Institutionals_j$ and $Low\_Institutionals_j$ and supportive measures as follows:

$$\text{Pro} \{ESOP_i = 1\} = \Phi\ (\alpha + \beta_1 * \text{SupportiveMeasures}_j$$

$$+\ \beta_2 * \text{SupportiveMeasures}_j * d\_High\_Institutionals_j$$

$$+\ \beta_3 * \text{SupportiveMeasures}_j * d\_Low\_Institutionals_j$$

$$+\ \sum_{k=4}^{8} \beta_k * \text{Control}_i + \beta_9 * \text{Opacity}_i + \beta_{10} * \text{OwnershipConcentration}_i$$

$$+\ \beta_{11} * d\_High\_Institutionals_j + \beta_4 * d\_Low\_Institutionals_j).\qquad (2)$$

We cluster dummy institutional variables (*shareholder protection (RADI)*, *supervisory power* and *individualism*) by two thresholds: the high threshold($High\_Institutionals_j$) at 75th percentile and the low threshold ($Low\_Institutionals_j$) at 25th percentile. As explained in the previous parts, we expect to find that the impacts of supportive measures on ESOPs adoption are negatively influenced by *shareholder protection* and *supervisory power* but they are positively influenced by *individualism*.

We also use equation (2) by replacing dummy institutional variables with dummy *opacity* variable and dummy *ownership concentration* variable. We expect *opacity* and *ownership concentration* influence significantly the effectiveness of supportive measures.

5. Results

5.1. Effectiveness of supportive measures

The marginal effects of the estimation results for equation (1) are given in Table 5. The results show that our variables of interest, the *Global index* and each of its component (*Legal index*, *Fiscal index* and *Political index*) impacts positively and significantly (at 1% confident level) on the probability of a bank having ESOPs, in line with our *hypothesis H1*. In terms of economic significance, we find that the probability of a bank adopting ESOPs increases about 6.43% when the *Global index* increases by 1 unit. It indicates that when a country creates supportive measures to promote ESOPs implementation, it is rational and effective. The higher supportiveness from the government and social partners, the higher proportion of banks having ESOPs. A government can decide to focus on one of three supportive measures or implement all supportive measures to increase ESOPs adoption.

Results also confirm our expectation that the impact of the revised anti-director rights (*RADI*) index on ESOPs is negative and is significant at 5% confident level. When minority shareholders are easy to appoint a proxy to vote on their behalf, they might protect their stock values from share dilution by cautiously accepting ESOPs. The estimation results show that the probability of a bank adopting ESOPs decreases by 9.65% when the *RADI* index increases 1 unit. However, we find that the influences of *supervisory power* and *individualism* on ESOPs adoption are not significant.

Overall, these results show empirical evidence that the total government supportive measure and each of its components impact positively and significantly ESOPs adoption. The impact of *shareholders protection* on ESOPs adoption is negative and significant. However, *supervisory power* and *individualism* has no direct impact on the decision of a bank to adopt an ESOP.

[INSERT TABLE 5]

5.2. Supportive measures, institutional environment and ESOPs adoption

The estimation results for Equation (2) are showed in Table 6, 7, 8, 9, 10.

Our results reject the hypothesis *H2*. We find that, even the direct impact of *shareholder protection* on ESOPs adoption is negatively and significantly, *shareholder protection* has no significant impact on the relationship between the total government supportive measure (the *Global index*) and ESOPs adoption.

However, we accept the hypothesis *H3* that the *Global index* impacts positively and significantly (at 1% confidence level) on the probability of a bank adopting ESOPs but only in countries having high degrees of *supervisory power*. In countries where *supervisory power* is low, the impact of supportive measures on ESOPs adoption is insignificant.

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The results accept our hypothesis *H4* that the impact of the *Global index* on the probability of a bank adopting ESOPs is stronger in countries having higher *individualism* levels. In countries having a medium and high *individualism* degree, the impact of the *Global index* on the decision of a bank to adopt ESOPs is positive and significant. However, in a country having a collectivistic culture, the impact of the *Global index* on ESOPs adoption is insignificant.

Regarding the effect of each supportive measure, we find the impact of *fiscal measure* on ESOPs adoption is strengthened in countries having high levels of shareholder protection. The impact of *legal measure* on ESOPs adoption is only significant in an institutional environment which has medium or high level of individualism. *Political measure* only impacts significantly ESOPs adoption in countries having medium or high degrees of individualism and supervisory power.

Overall, we find that *supervisory power* and *individualism* strengthen the impact of supportive measures on ESOPs adoption. However, *shareholder protection* has no significant influence on the relationship between supportive measures and ESOPs adoption. *Fiscal measure* is more effective in countries having high levels of shareholder protection than it in countries having low levels of shareholder protection. *Legal measure* and *political measure* is more suitable for countries having high levels of individualism.

5.3. Opacity and ESOPs adoption

The results given in Table 5 show that *opacity* has no significant impact on the decision of a bank to adopt an ESOP. This result rejects the hypothesis *H5a*. We expect that in banks having high degrees of opacity, minority shareholders would have more incentive to adopt ESOPs in order to turn employees into a group of minority shareholders, since then, it help to reduce conflict of interest between bank insiders and outside minority shareholders. However, the result shows evidence that the demand of minority shareholders is not sufficient to affect the decision of a bank to adopt an ESOP.

Table 10 shows how the interaction between *opacity* and supportive measures influences a decision of a bank to adopt an ESOP. We find that the effectiveness of supportive measures is not influenced by the degree of opacity. This result rejects the hypothesis *H5B*.

Overall, we find that *opacity* has neither a direct nor an indirect impact on the decision of a bank to adopt an ESOP.

5.4. Impacts of ownership concentration

Our results in Table 5 also show evidence to support for our *hypothesis H6b* while reject the *hypothesis H6a.* We find that the higher the degree of *ownership concentration,* the lower the probability of a bank adopting ESOPs. This result is consistent with the theory explaining that in a concentrated ownership environment where conflict of interest is between majority and minority shareholders, large shareholders have less incentive to turn employees into a group of minority shareholders via ESOPs adoption. In addition, controlling shareholders also have no demand to adopt ESOPs because they can easily appoint managers who act for the benefits of the controlling shareholders. On other hand, the results given in Table 11 show that *ownership concentration* has no significant impact of the effectiveness of supportive measures. This result rejects the hypothesis *H7*.

Overall, we find that, even *ownership concentration* has a negative and significant impact on ESOPs adoption, it has no significant influence on the effectiveness of supportive measures.

Regarding the control variables, our results show that *size* and bank's solvability (*Zscore*) affect positively and significantly (at 5% confident level) on ESOPs adoption. These results indicate that large banks have more incentives and financial resources to implement ESOPs than small banks and employees in banks having low insolvency risk are more likely to participate in ESOPs than those in banks having high levels of default risk. We also find expected results for the impacts of *equity ratio* and *net loans to total assets ration* ESOPs adoption. The results support for our theory that banks having high levels of *equity ratio* have less incentive to increase scale of equity due to high financing cost. Employees in banks having high ratio of *net loans to total assets* such as those in retail banks, are not willing to participate in ESOPs due to high employee turnover rate. However, we do not observe a significant impact of *return on equity ratio* on the decision of a bank to adopt ESOPs. It rejects the idea that shareholders in more profitable banks would be more generous to give stock options to employees as a bonus.

[INSERT TABLES 6, 7, 8, 9]

6. Robustness check

We conduct several robustness checks to probe the strength of our results. We examine whether the results varies differently by year. We use data of ESOPs adoption in 2013 to re-conduct our regressions. Our main regression results are presented in Appendix I. The regression results using data of ESOPs adoption in 2013 is showed in Appendix II. Comparing those two results, we find that the impacts of supportive measures on ESOPs adoption are always positive and significant at 1 % confident level. The impacts of other variables on ESOPs adoption also are not significantly changed.

We also use an alternative opacity measurement to test our results. We re-estimate equation (1) by using a *composite opacity index* following Lepetit, Meslier and Wardhana (2017). The results of the alternative regressions are showed in Appendix III. These results also confirm that, the impact of opacity on ESOPs adoption is insignificant. Furthermore, we use alternative econometric model to test our results. We use *probit regression* instead of *logit model*. The main results from probit estimations are shown in Appendix IV. It is clear that results are robust when we use either probit or logit model.

7. Conclusion

We empirically examined the impact of the government supportive measures, opacity and ownership concentration on the probability of a bank adopting ESOPs. Furthermore, we investigate whether the effectiveness of supportive measures is shaped by institutional characteristics, opacity and ownership concentration. For this, we build of data of 111 publicly traded banks across 17 European countries and manually collected the data of ESOPs adoption of these banks in year 2014. We also use clustering approach to conduct our investigation.

Our findings show that the total government supportive measure and each of its components impact positively and significantly (at 1% confident level) ESOPs adoption.

Regarding the effectiveness of the total government supportive measure under different institutional environment, we find that even *supervisory power* and *individualism* have no direct impacts on the decision of a bank to adopt an ESOP, they help to increase the effectiveness of supportive measures. In contrast, the direct impact of *shareholders protection* on ESOPs adoption is negative and significant but it has no significant influence on the effectiveness of supportive measures. In addition, *Fiscal measure* is more effective in countries having high levels of shareholder protection than it in countries having low levels of shareholder protection. *Legal measure* and *political measure* are more suitable for countries having high levels of individualism.

The results also prove that *opacity* has neither a direct nor an indirect impact on the decision of a bank to adopt an ESOP. On other hand, *ownership concentration* has a negative and significant impact on ESOPs adoption but it has no significant influence on the effectiveness of supportive measures. We also find that banks having low *default risk* are more likely to adopt ESOPs because employees are optimistic about banks' future performance.

Our findings have critical policy implications for the European Commission. We show empirical evidence to confirm the effectiveness of the government supportive measures for the development of ESOPs. We also show that, strengthening shareholder protection and

supervisory power will help to increase ESOPs adoption. In other aspect, concentrated ownership reduces the probability of ESOPs adoption. It indicates large shareholders have less incentive to adopt ESOPs when they have power to appoint managers who act for the benefits of large shareholders. Because ESOPs help to turn employees into minority shareholders, adopting ESOPs will strengthen minority shareholders to be able to reduce the risk of expropriation. Therefore, policy makers would need to create more incentives for controlling shareholders to encourage them to adopt ESOPs. In future research, it may be worthwhile exploring mechanism that could create appropriate incentives for controlling shareholders to decide to adopt ESOPs.

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Table 1

Number of banks having ESOPs by country in 2014

	Country Name	Total number of banks	Number of banks having ESOPs	Number of banks having no ESOPs
1	AUSTRIA	6	3	3
2	BELGIUM	2	0	2
3	DENMARK	23	1	22
4	FINLAND	2	2	0
5	FRANCE	6	4	2
6	GERMANY	8	4	4
7	GREECE	5	1	4
8	IRELAND	2	0	2
9	ITALY	14	12	2
10	LUXEMBOURG	1	1	0
11	NETHERLANDS	4	4	0
12	NORWAY	1	0	1
13	PORTUGAL	2	0	2
14	SPAIN	7	5	2
15	SWEDEN	4	3	1
16	SWITZERLAND	14	13	1
17	UNITED KINGDOM	10	10	0
	Total	111	63	48

Table 2
Supportive measure indices and Institutional characteristics

		Legal index	Fiscal index	Political index	Global index	Individualism	RADI	Supervisory power
1	AUSTRIA	2	3	2	7	55	2.5	12
2	BELGIUM	2	2	1	5	75	3	11
3	DENMARK	1	0	0	1	74	4	11
4	FINLAND	1	1	0	2	63	3.5	5
5	FRANCE	2	3	2	7	71	3.5	10
6	GERMANY	2	1	2	5	67	3.5	11
7	GREECE	1	1	2	4	35	2	8
8	IRELAND	2	3	3	8	70	5	6
9	ITALY	2	2	2	6	76	2	13
10	LUXEMBOURG	1	1	0	2	60	2	13
11	NETHERLANDS	2	0	2	4	80	2.5	11
12	NORWAY	0	1	0	1	69	3.5	9
13	PORTUGAL	1	0	0	1	27	2.5	12
14	SPAIN	2	3	1	6	51	5	9
15	SWEDEN	1	0	0	1	71	3.5	4
16	SWITZERLAND	3	3	3	9	68	3	11
17	UK	3	4	3	10	89	5	7

* Global index, Legal index, Fiscal index, Political index from "The promotion of employee ownership and participation", the European Commission, Oct 2014

* Individualism following Hofstede (2001)

* RADI (shareholder protection) following Djankov. La Porta. Lopez-de-Silanes. and Shleifer et al. (2008)

* Supervisory power following "Bank regulation and supervision database" (The World Bank 2003)

Legal index measures legal framework regarding the implementation of ESOPs. The Legal index varies from 0 to 3. It equals to 0 if a country has no systematic regulation of employee financial participation programs and its general regulations neither promote nor inhibit the development of employee stock option plans. It equals 3 if a country has a systematic regulation of more than one aspects of employee stock option plans (usually tax and company law) and

Fiscal index measures tax and financial incentives for companies and employees participating in employee stock option programs. The Fiscal index varies from 0 to 4. It equals 0 if a country has no special tax incentives and its general system of taxation neither promotes nor inhibits the development of employee s. It equals 4 if a country has effective tax incentives and, additionally, other instruments of fiscal support for employee stock option programs.

Political index measures the attitude of the government and social partners regarding employee stock option programs. The Political index varies from 0 to 3. It equals to 0 if neither government nor social partners are interested in employee programs. It equals 3 if employee stock option programs is a part of social dialogue and is substantially supported by the government.

Global index = Legal index + Fiscal index + Political index

Table 3

Definition of variables and expected sign of the coefficient

Variables	Definition	Source	Expected sign of the coefficient
ESOPs	Employee Stock Ownership Plans. It is a dummy variable that equals to one if banks have adopted an ESOP and equals 0 otherwise.	Annual reports of banks	
Supportive measures			
Global Index	Global Index = Legal measure + Fiscal measure + Political measure. Global index measures the total state supportive measures to promote ESOPs.	The promotion of employee ownership and participation, the European Commission, Oct 2014	(+)
Legal index	Measuring legal framework regarding the implementation of ESOPs.		(+)
Fiscal index	Measuring tax and financial incentives for companies and employees participating in employee stock option programs.		(+)
Political index	Measuring the attitude of the government and social partners regarding employee stock option programs.		(+)
Institutional variables			
RADI	Measuring shareholder protection. It takes the value of 1 for each of these indicators: Vote by mail is allowed. Shareholders are not required to deposit hares before annual shareholders' meeting. Cumulative voting is allowed. Minority shareholders have legal mechanisms against perceived oppression by the board. Shareholders have pre-emptive rights that can be waived only by shareholders' vote. The minimum percentage of share capital that allows a shareholder to call for a special shareholders' meeting is no more than 10%.	Djankov. La Porta. Lopez-de-Silanes. and Shleifer et al. (2008)	(-)
Supervisory Power	Measuring the strength of supervisory regime. The yes/no responses to the given questions covered all aspects of the power of the banking supervisory agency. The value for each answer is either 1 or 0. A higher total value indicates wider and stronger authority for bank supervisors.	Bank regulation and supervision database (The World Bank 2003)	(-)
Individualism	Measuring the level of individualism of a country. The individualism/collectivism dichotomy personifies the distinction between collective (group-based) and individual-based decision making. When individualism is low there is priority for group effort to achieve success while when it is high there is priority for individual needs and achievements	Hofstede (2001)	(-)
Bank-level variables			

Opacity index	Calculating the natural logarithm of the average daily trading volumes during the fiscal year, and bid-ask spread as the difference of ask price and bid price over the average of bid and ask prices. Ranking each of these proxies from the value of 1 (for banks with high trading volume, or small bid-ask spread) to the value of 10 (for banks with low trading volumes, or high bid-ask spreads). Then taking the average of these two proxies to capture the opacity level of each bank, with the most transparent bank has a value of 1 and the most opaque bank has a value of 10.	Anderson, Duru and Reeb (2009).	(+)
Composite opacity index	Measuring four components of opacity: (EF) measures the disconnection between insiders' and outsiders' information about firms' financial condition by computing the analyst forecast error; (EM) measures accounting opacity and is computed by the degree of earnings management of banks; (MF) is the negative of the ratio of short term and long term market funding to total assets measuring banks' exposure to the market; (Loan) loans in total assets. Then, associating each component with the value of 1 to 10 corresponding to the decile of 1 to 10. After that, summing up four proxies, then divide it by four to scale the composite index. This index ranges from 1 to 10.	Lepetit, Meslier and Wardhana (2017)	(+)
Ownership concentration	It is computed as the sum of square of all direct shareholders' voting rights. The higher the index is, the more concentrated ownership structure.	Renneboog (2000), Goergen and Renneboog (2001	(-)
Size	Natural logarithm of Total Assets.	BankScope	(+)
Equity to total assets	Total equity divided by total assets	BankScope	(-)
Net Loans to total assets	Net loans over total asset	BankScope	(-)
ROE	Return on equity ratio	BankScope	(+)
Zscore	Measure bank's solvability. Z-score is computed by three-year moving window in estimation standard deviation of asset returns for each bank each year. A higher Z-score indicates that a bank has a lower risk of insolvability. Formula to calculate: Z-Score $= \frac{\mu_{ROA}(3)+EQ\_TA}{\delta_{ROA}(3)}$ Where $\mu_{ROA}(3)$: moving mean for 3 observations of ROA EQ_TA: current value of capital-asset ratio $\delta_{ROA}(3)$: moving standard deviation for 3 observations of ROA	Laeven and Levine (2009); Agusman, Dominic and Kenton (2011); Lepetit and Strobel (2013) and Lepetit and Strobel (2015)	(+)

Table 4: Matrix of correlations between variables before and after orthogonalisation

Panel A: Matrix of correlations between variables before orthogonalisation

	ESOP	Global index	Size	EQ_TA	ROE	Net Loans to total assets	ZScore	Opacity	Ownership Concentration	RADI	SupPower	Individualism
ESOP	1											
Global index	0.539***	1										
Size	0.368***	0.254**	1									
EQ_TA	-0.0617	0.152	-0.452***	1								
ROE	0.122	0.0619	0.00540	0.0982	1							
NetLoan_TA	-0.285**	-0.237*	-0.00600	-0.415***	-0.159	1						
ZScore	0.232*	0.171	-0.00713	0.150	0.470***	-0.0925	1					
Opacity	-0.433***	-0.296**	-0.801***	0.263**	-0.0154	0.211*	0.0102	1				
Own_Concentration	-0.0619	0.181	0.104	-0.0764	-0.0639	0.0909	0.110	0.101	1			
RADI	-0.107	0.0387	0.0730	-0.0241	0.173	0.0729	0.167	-0.0440	-0.227*	1		
SupPower	-0.0851	-0.0566	-0.280**	0.105	-0.161	-0.0513	-0.0978	0.222*	0.143	-0.547***	1	
Individualism	0.213*	0.181	-0.120	0.0882	0.132	-0.236*	0.205*	0.0107	-0.215*	0.291**	-0.0164	1

Panel B: Matrix of correlations between variables after orthogonalisation

	ESOP	Global index	Size	EQ_TA	ROE	Net Loans to total assets	ZScore	Opacity	Ownership Concentration	RADI	SupPower	Individualism
ESOP	1											
Global index	0.539***	1										
Size	0.368***	0.254**	1									
EQ_TA	0.130	0.308***	0.0363	1								
ROE	0.122	0.0619	0.00540	0.113	1							
NetLoan_TA	-0.285**	-0.237*	-0.00600	-0.468***	-0.159	1						
ZScore	0.194*	0.159	-0.0111	0.122	-0.0363	-0.0145	1					
Opacity	-0.433***	-0.296**	-0.801***	-0.140	-0.0154	0.211*	0.0203	1				
Own_Concentration	-0.0619	0.181	0.104	-0.0289	-0.0639	0.0909	0.161	0.101	1			
RADI	-0.107	0.0387	0.0730	0.0126	0.173	0.0729	0.0907	-0.0440	-0.227*	1		
SupPower	-0.0851	-0.0566	-0.280**	-0.0348	-0.161	-0.0513	-0.0193	0.222*	0.143	-0.547***	1	
Individualism	0.213*	0.181	-0.120	0.0336	0.132	-0.236*	0.157	0.0107	-0.215*	0.291**	-0.0164	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

* Panel A shows that there are high correlations between *size* and *equity to total assets* and between *return on equity* and *Zscore*. Panel B shows that after orthogonalisation, the correlations between independent variables are decreased. We use orthogonalized values of *size* and *return on equity* for our regressions.

Table 5: Marginal effects of supportive measures (Global index, Legal index, Fiscal index, Political index) on the probability of a bank adopting ESOPs

Dependent var:	Supportive index = Global index			Supportive index = Legal index			Supportive index = Fiscal index			Supportive index = Political index		
	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP
Supportive index	0.0643***	0.0639***	0.0622***	0.274***	0.276***	0.272***	0.132***	0.125***	0.122***	0.173***	0.180***	0.175***
	(0.00739)	(0.00794)	(0.00846)	(0.0335)	(0.0376)	(0.0404)	(0.0197)	(0.0211)	(0.0225)	(0.0228)	(0.0238)	(0.0255)
Size_lag1	0.116**	0.0991*	0.100*	0.126***	0.103*	0.106**	0.105*	0.0953	0.0959*	0.117**	0.107*	0.108*
	(0.0510)	(0.0566)	(0.0544)	(0.0476)	(0.0542)	(0.0515)	(0.0545)	(0.0605)	(0.0580)	(0.0547)	(0.0591)	(0.0572)
EQ_TA_lag1	-0.0867**	-0.0923**	-0.0858*	-0.0685	-0.0779	-0.0757	-0.0941**	-0.0957**	-0.0861*	-0.0778*	-0.0830*	-0.0772*
	(0.0438)	(0.0443)	(0.0449)	(0.0487)	(0.0491)	(0.0498)	(0.0440)	(0.0462)	(0.0461)	(0.0458)	(0.0458)	(0.0466)
ROE_lag1	0.0570	0.0265	0.0226	0.0532	0.0196	0.0204	0.0606	0.0303	0.0220	0.0557	0.0375	0.0316
	(0.0425)	(0.0356)	(0.0341)	(0.0437)	(0.0343)	(0.0332)	(0.0425)	(0.0364)	(0.0342)	(0.0423)	(0.0376)	(0.0366)
NetLoan_TA_lag1	-0.378**	-0.448**	-0.413**	-0.276	-0.362**	-0.351*	-0.472***	-0.541***	-0.490***	-0.340*	-0.372**	-0.344*
	(0.172)	(0.178)	(0.184)	(0.172)	(0.179)	(0.184)	(0.173)	(0.182)	(0.188)	(0.175)	(0.178)	(0.184)
ZScore_lag1	0.0961***	0.0915***	0.0853**	0.0729**	0.0771**	0.0764**	0.0998***	0.101***	0.0887**	0.118***	0.105***	0.0981***
	(0.0347)	(0.0345)	(0.0352)	(0.0345)	(0.0345)	(0.0347)	(0.0342)	(0.0363)	(0.0368)	(0.0379)	(0.0363)	(0.0376)
Opacity	-0.00944	-0.0155	-0.0162	-0.00769	-0.0146	-0.0149	-0.0123	-0.0205	-0.0206	-0.0144	-0.0181	-0.0187
	(0.0188)	(0.0208)	(0.0205)	(0.0174)	(0.0195)	(0.0194)	(0.0202)	(0.0220)	(0.0216)	(0.0211)	(0.0224)	(0.0221)
Concentration	-0.535***	-0.415**	-0.375**	-0.512***	-0.391**	-0.387**	-0.445**	-0.324*	-0.248	-0.617***	-0.535***	-0.497***
	(0.171)	(0.171)	(0.170)	(0.162)	(0.171)	(0.167)	(0.181)	(0.186)	(0.180)	(0.175)	(0.172)	(0.176)
RADI	-0.0965***			-0.0981***			-0.115***			-0.0661*		
	(0.0353)			(0.0331)			(0.0364)			(0.0367)		
SupPower		0.0024			-0.00151			0.0077			0.0029	
		(0.0152)			(0.0152)			(0.0161)			(0.0154)	
Individualism			0.0027			0.0007			0.0051			0.0020
			(0.0031)			(0.003)			(0.0035)			(0.0028)
N	111	111	111	111	111	111	111	111	111	111	111	111

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

*This table presents the marginal effects of variables on ESOPs adoption. We presents the marginal effects instead of the estimation results in order to show economic impacts of variables on ESOPs adoption. The estimation results of these regressions are presented in **Appendix I**.

Table 6: The impact of the total government supportive measure (Global index) on ESOPs under high, medium and low levels of the institutional characteristics

	Institutional = RADI	Institutional = Supervisory Power	Institutional = Individualism
Dependent variable:	ESOP	ESOP	ESOP
Global index (b1)	0.510***	0.714***	0.643***
	(2.79)	(3.99)	(3.87)
Global index * d_Institutional_High (b2)	0.167	-0.368	-0.149
	(0.65)	(-1.18)	(-0.24)
Global index * d_Institutional_Low (b3)	-0.219	-0.436*	-0.658**
	(-0.38)	(-1.74)	(-2.26)
Size_lag1	0.967*	0.834*	1.440**
	(1.77)	(1.66)	(2.41)
EQ_TA_lag1	-0.859**	-0.857**	-0.945**
	(-2.07)	(-2.02)	(-2.07)
ROE_lag1	0.573	0.267	0.630
	(1.31)	(0.76)	(1.37)
NetLoan_TA_lag1	-3.516**	-4.115**	-5.716***
	(-1.98)	(-2.29)	(-2.74)
ZScore_lag1	1.000***	0.785**	1.328***
	(2.64)	(2.32)	(3.10)
Opacity	-0.0934	-0.0743	0.00753
	(-0.47)	(-0.43)	(0.04)
Own_Concentration	-5.251***	-3.642**	-3.783**
	(-2.85)	(-2.34)	(-2.17)
d_Institutional_High	-2.315	2.892	4.341
	(-1.49)	(1.62)	(1.12)
d_Institutional_Low	2.865	3.014**	4.715***
	(0.94)	(2.01)	(2.79)
_cons	1.167	-0.453	-0.419
	(0.78)	(-0.32)	(-0.30)
N	111	111	111
b1+ b2 = 0	0.678***	0.346	0.493
	0.000602	0.191	0.412
b1 + b3 = 0	0.291	0.278	-0.0149
	0.592	0.143	0.950

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high level of an institutional characteristic when its level is >= threshold 75th percentile of all banks.
A bank having a low level of an institutional characteristic when its level < = threshold 25th percentile of all banks.
A bank having a medium level of an institutional characteristic when its level is between threshold 25th and threshold 75th percentile of all banks.

Table 7: The impact of the legal supportive measure (Legal index) on ESOPs under high, medium and low level of the institutional characteristics

	Institutional = RADI	Institutional = Supervisory Power	Institutional = Individualism
Dependent variable:	ESOP	ESOP	ESOP
Legal index (b1)	2.354***	3.143***	3.115***
	(2.98)	(3.76)	(3.84)
Legal index * d_Institutional_High (b2)	1.568	-0.982	12.01
	(1.17)	(-0.61)	(0.01)
Legal index * d_Institutional_Low (b3)	-1.041	-1.685	-3.581**
	(-0.63)	(-1.46)	(-2.50)
Size_lag1	1.302**	1.060**	1.747***
	(2.25)	(2.04)	(2.73)
EQ_TA_lag1	-0.833*	-0.737	-0.959*
	(-1.84)	(-1.52)	(-1.89)
ROE_lag1	0.601	0.242	0.646
	(1.24)	(0.63)	(1.31)
NetLoan_TA_lag1	-3.042	-3.924**	-5.666**
	(-1.58)	(-2.11)	(-2.55)
ZScore_lag1	0.949**	0.741**	1.205***
	(2.36)	(2.10)	(2.91)
Opacity	-0.0433	-0.0211	0.0355
	(-0.23)	(-0.12)	(0.18)
Own_Concentration	-6.017***	-3.750**	-4.661**
	(-2.94)	(-2.33)	(-2.46)
d_Institutional_High	-4.410*	3.357	-20.47
	(-1.67)	(1.11)	(-0.01)
d_Institutional_Low	4.086	4.515**	7.897***
	(1.38)	(2.05)	(3.02)
_cons	-0.932	-3.305*	-3.035*
	(-0.49)	(-1.72)	(-1.71)
N	111	111	111
b1+ b2 = 0	3.922***	2.162	15.13
	0.000935	0.126	0.992
b1 + b3 = 0	1.313	1.458*	-0.466
	0.359	0.0819	0.676

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high level of an institutional characteristic when its level is $>=$ threshold 75th percentile of all banks.
A bank having a low level of an institutional characteristic when its level $< =$ threshold 25th percentile of all banks.
A bank having a medium level of an institutional characteristic when its level is between threshold 25th and threshold 75th percentile of all banks.

Table 8: The impact of the fiscal supportive measure (Fiscal index) on ESOPs adoption under high, medium and low level of the institutional characteristics

	Institutional = RADI	Institutional = Supervisory Power	Institutional = Individualism
Dependent variable:	ESOP	ESOP	ESOP
Fiscal index (b1)	0.560*	0.978***	1.306***
	(1.65)	(3.31)	(3.58)
Fiscal index * d_Institutional_High (b2)	0.921*	-0.496	-0.873
	(1.69)	(-0.79)	(-1.06)
Fiscal index * d_Institutional_Low (b3)	0.675	-0.207	-1.279**
	(0.47)	(-0.40)	(-2.14)
Size_lag1	0.780	0.705	1.225**
	(1.55)	(1.51)	(2.19)
EQ_TA_lag1	-0.755*	-0.756**	-0.885**
	(-1.95)	(-2.01)	(-2.12)
ROE_lag1	0.457	0.240	0.597
	(1.10)	(0.84)	(1.42)
NetLoan_TA_lag1	-3.867**	-4.608***	-5.435***
	(-2.33)	(-2.83)	(-2.84)
ZScore_lag1	0.914***	0.823***	1.294***
	(2.58)	(2.62)	(3.16)
Opacity	-0.0382	-0.107	0.00928
	(-0.21)	(-0.63)	(0.05)
Own_Concentration	-3.905**	-2.227	-2.741*
	(-2.45)	(-1.60)	(-1.71)
d_Institutional_High	-3.387**	1.814	5.223***
	(-2.37)	(1.32)	(2.63)
d_Institutional_Low	0.399	1.189	3.406**
	(0.16)	(1.03)	(2.43)
_cons	2.489*	1.641	0.415
	(1.91)	(1.43)	(0.31)
N	111	111	111
b1+ b2 = 0	1.481***	0.482	0.433
	0.000720	0.391	0.567
b1 + b3 = 0	1.235	0.772*	0.0261
	0.376	0.0838	0.954

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high level of an institutional characteristic when its level is $>=$ threshold 75th percentile of all banks.
A bank having a low level of an institutional characteristic when its level $< =$ threshold 25th percentile of all banks.
A bank having a medium level of an institutional characteristic when its level is between threshold 25th and threshold 75th percentile of all banks.

Table 9: The impact of the Political supportive measure (Political index) on ESOPs adoption under high, medium and low level of the institutional characteristics

	Institutional = RADI	Institutional = Supervisory Power	Institutional = Individualism
Dependent variable:	ESOP	ESOP	ESOP
Political index (b1)	1.659***	2.235***	1.694***
	(3.16)	(4.10)	(3.79)
Political index * d_Institutional_High (b2)	-0.119	-1.080	13.47
	(-0.18)	(-1.25)	(0.01)
Political index * d_Institutional_Low (b3)	-8.674	-1.855**	-1.656**
	(-0.01)	(-2.54)	(-2.23)
Size_lag1	0.810	0.965*	1.438**
	(1.51)	(1.83)	(2.40)
EQ_TA_lag1	-0.784*	-0.619	-0.900**
	(-1.89)	(-1.37)	(-1.97)
ROE_lag1	0.565	0.343	0.541
	(1.34)	(0.86)	(1.13)
NetLoan_TA_lag1	-2.305	-2.514	-5.690***
	(-1.33)	(-1.40)	(-2.74)
ZScore_lag1	1.105***	0.818**	1.365***
	(2.78)	(2.12)	(3.07)
Opacity	-0.250	-0.118	-0.0152
	(-1.20)	(-0.64)	(-0.08)
Own_Concentration	-5.526***	-4.953***	-4.165**
	(-2.88)	(-2.91)	(-2.31)
d_Institutional_High	-0.851	2.588*	-23.92
	(-0.75)	(1.68)	(-0.01)
d_Institutional_Low	18.20	3.412**	4.008***
	(0.01)	(2.32)	(3.02)
_cons	1.492	-0.419	0.365
	(1.07)	(-0.29)	(0.26)
N	111	111	111
b1+ b2 = 0	1.540***	1.156	15.16
	0.00126	0.106	0.992
b1 + b3 = 0	-7.015	0.381	0.0377
	0.994	0.482	0.954

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high level of an institutional characteristic when its level is $>=$ threshold 75th percentile of all banks.
A bank having a low level of an institutional characteristic when its level $< =$ threshold 25th percentile of all banks.
A bank having a medium level of an institutional characteristic when its level is between threshold 25th and threshold 75th percentile of all banks.

Table 10
The impact of the interaction between the total supportive measure (*Global index*) and *dummy opacity* on ESOPs adoption

	(1)	(2)	(3)
Dependent variable:	ESOP	ESOP	ESOP
Global index (b1)	0.765***	0.837***	0.776***
	(3.99)	(3.98)	(3.93)
Global index * d_Opacity_High (b2)	-0.250	-0.401*	-0.351
	(-1.13)	(-1.67)	(-1.56)
Global index * d_Opacity_Low (b3)	-0.142	-0.194	-0.385
	(-0.34)	(-0.35)	(-0.71)
Size_lag1	0.803*	0.514	0.684*
	(1.95)	(1.26)	(1.73)
EQ_TA_lag1	-1.171**	-1.147**	-1.131**
	(-2.46)	(-2.42)	(-2.34)
ROE_lag1	0.541	0.252	0.321
	(1.38)	(0.85)	(0.97)
NetLoan_TA_lag1	-4.553***	-4.946***	-4.724***
	(-2.59)	(-2.86)	(-2.69)
ZScore_lag1	0.722**	0.734**	0.632*
	(2.17)	(2.25)	(1.90)
Own_Concentration	-5.000***	-3.805**	-3.785**
	(-2.90)	(-2.40)	(-2.38)
d_Opacity_High	-0.0277	0.208	0.0261
	(-0.02)	(0.15)	(0.02)
d_Opacity_Low	0.336	1.174	1.774
	(0.15)	(0.40)	(0.60)
RADI	-0.579		
	(-1.60)		
SupPower		-0.182	
		(-1.36)	
Individualism			0.0349
			(1.24)
_cons	2.366	2.019	-2.034
	(1.45)	(1.25)	(-0.90)
N	116	116	116
b1 + b2 = 0	0.515***	0.436***	0.425***
	0.000839	0.00273	0.00278
b1 + b3 = 0	0.623	0.644	0.392
	0.111	0.233	0.440

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high degree of opacity when its opacity is >= threshold 75th percentile of all banks.
A bank having a low degree of opacity when its opacity < = threshold 25th percentile of all banks.
A bank having a medium degree of opacity when its opacity is between threshold 25th and threshold 75th percentile of all banks.

Table 11

The impact of the interaction between the total supportive measure (*Global index*) and *dummy ownership concentration* on ESOPs adoption

	(1)	(2)	(3)
Dependent variable:	ESOP	ESOP	ESOP
Global index (b1)	0.691***	0.670***	0.661***
	(3.71)	(3.58)	(3.62)
Global index * d_Concentration_High (b2)	-0.0152	-0.0177	-0.0371
	(-0.05)	(-0.05)	(-0.11)
Global index * d_Concentration_Low (b3)	-0.179	-0.268	-0.271
	(-0.63)	(-0.92)	(-0.97)
Size_lag1	1.141**	0.996*	1.020**
	(2.21)	(1.95)	(2.03)
EQ_TA_lag1	-1.178**	-1.139**	-1.083**
	(-2.21)	(-2.34)	(-2.21)
ROE_lag1	0.410	0.136	0.113
	(0.98)	(0.48)	(0.40)
NetLoan_TA_lag1	-4.749**	-4.877***	-4.505**
	(-2.55)	(-2.71)	(-2.43)
ZScore_lag1	0.942**	0.741**	0.691**
	(2.37)	(2.27)	(2.08)
Opacity	-0.142	-0.159	-0.165
	(-0.81)	(-0.90)	(-0.94)
d_Concentration_H	-2.793	-2.437	-2.250
	(-1.37)	(-1.19)	(-1.10)
d_Concentration_L	0.855	0.634	0.534
	(0.55)	(0.43)	(0.37)
RADI	-0.868**		
	(-2.27)		
SupPower		-0.00455	
		(-0.03)	
Individualism			0.0207
			(0.74)
_cons	3.809**	1.264	-0.299
	(2.13)	(0.71)	(-0.12)
N	113	113	113
b1 + b2 = 0	0.676**	0.653**	0.624**
	0.0189	0.0256	0.0342
b1 + b3 = 0	0.512**	0.402*	0.389*
	0.0250	0.0585	0.0650

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A bank having a high level of ownership concentration when its ownership concentration level is >= threshold 75th percentile of all banks.
A bank having a low level of ownership concentration when its ownership concentration level < = threshold 25th percentile of all banks.
A bank having a medium level of ownership concentration when its ownership concentration level is between threshold 25th and threshold 75th percentile of all banks

Appendix I

The estimation results of the impacts of supportive measures (Global index, Legal index, Fiscal index, Political index) on the probability of a bank adopting ESOPs (**data of ESOPs adoption 2014**)

	Supportive index = Global index			Supportive index = Legal index			Supportive index = Fiscal index			Supportive index = Political index		
Dependent variable:	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP
Supportive index	0.580***	0.526***	0.517***	2.592***	2.338***	2.303***	1.078***	0.911***	0.913***	1.472***	1.479***	1.448***
	(4.64)	(4.56)	(4.42)	(4.59)	(4.44)	(4.29)	(4.30)	(4.06)	(3.90)	(4.43)	(4.47)	(4.31)
Size_lag1	1.043**	0.816*	0.833*	1.192**	0.876*	0.895*	0.857*	0.695	0.718	1.000**	0.875*	0.893*
	(2.10)	(1.67)	(1.75)	(2.39)	(1.81)	(1.93)	(1.82)	(1.52)	(1.59)	(1.99)	(1.71)	(1.79)
EQ_TA_lag1	-0.782*	-0.760*	-0.713*	-0.648	-0.659	-0.641	-0.769**	-0.698*	-0.645*	-0.663	-0.681*	-0.637
	(-1.87)	(-1.95)	(-1.81)	(-1.36)	(-1.53)	(-1.47)	(-2.00)	(-1.94)	(-1.77)	(-1.63)	(-1.73)	(-1.59)
ROE_lag1	0.515	0.219	0.188	0.504	0.166	0.173	0.495	0.221	0.165	0.475	0.308	0.261
	(1.31)	(0.74)	(0.66)	(1.20)	(0.57)	(0.61)	(1.39)	(0.82)	(0.64)	(1.29)	(0.98)	(0.85)
NetLoan_TA_lag1	-3.412**	-3.691**	-3.436**	-2.617	-3.069*	-2.977*	-3.854**	-3.950***	-3.669**	-2.896*	-3.054**	-2.835*
	(-2.05)	(-2.31)	(-2.11)	(-1.55)	(-1.91)	(-1.82)	(-2.46)	(-2.64)	(-2.38)	(-1.84)	(-1.96)	(-1.78)
ZScore_lag1	0.867**	0.754**	0.709**	0.691*	0.653**	0.647**	0.815**	0.734**	0.664**	1.004***	0.862**	0.810**
	(2.46)	(2.40)	(2.23)	(1.95)	(2.08)	(2.05)	(2.57)	(2.49)	(2.23)	(2.69)	(2.56)	(2.36)
Opacity	-0.0852	-0.128	-0.135	-0.0728	-0.124	-0.126	-0.101	-0.150	-0.154	-0.123	-0.148	-0.154
	(-0.50)	(-0.74)	(-0.78)	(-0.44)	(-0.75)	(-0.76)	(-0.61)	(-0.92)	(-0.94)	(-0.68)	(-0.80)	(-0.84)
Own_Concentration	-4.827***	-3.417**	-3.118**	-4.849***	-3.310**	-3.279**	-3.636**	-2.363*	-1.855	-5.264***	-4.390***	-4.098**
	(-2.71)	(-2.22)	(-2.05)	(-2.73)	(-2.12)	(-2.13)	(-2.25)	(-1.66)	(-1.34)	(-2.94)	(-2.70)	(-2.50)
RADI	-0.870**			-0.929***			-0.939***			-0.564*		
	(-2.48)			(-2.62)			(-2.76)			(-1.72)		
SupPower		0.0198			-0.0127			0.0565			0.0244	
		(0.16)			(-0.10)			(0.48)			(0.19)	
Individualism			0.0224			0.00659			0.0386			0.0170
			(0.85)			(0.25)			(1.42)			(0.71)
_cons	3.457**	0.728	-0.694	1.446	-0.880	-1.436	4.814***	1.470	-0.811	3.168*	1.080	0.110
	(2.13)	(0.42)	(-0.31)	(0.87)	(-0.48)	(-0.66)	(3.11)	(0.89)	(-0.35)	(1.94)	(0.62)	(0.05)
N	111	111	111	111	111	111	111	111	111	111	111	111

t statistics in parentheses
* *p* < 0.1, ** *p* < 0.05, *** *p* < 0.01

Appendix II

The estimation results of the impacts of supportive measures (Global index, Legal index, Fiscal index, Political index)
on the probability of a bank adopting ESOPs (**data of ESOPs adoption 2013**)

Dependent variable:	Supportive index = Global index			Supportive index = Legal index			Supportive index = Fiscal index			Supportive index = Political index		
	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP
Supportive index	0.547***	0.495***	0.488***	2.640***	2.266***	2.207***	1.022***	0.859***	0.868***	1.380***	1.408***	1.360***
	(4.61)	(4.52)	(4.37)	(4.58)	(4.47)	(4.32)	(4.31)	(4.07)	(3.94)	(4.28)	(4.32)	(4.18)
Size_lag1	0.7843*	0.448	0.485	0.989*	0.527	0.562	0.504*	0.229	0.285	0.867*	0.703	0.744
	(1.56)	(0.91)	(0.99)	(1.89)	(1.06)	(1.16)	(1.07)	(0.49)	(0.61)	(1.66)	(1.35)	(1.44)
EQ_TA_lag1	-0.785*	-0.655*	-0.581	-0.759	-0.574	-0.539	-0.763*	-0.605*	-0.514	-0.642	-0.607	-0.536
	(-1.88)	(-1.72)	(-1.48)	(-1.61)	(-1.36)	(-1.24)	(-1.95)	(-1.70)	(-1.41)	(-1.61)	(-1.58)	(-1.34)
ROE_lag1	0.320	0.143	0.160	0.347	0.125	0.154	0.267	0.114	0.120	0.313	0.203	0.210
	(1.26)	(0.58)	(0.65)	(1.29)	(0.49)	(0.62)	(1.08)	(0.48)	(0.49)	(1.28)	(0.84)	(0.88)
NetLoan_TA_lag1	-3.201*	-2.963*	-2.348	-2.509	-2.353	-2.054	-3.501**	-3.189**	-2.501	-2.847*	-2.814*	-2.271
	(-1.95)	(-1.90)	(-1.41)	(-1.46)	(-1.45)	(-1.20)	(-2.24)	(-2.17)	(-1.60)	(-1.81)	(-1.80)	(-1.38)
ZScore_lag1	0.337**	0.283**	0.175	0.177	0.202**	0.152*	0.345**	0.272**	0.158	0.432**	0.396*	0.279
	(1.52)	(1.23)	(0.70)	(0.74)	(0.79)	(0.58)	(1.62)	(1.22)	(0.65)	(1.97)	(1.77)	(1.18)
Opacity	-0.148	-0.245	-0.264	-0.130	-0.238	-0.251	-0.215	-0.318*	-0.323	-0.120	-0.168	-0.189
	(-0.73)	(-1.20)	(-1.26)	(-0.64)	(-1.18)	(-1.22)	(-1.13)	(-1.66)	(-1.63)	(-0.56)	(-0.77)	(-0.86)
Own_Concentration	-3.715**	-2.213	-2.058	-4.294**	-2.278	-2.270	-2.358	-1.006	-0.752	-4.067**	-3.326**	-3.175**
	(-2.19)	(-1.50)	(-1.42)	(-2.40)	(-1.55)	(-1.57)	(-1.53)	(-0.75)	(-0.58)	(-2.38)	(-2.10)	(-2.00)
RADI	-0.765**			-0.917***			-0.839***			-0.427		
	(-2.35)			(-2.64)			(-2.63)			(-1.40)		
SupPower		-0.0189			-0.0394			0.0185			-0.0376	
		(-0.15)			(-0.30)			(0.15)			(-0.29)	
Individualism			0.0287			0.0137			0.0402			0.0224
			(1.09)			(0.54)			(1.52)			(0.91)
_cons	3.486**	1.484	-0.828	1.653	-0.266	-1.559	4.984***	2.393	-0.511	2.766*	1.773	-0.210
	(2.10)	(0.86)	(-0.35)	(0.96)	(-0.14)	(-0.69)	(3.17)	(1.43)	(-0.22)	(1.67)	(1.01)	(-0.09)
N	111	111	111	111	111	111	111	111	111	111	111	111

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The impacts of supportive measures (Global index, Legal index, Fiscal index, Political index)
on the probability of a bank adopting ESOPs (**Using *composite opacity index***)

Dependent variable: ESOP												
	Supportive index = Global index			Supportive index = Legal index			Supportive index = Fiscal index			Supportive index = Political index		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Supportive index	0.497***	0.467***	0.453***	2.320***	2.178***	2.031***	0.949***	0.787***	0.835***	1.274***	1.355***	1.255***
	(4.44)	(4.25)	(4.08)	(4.43)	(4.14)	(3.94)	(4.14)	(3.81)	(3.75)	(4.06)	(4.12)	(3.91)
Size	0.302**	0.258**	0.292**	0.338**	0.263**	0.300**	0.275**	0.257**	0.284**	0.318***	0.283**	0.323***
	(2.38)	(2.18)	(2.46)	(2.55)	(2.15)	(2.51)	(2.30)	(2.33)	(2.52)	(2.66)	(2.39)	(2.73)
ROE_lag1	-0.0798	-0.768	-0.355	0.224	-0.862	-0.466	-0.101	-0.678	-0.364	-0.412	-0.966	-0.465
	(-0.05)	(-0.50)	(-0.22)	(0.14)	(-0.52)	(-0.28)	(-0.07)	(-0.45)	(-0.23)	(-0.28)	(-0.64)	(-0.30)
Zscore_lag1	0.360**	0.330*	0.248	0.256	0.293	0.250	0.345**	0.302*	0.217	0.443**	0.441**	0.326*
	(1.97)	(1.81)	(1.25)	(1.30)	(1.45)	(1.20)	(1.98)	(1.72)	(1.10)	(2.38)	(2.35)	(1.68)
HERF	-3.688**	-2.613*	-2.718**	-3.930**	-2.563*	-2.741**	-2.976**	-1.834	-1.858	-3.918***	-3.378**	-3.468**
	(-2.42)	(-1.92)	(-2.02)	(-2.57)	(-1.92)	(-2.05)	(-2.00)	(-1.42)	(-1.47)	(-2.64)	(-2.40)	(-2.43)
Composite Opacity index	-0.228	-0.265	-0.347	-0.191	-0.244	-0.280	-0.252	-0.298	-0.404*	-0.225	-0.233	-0.304
	(-0.92)	(-1.13)	(-1.40)	(-0.73)	(-1.00)	(-1.13)	(-1.06)	(-1.39)	(-1.72)	(-0.96)	(-1.01)	(-1.26)
RADI	-0.684**			-0.763**			-0.813***			-0.366		
	(-2.19)			(-2.36)			(-2.58)			(-1.23)		
SupPower		-0.0572			-0.0967			-0.000526			-0.0943	
		(-0.47)			(-0.77)			(-0.00)			(-0.74)	
Individualism			0.0383			0.0192			0.0562**			0.0284
			(1.53)			(0.78)			(2.06)			(1.25)
_cons	-4.165	-4.892	-7.847**	-6.010*	-6.153*	-8.469**	-2.421	-4.403	-7.902**	-5.167*	-4.996*	-7.624**
	(-1.42)	(-1.63)	(-2.43)	(-1.92)	(-1.93)	(-2.56)	(-0.86)	(-1.57)	(-2.46)	(-1.85)	(-1.68)	(-2.51)
N	95	95	95	95	95	95	95	95	95	95	95	95

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

We use a *composite opacity index* following Lepetit, Meslier and Wardhana (2017) instead of *opacity index* following Anderson, Duru and Reeb (2009) to test the robustness of our results. This composite opacity index measurs four components of opacity: (EF) measures the disconnection between insiders' and outsiders' information about firms' financial condition by computing the analyst forecast error; (EM) measures accounting opacity and is computed by the degree of earnings management of banks; (MF) is the negative of the ratio of short term and long term market funding to total assets measuring banks' exposure to the market; (Loan) loans in total assets. Then, associating each component with the value of 1 to 10 corresponding to the decile of 1 to 10. After that, summing up four proxies, then divide it by four to scale the composite index. This index ranges from 1 to 10. This results also show that opacity has an insignificant impact on ESOPs adoption.

Appendix IV
The impacts of supportive measures (Global index, Legal index, Fiscal index, Political index)
on the probability of a bank adopting ESOPs (Using probit estimation)

	Supportive index = Global index			Supportive index = Legal index			Supportive index = Fiscal index			Supportive index = Political index		
Dependent variable:	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP	ESOP
Supportive index	0.341***	0.312***	0.305***	1.493***	1.360***	1.342***	0.627***	0.537***	0.538***	0.857***	0.831***	0.808***
	(4.95)	(4.82)	(4.64)	(4.97)	(4.74)	(4.53)	(4.58)	(4.20)	(4.05)	(4.76)	(4.85)	(4.61)
Size_lag1	0.612**	0.502*	0.511*	0.699**	0.542**	0.558**	0.492*	0.422	0.438*	0.607**	0.542*	0.542**
	(2.16)	(1.82)	(1.90)	(2.46)	(1.96)	(2.08)	(1.82)	(1.59)	(1.68)	(2.15)	(1.94)	(1.98)
EQ_TA_lag1	-0.468*	-0.467**	-0.438*	-0.384	-0.392	-0.385	-0.453*	-0.424*	-0.391*	-0.396	-0.405*	-0.379
	(-1.88)	(-1.98)	(-1.83)	(-1.42)	(-1.56)	(-1.51)	(-1.96)	(-1.92)	(-1.75)	(-1.64)	(-1.73)	(-1.60)
ROE_lag1	0.286	0.132	0.109	0.253	0.0876	0.0943	0.276	0.134	0.0908	0.278	0.180	0.151
	(1.25)	(0.77)	(0.66)	(1.07)	(0.53)	(0.58)	(1.31)	(0.84)	(0.59)	(1.29)	(1.02)	(0.89)
NetLoan_TA_lag1	-2.031**	-2.248**	-2.132**	-1.511	-1.863**	-1.824*	-2.295**	-2.382***	-2.248**	-1.745*	-1.902**	-1.823**
	(-2.12)	(-2.41)	(-2.25)	(-1.57)	(-2.01)	(-1.95)	(-2.49)	(-2.69)	(-2.48)	(-1.91)	(-2.12)	(-2.00)
ZScore_lag1	0.507***	0.448**	0.429**	0.408**	0.365**	0.367**	0.473***	0.419**	0.387**	0.595***	0.528***	0.504***
	(2.61)	(2.53)	(2.38)	(2.08)	(2.06)	(2.06)	(2.61)	(2.50)	(2.27)	(2.94)	(2.83)	(2.65)
Opacity	-0.0541	-0.0666	-0.0686	-0.0381	-0.0595	-0.0586	-0.0677	-0.0820	-0.0850	-0.0648	-0.0711	-0.0731
	(-0.56)	(-0.70)	(-0.73)	(-0.40)	(-0.63)	(-0.62)	(-0.70)	(-0.87)	(-0.91)	(-0.66)	(-0.74)	(-0.76)
Own_Concentration	-2.761***	-2.077**	-1.887**	-2.782***	-1.941**	-1.959**	-2.042**	-1.440*	-1.110	-3.116***	-2.583***	-2.378**
	(-2.89)	(-2.35)	(-2.15)	(-2.84)	(-2.18)	(-2.18)	(-2.35)	(-1.76)	(-1.38)	(-3.08)	(-2.77)	(-2.56)
RADI	-0.491**			-0.528***			-0.533***			-0.347*		
	(-2.54)			(-2.70)			(-2.86)			(-1.89)		
SupPower		0.0139			-0.0143			0.0347			0.0218	
		(0.20)			(-0.20)			(0.51)			(0.32)	
Individualism			0.0119			0.00161			0.0219			0.00888
			(0.82)			(0.11)			(1.50)			(0.64)
_cons	1.971**	0.391	-0.319	0.783	-0.463	-0.708	2.811***	0.847	-0.403	1.908**	0.577	0.168
	(2.16)	(0.40)	(-0.26)	(0.82)	(-0.44)	(-0.59)	(3.21)	(0.88)	(-0.32)	(2.09)	(0.59)	(0.14)
N	111	111	111	111	111	111	111	111	111	111	111	111

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$