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# DETERMINANTS OF BANK MARKET VALUATION: A REVIEW OF THE LITERATURE

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**Purpose:** Well-functioning banks are essential for the proper development of any economy. In addition, with the development of capital markets, capitalisation has been growing on local stock exchanges. However, the number of listed banks is still limited. These observations make it important to isolate the factors that shape market valuation of banks. This paper reviews the empirical literature on market valuation of banks and classifies the determinants of valuation.
**Design/methodology/approach:** Review of the literature based on an analysis of 30 publications on the market valuation of banks.
**Findings:** The factors that affect bank market valuation can be divided into a number of categories. The first category focuses on the connections between market value and financial aspects of banks. The relationship between the components of bank corporate governance and market valuation is discussed in the second group. We can distinguish between elements relating to boards, ownership structure, and other corporate governance elements in this group. The final section of the literature focuses on external variables that are unrelated to specific bank choices. Additionally, it is clear that Tobin's Q and MTB ratio serve as the two primary indicators of bank market valuation.
**Research limitations/implications**: There are not many research looking at the factors that affect the market value of banks in emerging markets. A study of the market value of banks from these economies could be an important issue for future research.
**Practical implications:** Knowing the elements that influence the market value of banks may be useful for investors considering investing in bank shares**.**
**Originality/value:** This literature review focuses on isolating external and internal factors that the empirical literature has examined in the context of bank market valuation. This allows us to capture a potential research gap in this topic.

**Keywords:** banking; market value of bank, literature review.

**Category of the paper:** literature review.

## 1. Introduction

A number of studies has examined the market valuation of publicly traded non-financial institutions (Boubakri et al., 2018; Ferris, Park, 2015; Gunasekarage et al., 2007). Research focused on market valuation of banks is still limited. With the development of capital markets, more and more companies are listed on stock exchanges, but the number of listed banks is still limited. The market value of a bank may be helpful in determining whether investors are willing to invest in it (Vo 2017), so it is important to isolate factors that determine a valuation.

This review of the literature lists the most relevant publications on the market value of banks and classifies valuation determinants. There have been no similar literature reviews found, ensuring the originality of this work. Identified factors shaping the market value of banks fall into several categories.

The first group focuses broadly on bank financial variables and market value. Financial variables are seen as indicators based on the financial statement of banks. The second group of papers investigates the effect of various corporate governance elements on market valuation of banks. Some of these papers are on board-related indicators, including CEOs. Another body of corporate governance literature focuses on the type of the major shareholder and ownership concentration One of the analyzed studies examines the role of shareholder protection laws in shaping bank market value. Corporate governance research also includes elements unrelated to ownership structure or boards. These elements are bank sustainability reports, intellectual capital components and Environmental, Social and Corporate Governance (ESG) activities. The last group of papers studies external determinants, which are not influenced by financial or corporate governance variables: the role of institutional reforms and the effect of policy uncertainty. In most studies cited in this review, the market value of a bank is measured using the Tobin's Q ratio, the market-to-book ratio, or both. Analyzed studies employ a single-country, cross-country or a regional analyse.

## 2. Bank financial variables and market valuation

In the banking literature, a substantial amount of effort has been devoted to the determination of the relationship between market valuation and bank financial variables. A frequently discussed topic is the impact of different types of diversification on valuation. Researchers often consider a diversification of revenue (Baele et al., 2007; Elsas et al., 2010; Guerry, Wallmeier, 2017; Sawada, 2013; Vo, 2017) or geographical diversification (Yildirim, Efthyvoulou, 2018). Another set of studies based on bank financial indicators examines the relationship between loan growth rate and market value (Hoang et al., 2020; Niu, 2016). A less

frequently discussed topic is the effect of bank size (Avramidis et al., 2018; Sakawa et al., 2020) and association of market value with efficiency (Fu et al., 2014), market power (Fang et al., 2014) and market discipline (Haq et al., 2019).

Revenue diversification is often examined on the basis of single-country dataset. Vo (2017) checks the relationship between revenue diversification and the market value of Vietnamese commercial banks over the period 2006-2013. Market valuation is measured by Tobin's Q ratio and market-to-book ratio. The results show a negative relationship between bank diversification strategy and stock market valuation. This implies that investors prefer banks that focus on traditional activities. At the same time, additional research reveals that investors prefer diversification of large banks. Sawada (2013) conducts very similar research on Japanese banking sector. Market valuation is measured by the same indicators as Vo (2017) uses. The sample includes 113 publicly traded banks and bank holding companies from Japan over the period 1999-2011. In contrast to Vo (2017) research, Sawada (2013) shows that higher degree of revenue diversification is related to a higher valuation. A positive effect of revenue diversification on valuation is stronger for bank holding companies than for independent banking organizations. Guerry and Wallmeier (2017) examine the effect of income diversification on bank valuation using a much larger sample of banks from 35 countries. The sample covers the period 1998-2012 and includes banks of various types: commercial banks, bank holdings & holding companies, investment banks, cooperative banks, savings banks, and real estate & mortgage banks. The main dependent variable is Tobin' Q ratio. As an alternative measure of valuation authors use a market-to-book ratio. The results depend on the subperiod. In the first subperiod 1998-2006, a higher diversification measure affects valuation negatively. On the contrary, during subperiod 2007-2013, there is a positive link between income diversification and market value. The authors consider the results for regional differences between the US, Europe and Japan. They find a diversification discount in all three regions.

Laeven and Levin (2007) use measures of diversification based on asset diversity and income diversity. As a measure of market valuation they use an excess value which is the difference between actual Tobin's Q and activity-adjusted Tobin's Q. They use a large sample of financial conglomerates from 43 countries over the period 1998-2002. The results indicate that both income and asset diversity are negatively linked to excess value. This means that financial conglomerates that engage in multiple activities are being valued lower than those that focus on individual activities. Fang et al. (2014) capture diversification in two dimensions. Using the sample of banks from Central European countries over the period 1997-2008, they show that both loan and asset diversification are negatively associated with Tobin's Q. Baele et al. (2007) introduce more than two measures of diversification. The main aim of the research is to analyze long-term performance of banks using Tobin's Q ratio. Baele et al. (2007) use four measures of diversification based on loans, assets, non-interest income and total operating income. The dataset covers 143 banks from 17 European countries over the period

1989-2004. As a measure of a long-term performance Baele et al. (2007) use a modified version of Tobin's Q. Results show that a higher share of non-interest income in total income enhances long-term profitability measured by Tobin's Q ratio. Revenue diversification may affect market valuation indirectly. Elsas et al. (2010) examine a relationship between revenue diversification and market valuation on the sample that covers 380 large banks from nine developed countries over the period 1996 – 2008. They show that there is no significant relationship between diversification and valuation measured by market-to-book-ratio. To overcome this issue, Elsas et al. (2010) consider a spread, which is the difference between return of assets and cost of equity. Revenue diversification enhances spread. Spread has a strong, positive effect on market valuation and, in consequence revenue diversification increases bank market valuation. This result is robust for alternatives measures of diversification and for alternative subsamples.

In some studies, diversification refers to a number of subsidiaries. Yildirim and Efthyvoulou (2018) consider the impact of geographic diversification on market valuation of banks. Three measures of geographic diversification are used: inter-regional diversification, intra-regional diversification and the sum of these two. Inter-regional diversification refers to a diversification across different regions. Intra-regional diversification refers to a diversification within a single region, where the bank is already present. Yildirim and Efthyvoulou (2018) examine 160 largest banks across the world over the period 2004 – 2013, originating from both developed and emerging countries. The main measure of market valuation is Tobin's Q. For robustness test, they use market-to-book ratio. Two key results emerge for Tobin's Q as a dependent variable. Firstly, geographic diversification is positively linked to market valuation for banks from emerging markets, but not for banks from developed markets. Secondly, while higher levels of intra-regional diversification improve market valuation, higher levels of inter-regional diversification have a negative effect on the valuation of banks from emerging markets. The results for market-to-book-ratio support earlier findings. Chahine (2007) considers the diversity of activities conducted by commercial banks as a diversification measure. The main explanatory variable is an activity-based diversification index, which equals to the total number of activities as reported by commercial banks in their annual reports. The sample includes 41 banks from countries belonging to the Gulf Cooperation Council over the period 2002 – 2004. Unlike other studies, Chahine (2007) uses price-to-book and price-to-earnings as measures of bank valuation. The findings show a positive effect of activity-based diversification index on both prices-to-book and price-to-earnings indexes.

In the banking literature, a loan growth rate is also a topic addressed in relation to market valuation. Niu (2016) examines the relationship between loan growth rate and market valuation. The sample includes 632 bank holding companies from US in the period 2002 – 2013. Niu (2016) uses Tobin's Q ratio and market-to-book-ratio as measures of valuation. The results suggest that faster loan growth is associated with higher measures of market value. When the main sample is divided into size groups, there is a positive relationship between loan growth rate and market value at small and medium banks, but not at large banks. Niu (2016) checks

whether the positive relation between loan growth and valuation holds under different market conditions. To do this, Niu (2016) divides the sample period into three periods: before crisis, during the crisis, and after crisis. The outcomes reveals that faster loan growth is related to higher market valuation in each period. The effect of loan growth on market valuation is also studied on a smaller sample of bank from one country. Hoang et al. (2020) focus on eight commercial banks from Vietnam over the period 2012-2019. As a proxy of bank valuation, Tobin's ratio is used. The results show that faster loan growth rate enhances the Tobin's Q ratio. Further investigation indicates that a positive link between loan growth and Tobin's Q exists in private and small banks, but the relationship is not significant in state-owned and large banks.

Another factor examined in the context of market valuation is bank size. Sakawa et al. (2020) check whether the valuation of large Japanese commercial banks is negatively associated with their size, as is the case with US banks. The authors focus on Japanese "too-big-to-fail" banks. "Too-big-to-fail-banks" are defined as banks that have an impact on national economic system and whose failure could result in a financial crisis. The sample includes 135 publicly listed banks over the period 1987-2017. To examine the relationship between size and market valuation, the pre-crisis period 1987-2006 is compared with the entire period 1987-2017. Market valuation is measured by Tobin's Q ratio and market-to-book ratio. The findings suggest that market valuation of Japanese "too-big-to-fail" banks is not significantly related to their size, both during the pre-crisis period 1987-2006 and over the entire period of 1987-2017. The effect of bank size on market value may be non-linear. In bank holding companies from US over the period 2001-2015 the relationship between bank size and Tobin's Q is inverse-U shaped (Avramidis et al., 2018).

Bank-specific factors which affects bank market valuation are market power (Fang et al., 2014) and efficiency (Fu et al., 2014). Market value is also used to estimate a charter value of bank (Haq et al., 2019). Fang et al. (2014) examine the role of market power in shaping market valuation in 68 banks from Central and Eastern European countries over the period 1997-2008. Market power is measured at the individual bank level by the Lerner index. The findings reveal that higher degree of market power significantly enhances Tobin's Q of banks. Fu et al. (2014) examine profit and cost efficiency of 688 commercial banks from 12 Asia-Pacific economies over the period 2003-2010. Two dependent market-based variables are used: Tobin's Q ratio and market-to-book ratio. The results suggest that market valuation is positively linked to improvements in both cost and profit efficiency. The results remain very similar for market-to-book ratio. Haq et al. (2019) study the link between a charter value and market discipline. The charter value is estimated by Tobin's Q ratio. Haq et al. (2019) use deposit growth, subordinated debt and interbank deposits as a market discipline. The sample includes 16 domestic banks from Australia and Canada over the period 1995-2011. On average, market discipline increases the charter value. The shape of this relationship depends on bank specific characteristics like bank capital, contingent liabilities, fee income and the Global Financial Crisis (GFC). Interbank deposits enhance charter value when banks have higher bank capital.

A higher fee-based income reduces charter value. In addition, a positive relation between market discipline and bank charter value is weaker in the post-GFC period.

The opacity of banks in the post-crisis period became an increasingly popular topic. Zheng and Wu (2023) define bank opacity as the degree of uninformativeness in the evaluation of bank asset quality. Using a sample of bank holding companies in the United States, authors find a negative relationship between opacity and valuation during the 2007-2009 crisis.

Some studies consider multiple financial factors in order to isolate those which influence bank market value. Simoens and Vennet (2021) investigate the determinants of the market-to-book ratios of 112 European and US banks over the period 2007-2017. Several key conclusions emerge from the study. For the entire sample, the most important driver of market value is profitability. Higher bank profitability increases market-to-book ratio of European and US banks. For European banks, a higher share of non-performing loans reduces bank market valuation. For both European and US banks, adequate provisioning of loan losses is positively linked with bank market value. Simoens and Vennet (2021) find a negative relationship between low policy rates and market value of banks from European markets. Table 1 provides a summary of papers that are presented in this section.

**Table 1.**
*Comparison of the studies based on the financial indicators of banks*

| Authors | Topic | Country | Sample size | Period |
|---|---|---|---|---|
| Vo, 2017 | Diversification and market valuation | Vietnam | all banks listed on the Ho Chi Minh City stock exchange | 2006-2014 |
| Sawada, 2013 | Diversification and market valuation | Japan | 113 bank and bank holding companies | 1999-2011 |
| Guerry, Wallmeier, 2017 | Diversification and market valuation | 35 countries | 18221 bank-year observations | 1998-2012 |
| Laeven, Levin, 2007 | Diversification and market valuation | 43 countries | 3415 bank-year observations | 1998-2002 |
| Fang et al., 2014 | Diversification and market valuation | 11 Central and Eastern European countries | 68 banks | 1997-2008 |
| Baele et al., 2007 | Diversification and market valuation | EU15 countries, Norway, Switzerland | 255 banks | 1989-2004 |
| Elsas et al., 2010 | Diversification and market valuation | Canada, France, Germany, Italy, UK, USA, Spain and Switzerland | 380 banks | 1996-2008 |
| Yildirim, Efthyvoulou, 2018 | Diversification and market valuation | 56 countries | 160 banks | 2004-2013 |
| Chaine, 2007 | Diversification and market valuation | Gulf Co-Operation Council countries | 41 banks | 2002-2004 |
| Niu, 2016 | Loan growth and market valuation | US | 632 bank holding companies | 2002-2013 |
| Hoang et al., 2020 | Loan growth and market valuation | Vietnam | 8 banks | 2012-2019 |

Cont. table 1.

| | | | | |
|---|---|---|---|---|
| Sakawa et al., 2020 | Bank size and market valuation | Japan | 135 banks | 1987-2017 |
| Avramidis et al., 2018 | Bank size and market valuation | US | Bank holdings companies listed on NYSE, AMEX and NASDAQ | 2001-2015 |
| Haq et al., 2019 | Market discipline and market valuation | Australia and Canada | 16 banks | 1995-2011 |
| Fu et al., 2014 | Efficiency and market valuation | 12 Asia-Pacific countries | 688 banks | 2003-2010 |
| Simoens and Vennet, 2021 | Determinants of bank market valuation | 16 European countries and US | 112 banks | 2007-2017 |

Source: Author's own study.

## 3. Corporate governance elements and market value

In recent years, bank corporate governance mechanism have been become increasingly important for the proper functioning of economic systems (Andries et al., 2018). Market valuation of banks has been started to be analyzed in a relation with numerous elements of corporate governance elements. Corporate governance studies focus on the link between board-related factors, including CEOs. and market value of banks (Alharbi et al., 2002; Arouri et al., 2014; Belkhir, 2009; Elnahass et al., 2022; Ghosh, 2017; Onali et al., 2016; O'Sullivan et al., 2016; Zulkafali, Samad, 2007). The second topic discussed in the banking literature is the effect of ownership structure on market valuation (Arouri et al., 2014; Busta et al., 2012; Caprio et al., 2007; Zulkafali, Samad, 2007). In addition to these two areas, studies investigate the role of corporate governance elements that are neither related to boards nor ownership structure (Azmi et al., 2021; Carnevale, Mazzuca, 2014; Nsour et al., 2021).

### 3.1. Boards and CEOs

The existing body of the literature tends to focus on the relationship between boards traits and bank profitability measured by ROA (Farag, Mallin, 2017; Chen, Ebrahim, 2018; Kick et al., 2017; Sarkar et al., 2019). There are fewer studies on the market value of banks. The literature on the banking corporate governance investigates whether gender of board members is linked to market valuation of banks. Alharbi et al. (2002) use a sample of 153 banks for the period 2007-2017 for 12 developing countries. Alharbi et al. (2002) employ a Tobin's Q ratio as a measure of market value. The results show that the presence of women directors on the board increases market value. Alharbi et al. (2002) show evidence that women as independent members are positively linked to market value, whereas women acting as a chairperson have no association with market value. Ghosh (2017) checks whether gender diversity impacts bank profitability measured by Tobin's Q. The sample includes 40 banks from

India over the period 2003-2012. Ghosh (2017) considers the share of women directors on the board and cases woman as CEO. In addition, Ghosh (2017) divides females directors into executives and non-executives, to determine which category matters for bank valuation. The results suggest that the presence of women directors does not have a significant relationship with market valuation. These findings remain unchanged when executive members are compared to non-executive.

Authors usually consider more board-related traits than gender. Zulkafali and Samad (2007) employ a dataset based on 107 banks from nine Asian emerging markets in 2004. They use market value measured by Tobin's ratio to determine bank corporate profitability. As board variables, they use CEO duality, board independence and board size. The findings suggest that the number of independent directors on the board and CEO duality do not affect Tobin's. CEO duality has no significant relationship with Tobin's Q but it is negatively related with ROA. Finally, board size has no significant relationship with either Tobin's Q or ROA. Elnahass et al. (2022) construct a complex board index to check whether compensation schemes of boards affect stock market valuation. Board compensation is measured as the level of total compensation which includes directors' annual salaries, meeting and committee fees, bonuses and in-kind benefits. Elnahass et al. (2022) employ a sample of 27 Islamic banks and 43 conventional banks from 11 countries over the period 2010-2015. Unlike the research of other authors, Elnahass et al. (2022) use a market capitalization to measure bank market value. Results indicate that higher director compensation is significantly and positively valued by the market. For Islamic banks, there is an insignificant relationship between board compensation and market capitalization. For conventional banks, Elnahass et al. (2022) find a positive association between board compensation and bank value. The authors test the effect of bank age by comparing matured banks with young banks. In case of conventional banks, the effect of board compensation on market valuation is the same in both young and matured banks. For Islamic banks, there is a positive relation between board compensation and bank value in young banks, but not in matured ones.

Studies on links between board characteristics and market value are also conducted for banks from the Gulf Cooperation Council (GCC) and for bank holding companies from US. Arouri et al. (2014) explore the effect of board composition on bank market valuation measured by Tobin's Q and market-to-book-ratio, using a sample of 68 listed banks from GCC countries in 2010. Board-related variables include board size and CEO duality. Board size and CEO duality do not have a significant effect on bank value, which implies that bank boards in GCC countries are not be an effective mechanism to ensure better corporate governance. O'Sullivan et al. (2016) examine the relationship between board characteristics and market valuation of 150 US bank holding companies over the period 1999-2009. The authors consider the following board traits: CEO tenure, average of the tenure of each board member (BOD tenure), CEO duality, board size and the proportion of outsiders on the board. The outcomes imply that a larger board increases Tobin's Q. Both CEO tenure and BOD tenure have a positive effect on

market value. An event when the CEO is the chair of the board (CEO duality) does not affect Tobin's Q. O'Sullivan et al. (2016) test whether the effect of board characteristics on Tobin's Q is different during the crisis period. While a larger board enhances the market value of bank holding companies during the normal times, the link becomes negative. The explanation of this result is that large boards are unable to respond quickly to bank problems. The proportion of outsiders, CEO duality, CEO tenure and BOD tenure have no effect on Tobin's during the crisis.

In presented papers, the board size is one of the many factors studied. In some research, the board size is the main topic. Belkhir (2009) investigates the relationship between board size and market profitability measured by Tobin's Q in US banking organizations: bank holding companies and savings-and-loan holding companies over the period 1995-2002. Belkhir (2009) finds that larger boards improve market valuation. The relation between board size and market profitability is similar in both bank holding companies and savings-and-loan holding companies. Some authors focus on the role of CEOs. Onali et al. (2016) consider the role of CEOs in shaping the market value of banks. Their study sample includes 109 banks from 15 EU countries over the period 2005-2013. Onali et al. (2016) examine CEO power, which consists of factors such as the equity stake of the CEO in the bank, CEO unforced turnover and CEO tenure. Market value of banks is measure by Tobin's Q ratio and market-to-book ratio. Results indicate that CEO ownership decreases current market value and the market value of the next year. For unforced CEO turnover there is a small, positive effect on the current market value and future valuation up to one year. Longer CEO tenure is associated with lower present and future market value.

### 3.2. Ownership structure

Another element of corporate governance is the ownership structure of banks. Busta et al. (2012) examine the relationhip between ownership concentration and market value of banks. In addition, they study the role of the institutional environment in shaping this relationship. The sample consists of 358 commercial banks from 17 Western European countries over a period 1993-2005. To investigate whether the relationship between ownership concentration and market value is influenced by the institutional environment, Busta et al. (2012) specify four dummy variables corresponding to the main legal origins including the French, English, German and Scandinavian systems. The results indicate that a higher level of ownership concentration is associated with lower market value measured by Tobin's Q. When sub-sampling is considered, higher ownership concentration results in a lower bank valuation particularly in countries from the German legal family, while the effect of ownership concentration on valuation is positive in Scandinavian countries.

Zulkafali and Samad (2007) examine the effect of ownership concentration and type of major shareholder on market value measured by Tobin's Q. The sample includes 107 banks from seven Asian countries in 2004. The findings show that a higher level of ownership concentration is negatively related to Tobin's. When an origin of shareholder is considered,

the presence of both foreign and government investors decreases market valuation. Onali et al. (2016) consider a type of a major shareholder as well. Using the sample of 109 banks from 15 EU countries over the period 2005-2013, they show that the state shareholder has no significant impact on either current or future market profitability. Results are held for both Tobin's Q and market-to-book ratio. Abraham (2013) focuses on a smaller sample of ten publicly traded banks from Saudi Arabia over two-year period. Abraham (2013) tries to identify differences between foreign and domestic banks in terms of performance metrics. One of the performance metrics is market valuation measured by Tobin's Q ratio. Abraham (2013) shows that domestic banks have superior market value in relation to foreign ones. Caprio et al. (2007) use a much larger sample that consists of 244 banks across 44 countries at the end of 2001. The research focuses on shareholder's cash-flow rights and shareholder protection laws. Bank market value is measured by Tobin's Q ratio and market-to-book ratio. The findings suggest that a higher level of cash-flow rights by a controlling shareholder increases bank market value. In addition, weak legal protection of minority shareholders decreases valuation. Greater cash-flow rights by a controlling shareholder is positively associated with valuation of banks in countries with weak legal protection of minority shareholders. Last but not least, Arouri et al. (2014) check the effect of different types of shareholders (family, institutional, government, foreign) on market valuation. They consider banks from countries belonging to the Gulf Cooperation Council in 2010. The study finds that family ownership has a positive influence on bank market valuation measured by Tobin's Q and MTB ratio. The findings reveal that there is a positive link between the foreign ownership and market valuation for both measures. The presence of an institutional investor in the ownership structure boosts market valuation. Conversely, state ownership has no relation with bank value.

### 3.3. Other elements of corporate governance

Corporate governance in banking includes also elements unrelated to ownership structure or management boards: sustainability reports (Carnevale, Mazzuca, 2014), intellectual capital (Nsour et al., 2021), ESG activities (Azmi et al., 2021; El Khoury et al., 2023) or Corporate Governance Responsibility (Komath et al., 2023).

Carnevale and Mazzuca (2014) study the importance of publishing sustainability reports by banks in shaping their market value. The sample includes 176 listed banks from 14 Western European countries over the period 2002-2011. The market value of banks is measured using quarterly stock prices. The descriptive statistics show that banks that do not publish sustainability reports have higher stock prices than banks publishing sustainability reports. The regression results reveal that there is a relationship between publishing sustainability reports and stock prices which means that investors appreciate the additional information offered by the sustainability reports.

Nsour et al. (2021) check whether there is a link between intellectual capital measured by Value Added of Intellectual Capital and financial performance of commercial banks from Jordan over the period 2010-2018. The financial performance equals to Tobin's Q. Value Added by Intellectual Capital is a complex variable computed as the sum of three components: human capital, structural capital and employed capital. It can be concluded that only human capital efficiency and capital employed efficiency have statistically significant effect on Tobin's Q. In addition, human capital efficiency has a greater impact on Tobin's Q than capital employed efficiency. This may suggest that banks should focus on human resources to build up their knowledge and capabilities.

Azmi et al. (2021) consider the link between ESG activity and bank market valuation. The studied sample includes 251 banks from 44 emerging markets over the period 2011-2017. The market valuation is measured by Tobin's Q ratio. For full ESG variable, a non-linear relationship is confirmed: low levels of ESG positively affect market value measured by Tobin's Q, while higher levels of ESG decreases Tobin's Q. Further, Azmi et al. (2021) separate ESG into individual measures of environmental, social and governance characteristics. When the individual ESG dimensions are considered, the results indicate that only environmental factors are relevant i.e. they are positively linked to market value. El Khoury et al. (2023) investigate the impact of ESG on valuation using the sample of 46 banks from Middle East, North Africa and Turkey between 2007-2019. A negative impact is observed for full ESG variable. When components of ESG are considered separately, social factors have a concave relationship with Tobin's Q, environmental elements have a convex relationship, while corporate governance factors are not significantly linked to market value. The relationship between ESG and market value is also examined using a single-country approach. Menicucci and Paolucci (2023) consider the Italian banking sector over the period 2016-2020. The sample includes 105 banks. The findings suggest that ESG policies have a negative impact on market value. When ESG dimensions are measured individually, none of the components is significantly related to Tobin's Q.

A topic closely related to ESG is Corporate Governance Responsibility (CSR). CSR is the concept that a company should play a good role in the community and take into account the environmental and social consequences of business actions. Komath et al. (2023) use Refinitiv's CSR strategy scores to analyze the market value of 2342 banks in 43 countries over the period 2017-2021. The authors discover a positive relationship between CSR strategy scores and the market value, implying that investors reward banks with effective corporate governance mechanisms.

## 4. External elements and market valuation

External determinants of market valuation are related with factors which are not influenced by a specific bank's decision and policies, but by events outside of banks. Fang et al. (2014) examine the role of institutional reforms in affecting valuation measured by Tobin's Q ratio. The sample includes 60 banks from 11 Central and Eastern European (CEE) countries over the period 1997-2008. Fang et al. (2014) consider banking, security market and legal reforms. The findings suggest that the bank valuation increases significantly after CEE countries reform their legal institutions and liberalize the banking system. Conversely, valuation decreases after stock market reforms. The second topic related with government policies and regulatory frameworks is the economic policy uncertainty (EPU). He and Niu (2017) investigate the effect of economic policy uncertainty on bank market valuation. The studied sample consists of bank holding companies from US through the period 1990-2015. The bank market valuation equals Tobin's Q ratio. The EPU measure is based on frequency counts of newspaper articles that contain terms about economy, policy and uncertainty. The authors find a negative relationship between EPU index and Tobin's Q which is explained by the fact that EPU reduces bank loan growth, and lower loan growth decreases bank market value. The decreasing effect of EPU on market value is stronger for banks with higher ratio of loans to total assets.

The acts of central banks have an impact on the market value as well. Andreeva et al. (2023) examine the impact of the March 2020 European Central Bank recommendation that banks do not pay dividends or buy back shares on their market values. The recommendation referred to dividends to be paid from profits earned in 2019 and 2020. The research is conducted on the sample of 40 euro area banks in year 2020. The findings suggest a negative impact on bank share prices during the two weeks following the announcement of the recommendation.

## 5. Conclusions

This study presents a review of the literature on market valuation of banks and identifies factors that shape valuation. The first conclusion is that the main measure of the market value of banks is the Tobin's Q ratio. As an additional variable, authors use market-to-book ratio, usually in robustness tests. Secondly, the presented articles employ both single-country (11 papers) and cross-country analyses (19 papers). The papers are divided into several groups, based on the type of factor analyzed.

In the group of papers on the link between bank financial variables and market valuation, a diversification is the most frequently discussed topic. Researchers also study the effect of loan growth rate and bank size on valuation. Beside this, there are single studies on market power,

market discipline and bank efficiency. The second set of studies focuses on the link between corporate governance elements and market valuation. The literature on this subject is abundant, so the papers can be divided into three subgroups: board-related indicators, ownership structure and other elements of corporate governance. Papers on board characteristics examine the role of boards and CEOs in shaping market value. Researchers investigate gender diversity, tenure of CEOs and board members, board size and independence of members. Some authors consider complex board-related indicators like CEO power or board compensation. Papers on shareholders examine the effect of ownership concentration on valuation. Other ownership-related variables are type and origin of the major shareholder. In the banking empirical literature there are also studies on corporate governance mechanisms not related with boards or ownership structure. The market valuation of banks is affected by the fact that they publish sustainability reports or are involved in ESG activity. Intellectual capital also is a vital component that affect market value. The last area examines the link between market value and external factors not related with specific bank's decision. These factors are institutional reforms and economic policy uncertainty.

Based on this review, it can be concluded that the market value of banks is significantly linked to financial indicators and corporate governance components. It is crucial to combine this finding with the limitations observed. One of the limitations identified is sample sizes. In most banking sectors, only a fraction of all banks are listed on stock exchanges. It is particularly noticeable in single-country studies, which are conducted on a samples containing no more than 20 banks (Haq et al., 2019; Hoang et al., 2020). Studies based on such samples might not accurately depict the relationship between the factors studied and the market valuation. It implies that particular attention should be given when selecting econometric model for analyzing such small samples. The choice of countries from which studied banks come is another identified limitation. Numerous papers examine the market value of banks from developed countries, but there are much less research that look at transition countries. The relationships observed in banks from developed countries may not coincide with those from emerging markets. These observations suggest that researches should concentrate on studying the market value of banks from emerging countries, especially in connection with the financial and corporate governance elements.

This review of the literature has practical implications for stock market investors as well. Listed banks are among the largest entities that operate on stock exchanges. For this reason, understanding the mechanisms that affect the market value of banks is important for investors who are interested in placing their funds in bank shares.

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