

# Transparency and disclosure (TD) and valuation of Indian banks

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## Abstract

The study's main goal is to determine how TD affects bank valuation while operating performance measures are held constant. The study uses panel data regression as its approach. Panel data from 34 banks are collected for six years (2016–2021). The econometric model is specified to determine the link of TD with the valuation of the banks. The other determinants of the value in the banks are controlled while estimating the model. Interestingly, the results endorse the apprehension raised in the study that TD's influence on the bank's valuation is significant despite controlling the operating performance. Such results are unique as it is not observed in any other study which discusses the impact of TD on the valuation of the banks. The main implication and recommendation of the study are: (1) the managers should exercise proper disclosures; (2) there should be regulation on both types of disclosures (mandatory and voluntary disclosures); and (3) provisions of pecuniary punitive action should be devised in case of digression from the regulation on disclosures as the gullible small investors are in the fray and may get misguided due to possible misleading disclosures by the banks.

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**Keywords:** transparency , disclosures, banking, non-performing assets, valuation

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## **1. Introduction**

Firms are always part of a business environment where all the firms' stakeholders interact as and when required (Rybalko, Seltzer 2010). In the labyrinth of communication with all the firms' stakeholders, firms share non-financial and financial information. Information sharing with all the stakeholders is defined as Transparency and Disclosures (TD). The definition of TD includes mandatory (Jayaraman, Wu 2019) as well as non-mandatory (or voluntary) disclosures (Charumathi, Ramesh 2020). TD, by design, is a non-economic activity. TD is incontrovertibly part of governance if not specifically part of corporate governance. However, TD is thought to have economic effects on the enterprises while being a non-economic activity, particularly when it comes to the valuation of the firms (Damodaran, 2007). Valuation is defined in its generic sense concerning the firms (Chua, Eun, Lai 2007).

The cost of capital is one of the essential determinants of a firm's value (Harjoto, Jo 2015). Voluminous literature explicates the significant association of TD with the firms' cost of capital (Nahar, Azim, Jubb 2016; Balakrishnan, Ertan 2019). The literature puts forth almost unanimously that high disclosure decreases the cost of capital in organizations, including banks (Botosan 2006; Lawrence 2013). Therefore, it seems axiomatic to believe that high TD will lessen the cost of capital and consequently increase the firm's value, as the cost of capital is inversely associated with its value (Harjoto, Jo 2015). However, the literature highlights firms' hyped or doctored disclosures (Hutton, Miller, Skinner 2003). In addition, it is found in the literature that disclosure, primarily corporate social responsibility, and environmental disclosures, are more directed toward image building than reflecting any additional value activity (Bhimavarapu, Rastogi, Abraham 2022; Longo, Mura, Bonoli 2005; Dewi 2020; Vishwanath; Kaufmann 1999). Therefore, there is a possibility that TD is jeopardized, and despite that, it may affect the organization's value. This situation is equivalent to saying that the stock market (market price of the securities) may not truly reflect the firm's performance. In the literature, there is evidence that advocates such market inefficiency (Zunino et al. 2008; Patil, Rastogi 2019, 2020a) and can cause incoherence in the market price and intrinsic value of the securities (Kumar 2009; Aggarwal, Wu 2006).

After having raised the problem, this study offers to do an empirical analysis on how TD impacts the Indian banks' value. By establishing the relationship among TD and the valuation while accounting for other valuation variables, this exercise can be completed. As a result, the goal is to establish the connection between TD and valuation while accounting for other value-related factors.

The paper's primary contribution is that despite controlling for performance (profitability) and risk (provision coverage ratio), TD significantly influences the valuation of the banks. TD influences the value even though the bank performance is the exclusive contribution of the current study. This situation is tantamount to stating that value can be enhanced by influencing the banks' TD. No other explicit evidence is observed in this literature, making these findings novel and unique. This finding leads to a strong implication for the government and policymakers of the banks in India. This implication is more relevant for regulation on disclosure and transparency. The disclosure norms and regulations in the banks are well in place. The quality of the disclosures is not on the radar. Anything and everything are being disclosed in the name of TD. There should be more clarity on mandatory versus voluntary disclosures, and the quality of disclosures should also be established.

There are seven sections in total in the document, including this one. The second focuses on the theoretical underpinnings and valuation-related difficulties in relation to TD. The third portion

discusses a review of pertinent literature. The data and methodology used in the paper are discussed in the fourth part. Results are covered in the fifth portion, which is followed by the discussion in the sixth section. The seventh and last portion of the study wraps everything up.

## **2. TD and valuation: the theoretical background**

There is a question worth asking: can disclosure and transparency be valued (Damodaran 2007)? TD can be taken for granted, especially in the banks, because regulatory bodies, financial markets, investors and practically all the stakeholders are entitled to information from the banks. However, opacity in the banks is inherent (Fosu et al. 2017; Wagner 2007), and this can be one of the explanations for the effect of TD on the value. Nevertheless, the impact of TD on the value is also found in firms other than banks (Lang, Lins, Maffett 2012; Jiao 2011). There are additional difficulties surrounding the proper level of disclosure because TD has interests that go beyond benefiting businesses or banks (Moreno, Takalo 2016). The reasoning above can be understood, and it can be inferred that there are issues with TD and value, particularly in the banks, that need to be viewed from a different angle.

### **2.1. Is the share market or share price speculative?**

Evidence shakes our faith in the stock market and causes concern about it (Guiso, Sapienza, Zingales 2008). The price reflected in the stock market may or may not be trustworthy if the trades are motivated by speculative instincts (Kumar 2009). Sapienza and Zingales (2012) highlight the investors' concerns about the stock market and the vulnerabilities related to the lack of trust. Such literature is enough to raise doubts regarding TD's precarious role in the stocks' valuation. After all, TD is not a value-added activity. Rather it is just disclosing what should be disclosed. Behavioural finance and prospect theory (Barberis, Huang, Santos 2001; Kahneman, Tversky 1979; Tversky, Kahneman 1992) can explain such support of TD to valuation, which is beyond the reason through conventional wisdom (Mangram 2013). Therefore, it is apt to study the association of TD with the valuation of stocks *ceteris paribus*.

### **2.2. Market inefficiency**

All the information about a firm should be reflected in its price in a straight definition of market efficiency (Fama 1991). Lengthy commentaries and discussions are part and parcel of the whole discussion on market efficiency (true reflection of all the information about the firm's price) (Dimson, Mussavian 1998, 2000). However, despite all the omissions and commissions on the issue of market efficiency, it is a fact that the market is not a perfectly efficient place, especially concerning time. The main premise of this argument is that straightforward market efficiency (or inefficiency) concerning time is not constant. Market efficiency varies somewhat concerning time. These results are there across all types of markets (this argument is market agnostic and is present in all the markets worldwide) (Ito, Sugiyama 2009; Zunino et al. 2008; Patil, Rastogi 2020b). Surprisingly this argument of time-varying market efficiency repeatedly props up even by using the relatively newer multifractal methodology to

assess the Adaptive Market Efficiency in the stock markets (Patil, Rastogi 2019, 2020a). This evidence favouring time-varying market efficiency (or inefficiency) is the main argument that TD's association with the market valuation may be due to market inefficiency instead of any economic reason.

### **2.3. Grey areas in disclosures and transparency**

Information disclosure and its veracity is a matter of concern. The literature is full of evidence to shine a light on this issue. Marquis, Toffel and Zhou (2016), and Kim and Lyon (2015) indicate the exaggeration in the firms' disclosures regarding environmental sensitivity. Peer pressure and the fad of environmental sensitivity prod corporates to over-disclose some features and under-disclose others. Irani and Karamanou (2003) advocate regulation in the firm's fair value disclosures to provide all the firms a level playing field. This advocacy also stems from the fact that disclosures are exaggerated to suit the requirements of the firms. Pae (2005) exhibits the dilemma of investors in the case of selective disclosures by organizations. Investors grapple with the uncertainty of making up for the undisclosed information due to corporates selecting the relevant information to disclose. A similar doctoring of the information regarding earnings forecasts is also witnessed. Fischer and Verrecchia (2004) find similar evidence of bias in the disclosure of the information in their study. They show that bias in the information is affected by the level of the competition faced by the companies.

The compelling reasons raised above call attention to the fact that disclosures can be deceptive. Such inaccurate statements may likewise be equally deceptive in the valuation they support. It would only make things worse for investors, who typically get confused in a fog of too much information.

## **3. Literature review and hypotheses formulation**

The discussion on the literature on the topic is categorized into four parts so that an in-depth analysis of the research work can be analyzed systematically. A threadbare discussion is done on each part to highlight the topic in detail.

### **3.1. TD and cost of capital**

The voluminous literature prompts us to consider a positive but inverse correlation between disclosures and the cost of capital across the board, including for the banks. However, as we dig deeper and investigate the finer details, we find a few relevant issues suitable to raise in the current study.

In a seminal work on the association of information and cost of capital by Easley and O'Hara (2004), they opine that information (disclosure) is positively linked to reducing the cost of capital for organizations. Balakrishnan and Ertan (2019) posit that in European banks, more disclosures lead to higher credit supply at a reduced rate. Lawrence (2013) involves investors in his study of disclosures and the supply of funds. He shows that more disclosures increase investments by investors, and more disclosures have a positive association with better returns. Matthews, Heyden and Zhou (2022) conduct a study on United Kingdom Financial Times Stock Exchange 350 firms from 2011 to 2016 that

shows disclosure of more information on exploitation and exploration innovative activities leads to a reduction in the cost of equity capital of the firms.

However, we get a few startling and surprising pieces of evidence from the Bangladesh banks. Nahar, Azim and Jubb (2016) show from their study of 30 Bangladesh banks during 2006–2012 that more disclosures reduce the cost of capital. Nevertheless, surprisingly, it is also found that banks that do not perform well disclose more. In other words, poor-performing banks intend to provide more information on disclosures.

In a survey of literature on the disclosures and cost of capital by Botosan (2006), TD's scepticism with the firms' performance is also raised. It is found in the study that TD does reduce the cost of capital. However, Botosan (2006) excludes the cases of earning quality (Hribar, Jenkins 2004; Francis et al. 2004) and the veracity of the disclosures (Botosan; Plumlee 2013). Both the studies (Botosan 2006; Nahar, Azim, Jubb 2016) provide the gap in the literature that TD and its influence on the cost of capital may be questionable. The association of the cost of capital with the value of the firms is obvious (Gordon, Gould 1978; Duncan et al. 2017; Auerbach 1979). Therefore, TD and its association with the firm's valuation cannot be taken for granted, and a fresh empirical perspective is required to clarify the issue.

### **3.2. TD and valuation**

The apprehensions and concerns about the association between TD and value are widespread. It is not limited to the indirect association of value with TD via the cost of capital. However, there is direct evidence of TD and value, which are ambiguous. Two major categories can be drawn from the published writings on the correlation of TD and corporate value. The one category is the writings that support the premise that TD affects the business's value, and the second category is indifferent towards the link of TD with the value of the businesses.

Jiao (2011) posits in his study that disclosures favourably affect both the value and the performance of the firms. He uses the disclosure data from a database that ranks the firms based on the quality of the disclosures. The database uses the data of more than 400 US firms from more than 40 industries during 1979–1996. The voluntary disclosure scale that Charumathi and Ramesh (2020) developed is used to measure the TD of 81 financial and non-financial enterprises from the BSE 100 indexes for the years 2010 to 2015 and determine how it affects the value of the firms. They discover proof of the strong and positive relation of voluntary disclosure and the worth of the firms. Anam, Fatima and Majdi (2011) apply a specialized disclosure of the intellectual capital of 456 Malaysian firms for 2004–2006 to explore its association with the firm's value. They find a substantial and favourable correlation of the two. However, the intellectual capital information is not directly disclosed by the firms. Therefore, the authors recommend a follow-up study to corroborate the findings. In another study using specialized disclosure data of executives' compensation by Sheu, Chung and Liu (2010), a positive association is found between disclosure and the firm's value. In most studies, the disclosure is for specialized purposes, with a favourable and positive association with value. The corporate disclosure that holistically addresses the disclosure practices could have been used. Therefore, there is a need to view the link of corporate disclosure and value from a fresh perspective in light of the issues raised in the current study.

In another set of studies, the association between disclosure and value seems to grapple with different issues. They defy the general perception of a significant association between the two. In Alencar (2005), 222 Brazilian companies were studied, and the results showed little indication that corporate disclosure affects the value of the companies. Additionally, he makes no connection between corporate governance and the value of the company. Azrak et al. (2020) show in their study on Islamic and conventional banks of Malaysia in 2016 that the disclosure index does not influence stock volatility and return. Bhimavarapu, Rastogi and Abraham (2022), conduct a study on 31 Indian banks from 2010 to 2019 that shows that transparency and disclosure have no impact on the valuation of banks. However, TD and valuation have a significant but positive association with ESG and shareholder activism.

Furthermore, Hassan et al.'s (2009) study on 80 non-financial Egyptian enterprises on the relationship between voluntary disclosure and firms' value produced a few unexpected results. The analysis reveals that disclosures have a very strong negative correlation with firms' value. However, there is a slight but positive correlation between voluntary disclosure and firms' value. The link between disclosures and value is uncertain, and although this study focuses on enterprises, it can also be applied to banks. New evidence may clear up the murky and disorganised conclusions on this subject.

### **3.3. TD and performance of firms/banks**

As we try to glean through the extant literature to establish the correlation between disclosure and the business's value, finding linkages between TD and the organization's operating performance seems germane. The link of TD with the value of the firm bereft of performance is the real issue that the current study is trying to discover. Surprisingly, on this front as well, we find contradictory literature. One set of literature says that TD positively impacts the performance of the businesses/banks. On the contrary, another set of literature posits that TD does not support the performance of the businesses/banks.

Akhigbe, McNulty and Stevenson (2013, 2017) find evidence that TD positively and significantly influences the banks' profit efficiency in the USA. In a study encompassing the 29 banks of the UAE and other Islamic nations on Islamic banking during 2013–2016, Srairi (2019) shows that TD brings financial stability to the banks. Bashir et al. (2021) endorse the results of Srairi (2019) in a study on Chinese banks during 2000–2014. Kuranchie-Pong, Bokpin and Andoh (2016) indicate that more disclosures reveal more risk in the banks in Ghana during 2007–2011.

On the contrary, Matuszak and Różańska (2017) show that disclosures do not influence performance. A study on 18 Polish banks from 2008–2015 found that corporate social responsibility (CSR) disclosures do not influence the financial performance of the banks. Similarly, in France, study on 201 big companies during 11 years (2000–2010), CSR disclosures do not influence the financial performance of the companies. A study by Rastogi and Kanoujiya (2022) identifies that disclosures don't influence the performance of Indian banks. It is evident from the above discussions that TD may or may not affect the performance of the banks. This issue suggests that TD's potential relationship to bank valuation may be disconnected from the banks' operational success. This finding raises doubt on the validity of TD's involvement in the appraisal of the banks. Therefore, the following hypotheses are presented in a different way for the purpose of empirical testing:

H<sub>1</sub>: Profitability impacts the banks' valuation.

H<sub>2</sub>: Risk in banks impacts the banks' valuation.

### 3.4. Determinants of valuation of the firm/banks

After exploring the association of TD with the cost of capital, value and performance, it is also pertinent to dwell more on the determinants of the value of the banks or firms. This exploration is justified because of the plethora of literature linking TD with the valuation of firms. Therefore, it is logically correct to expect TD to be a determinant of the valuation of firms. However, no study has referred to TD as one of the determinants of the valuation of firms or banks. Rajhans (2013) and Oladele (2013) investigate the determinants of valuation, and there is no trace of TD as a determinant of the firm valuation.

Furthermore, Surjandari et al. (2019) and Siyanbola (2015) present non-financial determinants of the firm's valuation, and TD is not part of the findings. Even in other studies covering non-financial determinants of a firm's valuation, no study considers TD as one of the determinants. Rawal et al. (2022) conclude that TD and financial distress are favourably linked with the performance of the banks.

The extensive discussions on the relationship between TD and business value plainly show that the relationship needs to be regarded from an entirely novel perspective, especially when the other elements impacting the relationship between the two are adjusted for or considered. As a result, the following hypothesis is presented in a different way for the purpose of empirical testing:

H<sub>3</sub>: Transparency and Disclosures support the banks' valuation while the banks' performance (profitability and risk) is controlled.

## 4. Data and methodology

### 4.1. Data

The data that was utilised in the study was acquired from the Prowess Database of the Centre for Monitoring Indian Economy (CMIE), Prowess Database (<https://prowessiq.cmie.com/>) annual reports of the relevant banks, and the Reserve Bank of India's (RBI) (central bank of India) website (<https://www.rbi.org.in>). The data from 34 banks (19 public and 15 private sectors) is collected for six years (2016–2021). The Indian banking industry is undergoing significant changes post the 2008 financial crisis. Most of the changes are gradual and become effective in time. Hence, the data before 2016 is not considered for this reason. The Indian banking industry is also undergoing significant consolidation during 2019–2020. Therefore, we decide not to take the data after 2021 to avoid the consolidation exercise. Therefore, we take data for only four years. We find literature support to estimate the model using a short panel. Therefore, we justify using four years of data for the current study (Lai, Liu, Wang 2013; Wanderi 2016).

Table 1  
Variables definition

Variable name	Symbol	Definition	Data source	Literature
Tobin's Q	tq	Tobin's Q is the derived market value the firm	CMIE; statement of annual progress	(Ghosh 2007; Fu, Singhal, Parkash 2016)
Market capitalisation	mc	Market capitalization measure is defined as market price of the share multiplied by number of shares outstanding	CMIE; statement of annual progress	(Anam, Fatima, Majdi 2011)
Market value / book value	Mv/bv	It is defined as market value divided by the book value of the shares	CMIE; statement of annual progress	(DeFond, Hann, Hu 2005; Sheu, Chung, Liu 2010)
Transparency and Disclosure (TD)	td	TD assists in the dissemination of information about the company via any channel	CMIE; statement of annual progress	(Bhimavarapu, Rastogi, Kanoujiya 2023; Lev 1992)
Provisional coverage ratio	pcr	This is the ratio which measures the ability to withstand credit risks	CMIE; statement of annual progress	(Ozili 2019)
Net Interest Margin	nim	Defined as the difference of net interest earned over interest paid on the total loans	CMIE; statement of annual progress	(Yuksel, Zengin 2017)

Note: The variables are defined in their original form. They should be construed in the context of the banks in India.

## 4.2. Variables

The definition of the variables and their linkage with the literature is provided in Table 1. We use Tobin's Q (Daines 2001; Fu, Singhal, Parkash, 2016) to measure the banks' valuation. We also use two other crucial measures of valuation, market capitalization (Anam, Fatima, Majdi2011) and market value / book value (DeFond, Hann, Hu 2005), to provide additional valuation measures so that they can be utilized to ensure the robustness of the results. All three variables used in the study for valuation are extensively used in the literature (Lang, Stulz 1994; Wang 2015). Therefore, it is justified to use them in the study.

Transparency and Disclosure are measured with the help of an index adapted from the S&P disclosure index (Patel, Dallas 2002). Studies on TD are usually of two types. One category of studies uses a ready-made index (Arsov, Bucevska 2017; Amidjaya, Widagdo 2019; Zhang, Chong, Jia 2019).



The other uses a customized index (Maali, Casson, Napier 2006; Hossain 2008; Razali, Adnan 2012; Nair et al. 2019; Sufian, Habibullah 2014). The current study belongs to the second category. Adopting the studies (Arsov, Bucevska 2017; Patel, Dallas 2002; Aksu, Kosedog 2006), using the assembled database of the S&P index as the base, we developed a new customised index with four major categories and 102 attributes. The recently developed TD index covers more recent characteristics that were ignored in earlier studies (Arsov, Bucevska 2017; Silva et al. 2008; Patel, Dallas 2002; Aksu, Kosedog 2006). Nevertheless, this index would be extremely valuable to stakeholders.

In addition to the three extensive groups: (1) Information Disclosure and Financial Transparency; (2) Investor Relations & Ownership Structure; and (3) Board and Management Structures Processes of the S&P index, the newly created index presented a 4<sup>th</sup> major category of Strategic, Technology and Basel Disclosures. The newly introduced broad category has been given more weight because it was overlooked in previous investigations. Below are the subcategories of this fourth, broad category:

- a) Basel norm,
- b) strategic information,
- c) technology information
- d) Website information.

Typically, either a weighted or an unweighted formula is used to determine the T&D index score. The unweighted technique is taken into account in the current study's methodology (Turrent, Ariza 2012; Hossain 2008; Kumar, Kidwai 2018). For each attribute included in the index, this method accepts binary values, i.e. one for the availability of the data and zero otherwise.

Furthermore, it is observed that risk management, especially management of non-performing assets (NPA), has a substantial impact on the valuation of the banks (Rastogi, Gupte, Meenakshi 2021; Kuknor, Rastogi 2021; Yadav 2011). In addition to NPA, profitability is also considered an essential determinant of the valuation of the firms (Rastogi, Gupte, Meenakshi 2021; Banerjee, Velamuri 2015; Llewellyn 2005; Rajhans 2013; Oladele 2013). This study is on TD's impact on the bank's valuation. It is also evident that NPA and profitability impact the valuation of the firms/banks. As a result, we use NPA and profitability as control variables so that TD's unbiased impact on the company's value can be affirmed. The Provision Coverage Ratio (PCR) is used in the study as a proxy for NPA to capture risk management for NPA in the banks. Net Interest Margin (NIM) is used in the analysis as a proxy for profitability.

### 4.3. Econometric model and estimation technique

Panel data econometric method is applied in the study Batrancea (2021). We propose three models to be estimated to test hypotheses and serve the study's objective:

#### Model 1

$$tq_{it} = \alpha + \beta_1 td_{it} + \delta_1 pcr_{it} + \delta_2 nim_{it} + u_{it} \quad (1)$$

where:

- $u_{it} = \mu_i + v_{it}$  – individual effect term (cross-sectional term),
- $v_{it}$  – the remainder error term.

**Model 2**

$$mc_{it} = \alpha + \beta_1 td_{it} + \delta_1 pcr_{it} + \delta_2 nim_{it} + u_{it} \quad (2)$$

where:

$$u_{it} = \mu_i + v_{it}$$

$\mu_i$  – individual effect term (cross-sectional term),

$v_{it}$  – the remainder error term.

**Model 3**

$$mbv_{it} = \alpha + \beta_1 td_{it} + \delta_1 pcr_{it} + \delta_2 nim_{it} + u_{it} \quad (3)$$

where:

$$u_{it} = \mu_i + v_{it}$$

$\mu_i$  – individual effect term (cross-sectional term),

$v_{it}$  – the remainder error term.

We propose to use the static panel data analysis technique to estimate equations 1 to 3. We also propose to go for one-way panel data analysis (cross-section term-based one-way analysis).

## 5. Results

### 5.1. Descriptive

Table 2 presents the descriptive statistics of the variables employed in the study. TQ's mean value is less than 1 (0.4947). This result implies that, on average, the bank's stocks are undervalued in India (Fu, Singhal, Parkash 2016). The average value of TD is 0.5146, which is more and closer to the highest score, and depicts the positive side of the disclosures in the banks (1.932 and 0.5060 are the highest and lowest values of TD, respectively). The average value of PCR is 2%, which is on the lower side, as the PCR values are on the higher side (79.34% and 0.04034% are the highest and lowest values of PCR) (Roy 2014). In addition, the standard deviation of PCR is very high (15.68%), which hints at veritable variation in the level of risk management for bad debt. The mean of NIM is 2.6118 %, and the variation in NIM is 0.7198% (standard deviation).

The correlation among the independent variable is not significant (between TD and PCR) and if significant (between TD and NIM), it is less than 0.8 (Table 2). Therefore, the multicollinearity among the independent variable is ruled out. In addition to the correlation analysis of the independent variables, the value of VIF (Variance Inflation Factor) of the independent variables is also estimated, which is less than 4 in all three cases for all the model specifications. Hence, the value of VIF also confirms that there's no issue with multicollinearity in the models.

Table 2  
Descriptive statistics

	Mean	Sd	Skewness	Kurtosis	Shapiro-Francia W test	VIF-values
tq	0.4947	0.6142	2.6101	8.7490	0.70056* (0.00001)	–
mc	13934	21830	2.1153	4.1513	0.96022* (0.00085)	–
mvbv	1.2384	1.1853	1.4188	0.9878	0.81836* (0.00001)	–
td	0.5146	0.0932	0.8515	3.6314	0.88106* (0.00001)	1.15
pcr	4.9748	15.686	3.4421	10.403	0.09964* (0.00001)	1.01
nim	2.6118	0.7198	0.4403	-0.2259	0.97584* (0.01772)	1.15

Table 3  
Correlation matrix

	tq	mc	mvbv	td	pcr	nim
tq	1					
mc	0.4948* (0.0000)	1				
mvbv	0.7011* (0.0000)	0.4510* (0.0000)	1			
td	0.1503 (0.0807)	0.4140* (0.0000)	0.4088* (0.0000)	1		
pcr	-0.0793 (0.3587)	0.3140* (0.0002)	-0.1275 (0.1391)	0.0847 (0.3268)	1	
nim	0.3826* (0.0000)	0.2637* (0.0019)	0.6928* (0.0000)	0.3568* (0.0000)	-0.1339 (0.1201)	1

Note: tq represents Tobin's Q, a prominent measure to value a firm, when the tq value is less than one, it is considered as undervalued and if more than one as overvalued. mc is market capitalization denoted with RS-rupees and mvbv is market value/book value. In correlation matrix td represents transparency and disclosure index displaying correlation coefficients. pcr and nim are provision coverage ratio and net interest margin respectively. P-values of respective variables are mentioned in parenthesis.

\*significant at 5%.

## 5.2. Panel data analysis

Panel data econometrics is applied to estimate the three proposed models (equations 1, 2 and 3). The null hypotheses of constant individual bank coefficient are rejected, leading to significant FE. The null of zero variance of individual effect (bank entity effect) is also rejected, leading to significant FE. As a result, the Hausman test (Hausman 1978) of the null of no association of individual effect with the exogenous variable in the model is also rejected, leading to the conclusion of FE estimation of all three models. Besides the statistical reason to use FE, we would prefer to analyze the bank's individual effect on the analysis. Hence we would prefer FE over the RE effect to test all three models.

The diagnostic tests (autocorrelation and heteroscedasticity tests) are significant in the estimation of model one. Therefore, the robust standard error is also reported (Table 3). The result indicates that TD is significantly associated with TQ in Model 1. The coefficient of TD is positive and significant. Therefore, a high TD leads to more valuation of the bank stocks in India. PCR as the control variable is also significant at a 5% significance level.

Another control variable, NIM, is not significantly associated with TQ. The result implies that despite controlling for profitability (NIM) and risk (PCR), transparency and disclosure are significantly associated with the bank stock valuation. This result implies that disclosures add value to the bank stock irrespective of the banks' performance and risk management proposition.

Table 4  
Result of regression analysis (panel data analysis; fixed effect)

	DV: TQ	DV: TQ (robust estimates)
Constant	-0.8180 (1.0278)	-0.8180 (1.1254)
td	3.9098** (1.9825)	3.9098* (1.8254)
pcr	0.0021 (0.0056)	0.0021* (0.0006)
nim	-0.2716* (0.1297)	-0.2716 (0.1779)
F-test (model)	2.41**	3.90*
R-square	0.0680	0.0680
$\sigma_{vit}$	0.6859	
F-test fixed effect	10.78*	
Breush-Pagan test	84.79*	
Hausman test	14.22*	
No. of observations (n)	136	
Degree of freedom	102	
Wald test for heteroscedasticity <sup>1</sup>	1.3×10 <sup>5</sup> *	
Wooldridge Autocorrelation Test <sup>2</sup> AR (1)	2.930**	

Note: The null for the 1Wald test of heteroscedasticity is "no heteroscedasticity". The null of the 2Wooldridge test of autocorrelation in the panel is no autocorrelation (with 1 lag). The regression's standard error is vit. Parentheses are used to indicate standard errors. Significant heteroscedasticity and autocorrelation result in robust estimates. pcr stands for provision coverage ratio. nim stands for net interest margin. The dependent variable is DV. Transparency and Disclosure index is known as TD. TQ stands for Tobin's Q estimations.

\* significance at 5%; \*\* significance at 10%.

Table 5  
Result of robustness of the results

	DV: mc (robust standard error)	DV: mvbv (robust standard error)
Constant	0.8252 (1.9833)	-1.2109 (1.3914)
td	18.2432* (3.9893)	3.9940 (2.6524)
pcr	0.0083 (0.0026)	-0.0041 (0.0028)
nim	-0.0113 (0.3340)	0.1588 (0.1813)
F-test (Model)	9.14*	2.01
R-square	0.1206	0.0566
$\sigma_{vit}$	2.0014	0.9789
No. of observations (n)	136	136
Degree of freedom	102	102

Note:  $\sigma_{vit}$  is standard error of regression. Standard errors are reported in the parentheses. Robust estimates are estimated due to significant heteroscedasticity and autocorrelation. pcr is provision coverage ratio. nim is net interest margin. DV is dependent variable. TD is Transparency and Disclosure index. TQ is Tobin's Q estimates.

\* significance at 5%; \*\* significance at 10%.

### 5.3. Endogeneity and robustness tests

In the main model (equation 1), theoretically, there is a possibility that TD may be endogenous to TQ. Therefore, endogeneity of TD is tested for TQ using the 2SLS method. TD has a very high association with Promoters holding in the banks. Promoter holding is also exogenous to TQ. Hence Promoter's holdings can be a good instrument for TD concerning TQ. The Durbin-Wu-Hausman statistics of Chi-square is 1.9711 (p-value 0.1603), and F (1,131) is 1.9266 (p-value 0.1675) of the endogeneity test are not significant. Therefore, the possibility of endogeneity due to TD is ruled out in Model 1. Models 2 and 3 are used as robustness testing of the results. In Model 2, market capitalization (Table 1) is used instead of TQ (as a valuation proxy).

Furthermore, in Model 3, market value to book value (MVBV) (Table 1) is used as a proxy for the valuation in place of TQ. The result of the robustness analysis is reported in Table 4. The result of the robustness analysis is consistent with the main findings that TD is significantly associated with the TQ. At the same time, the association is controlled for profitability (NIM) and risk management (PCR) in the banks.

## **6. Discussion**

### **6.1. Hypothesis testing**

Hypothesis one, that profitability impacts the valuation, is rejected because the results are insignificant (Tables 3 and 4). Hypothesis two, that risk impacts the valuation, is also rejected as the results are only significant in the primary analysis (Table 3) and inconsistent in the robustness test (Table 4). The hypothesis that TD supports the valuation of the banks while performance (profitability and risk) is controlled cannot be rejected. The fact that the hypothesis was not rejected suggests that TD has a favourable impact on the bank's valuation. It is remarkable that even after accounting for the bank's operating performance, there is still a positive correlation between the TD and the bank's value. This conclusion suggests that the study's concerns are justified and that value is associated with TD, even though TD may or may not concurrently support the bank's performance. The results suggest that there is a chance of manipulating the TD artificially, and as a result, the value of the banks may be increased regardless of any economic value added in their operations. These findings raise questions on the sanctity of the market efficiency of banks' stocks, as the value can be artificially enhanced by just manipulating the disclosures in the banks in India.

### **6.2. Comparison of the findings with the earlier work**

No research is observed emphasizing the impact of TD on the valuation through the pragmatic lens of their linkage with performance. Only Jiao (2011), attempts to connect the association of TD with value and makes a second attempt to connect TD with performance. However, no other study tackles the problem head-on and offers some supporting data. However, it may be argued that the results of this research support the idea that TD has a significant influence on valuation in a broader sense (Sheu, Chung, Liu 2010; Anam, Fatima, Majdi 2011). Additionally, it can be inferred that the results of this study disprove the assertion that TD has no bearing on the worth of businesses or banks (Azrak et al. 2020; Alencar 2005). However, there are no other studies in the literature that support the conclusions of the current research and its assertion that TD increases business value regardless of performance. As a result, it can be concluded that the present study's findings are original and will make a substantial contribution to the body of knowledge already available on the subject.

### **6.3. Contribution and implication**

The current research and its results are unique. Undoubtedly, there are many studies on the topic that TD positively influences the valuation of banks (please refer to Section 3.2). However, it is observed that no study tried to connect the link (of TD with the valuation) with the performance. TD is a type of information that should be reflected in the pricing (Fama 1976, 1991) as per market efficiency. However, the information should be about the performance or the fundamentals of the firm. Mere exaggeration of the fact cannot and should not be linked with the tangible valuation of the banks. This study highlights these cogent issues, which is one of the significant contributions of this study. Researchers might have overlooked this aspect of the line of inquiry, which is pinpointed categorically in this study.

The study's conclusions have several significant ramifications for decision-makers and managers. Managers should refrain from inflating the disclosures because doing so could result in a phoney addition of value that will not endure. Such a practice could backfire and eventually prove to be counterproductive. As a result, managers ought to exercise patience and follow the finest corporate governance guidelines for disclosures. The study's conclusions also have some challenging consequences for decision-makers. There is legislation governing disclosure requirements. For voluntary disclosures, there are no rules or regulations. There is no system in place to confirm the accuracy of the disclosures (both voluntary and mandatory). The restructured policy on corporate disclosures (based on the findings of the current study) should be three-pronged: (1) there should be a detailed and well-articulated policy/guidelines/regulation on the disclosures on the banks so that gullible investors cannot be duped or misguided by misplaced disclosures; (2) the government should devise some ingenious ways to ensure a check on the veracity of the information being disclosed by the corporates, and (3) to ensure adherence and best practices, there should be provisions of pecuniary punitive action for non-compliance on the disclosures.

## 7. Conclusion, limitation and future scope

This study's goal is to determine the association of transparency and bank valuation while taking other value-related aspects into account. Surprisingly, it is discovered that TD is highly connected with the worth of the banks despite adjusting for profitability and risk (two important determinants of the price in a bank). The results are consistent (the results are robust). There is no endogeneity problem (due to TD's simultaneity concerning TQ). The study's findings endorse the problem raised in the paper that doctoring TD can influence the valuation of whether the TD is supported by facts or by exaggeration. To determine if TD is doctored or not, more research is necessary, although the results of the current investigation uncovered indications that it is a possibility.

To summarise, this study shows that TD can be misused as it significantly affects the valuation. However, no such empirical evidence is gathered in the study to establish whether disclosures are doctored. Instead, this study used earlier research to accept the possibility of manipulated disclosures. This circumstance is one of the study's shortcomings. Studies on this subject can be conducted in the future to evaluate the accuracy of the disclosures. Another study can be carried out to distinguish between the characteristics of banks that adhere to best practices and those that deviate from the proper course of action with regard to disclosures. Another drawback of the article is the usage of a brief panel. To get around this restriction, a longer-term study might be conducted in the future.

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## Transparentność i ujawnianie informacji a wycena banków indyjskich

### Streszczenie

Badania wskazują, że transparentność banków i ujawnianie przez nie informacji oddziałują na ich wartość rynkową. Wpływ przejrzystości i jawności informacji na wartość rynkową banków staje się przedmiotem szczególnego zainteresowania badaczy między innymi dlatego, że są to nośniki wartości o coraz większym znaczeniu, mimo że nie wiążą się z działalnością gospodarczą banków. Coraz większe znaczenie samego podejścia do informowania inwestorów generuje zagrożenie, że wartość akcji banków może być zawyżona z jednej strony na skutek eksponowania pozytywnych informacji, z drugiej zaś w wyniku ukrywania niekorzystnych faktów. Właśnie to zagrożenie stało się głównym powodem przeprowadzenia badań, których wyniki przedstawiono w niniejszym opracowaniu.

Celem opracowania jest rozpoznanie, jak transparentność i ujawnienia informacji dokonywane przez banki w Indiach wpływają na ich wycenę. W artykule zwrócono uwagę, że wartość rynkowa banków zależy nie tylko od sytuacji w zakresie rentowności oraz ryzyka towarzyszącego działalności, lecz także od tego, w jakim stopniu banki są transparentne i jak ujawniają informacje. Wychodząc z założenia, że przejrzystość i jawność informacji wpływają na wycenę rynkową banków, przyjęto konsekwentnie, że wartość banków można zwiększać przez transparentność i jawność informacji. W literaturze przedmiotu w niewystarczającym stopniu zwraca się uwagę na ten sposób budowania wartości rynkowej banków.

Do określenia relacji między przejrzystością i jawnością informacji a wyceną banków zastosowano metody ilościowe. W szczególności posłużono się metodą regresji danych panelowych. Wykorzystano dane z 34 banków indyjskich, obejmujące lata 2016–2021. Do wyceny banków posłużono się wskaźnikiem  $q$  Tobina, a dla zwiększenia wiarygodności wyników użyto dodatkowych miar wyceny, takich jak kapitalizacja rynkowa oraz relacja wartości rynkowej do wartości księgowej. Pomiaru przejrzystości i jawności informacji dokonano za pomocą indeksu zaadaptowanego z indeksu S&P Disclosure. Dla potwierdzenia wpływu transparentności i ujawnień informacji na wartość analizowanych banków posłużono się wskaźnikiem aktywów niepracujących. Aby ustalić sytuację w zakresie zarządzania ryzykiem w rozpatrywanych bankach, posłużono się wskaźnikiem pokrycia rezerw, a w analizie rentowności wykorzystano marżę odsetkową netto.

Badania wykazały, że transparentność i ujawnianie informacji mają wpływ na TQ. Wysoka przejrzystość i jawność informacji prowadzą do wyższej wyceny akcji banków w Indiach. Wyniki przeprowadzonych badań potwierdzają, że wpływ transparentności i jawności informacji na wycenę banków jest znaczny pomimo koncentrowania się banków na wynikach operacyjnych.

Główne wnioski i zalecenia płynące z badania są następujące: (1) menedżerowie banków powinni odpowiednio ujawniać informacje inwestorom w celu zwiększenia przejrzystości, (2) powinna zostać wprowadzona regulacja dotycząca ujawnień, zarówno obowiązkowych, jak i dobrowolnych, (3) należy doskonalić metody zapewniania jakiegoś szerokiego zakresu ujawnień, (4) należy opracować przepisy pozwalające nakładać kary w wypadku nieprzezwiezania rozporządzenia w sprawie ujawnień informacji.

Wyniki przeprowadzonych badań mogą być użyteczne także dla rządu i zarządzających bankami w Indiach. Mogą stanowić impuls do działań poprawiających jakość informowania inwestorów, którzy potrzebują wiarygodnych i aktualnych informacji do oceny wyników działalności banków oraz sytuacji w zakresie ryzyka.

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**Słowa kluczowe:** transparentność, ujawnienia informacji, bankowość, aktywa niepracujące, wycena