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Value Relevance of Business Strategy - Evidence from Indian Banks

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Abstract

This study examines the value relevance of accounting information on business strategies using unique panel data from banks in India, for a 29-quarter period. Based on the publicly available quarterly revenue information on business segments, the study will associate the revenue segment information with choices related to business strategies of all ownership type banks and allow equity prices to predict prospective performance and risks associated with strategic choices related to focus, diversification and differentiation.

By applying the MANOVA analysis, this study show that for any state-owned bank, strategies are differentiated over time. The study also finds that for any time strategies are differentiated across banks under any ownership type. By applying the panel data analysis, the study find that market contains information on strategic focus and diversification particularly in case of public sector and new private sector banks.

Keywords: Strategy, Differentiation, Diversification, ownership, bank, value relevance

1 Introduction

Strategy is thought about as a firm's realized position in its competitive market (Deephouse, 1999; Mintzberg, 1987; Porter, 1980), aided by its resources and capabilities (Deephouse, 1999; Wernerfelt, 1984). It is important to understand banking strategy as fundamental strategic decision of a commercial bank includes the selection of assets or investments in various sectors of the economy such as real estate loans and government securities (Deephouse, 1999).

Banks differentiate because of their differing histories of strategic choice and performance (Hunt & Morgan, 1995; Roberts & Amit, 2003; Rumelt, 1984; Teece, Pisano, & Shuen, 1997) and to create comparative advantages (Roberts & Amit, 2003). Selection and implementation of strategies by competing banks lead to some variation in their own realized strategic positions (Deephouse, 1999).

While differentiation across asset allocation strategies has been related to accounting rates of return (Deephouse, 1999), recent research has also associated banks' asset allocation strategies of focus versus diversification with their market performance (Baele, De Jonghe, & Vander Vennet, 2007; Stiroh, 2006).

Strategic choices can be examined from the perspective of focus, diversification, and differentiation.The equity prices allow the prediction of prospective performance and risks associated with different strategic choices (Baele et al., 2007; Stiroh, 2006).

There are number of reasons because of which this study believes value relevance of business strategy information be an interesting perspective to be examined for India. Firstly, in India the performance and risk reduction via strategic diversification does not impact the behaviour of all types of banks uniformly (Pennathur, Subrahmanyam, & Vishwasrao, 2012).

Secondly, banks earn revenues from different business strategic operations and distinction on bank revenue flows is relevant (Stiroh, 2006). Indian banks have been disclosing quarterly revenue segment information (Corporate, Retail, and Treasury) based on RBI guidelines on AS-17 Segment Reporting, applicable from 30 September 2007 (RBI-Circular, 19 December 2006). As a result, it permits this study to clearly ascertain the impact of strategic operations on the performance of Indian banks.

Thirdly, Indian Banks have been recommended to evolve business strategies. For example, to help banks in differentiating strategies, PJ Nayak Committee has proposed the establishment of Bank Board Bureau (RBI, May 2014).

Fifthly, studies on strategic focus versus diversification are even though well-established in corporate finance, there is no agreement as to which strategy tends to perform better.

Based on the above arguments, this dissertation contributes to the existing literature by hand-collecting unique dataset that allows us simple distinction between wholesale, retail and treasury business of banks, associating that information with their choices related to business strategies each from the perspectives of focus, diversification and differentiation. This study also attempts to understand how strategic choices of banks with various ownership types affect their market performance.

The rest of the study is organized as follows: Section 2 reviews the related literature on business strategies. Research question and hypothesis formulation are presented in Section 3. Section 4 discusses the Methodology, data & Summary Statistics. The relationship between business strategies and market prices is investigated in Section 5. Section 6 concludes this study.

2 Literature Review

Strategies are supported by its resources and capabilities, reflecting the idea that resources and positions are two sides of the same coin (Deephouse, 1999; Wernerfelt, 1984).

Each firm in an industry is a distinctive entity in time and space owing to its history (Hunt & Morgan, 1995; Roberts & Amit, 2003). In literature there is a discussion on why strategies are differentiated through time and across firms.

Strategic differentiation is a distinct position in what it *ex ante* perceives to be an unexploited or underexploited niche (Deephouse, 1999). The firm stakes out a distinct position from its rivals (Deephouse, 1999; Porter, 1991) and selects strategies outside the range of acceptability (or reject the conventional wisdom that is incorporated in the industry consensus (Miller & Ming-Jer, 1995; Porac, Thomas, & Baden-Fuller, 1989). The selection and implementation of strategies by competing firms lead to some variation in realized strategic positions (Deephouse, 1999). The source of variation (product and process innovation) may emerge in the external environment (Roberts & Amit, 2003).

A firm's system of strategic attributes evolves over time as it continually incorporates new strategic assets and new products (Roberts & Amit, 2003). Firms differ because of differing histories of strategic choice and performance (Roberts & Amit, 2003; Rumelt, 1984) or the cumulative effects of a series of more incremental changes (Aldrich & Ruef, 2006; Roberts & Amit, 2003).

There exists literature which argues that firm are less likely to differentiate. This is derived primarily from resource dependence and new institutional theories. Under conditions of uncertainty, mimetic behavior is likely (Cyert & March, 1963; Deephouse, 1999; DiMaggio & Powell, 1983). Successful strategies are imitated (Haveman, 1993). Managers develop a cognitive consensus about the strategies that will lead to success (Huff, 1982; Porac et al., 1989; Reger & Huff, 1993; Spender, 1989).

Strategic deviation is measured empirically in earlier literature (Finkelstein & Hambrick, 1990; Ling Seng, Mohd Nazari, & Abdul Razak, 2004; Mintzberg, 1978). Deephouse (1999) has estimated differentiation strategy by comparing each (asset allocation) strategy of each bank with the banking sector mean for that (asset) strategy, expressing it as a standard deviation and then aggregating the absolute values of the standard deviations of all three (revenue) strategy variables for each bank. Strategy is a holistic concept involving interrelated components and aggregation increases model parsimony (Finkelstein & Hambrick, 1990; Mintzberg, 1978). Standard deviation units also were used in strategy research (Finkelstein & Hambrick, 1990) because DiMaggio and Powell (1983) and Scott (1995) suggested that these indicate conformity to institutional norms.

The strategic differentiation can be demonstrated from the perspective of a banking firm using an example of real estate lending. A successful bank that perceived unexploited opportunities in real estate lending would be able to lock-in the best quality loans. Moreover, the interest rates on the loans are likely to be more favourable to the bank because of limited competition for these loans. This bank would establish a distinct position visa-vis its rivals (Deephouse, 1999). As competitors recognized opportunities in real estate lending, they would compete more vigorously in it, driving down lending rates and profit margins. Competitors may induce the best-quality borrowers to switch banks. Meanwhile, the successful bank would rely on its skills in identifying and capitalizing on the next underexploited sector such as commercial lending, before its competitors. In the process, it would re-establish its distinct position (Deephouse, 1999). There are situations when banks are less likely to differentiate, for example

if banks do not know the assets in which economic sector will fail to make future payments, then there will be uncertainty in their asset allocation (Deephouse, 1999).

Fundamental strategic decisions of a commercial bank are the selection of assets and liabilities (Deephouse, 1999; Santomero, 1984). Bank assets are investments in various sectors of the economy such as real estate loans and government securities (Deephouse, 1999). Bank liabilities are borrowings of various types such as checking deposits and money market borrowing. Strategic decisions such as asset allocation decisions (Santomero, 1984) in banking are analogous to the allocation of resources to certain product markets described by Chandler (1962).

Banks can allocate the resources broadly among retail, corporate/wholesale, and treasury business segments. Treasury should include the entire investment portfolio. Retail banking includes exposures which satisfy the following four criteria of orientation, product, granularity and low value of individual exposures. Wholesale banking includes all advances to trusts, partnership firms, companies and statutory bodies, which are not included under 'retail banking'(RBI-Circular, 19 December 2006). This study will associate the above business segment revenue information with their choices related to business strategies each from the perspectives of Focus, Diversification and Differentiation.

In India, bank strategic focus on business segments has changed over last few years and has also been interestingly related to their risk responses. For example, In the post-crisis period, between March 2009 and March 2013, the corporate focus in the total advances of Indian SCBs has significantly increased to 44.7 percent in December 2013 from 37 percent in March 2009 (RBI, June 2014).

Within Corporate sector, stressed financial condition of some State Electricity Boards and airline companies augmented the decline in the asset quality of Indian banks (RBI, June 2012). There has been a rise in the Risk weighted assets (RWA) to total assets due to the downgrading of some corporate borrowers and rising NPAs in India. This is evident from the fact that the share of 'A and above' rated corporate exposures of SCBs, attracting less than 100 percent risk weights, decreased from around 45 percent of the total long-term rated advances as at March 2009 to around 22 percent as in March 2013. 'BBB and below' rated corporate exposures of SCBs, attracting risk weights in the range of 100 to 150 percent, increased from around 55 percent to around 78 percent during the same period (RBI, December 2013).

Among the banks, the private ownership banks appear to make more efforts on corporate focus, which would require sound credit appraisals, adoption of sophisticated risk management techniques, and better information sharing among banks (Banerjee & Velamuri, 2015). While the default by borrowers, both in the corporate and retail business segments, in the repayment of loans has hurt all the banks, the weak capital base of PSBs has also hurt their ability to lend more. The weakness is because the government, their principal shareholder and itself fiscally challenged, has found it tough to add to or even retain their capital at current levels [1]. Corporate segment has stressed advances ratio of about 14.5 percent of total advances in that segment and for public sector banks it is about 17 percent followed by old private banks at 13.6 percent. Corporate loans to total loans is the second largest for the public sector banks and the stressed advances are the highest in this segment. Particularly, the corporate segments, with a share of about 54 percent in total advances, included more than 90 percent of restructured accounts (RBI, December 2013).

The retail focus has remained lower than the growth in loans and advances of SCBs (21.2 percent) mainly due to slowdown in credit for housing loans, auto loans, credit card receivables and other personal loans (RBI, 30 June 2009). Comparing to corporate business segments in India, there was a marked deceleration in the growth of retail loans even during the post-crisis period, from 7.5 percent during 2001-07 to 2.6 percent during 2008-12. This could partly be due to risk aversion that generally followed after the crisis (Lokare, 2014) .

This is particularly seen as over the last decade, retail focus in India, on average, accounted for over 17 percent of total NPAs, which is higher than its share in total gross advances (15 percent). In the retail loan segment, the share of personal loans is the highest in the total NPAs (7.2 percent), followed by housing loans (5.5 percent), credit card loans (2.2 percent) and auto loans (1.9 percent). However, the share of personal loans and credit card loans in total gross advances is lower than their share in total NPAs (Lokare, 2014) as a considerable portion of the total incremental NPAs of domestic banks in 2010-11 was contributed by agricultural NPAs (RBI, June 2011).

Treasury focus as a proportion of revenues has shown significant reduction over the years in case of nationalized banks and for only 10-15 percent of total income. Reforms have altered the ownership pattern, and the domain of operations of financial institutions (Pennathur et al.,

[1] Indian-Express. (26 February, 2013). Banking on change. The Indian Express: Editorials.

2012) and have even urged the PSBs to focus on treasury segment (RBI, Trend and Progress of Banking in India, 2002–2003). Nevertheless private sector banks in India have responded rapidly compared to their state-owned counterparts, to embrace a range of functions, including securities-related activities, insurance, foreign exchange, derivatives, investment management, financial planning, and off-balance-sheet-related activities (Edirisuriya, Gunasekarage, & Dempsey, 2014; Pennathur et al., 2012).

While performance and risk reduction through treasury focus is important, it does not impact the behaviour of all types of banks uniformly (Pennathur et al., 2012). For example, banks which focus on treasury segment (e.g. government securities etc.) and not use funds to lend to the private sector can be intended to minimize credit risk (Banerjee & Velamuri, 2015; Lipe, 1986). This is particularly in case of public sector banks which do not develop the knowledge and skills required to assess the risks in the loans that they advance (Banerjee & Velamuri, 2015). The treasury focus is risky by itself because of the lack of prior experience, nascent or non-existent financial networks, and cost and lack of technology, especially at the public sector banks and small private domestic banks (Pennathur et al., 2012).

Diversification strategy in banking can be considered to be three-dimensional: (i) across financial products and services (ii) through geographical expansion, and (iii) through a combination of geographic and business line diversification (Mercieca, Schaeck, & Wolfe, 2007). Primary modes of bank diversification have been in relation to both income and assets, as the banks have responded to the challenge of global competitiveness (Edirisuriya et al., 2014). Asian banks are also likely to pursue functional diversification through activities such as commercial banking, investment banking, insurance and other financial services potentially capable of earning revenue in different ways, including interest, transaction fees and commissions (Lin, Chung, Hsieh, & Wu, 2012).

Strategic diversification across different products/business segments, reduces shocks to NIM (Lin et al., 2012), leveraging managerial skills across products (Iskandar-Datta & McLaughlin, 2005), makes inexpensive to achieve credibility in screening (Boyd & Prescott, 1986; Diamond, 1984; Ramakrishnan & Thakor, 1984), helps in gaining economies of scope (Drucker & Puri, 2009), and provides a financial supermarket to customers who demand multiple products (A. N. Berger, Hasan, & Zhou, 2010). Banks become more stable when they diversify across activities (Boot & Schmeits, 2000; Nguyen, Skully, & Perera, 2012), reduces

expected costs of financial distress by lowering risks (Boot & Schmeits, 2000) and achieve comparative advantages (Lin et al., 2012).

On the other side, with diversification, diseconomies of scope arise through weak monitoring incentives and a risky loan portfolio; downturn of one may lead the bank to bankruptcy (Acharya, Hasan, & Saunders, 2006; Dell'Ariccia, Friedman, & Marquez, 1999; Gehrig, 1998; Hayden, Porath, & Westernhagen, 2007; Marquez, 2002; Shaffer, 1998; Tabak, Fazio, & Cajueiro, 2011; Winton, 1999). Also, banks which diversify may not get benefits of expertise in specific sectors or group of sectors (Acharya et al., 2006; P. G. Berger & Ofek, 1995; Denis, Denis, & Sarin, 1997; Jensen, 1986; Klein & Saidenberg, 1998; Servaes, 1996) and may negatively affect bank productivity (Sanyal & Shankar, 2011). Diversification (Acharya et al., 2006) is used to explain firm performance (proxy by ROA) in existing literature (A. N. Berger et al., 2010).

Diversification of banks into interest-only income activities results in higher market-to-book valuations and improved solvency, but only up to a point, as these performance indicators are negatively linked to higher levels of diversification. This is because, markets require evidence of actual performance of non-interest-bearing assets as contributing proportionately to bank total income, and that this is not always the case (Edirisuriya et al., 2014).

The ownership factor has been argued to one of the factor that drives the impact of diversification on banks. From a regulatory viewpoint, it appears that diversification is advantageous to public sector banks (Pennathur et al., 2012). However, Private sector banks in the south Asian region have followed a diversified approach that has taken advantage of the opportunities offered by the liberalized financial system (Edirisuriya et al., 2014).

There exists literature which discuss the impact of strategic Differentiation on firms. If firms do not differentiate, then it may lead to competitive disadvantage because of limited performance of the firms due to similar competitors and increase failure rates (Henderson, 1981). This situation may even approach perfect economic competition where economic rents equal zero (Deephouse, 1999).

Banks which differentiates may even face legitimacy challenges. For example, if a bank planned to grow faster than a specified rate, the bank was required to notify regulators

(Deephouse, 1999). In the 1980s, banks that pushed aggressively into agricultural and real estate loans faced increased oversight and even closure by regulators (Deephouse, 1999).

In India, the idea of differentiated banks was first envisaged in 2007 but it was not pursued. Thereafter, the idea was once again explored in a paper 'Banking Structure in India – The Way Forward', by the Reserve Bank in August 2013. It considered different aspects of the banking structure, licensing of banks, banking models and recommended a transition path for some banks (Gandhi, May 2015). Banks are advised to generate business strategies to follow the economic growth. Recently, the J P Nayak Committee has recommended the establishment of Bank Board Bureau comprising professionals and eminent bankers to appoint and empower individual bank boards. This bureau will support creation of independent high performing boards to drive differentiated strategy, capital mobilization, effective mergers and acquisition and human resource strategy.

Profits from the choice of differentiation strategy, will persist depending on the ability of competitors to imitate the position (Deephouse, 1999). Higher returns accumulate in firms with uniquely valuable systems of strategic attributes, which include both the firm's strategic assets and the products and services that they create together for customers (Barnett, Greve, & Park, 1994; Levinthal, 1998; Roberts & Amit, 2003).

In the literature the advantages of no-differentiation has also been discussed. It helps in achieving superior performance by avoiding legitimacy challenges that hinder resource acquisition, ceteris paribus, and reducing competitive risk (Deephouse, 1999). Firms create competitive advantage by creating novel combinations, which may entail adopting new products and processes that were developed by other firms and that are readily adopted by competing firms (Roberts & Amit, 2003).

The discussion on review of existing literature reveals that that firms differ because of differing histories of strategic choices. Also, it was argued that strategies selected and implemented by competing firms lead to some variation in realized strategic positions (Deephouse, 1999; Roberts & Amit, 2003). While differentiation across asset allocation strategies has been related to accounting rates of return (Deephouse, 1999), recent research has also associated banks' asset allocation strategies of focus versus diversification with their market performance (Baele et al., 2007; Stiroh, 2006). The existing literature has not examined the value relevance of strategic differentiation - which helps in accumulating higher returns to the firm depending on

the ability of competitors to imitate the position. The value relevance of strategic choices of focus and diversification has been extensively researched in developed markets like USA, the research on Indian markets is limited in terms of number of studies as well as scope.

In due course of time, the banking sector has changed much owing to the regulatory changes after the Basel Capital Accord and the impact of the global financial crisis (GFC). However, the review of available literature reveals that there are many gaps in the research on value relevance hypothesis of business strategies in Indian context. These research gaps provide scope for a comprehensive study on value relevance of business strategic choices in Indian banking. A detailed discussion on the research gaps is presented in Section 3.

3 Research Questions and Hypothesis Development

The fundamental strategic decisions of commercial bank are the selection of assets (Santomero, 1984) or investments in various sectors of the economy such as real estate loans and government securities (Deephouse, 1999). It is really important to understand why the strategic decisions related to bank asset/revenue allocation are important to be examined.

Commercial bank loan asset portfolios are typically 10 to 15 times larger than bank equity; therefore they are likely to have an important impact on bank stock market values (Wahlen, 1994). Supplemental disclosures with respect to the characteristics of that loan portfolio possess incremental explanatory power for equity prices (Beaver, Eger, Ryan, & Wolfson, 1989). For example, the disclosure related to loan asset composition helps the investor in judging the bank's risk (Brewer & Lee, 1986).

In structuring their asset portfolios, bankers choose their risk (exposure to credit, liquidity, and interest rate risks) with the expectation of earning a return commensurate with the expected levels of risk (Brewer & Lee, 1986). Thus, bank management, through decisions about uses and sources of funds, determines expected return and an associated level of risk for the owners of the bank's common stock (Jahankhani & Lynge, 1980). Investors are likely to form expectations of loan losses on basis of each bank's asset portfolio composition involving different default risks (Wahlen, 1994).

The information on loan asset portfolio composition should also be associated with the revenue generated while doing business across its asset segments (Corporate, Retail, and Treasury). As bank earn revenues from different business operations, distinction on bank revenue flows is

relevant and offers different policy implications (Ozsoz, Rengifo, & Akinkunmi, 2014; Stiroh, 2006).

Publicly available quarterly financial reports inform about bank strategy (Deephouse, 1999) related to asset/revenue allocation. Indian Banks are required to report quarterly segment information on revenue with enhanced disclosures related to corporate, retail and treasury business segment as per RBI guidelines on AS 17 - Segment Reporting, applicable from 30 September 2007 (RBI-Circular, 19 December 2006). Based on this publicly available quarterly revenue information on business segments, this study will associate the revenue segment information with choices related to business strategies of any banks and examine if banks differentiate across their business segments.

Hypothesis Testing for Strategic Differentiation

Banks differ because of differing histories of strategic choice and performance (Hunt & Morgan, 1995; Roberts & Amit, 2003; Rumelt, 1984; Teece et al., 1997). Selection and implementation of strategies by competing banks lead to some variation in realized strategic positions (Deephouse, 1999).

In light of the above discussion, We form our hypothesis:

H2: Banks differentiate their strategies

H2a: Strategies are not differentiated over time for any bank

H2b: Strategies are not differentiated across banks for any time

Hypothesis Testing for Value Relevance of Business Strategic Choices

Banking strategies represent different points on the risk/return frontier (Robert DeYoung & Rice, 2004). Thus, to pick up a strategy, banks will be influenced by their own distinctive capabilities and risk-return profile of the chosen approach (Berg & Kim, 1998). Equity prices should allow the prediction of prospective performance and risks associated with different strategic choices related to Focus, Diversification (Baele et al., 2007; Stiroh, 2006), and Differentiation.

A focus strategy requires definition of a specialization which will yield a defensible competitive advantage. One of the broadest choices in this respect is whether to compete in retail or wholesale financial services or both. Although financial products may be

similar for these two markets, the businesses of serving them are quite different, requiring different business systems, different marketing approaches and different management skills (Pollock, 1985).

Indian banks have focused more in corporate business segment due to rising infrastructure investment, overseas expansion by Indian companies and further "Indianization" of multinational businesses[2]. In corporate/wholesale banking, higher switching costs and information costs stabilize lending relationships and hence income fluctuations over time (R. DeYoung & Roland, 2001). This business segment is traditionally considered the riskiest lending (Donald P. Morgan & Stiroh, 2001) and could also increase the insolvency probability (Hayden et al., 2007).

In India, retail focus has improved opportunities because of the rising purchasing power over the years and also as banks have been feeling hit in other businesses[3]. Retail business segment has a lower risk weight compared to corporate banking (except in the case of clients who are A rated and above) reducing the impact on higher allocation of capital. Cross-selling opportunities in retail segment gives the bank better return and also risk is widespread bringing many business opportunities[4]. Focus in retail makes an above-average contribution to most banks' P/E , market-to-book ratios, high margins, stable income, and modest capital consumption' (as mentioned by Hirtle and Stiroh (2007). There is sufficient literature which argues Retail focus to have low risk (Robert DeYoung & Rice, 2004) and low return (Robert DeYoung & Rice, 2004; Hirtle & Stiroh, 2007).

Banks focus more on treasury business, particularly if there is a decline in interest margins from other two business segments (Albertazzi & Gambacorta, 2009) as cited and noted by Uzhegova (April 2010) or needs stable revenue stream (Lin et al., 2012). Given that fee-based services and financial advice constitute a more stable revenue stream, Asian banks place greater emphasis on these types of revenue lines in an attempt to improve their financial performance (Lin et al., 2012). While, focus on treasury business segment increases risk (R. DeYoung & Roland, 2001; Lepetit, Nys, Rous, & Tarazi, 2008; Mercieca et al., 2007; Donald

[2] Lal, A., & Tahilyani, N. (March 2011). Wholesale banking in India: The next frontier McKinsey & Company: Insights & Publications.
[3] Ray, A. (16 April 2014). Retail Loans: PSU banks have an edge, The Economic Times p. 18.
[4] Kishore, K., & Kumar, N. (1 April 2014, April 01). Can PSU banks mangae their lemons? Outlook Money.

P Morgan & Stiroh, 1999; Donald P. Morgan & Stiroh, 2001; Ozsoz et al., 2014), it may also decrease risk (Rose, 1989; Sawada, 2013).

Diversification strategy across activities such as commercial banking, investment banking, insurance and other financial services potentially capable of earning revenue in different ways, including interest, transaction fees and commissions, is likely to be pursued by Asian banks (Lin et al., 2012). Spreading operations across different products reduce expected costs of financial distress by lowering risks (Boot & Schmeits, 2000) and shocks to net interest margin (NIM) (Lin et al., 2012), helps in leveraging managerial skills across products (Iskandar-Datta & McLaughlin, 2005), makes it inexpensive to achieve credibility in screening or monitoring (Boyd & Prescott, 1986; Diamond, 1984; Ramakrishnan & Thakor, 1984), benefits in gaining economies of scope (Drucker & Puri, 2009) and provides a financial supermarket to customers who demand multiple products (A. N. Berger et al., 2010).

Strategic differentiation as a firm-level construct characterizes the degree to which a firm's strategic position is similar to the strategic positions of competitors in its market at a particular point in time. In other words, it represents the difference between a firm's realized strategy and those of its competitors subjected to competitive and institutional forces which are present in banking (Deephouse, 1999). Firm's performance (measured using accounting return) can be explained using this strategic choice (Deephouse, 1999).

Firms with uniquely valuable systems of strategic attributes achieve superior returns (Barnett et al., 1994; Levinthal, 1998; Roberts & Amit, 2003). Adopting or altering any one strategic attribute has a direct effect on firm performance and a combined effect when used along with the firm's other strategic attributes and results in comparative advantages (Roberts & Amit, 2003).

Based on the publicly available quarterly revenue information on business segments, this study will associate the revenue segment information with choices related to business strategies of any bank and allow equity prices to predict prospective performance and risks associated with strategic choices related to focus, diversification and differentiation.
In light of the above discussion, we form our next hypothesis:

H3: Strategic choices impact performance – if at least one of the following three conditions is met.

- Strategic deviation is positively associated with market performance
- Strategic diversification is positively associated with market performance
- Focus strategy is associated with market performance

$$\text{Capital market measures} = f(\text{Strategic Choices}) \qquad \ldots (2)$$

4 Data and Methodology

4.1 Model Specification

Hypothesis Testing for Strategic Differentiation

Since this study deals with business strategic choices, it is natural to examine if there is any differentiation in strategies across banks and also over time. As discussed in Section 3, this study associate strategy with the revenue information on business segments, i.e. Corporate/Wholesale, Retail and Treasury to test if banks do not differentiate their strategies. The resulting equation is:

H2a: Strategies are not differentiated over time for any bank

H2a is not rejected implies that overall for any Indian bank, there exists no differentiation in strategy adopted over time.

$$\text{H1a} = \begin{bmatrix} \text{Strategy}_{\text{CB}}^{t=1} \\ \vdots \\ \text{Strategy}_{\text{CB}}^{t=T} \end{bmatrix} = \begin{bmatrix} \text{Strategy}_{\text{RB}}^{t=1} \\ \vdots \\ \text{Strategy}_{\text{RB}}^{t=T} \end{bmatrix} = \begin{bmatrix} \text{Strategy}_{\text{TB}}^{t=1} \\ \vdots \\ \text{Strategy}_{\text{TB}}^{t=T} \end{bmatrix}$$

… (I)

H2b: Strategies are not differentiated across banks for any time

H2b is not rejected implies that overall at any time, there exists no differentiation in strategies adopted across banks.

$$\text{H1b} = \begin{bmatrix} \text{Strategy}_{\text{CB}}^{\text{Bank 1}} \\ \vdots \\ \text{Strategy}_{\text{CB}}^{\text{Bank } N} \end{bmatrix} = \begin{bmatrix} \text{Strategy}_{\text{RB}}^{\text{Bank 1}} \\ \vdots \\ \text{Strategy}_{\text{RB}}^{\text{Bank } N} \end{bmatrix} = \begin{bmatrix} \text{Strategy}_{\text{TB}}^{\text{Bank 1}} \\ \vdots \\ \text{Strategy}_{\text{TB}}^{\text{Bank } N} \end{bmatrix} \qquad \ldots (II)$$

The hypothesis will be tested using MANOVA, which has been widely used in earlier studies (Collins & Hopwood, 1980; Mehra, 1996; Meric, Leveen, & Meric, 1991; Uygur, Meric, & Meric, 2013).

Hypothesis Testing for Value Relevance of Business Strategic Choices

While associating the revenue segment information with choices related to business strategies of any banks, this study also allow equity prices to predict prospective performance and risks associated with different strategic choices.

Bank equity values are sensitive to all the factors that affect the overall stock market as well as to factors specific to the banking industry (Brewer & Lee, 1986). Since this study deals with the value relevance of accounting information on business strategy, it is natural to consider the perspective of the equity investor.

This study uses equity returns cumulated from the beginning of the quarter to one day after the earnings announcement for each bank (termed SHR) as a measure of market return.

Focus strategy, diversification strategy and differentiation strategy are used to represent strategic choices of banks. Focus strategy is associated with the proportion of revenue a bank generates by focusing on corporate, retail and treasury business segments (termed $R_{\mathrm{CB,RB,TB}}$). Diversification strategy (termed DIV and estimated as $1-\sum_{R=1}^{3}(P_{\mathrm{R}})^2$) is obtained as sum of the squares of revenue as a fraction of total revenue under a given business segment (i.e. corporate, retail or treasury); the index so obtained is subtracted from 1 to obtain this diversification index. Differentiation strategy (termed strategic deviation and estimated as $\sum_{\mathrm{R}=1}^{3}\left[Abs\left(\frac{P_{\mathrm{Rit}}-\overline{P_{\mathrm{Rt}}}}{\sigma(P_{\mathrm{Rt}})}\right)\right]$) is obtained by comparing each (revenue) strategy of each bank with the banking sector mean for that (revenue) strategy, expressing it as a standard deviation and then aggregating the absolute values of the standard deviations of all three (revenue) strategy variables for each bank.

In line with earlier studies (Brown & Kennelly, 1972; De Jonghe, 2008; Knaup & Wagner, 2012; Lindquist, 2004; Ozsoz et al., 2014; Sawada, 2013), size, net interest margin, capital adequacy ratio, proportion of non-performing loans in total advances, return on assets, loan loss provisions and earning per share are control variables.

ROA controls for the firm's performance. Change in gross non-performing assets to advances from previous to current quarter (termed NPA) controls for the probability of loan loss. Loan loss provisions divided by non-performing assets (termed LLP) controls for signal of a decrease in loan quality or strong future earnings. Log of market value of equity (termed SIZE) controls for cost differences due to scale economies and the greater ability of banks to diversify. The

sensitivity of bank equity values to movements in interest rates is controlled by using difference between total interest income and interest expense divided by total Income (termed NIM). The banks' capacity to bear losses and avoid crises is controlled for by using capital adequacy ratio (termed CAR). Earnings per share controls for monetary value of earnings per outstanding share of common stock for a bank (termed EPS_t).

The resulting equation is

$$\mathrm{SHR_{it}} = \alpha_0 + \alpha_1 \mathrm{WB_{it}} + \alpha_2 \mathrm{RB_{it}} + \alpha_3 \mathrm{TB_{it}} + \alpha_4 \mathrm{DIV_{it}} + \alpha_5 \mathrm{Strategic\ Deviation_{it}} + \alpha_6 \mathrm{ROA_{it}} + \alpha_7 \mathrm{NPA_{it}} + \alpha_8 \mathrm{LLP_{it}} + \alpha_9 \mathrm{NIM_{it}} + \alpha_{10} \mathrm{CAR_{it}} + \alpha_{11} \mathrm{EPS_{i,t}} + \alpha_{12} \mathrm{SIZE_{it}} + \varepsilon_{i,t}$$

… (III)

As discussed in Section 3, existing literature predicts that if market contains information on business strategic choices related to focus, diversification and differentiation, we should see a difference in the coefficient of WB_t, RB_t and TB_t in model III. If a bank gets rewarded for being more diversified across business strategies, we should see a positive coefficient of DIV in model III. If a bank differentiates its business strategies in context of other banks, we should see a positive coefficient of strategic deviation in model III.

If the market contains accounting reported information, we should see a positive coefficient of $\mathrm{ROA_t}$ in model III. If there is information symmetry in the asset and loan market, we do not expect the market to react to any contemporaneous change in NPA. If any increase in loan loss provisions indicates strong future earnings, we should see a positive coefficient of LLP. If higher interest rates are those that later have higher levels of problem loans, then we should see a negative coefficient of NIM in model III. If higher capital levels improve banks' capacity to bear losses and avoid crises, then we should see a positive coefficient of CAR in model III. If the market reacts positively on increase in monetary value of earnings per outstanding share of common stock, then we should see a positive coefficient of EPS in model III. If increase in size leads to scale economies and the greater ability of banks to diversify, then we should see a positive coefficient of SIZE in model III.

4.2 Data

The bank-level quarterly data has been developed from CMIE. The data on business segments (corporate, retail and treasury revenue) has been hand collected from DION INSIGHT. This data pertains to the period 2008 to 2015 for 39 listed banks. The sample is first divided into

public and private sector groups. Private sector group is then divided into new private and old private sector banks. Thus, we covered 25 public sector banks, 9 old private sector banks and 6 new private sector banks, resulting in 1131 bank-quarter observations.

Summary statistics of the variables used in the regression model are reported in Table 1, and the following can be observed: First, interestingly, old private banks are much smaller, on average, than the new private and public sector banks even though they have operated in India much longer than their new competitors. Second, new private banks are much better capitalized than other domestic banks. This could imply either that new private banks are in a better position to take risk, or that they are more risk averse.

Third, the proportion of revenue by way of entire investment portfolio is highest across new private sector banks and the proportion of corporate banking revenue is highest across public sector banks. Fourth, the income diversification index of public sector banks is higher, on average, than the private sector banks. This could imply that public sector banks are potentially capable of generating revenue in a variety of ways. Fifth, the differentiation index is much higher across new private, on average, than the old private and public sector banks.

Sixth, the ROA is much higher across new private, on average, than the old private and public sector banks. Seventh, the ratio of loan loss provisions to gross non-performing loans of new private banks (0.21) and state-owned banks (0.12) is higher than that of old private banks (0.11). Finally, the ratio of gross non-performing loans to advances of state-owned banks (0.03) and old private banks (0.026), a reasonable proxy for the risk appetite of the banks, is much higher than that of new private banks (0.021).

Table-1

Summary statistics by bank ownership, 2008 Q4-2015 Q4.

Bank characteristics	All banks	Public	Private	Old private	New private
% of revenue in corporate banking					
MEAN	40.28	44.81	32.44	31.76	33.63
STD	0.11676	0.08841	0.11841	0.08614	0.14918
% of revenue in retail banking					
MEAN	33.97	30.41	40.12	44.26	33.70
STD	0.12038	0.08665	0.14366	0.09034	0.17423
% of revenue in treasury banking					
MEAN	24.06	22.78	26.28	23.20	30.98
STD	0.0796	0.06139	0.10012	0.03951	0.13416
% of revenue in other banking					
MEAN	1.693	1.99	1.17	0.78	1.69
STD	0.02712	0.031	0.0174	0.0091	0.02349
Diversification					
MEAN	0.62904	0.6344	0.61978	0.63222	0.60635
STD	0.05064	0.04953	0.05126	0.04072	0.05957
Differentiation					
MEAN	2.89353	2.48951	3.59232	2.66415	4.74716
STD	1.56799	1.36124	1.65556	1.15802	1.55234
% of income in net interest margin					
MEAN	6.15	5.30	7.68	7.75	8.11
STD	0.07062	0.06344	0.07972	0.07826	0.07686
Return on assets (%)					
MEAN	0.8279	0.78607	0.90479	0.75977	1.22006
STD	0.67634	0.47496	0.93606	0.88919	0.88681
Non-performing assets ratio (Gross NPA/Total Advances) %					
MEAN	2.76572	2.97019	2.4036	2.56985	2.15684
STD	0.01647	0.0156	0.01735	0.01329	0.02127
Loan loss provisions ratio (LLP/Gross NPA)					
MEAN	0.13443	0.12302	0.1553	0.10854	0.21193
STD	0.13301	0.09561	0.18091	0.07992	0.24523
Earnings per share (Rs.)					
MEAN	24.4472	31.2431	12.6298	11.1821	15.0385
STD	25.4735	28.5642	11.801	11.595	11.0087
Market value of equity (Million Rs.)					
MEAN	183683	134809	268670	71678.1	526727
STD	361213	286592	451153	145529	572404
Capital adequacy (%)					
MEAN	13.008	12.1561	14.5163	13.8999	15.2791
STD	2.02617	1.11231	2.37275	2.30808	2.06835
Number of banks	39	25	14	9	6

Source: Compiled from CMIE PROWESS

5 Analysis of Results

The MANOVA results for model I and model II are presented in the lower panel of table 2. The difference between the means for a group (corporate, retail and treasury) of strategies adopted by any bank over time is insignificant at all levels under all private sector banks. While testing for the difference in strategies at any time adopted across banks, this study find it to be significant at all levels. This provides strong evidence that although strategies are differentiated across banks for any time under all ownership types, strategies are differentiated over time only for any public sector bank.

The results of testing the difference in the coefficients for model III are also presented in lower panel of table 2. The difference between the coefficients for a group (corporate and retail) of strategies adopted by any bank over time is significant at 5% significance level under all private sector banks and most prominently in new private sector banks. This provides strong evidence that the market does not react to any form of *strategic focus* by state-owned and old private banks. The coefficient of *differentiation* is insignificant at all level of significance under all ownership types. This provides strong evidence that *differentiation strategy* by a bank does not benefit shareholders.

The coefficient of DIV_t is negative and significant at 1 percent level under the estimation of model 2 with all public sector banks. A plausible explanation for this is that diseconomies of scope arise through week monitoring incentives. The coefficient of DIV_t is positive and significant at 10 percent level under the estimation of model 5 with all new private sector banks. A plausible explanation for this is that the new private sector banks leverage managerial skills across products and makes it inexpensive to achieve credibility in screening or monitoring its borrowers. This provides evidence that the market reacts to *diversification strategy* made by public and new private sector banks.

Table-2
Bank-level regressions using panel data

	Dependent Variable: Market Return				
	All banks (1)	**Public (2)**	**Private (3)**	**Old private (4)**	**New private (5)**
Constant	0.9734*** (0.3175)	1.4142*** (0.4898)	0.3611 (0.2587)	0.5305 (0.4950)	0.1638 (0.3633)
Diversification	-0.4073 (0.2620)	-1.1067*** (0.4363)	0.4148 (0.3087)	0.5276 (0.4501)	0.8505* (0.4540)
Differentiation	-0.0069 (0.0052)	-0.0077 (0.0056)	0.0087 (0.0098)	0.0202 (0.0166)	0.0101 (0.0154)
Corporate banking	-0.5142** (0.2202)	-0.9502*** (0.3367)	-0.0934 (0.1486)	-0.3883 (0.3969)	0.0796 (0.2300)
Retail banking	-0.4630*** (0.1789)	-0.7506*** (0.2776)	-0.3103*** (0.1149)	-0.4952 (0.4189)	-0.2977*** (0.1108)
Return on assets	-1.8546* (1.1329)	-1.7175 (1.1857)	-0.8847 (1.0936)	-2.5050*** (1.0110)	1.2389 (2.1391)
Non-performing assets	0.5085 (1.5581)	-2.0975 (1.4352)	2.2655 (2.0311)	-0.3033 (2.1161)	3.7464* (1.9909)
Loan loss provisions	0.1904 (0.1295)	0.3129** (0.1517)	0.0090 (0.0417)	-0.0017 (0.1097)	-0.0093 (0.0414)
Net interest margin	0.1464 (0.1110)	0.1566 (0.1612)	0.2245 (0.1390)	0.3706 (0.2464)	0.2414 (0.2046)
Capital adequacy ratio	-0.3978 (0.3471)	-0.1051 (0.6574)	0.2091 (0.3487)	-0.3502 (0.4099)	0.3577 (0.5130)
Size	-0.0098 (0.0065)	0.0115 (0.0101)	-0.0313*** (0.0094)	-0.0333*** (0.0133)	-0.0471*** (0.0128)

Earnings per share	0.0003 (0.0003)	0.0004 (0.0003)	0.0006 (0.0008)	0.0005 (0.0006)	0.0018 (0.0018)
Time Effects	Yes	Yes	Yes	Yes	Yes
Random Effects	Yes	Yes	Yes	Yes	Yes
***R*-Square**	6%	15%	6%	6%	17%
Number of Banks	39	25	14	9	6
Time Series Length (Quarters)	29	29	29	29	29
H1a: Corporate=Retail=Treasury (across firms^)	0.0348***	0.0990***	0.0209***	0.2767***	0.0022***
H1b: Corporate=Retail=Treasury (over time^)	0.9170	0.8168***	0.8984	0.7386	0.8225
H2: $\beta_{Corporate} = \beta_{Retail}$ (impact on market returns#)	0.45	2.39	4.59**	0.60	3.81**

Note: * $p < .10$, ** $p < .05$, *** $p < .01$, Standard errors (Newey–West) in parentheses are corrected for heteroscedasticity and autocorrelation, ^ indicates Wilks' Lambda Statistics, # indicates Wald Statistics

6 Conclusions

This study examines the strategic choices in the context of scheduled commercial banks within India. While associating the revenue segment information with choices related to business strategies of any banks, this study find that strategies are differentiated over time for any public sector bank. This is consistent with Roberts and Amit (2003) who argue that history is important while determining a bank's current actions and performance outcomes (Roberts & Amit, 2003). The study also find that strategies are differentiated across banks under any ownership type for any time. This is consistent with Deephouse (1999) who argues that the selection and implementation of strategies by competing firms lead to some variation in realized strategic positions.

This study also examines the value relevance of strategic choices. The study find empirical support for the impact of strategic choices related to corporate focus on market performance by new private sector banks. This is consistent with Banerjee and Velamuri (2015) who argue that new private banks appear to make efforts on increasing commercial lending, which would require sound credit appraisals, adoption of sophisticated risk management techniques, and better information sharing among banks.

The study do not find any empirical support for the impact of strategic choices related to differentiation strategy on market performance under all ownership types. This implies that banks should be conforming to standard industry strategies to avoid increasing oversight and even closure by regulators media (Deephouse, 1999; Loomis, 1992).

The study also find empirical support for the negative impact of diversification strategy on market performance under all state-owned banks. A plausible explanation for this is that diseconomies of scope arise through week monitoring incentives. However, the study find diversification is positively associated with market performance in case of new private sector banks. A plausible explanation for this is that the new private sector banks leverage managerial skills across products and makes it inexpensive to achieve credibility in screening or monitoring its borrowers.

This study contributes to the growing evidence supporting the value relevance of strategic choices related to focus, diversification and differentiation in Indian banks.

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