

A Study on Effect of Non-Financial Balanced Scorecard Perspectives on Financial Performance of Property Firms Listed in the Philippine Stock Exchange

Joy Rabo

De La Salle University

joy.rabo@dlsu.edu.ph

Abstract: The Balanced Scorecard (BSC) framework developed by Kaplan and Norton includes four perspectives, namely: financial, customer, internal process, and learning and growth. This study aims to test if measures in the three non-financial BSC perspectives have an effect on the financial performance of property firms listed in the Philippine Stock Exchange. Ordinary least squares regression is used in this study. This study adds to the vast literature on BSC and finds that non-financial BSC perspectives have no significant positive effect on financial performance measured in terms of current ratio, debt-to-equity ratio, net profit margin, and return-on-asset.

Key Words: Balanced Scorecard; firm performance; non-financial perspectives; financial perspective; property firms

1. INTRODUCTION

1.1 Objective and Scope

Understanding the relationship between financial and non-financial measures is a key to successful balanced scorecard (BSC) implementation (Bryant, Jones, & Widener, 2004).

The BSC provides the basis of a company's current and future success since traditional financial measures fail to indicate to managers how performance can be improved in the next period (Kaplan & Norton, 1993). The study of Ardekani, Sharifabadi, Jalaly, and Zarch (2013) showed that managers in the ceramic and tile industry must also consider customer, internal process, and learning and growth, aside from financial measures, in evaluating performance. However, a number of non-adopters are sceptical of the linkage among the four perspectives in the BSC.

The main objective of this study is to determine if non-financial BSC perspectives (learning and growth, internal process, and customer) have an effect on financial perspective. The study uses all 32 publicly-listed property firms in the Philippine Stock Exchange with available 2012 annual reports as of December 2013. This study adds to the vast literature on balanced scorecard. While most researches employ firm-specific case studies, survey questionnaires, and interviews, this study uses entirely publicly-available data and ordinary least squares (OLS) regression.

1.2 Balanced Scorecard

Robert Kaplan and David Norton introduced the concept of the balanced scorecard (BSC) in 1992 to analyze how value is created in organizations (Kaplan & Norton, 2000). It was during the time when management accounting practice started to shift its focus from reducing waste to creating customer value.

The BSC is a tool that measures an organization's performance from four different perspectives, namely financial, customer, internal process, and learning and growth. The financial perspective is concerned with how the organization is viewed by shareholders; the customer perspective is concerned with the customers' viewpoint; the internal process perspective is concerned with determining what the organization excels at; and the learning and growth perspective is concerned with how the organization can continue to create value (Kaplan & Norton, 1992).

Kaplan and Norton (2000) write that the BSC tells "the knowledge, skills, and systems that employees will need (learning and growth) to innovate and build the right strategic capabilities and efficiencies (internal processes) that deliver specific value to the market (customer), which will eventually lead to higher shareholder value (financial)" (p. 169). This is affirmed in the study of Glaveli and Karassavidou (2011) wherein employee training in a Greek bank led to positive employee attitudes and loyalty which translated to improved service quality thereby generating positive customer attitudes

and loyalty and this in turn improved profitability and shareholder value.

The study of Wu and Chen (2011) revealed the following results: learning and growth performance has a positive influence on internal process and financial perspectives; internal process performance has a positive influence on customer and financial perspectives; and customer performance has a positive influence on financial perspective. The studies of Liang and Hou (2006), which analyzed actual data from a hotel in Taiwan, and Huang, Chu, and Wang (2007), which surveyed international tourist hotels in China, had the same conclusion. Moreover, one of the interviewees in the study of Lord, Shanahan, and Gage (2005), which covered chief financial officers of 43 publicly-listed New Zealand-based firms, shared that “minimizing high staff turnover will lead to better service/quality, lower recruitment costs, stronger financials” (p. 60).

Norreklit (2000) recognizes that the cause-and-effect relationship among four perspectives is central to BSC and makes it unique from other performance measurement and strategic management models, however, the assumption among perspectives should be interdependence instead of causality. As a result, Liang and Wang (2008) tested the interdependency between financial and customer perspectives.

The study of Kairu, Wafula, Okaka, Odera, and Akerele (2013), which involved a survey of managers in 200 service providers operating within Kakamega municipality in Kenya, concluded that improvement in one perspective led to improvement in the other perspectives. Specifically, increased profitability improved the other functions of the firms and translated to more employee rewards and active social responsibility activities which resulted to positive public image (Kairu et al., 2013).

1.3 Overview of the Property Sector

The property sector is vital to Philippine economy. The research of Bangko Sentral ng Pilipinas (BSP) shows that real estate contributed 42.5% to foreign direct investments during first quarter of 2011 as against 21.97% by mining and quarrying and 10.12% by manufacturing (Center for International Private Enterprises, 2011).

The World Bank reported that based on the top six Philippine real estate firms, the average debt-to-equity ratio was around 53% in 2012 (Ordinario, 2013 August 5). Moreover, property stocks are currently considered the best performing in Southeast Asia on a year-on-year basis with a 15% growth (Padilla, n.d.). For the first quarter of 2013, CBRE Philippines disclosed that the occupancy rate for the office sector across Metro Manila is 97%, thus making the vacancy rates at an all-time low (Padilla, n.d.).

With a low interest rate environment, the World Bank explained that a high loan-to-value ratio, or the portion of the total contract price of the property that banks can finance, is necessary to mitigate the consequences of relaxed credit standards for household real estate loans (Ordinario, 2013 August 5).

In the UK, the property and construction sector need to address the issues of limited qualified workforce, ageing senior managers, lack of formal training plan, and shift towards becoming green (www.prospects.ac.uk).

In the Philippines, as mentioned by Willie Uy, president and CEO of Phinma Properties, becoming green or

lessening carbon footprint is also a challenge (Reyes, 2013 January 14). The recent Super typhoon Haiyan and the Bohol earthquake intensified the need for major reforms in local real estate developments (Miraflor, 2013 December 11). For Rick Tan, CEO of Vista Land and Lifescapes, Inc., the government should implement the Private-Public Sector Partnership Program and speed up infrastructure development (Reyes, 2013 January 21).

Despite the issues, the local sector sees more business opportunities and higher investor confidence with the existence of more than 20 urban districts in Metro Manila and the effect of credit-rating upgrade that the Philippines has recently had (Maclang, 2013 November 26). According to Jeffrey Ng, president of Cathay Land, the sector would be driven mainly by affordability and economy (Reyes, 2013 January 14).

Customer-wise, the local sector can enjoy long-term growth from emerging market segments such as retirees, overseas Filipino workers (OFWs), and BPOs. In her article, Maclang (2013 October 15) reported that the International Living Magazine’s survey results show the Philippines as the 15th most preferred destination for retirement. By 2017, the silver market, which is composed mainly of retirees, is expected to grow to least \$3 trillion (Maclang, 2013 October 15). Ng mentioned that OFWs market is expected to contribute to at least 30% in property sales (Reyes, 2013 January 14). Katrina Ponce Enrile, president of JAKA Group, expects BPOs to triple 2012 occupancy rates by 2016 (Reyes, 2013 January 21).

Supplier-wise, Alfredo Austria, president of DMCI Homes, expects that the sector would have more new entrants but added that a trusted brand name would be key (Reyes, 2013 January 21). Ponce Enrile added that suppliers would focus on product and service quality, especially in terms of amenities and ease of payment (Reyes, 2013 January 21).

Traditionally, the construction industry relies on efficiency, return on capital, and profitability (Bassioni, Price, & Hassan, 2004). Kagioglou, Cooper, and Aouad (2001) recognized that traditional performance measures do not assess true performance in the construction industry. Development of measures specific to the industry has not been well-addressed (Bassioni et al., 2004).

The study of Ke (2008) used annual reports of all listed property firms in China and found that firm performance is significantly related to sales, growth rate, and senior manager’s salary. Meanwhile, the study of Thim, Choong, and Asri (2002) which covered 36 property firms listed on Main Board of Bursa Malaysia, used OLS regression to test these variables: stock performance, return on assets, return on equity, net profit margin, debt ratio, effective tax rate, earnings per share, and price-earnings ratio.

1.4 Hypothesis

The relationship between financial and customer perspectives remains ambiguous with factors such as industry and performance measures used affecting the outcome (Chenhall, 2005).

Ittner, Larcker, and Randall (2003) used data from US financial services firms and concluded that BSC has weak and inconsistent economic results, with BSC usage being negatively associated with return on assets. On the other hand, the study of Banker, Potter, and Srinivasan (2000) which covered 18 hotels managed by one firm concluded that

customer satisfaction in the customer perspective helps predict future financial performance in the financial perspective. Similarly, Bryant et al. (2004) found positive relation between financial perspective and both customer and internal process perspectives.

The cause-and-effect linkage among the BSC perspectives is observed by Debusk and Crabtree (Fall 2006) wherein most organizations which regularly use the BSC reported improvements in operating performance and profits. The study of Bento, Bento, and White (2013), which made use of 332 publicly-listed US firms, showed that all non-financial BSC perspectives have a direct effect on financial result. Moreover, the study of Khan, Halabi, and Masud (2010) showed that the BSC perspectives are positively correlated with each other using manufacturing and service companies in Bangladesh. This leads to the following hypothesis: *The non-financial BSC perspectives have a significant positive effect on financial performance.*

2. METHODOLOGY

2.1 Sample

Of the 39 property firms listed in Philippine Stock Exchange, five do not have available 2012 annual reports and two reported minimal to zero revenues for 2012. As a result, this study makes use of 32 firms which are listed in Table 1.

Table 1. List of Sampled Firms

ALCO	CEI	IRC	ROCK
ALHI	CHI	KEP	SHNG
ALI	CPG	LAND	SLI
ALPHA	CPV	MEG	SMPH
ARA	ELI	PHES	STR
BEL	EVER	PRMX	SUN
BRN	FLI	RLC	TFC
CDC	GERI	RLT	VLL

2.2 Definition of Variables

Similar to the studies of Hoque and James (2000), Iselin, Mia, and Sands (2008), Wang, Li, Jan, and Chang (2013), and Fang and Lin (2006), this study utilizes regression analysis to test the hypothesis.

In this study, since the property sector includes diverse activities such as property development and commercial leasing, total revenue is used in lieu of sales. Quick ratio and inventory turnover are not used since some firms do not have inventories. Specifically, the following OLS regression equations are developed:

$$CR_{it} = \beta_0 + \beta_1 RG_{it} + \beta_2 EP_{it} + \beta_3 SR_{it} + \beta_4 Size_{it} + \varepsilon_{it} \quad (\text{Eq. 1})$$

$$DE_{it} = \beta_0 + \beta_1 RG_{it} + \beta_2 EP_{it} + \beta_3 SR_{it} + \beta_4 Size_{it} + \varepsilon_{it} \quad (\text{Eq. 2})$$

$$PM_{it} = \beta_0 + \beta_1 RG_{it} + \beta_2 EP_{it} + \beta_3 SR_{it} + \beta_4 Size_{it} + \varepsilon_{it} \quad (\text{Eq. 3})$$

$$ROA_{it} = \beta_0 + \beta_1 RG_{it} + \beta_2 EP_{it} + \beta_3 SR_{it} + \beta_4 Size_{it} + \varepsilon_{it} \quad (\text{Eq. 4})$$

where:

$$CR_{it} = \text{Current ratio for firm (i) at time (t)}$$

RG = Revenue growth

EP = Employee productivity

SR = Salary ratio

Size = Firm size

ε = Error term

DE = Debt-to-equity ratio

PM = Net profit margin

ROA = Return on assets

The dependent variables in the above four equations represent commonly-used financial performance measures which are included in annual reports of publicly-listed property firms as key performance and financial soundness indicators. Current ratio is a measure of liquidity which is computed as current assets divided by current liabilities; Debt-to-equity ratio is a measure on solvency and is computed as total liabilities over total equity; Net profit margin and return on assets are both profitability measures. Net profit margin is net profit divided by revenues, while return-on-asset is net income divided by total assets.

The independent variables represent the non-financial BSC perspective measures. Revenue growth (in lieu of sales growth) is a customer perspective measure used in the studies of Ke (2008) and Wang et al. (2013). It is computed as the difference between revenues in 2011 and 2012 divided by 2011 revenues. Employee productivity is an internal process perspective measure which is measured as revenues divided by number of employees (Wang et al., 2013). Salary ratio, computed as salary divided by revenues, is a learning and growth perspective measure since it proxies employee satisfaction (Wang et al., 2013).

Similar to the study of Wang et al. (2013),

the natural logarithm of total assets is calculated for the control variable which is firm size

3. RESULTS AND DISCUSSION

Tables 2 to 5 are outputs from SPSS 17.0. Table 2 shows minimum, maximum, mean, and standard deviation for dependent variables (CR, DE, PM, ROA), independent variables (RG, EP, SR), and control variable (Size).

Pearson's analysis is done to test for correlation between variables. As a result of this step, asset-to-equity ratio and return on equity, two of the original six dependent variables, are omitted from this study due to very strong correlation with another dependent variable. Table 3 shows the analysis results based on variables used in this study.

Table 2. Descriptive Statistics

Variable	Minimum	Maximum	Mean	Standard Deviation
CR	.5041	5.2516	2.393119	.9712426
DE	.0652	2.2784	.562492	.5923322
PM	.0089	.8769	.274618	.1868069
ROA	.0011	.1171	.043860	.0331867
RG	.0250	.9692	.328040	.2652539
EP	1.0091E6	2.5605E8	2.785866E7	4.9317694E7

SR	.0049	.2023	.064375	.0514542
Size	8.5341	11.3640	9.958901	.7914839

Table 3. Pearson’s Correlation Analysis

Variable	CR	DE	PM	ROA	RG	EP	SR	Size
CR	1							
DE	-.449*	1						
PM	.077	-.112	1					
ROA	-.028	.017	.378*	1				
RG	-.043	-.159	.467*	-.132	1			
EP	.124	-.199	-.419*	-.396*	.048	1		
SR	-.131	-.039	.232	.217	-.082	-.391*	1	
Size	-.056	-.115	.256	.195	-.119	-.487**	.378*	1

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

To avoid inflating standard errors, multicollinearity is tested on all independent variables with the use of variance inflation factor (VIF). Collinearity exists if a variable’s VIF is around 5 or more and thus needs to be removed from the model (www.chsbs.cmich.edu). Table 4 shows all VIFs are less than 5, as such, there is no multicollinearity.

Table 4. VIF Multicollinearity Test

Variable	VIF
RG	1.084
EP	1.312
SR	1.188
Size	1.380

To further meet the requirements of regression analysis, the Durbin-Watson test is done to check for autocorrelation in the residuals. The Durbin-Watson statistics of CR, DE, PM, and ROA are 1.933, 1.169, 2.485, and 1.620, respectively. With critical values of 1.14 and 1.74, the conclusion is that errors are not positively auto correlated with CR and PM, while the test is inconclusive with DE and ROA (www.math.nsysu.edu.tw).

Table 5. Regression Results

Variable	Equation 1	Equation 2	Equation 3	Equation 4
	CR	DE	PM	ROA
RG	-.113	-.202	.472	-.096
EP	-.050	.052	.079	-.010
SR	.316	-.164	-.456	-.268

Table 5 shows the standardized beta coefficients for each of the four equations.

Holding all other variables constant, current ratio (CR), debt-to-equity ratio (DE), and return-on-asset (ROA) decrease by 0.11, 0.20, and 0.10, respectively, for every unit of

increase in revenue growth (RG); meanwhile, net profit margin (PM) increases by 0.48 for every unit increase in RG. In terms of p-values, at 95% confidence level, RG has insignificant effect on CR (0.649), DE (0.414), and ROA (0.720), but a significant effect on PM (0.028). This means that customer perspective measured in terms of revenue growth has a significant positive effect on financial performance measured by PM. This is consistent with previous studies (Wu & Chen, 2011; Liang & Hou, 2006; Huang et al., 2007; Bryant et al., 2004; Bento et al., 2013).

For every unit increase in employee productivity (EP), DE and PM increase by 0.05 and 0.08, respectively, while CR and ROA decrease by 0.05 and 0.01, respectively. The p-values of CR, DE, PM, and ROA are 0.847, 0.838, 0.703, and 0.970, respectively. Since all p-values are greater than 0.05, then EP has no significant effect on all four financial performance measures. Based on the results of this study, employee productivity alone is not a reliable internal process measure to determine effect on financial performance. In the study of Wang et al. (2013), other internal process measures such as research and development (R&D) expense ratio and accounts receivable turnover were used together with employee productivity. This study omits these variables since the sample consists of property firms where R&D expense and cost of sales are uncommon.

For every unit increase in salary ratio (SR), CR increases by 0.32, while DE, PM, and ROA decrease by 0.16, 0.46, and 0.27, respectively. Salary ratio has no significant effect on CR, DE, and ROA with p-values of 0.256, 0.545, and 0.363, respectively, however, it has a significant effect on PM with p-value of 0.049, which is lower than 0.05. This means that learning and growth perspective has a significant effect on financial performance. This conclusion is supported by previous studies (Wu & Chen, 2011; Ke, 2008; Bryant et al., 2004; Bento et al., 2013). Although instead of a negative effect, Wu and Chen (2011) showed a positive effect with the use of a 36-item questionnaire while Bryant et al. (2004) used retirement cost per current employee to proxy employee skills in the learning and growth perspective and led to a positive effect.

Table 6 summarizes the effects of the different non-financial BSC measures on financial performance measures.

Table 6. Summary for Hypothesis Testing

Variable	CR	DE	PM	ROA
RG	Insignificant negative	Insignificant negative	Significant positive	Insignificant negative
EP	Insignificant negative	Insignificant positive	Insignificant positive	Insignificant negative
SR	Insignificant positive	Insignificant negative	Significant negative	Insignificant negative

4. CONCLUSION

This study finds that profit margin is affected positively by revenue growth and negatively by salary ratio. Based on this study, customer perspective has a significant positive effect on financial performance, internal process perspective has no significant effect, and learning and growth perspective has a significant negative effect. Thus, the hypothesis that non-financial BSC perspectives have a

positive effect on financial performance is not accepted.

This study shows that the cause-and-effect relationship among BSC perspectives can be tested using only publicly-available data. However, this study involves publicly-listed property firms in the Philippines and a limited number of performance measures.

For further research, a different sector can be sampled. Also, a different set of readily-available performance measures can be used as basis. Instead of employing OLS regression, other methodology such as structured equation modelling can be used. A combination of OLS regression and data envelopment analysis can also be employed in analyzing data.

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