
Factors determining stock returns in property, real estate and construction companies in Indonesia

Henny Medyawati* and Muhamad Yunanto

Department of Economics,
Gunadarma University,
Margonda Raya 100, Pondok Cina,
Depok, West Java, Indonesia
Email: henmedya@staff.gunadarma.ac.id
Email: myunanto@staff.gunadarma.ac.id
*Corresponding author

Abstract: The main reason for investors or potential investors to invest in stocks is to derive maximum returns at minimum risk. One of the many factors determining stock returns from a company's shares consists of the company's financial ratios. The better the level of financial performance of the company, greater is the expectation of increase in its stock prices, and larger the benefit (return) from its shares to investors. The purpose of this study is to assess the impact of four factors, namely price-to-book value (PBV), the current ratio, debt-to-equity ratio (DER) and total assets turnover (TATO) on the level of stock returns in property, real estate and building construction firms listed in the Indonesian Stock Exchange for the period 2011–2014. The sample used in this study consisted of 18 companies, selected through the purposive sampling method. Regression analysis of panel data is the analytical tool used. The results have shown that TATO, DER and PBV influence the stock returns significantly.

Keywords: current ratio; debt-to-equity ratio; price-to-book value; total assets turnover.

Reference to this paper should be made as follows: Medyawati, H. and Yunanto, M. (2017) 'Factors determining stock returns in property, real estate and construction companies in Indonesia', *Int. J. Globalisation and Small Business*, Vol. 9, No. 1, pp.3–19.

Biographical notes: Henny Medyawati is an Associate Professor in the field of economics at the Faculty of Economics, Gunadarma University, Depok, Indonesia. Her main research interests include banking, financial management and information system.

Muhamad Yunanto is an Associate Professor in the field of economics at the Faculty of Economics, Gunadarma University, Depok, Indonesia. His main research interests include fiscal and monetary policy, economics and financial management.

This paper is a revised and expanded version of a paper entitled 'Leverage Ratio Effect on Stock Return in the Companies Sector of Property, Real Estate and Construction in Indonesia: Panel Data Analysis', presented at *SIBR-Thammasat Conference on Interdisciplinary Business & Economics Research* June 2-3, 2016, Bangkok.

1 Introduction

Indonesia's economic performance in 2012 was encouraging although in the world economy had weakened owing to unusual uncertainty. The country's economic growth was maintained at a high level (6.2%), with inflation being held at a low level (4.3%) i.e. within the target range of $4.5 \pm 1\%$ (Bank Indonesia, 2012). During 2012 and the first half of 2013, the property sector in Indonesia was growing rapidly. The growth in profits arising from property development rose sharply (out of the 45 property companies listed in the Indonesia Stock Exchange in 2012, 26 companies recorded a net profit growth of more than 50%) and, accordingly property prices increased. For instance, residential property prices grew by almost 30% per year between 2011 and 2013 (van der Schaar, 2015).

Companies that go public can be classified into various types, in terms of the lines of business in a particular sector. This paper focuses on property, real estate and construction in view of their rapid development in Indonesia over the last 5 years. For example, stock prices in these sectors kept increasing continuously between 2010 and 2014. The increase was particularly high in the period 2011–2012, an increase in approximately 42%.

Positive returns are created whenever stock prices increased over a sustained period. The amount of profit returns depends on the change in the trading price of the shares. Many factors such as fundamental and technical information affect stock prices. Basically, the information needed for the assessment of the returns is drawn from the company's financial statements, while background information is obtained from outside the company by looking at the general economic and political conditions (Dzulqarnain, 2014). It is important to evaluate proposals for investment diligently through risk and uncertainty assessment (Tyas, 2010). According to Hermi and Kurniawan (2011), a major concern for people when considering investment in a company is, its financial performance. The higher the level of financial performance of the company, higher is the expected stock price, and greater are the likely benefits to people investing in the company.

Based on the results from the above-cited studies, this paper analyses the influence of financial ratios on stock returns from public companies in the property, real estate and construction sectors. Specifically, this study aims to analyse the influence of price-to-book value (PBV), current ratio (CR), debt-to-equity ratio (DER) and total assets turnover (TATO) on stock return, by extending a previous model by Medyawati and Yunanto (2016) by examining the influence of return on assets (ROA). The previous work had not included ROA in their model since they had found that this variable does not affect stock returns. The present study uses 18 companies as a sample and the study period was 4 years. The estimation method is panel data regression analysis conducted utilising a panel data estimation process that assumes that the characteristics of individuals can be estimated with due attention to the dynamics between the times of use of each variable in the study. The use of the panel data estimation can be made more comprehensive by including items that are close to reality (Ekananda, 2014). The contribution of this study is to provide an overview of the condition of public company in property, real estate and construction sectors in Indonesia. Another contribution is the development of a model to analyse the influence of financial ratios on stock returns for developing countries, especially Indonesia.

2 Theoretical framework and related articles

2.1 Stock returns and financial performance

Stock returns is one of the factors that motivate investors to invest and also reward the courage of investors in taking up investment risks (Tandelilin, 2010; p.102). According to Jones et al. (2009; p.141), stock returns can be seen as benefit in return to investment risks. It consists of two components: the yield and the capital gain (or loss). Yield is the income or cash flow received by investors, for example, in the form of dividends or interest. Capital gain (or loss) is the difference between the purchase prices of shares at the time of purchase and sale. Stock returns are returns expected by investments made on stock.

To analyse the company's performance, one can use financial ratios that can be divided into four groups, namely, liquidity ratios, activity, leverage, and profitability and market. According to Muslich (2004, p.44), a company's financial performance is usually evident from its financial statements, balance sheet, income statement and financial performance. Performance is usually analysed by assessing certain financial ratios, which can be divided into four groups: liquidity ratios, activity ratios, leverage ratios, and profitability ratios and market ratios. According to Harjito and Martono (2011; p.53), the liquidity ratio is the ratio that indicates the relationship between the company's assets and other current Ativa with current debts. The liquidity ratio used to measure a company's ability to meet its financial obligations that must be met or short-term liabilities. The liquidity ratio used in this study is the current ratio, while the ratio of activity is TATO, the leverage ratio is DER and the ratio of the market is the PBV. Current ratio is calculated by dividing current assets, with current liabilities. A high CR points to a good guarantee for short-term creditors in the sense that at any time the company has the ability to pay off financial obligations in short term. Activity ratio also known as the efficiency ratio is a ratio measuring the efficiency with which company exploits its assets. Activity ratio throws light on the relationship between profit and loss, especially sales, using elements drawn from the company's balance sheet, in particular elements related to assets (Harjito and Martono, 2011; p.53). TATO measures the turnover of all the assets owned by the company, and is calculated by dividing the sales into total assets. Leverage ratio, also called as solvency ratio, is a ratio that measures how many companies use the proceeds of the debt (Harjito and Martono, 2011; p.53). DER is a ratio illuminating the total debt held by the company's own capital (equity). DER is used to measure the level of use of debt to total equity stakeholders of the company. A higher DER indicates a high dependence on capital firm drawn from outsiders. Market ratio indicates the extent to which a given market has appreciated the shares of the company (Hermi and Kurniawan, 2011). PBV is a ratio used to measure the market performance of the stock market price-to-book value. PBV shows the degree to which the company is able to create enterprise value relative to the amount of capital invested. The higher the ratio is, the more successful and capable is the company in creating value for its shareholders. The next section will describe certain results reported in literature that are of particular interest to the present study.

2.2 *The benefit from and risk of stock ownership*

Investors who have purchased shares automatically acquire rights in the issuing company. The number of shares purchased determine the percentage of ownership of the investor. The greater the number of shares owned by the investor, the greater are their rights to the companies issuing the securities. In general, there are two benefits to be gained by buyers of shares, namely economic benefits and non-economic benefits (Anoraga and Piji, 2006: 60). Economic benefits include

- 1 The dividend i.e. the earning given by the company issuing the shares on the company's income.
- 2 Capital gains, i.e. the difference between the sale value and the value of purchase when the former is higher than the latter.

Shares allow investors to obtain yields or capital gains in a short time. However, if the stock prices fluctuate frequently, the investor may suffer huge losses over a short time (van Horne and Wachowicz, 2007: 16). According to Darmadji and Fakhruddin (2006:13–15), the risks faced by investors over its ownership, include inter alia

- a non-receive of dividends
- b a capital loss
- c the company going bankrupt or getting liquidated
- d shares issued on the stock exchange (delisting)
- e shares suspended (suspension).

2.3 *Related articles*

Hermi and Kurniawan (2011) showed that financial performance in manufacturing companies consists of the net profit margin (NPM), return on equity (ROE), price to earning ratio, return on investment (ROI), PBV, DER and earning per share (EPS), all of which significantly affect stock prices. Partial testing has shown that only EPS influences stock returns. Susilowati (2011) studied the influence of fundamental factors (EPS, NPM, ROA, ROE and DER) on stock returns of manufacturing companies listed in Indonesia Stock Exchange (IDX) for the period 2006–2008. She showed that DER's effect on stock returns is mostly used by investors to predict stock returns from manufacturing companies. Kheradyar and Ibrahim (2011) analysed the role of financial ratios as predictors of stock returns in Bursa Malaysia. They found empirically that variables, dividend yield, yield earnings and book-to-market ratio, were empirically able to predict stock returns. Tyas (2010) studied the influence of financial ratios on stock returns in the food and beverage sector using the same three variables employed by Thrisye and Simu (2013), namely TATO, DER and CR but excluded ROA and EVA. They found that CR and DER had some influence on stock returns, but none of the other variables had any effect. Khan et.al (2012) found that dividend yield and earning yield ratios has direct positive association with stock return where as B/M ratio has significant negative relationship with stock return. Research by Thrisye and Simu (2013), on Indonesia's mining sector over the period 2007–2010, showed that all these variables affect stock returns. The contradictory natures of the two sets of findings arose because of the

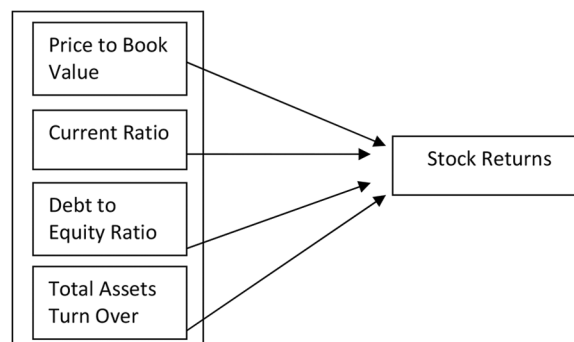
different research objectives, one referred to the agricultural sector (food and beverage), whereas the other focused on the state-owned mining sector.

Nuryana (2013) used 17 variables to analyse the influence of financial ratios on stock returns in LQ45 companies on the stock exchanges of Indonesia. The results showed that only five variables could be used in the regression equation relating EPS, DER, TATO, gross profit margin and ROI. Dzulkarnain (2014) showed that DER, TATO, PBV, NPM and CR had no effect on stock returns. Bukit and Anggono (2013) found that PBV, dividend payout ratio (DPR) and EPS have positive effects on stock return related to the LQ 45 Index with a level of significance of 5%. PBV, DPR and EPS also have simultaneous and significant effect on stock returns related to LQ 45 Index. Bahri (2015) investigated the sensitivity of industrial stock returns and empirically tested of the model underlying the arbitrage pricing theory (APT). This led to three empirical findings. First, there was no difference in the sensitivity of industrial stock returns across different sectors as a result of systematic risk factors. Second, testing of the capital asset pricing model (CAPM) and APT multifactor models revealed inconsistent results while testing industrial stocks. However, overall, the model of CAPM seemed more valid and robust than the APT multifactor model.

2.4 Theoretical framework and research hypothesis

The similarity between of the present study and the previous studies mentioned above is that the variable used in this study refers to CR, TATO, DER and PBV. CR and TATO are used in this study because there are still differences between the results from this study and other studies such as Thrisye and Simu (2013), Nuryana (2013) and Tyas (2010). This observation pointed to a need to conduct further research on this variable. Susilowati (2011), Thrisye and Simu (2013), Tyas (2010) and Nuryana (2013) have studied the effect of DER on stock returns. Based on the results from these studies, DER was included in the present study. The inclusion of PBV in this study was prompted by differences in the results between the findings of Hermi and Kurniawan (2011), Kheradyar and Ibrahim (2011) and Bukit and Anggono (2013). Figure 1 shows the framework of the analysis, used in the present study.

Figure 1 Theoretical framework



The research hypothesis are as follows:

H1: Price-to-book value has no effect on stock returns.

H2: Current ratio has no effect on stock returns.

H3: Debt-to-equity ratio has no effect on stock returns.

H4: Total asset turnover has no effect on stock returns.

H5: Price-to-book value, current ratio, debt-to-equity ratio simultaneously have no effect on stock returns.

3 Research method

This study used secondary data over the period 2011–2014. Site-listed companies were the object of research and data on them were obtained from the publications of IDX and Yahoo Finance. The variables used were adapted from Dzulqarnain's (2014) study where stock return was the dependent variable (Y) and the independent variables were PBV, CR, DER and TATO. The data used in this research consisted of panel data, consisting of a combination of time series data and cross-sectional data. The data analysis technique used was panel data regression, using three methods: the common effect, fixed effect and random effect methods. To determine whether the model estimation should use the common or fixed effect, the Chow test or the Likelihood ratio test was conducted. The next step consisted of conducting the Hausman test to determine whether the fixed effect model or the random effect model leads to a difference in the intercept in the equation. The fixed effect definition was based on the differences in the intercept between companies, it was taken to be time invariant (Widarjono, 2007). The population in this research consisted of all public companies belonging to the property, real estate and construction sectors as listed in the IDX (51 companies altogether). The sampling technique was purposive sampling, where each selected company satisfied the following criteria:

- a was listed on the IDX
- b had carried out an IPO before 2010
- c had published financial statements for the period 2011–2014
- d had full data showing that it had produced a profit in each of the years in the period.

In general, public companies were selected to be studied in this paper was a company that has established and operated for over 20 years, and has a vision as a company that has a global business. As an example of a company with the code ADHI who have a vision as a leading construction company in Southeast Asia, the company with the code RDTX been exporting to Asia and the Middle East. In the event, there were 18 companies meeting the above criteria (Table 1).

Table 1 Sample of the companies sector of property, real estate and construction

No.	Code	Company name	No.	Code	Company name
1	ADHI	Adhi Karya	10	LPCK	Lippo Cikarang
2	ASRI	Alam Sutra Realty	11	LPKR	Lippo Karawaci
3	BSDE	Bumi Serpong Damai	12	PLIN	Plaza Indonesia Realty
4	CTRA	Ciputra Development	13	PUDP	Pudjiadi Prestige
5	CTRP	Ciputra Property	14	RDTX	Roda Vivatex
6	CTRS	Ciputra Surya	15	SMRA	Summarecon Agung
7	DGIK	Nusa Konstruksi Enjiniring	16	SSIA	Surya Semesta Internusa
8	GPRA	Perdana Gapuraprima	17	TOTL	Total Bangun Persada
9	JRPT	Jaya Real Property	18	WIKA	Wijaya Karya

The first step in the data processing stage consisted of the classical assumption test. The test aimed to ensure that the model obtained actually met the basic assumptions in the regression analysis assuming normality of data, along with no autocorrelation, heteroscedasticity or multicollinearity. The next step was to engage in estimation using common, fixed and the random effects.

4 Results and discussion

4.1 Descriptive analysis

This study used data from the period 2011 through 2014. This section presents a descriptive analysis of data for 18 companies, which become the sample. In Figure 2, we do not notice major fluctuations in the development of CR. The highest CR (559.88) occurred in 2012, whereas the lowest (24.05) occurred in 2013. During the study period, the company receiving the highest CR (445.32) had the code LPKR (Lippo Karawaci), while that with the lowest (45.905) was RDTX (Roda Vivatex). Table 2 presents current ratio calculation results of 18 companies.

Figure 2 Growth of CR in the period 2011–2014 (see online version for colours)

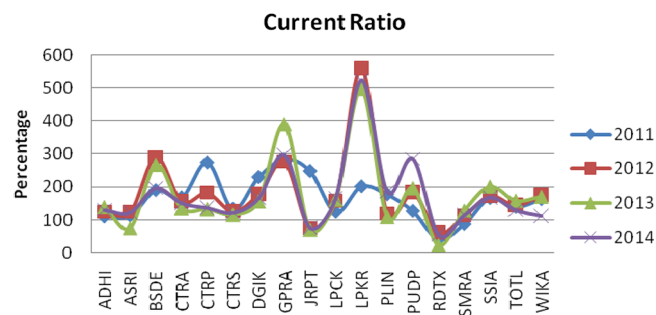


Table 2 Current ratio calculation results

	2011	2012	2013	2014
ADHI	110.71	124.44	139.1	130.1
ASRI	113.96	123.48	75.3	122.5
BSDE	190.77	290.2	266.71	196.14
CTRA	168.8	155.97	135.4	150.6
CTRP	274.43	181.72	132.82	136.56
CTRS	134.13	126.09	115.94	122.04
DGIK	230.34	177.83	156.41	165.39
GPRA	284.71	275.78	389.03	297.7
JRPT	248.59	74.65	70.33	75.58
LPCK	125.13	157.31	161.66	165.6
LPKR	202.1	559.88	495.98	523.32
PLIN	178	118.7	109.75	185.66
PUDP	127.79	182.86	196.14	285.14
RDTX	42.96	61.1	24.05	55.51
SMRA	88.02	112.48	128.04	114.07
SSIA	166.72	172.51	200.6	167.96
TOTL	140.38	144.42	157.97	129.84
WIKI	163.41	174.98	170.27	112.25

In 2011, the Indonesian economy exhibited strong resilience despite great global economic uncertainty, suggesting that the growth performance was even better and macroeconomic stability was maintained. Indonesia's economic growth reached 6.5%, the highest figure over the previous 10 years. The decline in the Bank Indonesia Rate subsequent to October 2011 was expected to be able to turn the sources of domestic financing away, from the banking sector. Still the pace of investment growth was still predicted to increase which in turn should be able to maintain national purchasing power. Opportunities to improve the investment climate were expected to be even greater once Indonesia was moved up to investment grade (Bank Indonesia, 2011).

However, TATO ratio development across the sample of 18 companies was, however, highly fluctuating. The highest TATO (1.13) in 2013 occurred for the company code ADHI (Adhi Karya), whereas lowest (0.1) in 2011 for company code CTRP (Ciputra Property). The growth of TATO Ratio in the period 2011–2014 is illustrated in Figure 3. Table 3 presents TATO ratio calculation results of 18 companies.

Figure 3 The growth of TATO in the period 2011–2014 (see online version for colours)

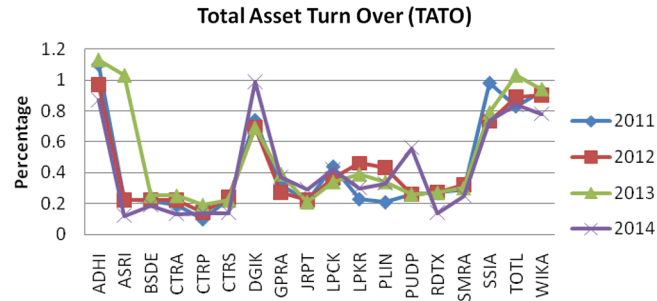
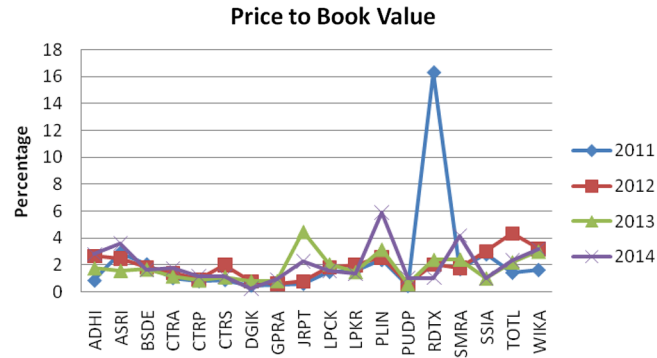


Table 3 TATO ratio calculation results

	2011	2012	2013	2014
ADHI	1.1	0.97	1.13	0.87
ASRI	0.23	0.22	1.03	0.12
BSDE	0.22	0.22	0.25	0.19
CTRA	0.19	0.22	0.25	0.13
CTRP	0.1	0.14	0.19	0.14
CTRS	0.23	0.24	0.22	0.14
DGIK	0.74	0.69	0.69	0.99
GPRA	0.32	0.27	0.39	0.37
JRPT	0.22	0.22	0.21	0.29
LPCK	0.44	0.36	0.34	0.42
LPKR	0.23	0.46	0.39	0.3
PLIN	0.21	0.43	0.34	0.33
PUDP	0.26	0.26	0.26	0.56
RDTX	0.27	0.27	0.27	0.14
SMRA	0.29	0.32	0.3	0.25
SSIA	0.98	0.73	0.79	0.74
TOTL	0.83	0.89	1.03	0.84
WIKA	0.93	0.9	0.94	0.78

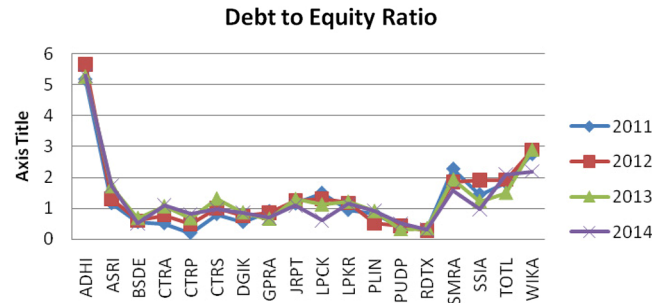
Likewise, the PBV fluctuated over the 18 sample companies. The highest value (16.3) occurred in 2011 (company code RDTX), whereas the lowest (0.25) occurred in 2014 (company code DGIK-Nusa Konstruksi Enjiniring). Figure 4 shows the variation in the PBV ratio. Table 4 presents PBV ratio calculation results of 18 companies.

Figure 4 The growth of PBV ratio in the period 2011–2014 (see online version for colours)**Table 4** PBV ratio calculation results

	2011	2012	2013	2014
ADHI	0.88	2.68	1.76	2.8
ASRI	2.95	2.49	1.58	3.6
BSDE	2.08	1.84	1.68	1.65
CTRA	1.07	1.43	1.16	1.76
CTRP	0.84	0.93	0.85	1.16
CTRS	0.92	2.01	1.10	1.15
DGIK	0.51	0.79	0.80	0.25
GPRA	0.58	0.61	0.81	0.92
JRPT	0.64	0.77	4.48	2.26
LPCK	1.52	1.83	2.06	1.59
LPKR	1.62	2.01	1.48	1.34
PLIN	2.4	2.58	3.16	5.9
PUDP	0.48	0.59	0.58	1.05
RDTX	16.3	2.06	2.39	1.05
SMRA	1.72	1.8	2.42	4.19
SSIA	2.82	3.04	1.01	1.01
TOTL	1.46	4.35	2.21	2.36
WIKI	1.66	3.21	3.01	3.21

Debt-to-equity ratio too was highly fluctuating. The highest DER (5.67) occurred in 2013 (company code ADHI), whereas the lowest (0.2) occurred in 2011 (code CTRP). DER is a leverage ratio; it measures the solvency ratio representing the company's ability to meet its financial obligations (Husnan, 2004). A DER below 1 indicates that the company has a debt that was smaller than its equity. But as an investor, one should be careful in looking at DER because if the total debt is greater than the equity, one needs further check to see whether the current liability or the long-term debt is greater. Figure 5 and Table 5 present the finding with regard to deb-to-equity ratio (DER).

Figure 5 Growth of DER in the period 2011–2014 (see online version for colours)



Note: DER, debt-to-equity ratio

Table 5 DER calculation results

	2011	2012	2013	2014
ADHI	5.17	5.67	5.28	5.3
ASRI	1.16	1.31	1.71	1.73
BSDE	0.55	0.59	0.68	0.52
CTRA	0.51	0.77	1.06	1.1
CTRP	0.2	0.49	0.67	0.81
CTRS	0.81	1	1.31	0.97
DGIK	0.55	0.75	0.86	0.85
GPRA	0.9	0.86	0.66	0.7
JRPT	1.15	1.25	1.3	1.087
LPCK	1.49	1.31	1.12	0.613
LPKR	0.94	1.17	1.21	1.139
PLIN	0.84	0.5	0.91	0.92
PUDP	0.42	0.42	0.32	0.5
RDTX	0.31	0.27	0.35	0.3
SMRA	2.27	1.85	1.93	1.57
SSIA	1.45	1.91	1.23	0.97
TOTL	1.82	1.92	1.5	2.1
WIKA	2.75	2.89	2.9	2.19

Overall, except for companies with a code RDTX, almost all companies in this study had a CR of more than 100%. This showed that the majority of companies were in good shape although the CR did not reflect the company's profit. CR only reflects how the company can meet its obligations.

Conditions were not much different from those associated with the fourth independent variable, the condition of stock returns (the dependent variable) also fluctuated. In 2013, the company TOTL with stock returns had reached -44.44% and PUDP -2.04% . This can be explained by the fact that in 2013 Indonesia had experience a slowdown in economic growth and this had impacted companies in the property sector, in

particular real estate and construction. Figure 6 and Table 6 present the findings with regard to stock returns.

Figure 6 Growth of stock returns in the period 2011–2014 (see online version for colours)

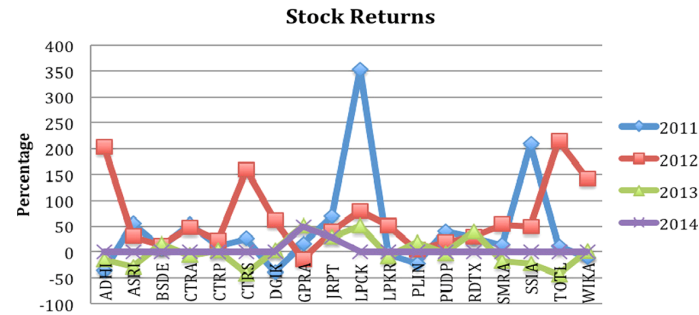


Table 6 Growth of stock return

	2011	2012	2013	2014
ADHI	-36.26	203.45	-14.20	0.87
ASRI	55.93	30.43	-28.33	0.38
BSDE	8.89	13.27	16.22	0.41
CTRA	54.29	48.15	-6.25	0.77
CTRP	11.36	22.45	3.33	0.42
CTRS	26.09	158.62	-41.78	1.2
DGKI	-39.04	61.80	4.17	0.19
GPRA	15.84	-14.53	51.00	50
JRPT	69.23	40.91	29.03	29
LPCK	353.16	80.17	51.16	1.14
LPKR	-2.94	51.52	-9.00	0.27
PLIN	-22.11	4.52	18.52	0.52
PUDP	40.82	18.36	-2.04	-0.09
RDTX	28.57	29.63	40.00	0.07
SMRA	13.76	53.23	-17.89	0.96
SSIA	209.01	50.00	-22.22	0.72
TOTL	11.76	215.79	-44.44	1.12
WIKA	-10.29	142.62	1.89	0.97

4.2 Panel data regression

The next step in the data processing consisted of testing whether the data were normally distributed. Common problems with the data panels are autocorrelation and heteroscedasticity. The test results showed that the data used in this study were free of autocorrelation, but there were symptoms of heteroscedasticity. However, the panel data regression results were not found to be intrusive in the process of further data processing.

A question that often arises in the studies using panel data analysis is whether the dependent variable is likely to have characteristics that are static over time while containing observations or changes over time. There are three estimation methods associated with panel data regression techniques, namely the common effect, fixed effect and random effect. The first step, therefore, was the estimate of the common effect, which yielded the following equation:

$$\begin{aligned} \text{Stock return}_{it} &= 1.3642 + 1.8187 \text{CR}_{it} + 5.3794 \text{TATO}_{it} + 9.3998 \text{DER}_{it} + 2.0854 \text{PBV}_{it} \\ p \text{ value} & (0.0182) \quad (0.1907) \quad (0.0000) \quad (0.0018) \quad (0.0221) \end{aligned} \quad (1)$$

$$R^2 = 43.25\%$$

The estimation results indicated that TATO, DER and PBV had influence over stock return. R^2 value was 43.25%, which was larger than that 28.3% reported by Medyawati and Yunanto (2016). The next step was to estimate the fixed effect, which yielded the following equation:

$$\begin{aligned} \text{Fixed effect} \\ \text{Stock return}_{it} &= 2011.446 - 0.0069 \text{CR}_{it} + 0.0016 \text{TATO}_{it} + 0.4421 \text{DER}_{it} + 0.5588 \text{PBV}_{it} \\ p \text{ value} & (0.0000) \quad (0.0115) \quad (0.6039) \quad (0.5022) \quad (0.4762) \end{aligned} \quad (2)$$

$$R^2 = 14.63\%$$

To ascertain whether the model is using a common effect or fixed effect, the likelihood test or Chow test was conducted next. Table 7 presents the results from the test using the random effect model.

Table 7 Likelihood test/chow test results

<i>Effect test</i>	<i>Statistic</i>	<i>d.f</i>	<i>Probability</i>
Cross-section F	0.106296	(17.50)	1.0000
Cross-section Chi-square	2.556209	17	1.0000

The estimation results with random effect were as follows:

$$\begin{aligned} \text{Random effect} \\ \text{Stock return}_{it} &= 2012.442 - 0.0525 \text{CR}_{it} - 0.07544 \text{TATO}_{it} + 90.2488 \text{DER}_{it} + 4.5961 \text{PBV}_{it} \\ p \text{ value} & (0.0000) \quad (0.1944) \quad (0.9603) \quad (0.3610) \quad (0.8539) \end{aligned} \quad (3)$$

$$R^2 = 11.55\%$$

The above results indicate that there were no variables significantly affecting stock return. R^2 was 11.5%. The next step was to conduct the Hausman test. During the panel data analysis stage, model selection with constant and random influences could be performed using this test. This is generally considered to be the most appropriate test for determination of fixed and random effect for panel data estimation method (Ekananda, 2014). Table 8 presents the results from the test using Hausman test.

Table 8 Hausman test results

<i>Test summary</i>	<i>Chi-Sq. statistic</i>	<i>d.f.</i>	<i>Probability</i>
Cross-section random	1.807032	4	0.771

Based on the tests described above and the findings, it could be concluded that the most appropriate model was that based on common effect, i.e. Eq. (1). This equation shows that TATO, DER as well as PBV affect stock returns. These results are consistent with Thrisye and Simu (2013), as well as Hermi and Kurniawan (2011). Thrisye and Simu (2013) explained that as the current ratio rises, there would be a decrease in stock return. Typically, current ratio is used to measure the liquidity of a company. A high current ratio suggests that the company is less able to create money, which in turn can lead to a reduction in the profitability of the company. Stocks with high liquidity induce investors to buy and sell shares but a high current ratio does not guarantee that it will be able to repay loans that have matured. This is because the proportion of current assets that are not beneficial if the cash balance excess the amount of receivables and inventories will be too large. This is why the low ability of mining companies to pay off current liabilities using current assets held had resulted in investors tending not to pay more attention to the shares.

4.3 *Macroeconomic conditions*

These results presented above indicate that macroeconomic conditions greatly affect the growth of the property sector, real estate and construction. Indonesia's economic growth has continued to fall. Having achieved economic growth of 6.5% in 2011 and 6.23% in 2012, and economic growth in 2013 was below 6% (Suryowati, 2014). Furthermore, the economic growth in Indonesia reported by the Central Bureau Statistics or Badan Pusat Statistik (BPS) during 2013 was only 5.58%, which is much smaller than the 6.23% reported for 2012. The global economy in 2013 had experienced marked slowdown, falling commodity prices, and a reversal of capital flows has been putting pressure on the Indonesian economy both through trade and finances. At the same time, domestic structures are less able to sustain external changes so that it becomes inhibited economic adjustments. With the development of the global and domestic economy becoming unfavourable, Indonesia's economic growth, especially until the third-quarter of 2013, has been in a downward trend with the sources of growth being accompanied by less imbalance. Investment in 2013 grew 4.7%, but sharply down from the 2012 growth which was 9.7%. This slowdown has been mainly to the limited demand for exports, which was due to the global economic uncertainty. This subsequently led to postponement of investment, both in terms of construction and non-construction investment. As for construction investment, slowing growth comes from start retention rate of demand for properties mainly commercial properties. In the building sector, the slowdown in growth was influenced by declining investment activity and construction. This observation is consistent with the results of a survey of commercial and residential property Bank Indonesia that demonstrated the limited addition of stock properties, especially with respect to commercial properties and industrial land. In addition, businesses also hold expansion properties arising from an increase in lending rates and tightening payment (loan to value) properties (Bank Indonesia, 2013).

As for the release of the GDP of Indonesia dated 5 February 2014, among the economic sectors that experienced the highest growth sectors were finance, real estate, and business services. This sector recorded a growth of 7.56% in 2013, which is well above other sectors. This growth marks the increasing role of the sector in the economy of Indonesia today (Muttaqiena, 2014). Indonesia's economy in 2014 grew by 5.0%, down from 5.6% in 2013 and lower than forecast at the beginning of 2014 in the amount of 5.5–5.9%. The inflation rate in 2014 reached 8.36% (year on year), which was above the inflation target for 2014 ($4.5 \pm 1\%$). In 2014, the government issued several price adjustment policies, particularly in the energy sector, to reduce the burden of the subsidy to be diverted to financing for development and for more productive sectors. Gradually, Indonesia's government adjusted the price of 12 kg LPG and electricity tariff for specific customer groups, along with subsidised fuel price adjustment. Some of the price adjustment policies have an impact on the increase in inflation administered prices (AP) from the previous year (16.65%) that contributed the most to inflation in 2014, which amounted to 3.20%.

Based on reports from BPS (2015), Indonesia's economy grew by 5.02% in 2014, which represented a slowdown compared to the 5.58% in 2013. On the side of production, the highest growth rate (10.02%) was recorded by the business information and communications sector. As for expenditure the highest growth rate (12.43%) was achieved by the non-profit institution consumption expenditure household (LNPR) sector (BPS, 2015). Other conditions that could be explained from the results of this research are that consumer's needs for housing is a basic requirement for the continuation of purchases of houses although there is a tendency for rising house prices.

5 Conclusion

From the panel data regression results with common effect, it is evident that financial ratios (TATO, DER and PBV) influence stock returns. In this study, CR did not affect stock returns. This can be explained by the fact that CR is unsuitable for use as a reference for investors while seeking to invest. Real estate sector is a sector that usually gets included in long-term investments although CR indicates the company's abilities to meet short-term liabilities. The Indonesian economy decelerated in the last 3 years because of the special characteristics possessed by property sector, real estate and building construction, which affected their financial performances. However, this research has the limitation that the variable used in the model has only examined company fundamentals. The model used in this research has not taken into account macroeconomic factors such as inflation and interest rates.

References

- Anoraga, P. and Piji, P. (2006) *Pengantar Pasar Modal*, PT Rineka Cipta, Jakarta.
- Badan Pusat Statistik (BPS). (2015) *Pertumbuhan Ekonomi Indonesia Tahun 2014 tumbuh 5,02 persen melambat sejak lima tahun terakhir*. Retrieved from: <https://www.bps.go.id/Brs/view/id/1114> (access 8 March 2016) [online].

- Bahri. (2015) 'The volatility of industrial stock returns and an empirical test of arbitrage pricing theory', *Review of Integrative Business and Economic Research*, Vol. 4, No. 2, pp.254–277. Retrieved from: <http://buscompress.com/riber-4-2.html> (access 15 July 2016) [online].
- Bank Indonesia. (2011) *Laporan Perekonomian Indonesia Tahun 2011*. Retrieved from: http://www.bi.go.id/id/publikasi/laporan-tahunan/perekonomian/Pages/lpi_2011.aspx [online].
- Bank Indonesia. (2012) *Laporan Perekonomian Indonesia Tahun 2012*. Retrieved from: <http://www.bi.go.id/id/publikasi/laporantahunan/perekonomian/Documents/6227189f6cae44259d624b2bbb39af30LPi2012Finaledit12042014.pdf> (access 10 February 2016) [online].
- Bank Indonesia. (2013) *Laporan Perekonomian Indonesia Tahun 2013*. Retrieved from: <http://www.bi.go.id/id/publikasi/laporan-tahunan/perekonomian/Documents/LPI%202013%20ID%20-%20Bagian%20II%20Perekonomian%20Domestik.pdf> (accessed 10 February 2016) [online].
- Bukit, I.N.H. and Anggono, A.H. (2013) 'The effect of price to book value (PBV), dividend payout ratio (DPR), return on equity (ROE), return on asset (ROA), and earning per share (EPS) toward stock return of LQ 45 for the period of 2006–2011', *Review of Integrative Business and Economic Research*, Vol. 2, No. 2, pp.22–43. Retrieved from: <http://buscompress.com/riber-2-2.html> (access 15 July 2016) [online].
- Darmadji, T. and Fakhruddin, H.M. (2006) *Pasar modal di Indonesia Edisi 2*, Salemba Empat, Jakarta.
- Dzulqarnain, M. (2014) *Analisis Pengaruh Rasio Keuangan terhadap Return Saham Perusahaan Properti, Real Estate dan Konstruksi Bangunan yang terdaftar di Bursa Efek Indonesia*, Thesis, Faculty of Economics, Universitas Gunadarma Jakarta, Indonesia.
- Ekananda, M. (2014) *Analisis Ekonometrika Data Panel Bagi Penelitian Ekonomi, Manajemen dan Akuntansi*, Mitra Wacana Media, Jakarta.
- Harjito, D.A. and Martono. (2011) *Manajemen Keuangan*, Edisi 2, Ekonisia, Yogyakarta.
- Hermi, and Kurniawan, A. (2011) 'Pengaruh Kinerja Keuangan terhadap Return Saham pada Perusahaan Manufaktur yang terdaftar di Bursa Efek Indonesia 2008-2010', *Jurnal Informasi, Perpajakan, Akuntansi dan Keuangan Publik*, Vol. 6, No.2, pp.83–95.
- Jones, C.P., Utama, S., Frensidy, B. and Budiman, R.U. (2009) *Investment: Analysis and Management (an Indonesian Adaption)*, 10th ed., John Wiley & Sons (Asia) Pte. Ltd., Singapore.
- Khan, M.B., Gul, S., Rehman, S.U., Razzaq, N. and Kamran, A. (2012) 'Financial ratios and stock return predictability (evidence from Pakistan)', *Research Journal of Finance and Accounting*, Vol. 3, No. 10, pp.1–6.
- Kheradyar, S. and Ibrahim, I. (2011) 'Financial ratios as empirical predictors of stock return', *Proceeding of International Conference on Sociality and Economics Development IPEDR*, Vol. 10, IACSIT Press, Singapore. Retrieved from: <http://www.ipedr.com/vol10/59-S00072.pdf> [online].
- Medyawati, H. and Yunanto, M. (2016) 'Leverage ratio effect on stock return in the companies sector of property, real estate and construction in Indonesia: panel data analysis', *Proceeding of SIBR Conference*, 2nd–3rd June, Bangkok.
- Muslich, M. (2004) *Manajemen Keuangan Moderen, Analisis Perencanaan dan Kebijakan*, Bumi Aksara, Cetakan Pertama, Jakarta.
- Muttaqiena, (2014) *Problema Sektor Properti dan Keuangan di Indonesia 2014*. Retrieved from: http://www.seputarforex.com/saham/ekonomi/detail.php?id=158135&title=problema_sektor_properti_dan_keuangan_indonesia_2014 (access 10 October 2016) [online].
- Nuryana, I. (2013) 'Pengaruh Rasio Keuangan terhadap Return Saham Perusahaan LQ 45 di Bursa Efek Jakarta', *Jurnal Akuntansi Aktual*, Vol. 2, No. 2, pp.57–66.

- Suryowati, E. (2014) *Tahun 2013 Ekonomi Indonesia Hanya 5,78 Persen*. Retrieved from: <http://bisniskeuangan.kompas.com/read/2014/02/05/1221161/Tahun.2013.Ekonomi.Indonesia.Hanya.5.78.Persen> (access 5 February 2016) [online].
- Susilowati, Y. (2011) 'Reaksi Signal Rasio Profitabilitas dan Rasio Solvabilitas terhadap Return Saham', *Dinamika Keuangan dan Perbankan*, Vol. 3, No. 1, pp.17–37. Retrieved from: <http://www.unisbank.ac.id/ojs/index.php/fe1/article/view/192/142> (access 7 February 2016) [online].
- Tandelilin, E. (2010) *Portofolio dan Investasi Teori dan Aplikasi*, Kanisius, Edisi pertama, Yogyakarta.
- Thrisye, R.Y. and Simu, N. (2013) 'Analisis Pengaruh Keuangan terhadap Return Saham BUMN Sektor Pertambangan Periode 2007-2010', *Jurnal Ilmiah Akuntansi Bisnis*, Vol. 8 No. 2, pp.75–81.
- Tyas, A.A.W.P. (2010) 'Pengaruh Rasio Likuiditas, Aktivitas, Profitabilitas, Leverage dan Economic Value Added terhadap Return Saham pada Saham Food and Beverages', *Jurnal Ekonomi*, Vol. 1, No. 2, pp.117–124. Retrieved from: http://digilib.esaunggul.ac.id/public/UEU-journal-2213-Ari_Anggarani.pdf (access 1 February 2016) [online].
- van der Schaar, R.M.A. (2015) *Analisis Pasar Properti Indonesia; Overview & Kepemilikan Asing*. Retrieved from: <http://www.indonesia-investments.com/id/berita/kolom-berita/analisis-pasar-properti-indonesia-overview-kepemilikan-asing/item5728> (access 10 February 2016) [online].
- van Horne, J.C. and Wachowicz, J.M. (2007) *Fundamentals of Financial Management, Prinsip-Prinsip Manajemen Keuangan*, Salemba Empat, Jakarta.
- Widarjono, A. (2007) *Ekonometrika Teori dan Aplikasi untuk Ekonomi dan Bisnis*, Ekonisia Yogyakarta.