CONVERGENCE OF FINANCIAL RATIOS IN PROPERTY AND REAL ESTATE COMPANIES LISTED IN INDONESIA STOCK EXCHANGE (IDX) DURING THE PERIOD OF 2007-2014

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ABSTRAK

Properti dan real estat di Indonesia merupakan salah satu industri paling potensial melihat dari pentingnya peran rumah pada kebutuhan manusia. Potensinya masih bisa menarik investor di masa mendatang. Rasio keuangan berguna untuk menganalisa, memonitor, merencanakan atau sebuah titik balik untuk meningkatkan kinerja keuangan sebuah perusahaan di masa mendatang, juga bisa berguna untuk memberikan informasi untuk investor sebagai bahan pertimbangan untuk keputusan investasi. Penelitian ini bertujuan untuk melihat adanya konvergensi di rasio-rasio keuangan, khususnya pada current ratio, quick ratio, debt-to-equity ratio, inventory turnover ratio, dan total assets turnover ratio, di perusahaan properti dan real estat. Metode yang digunakan pada penelitian ini adalah regresi data panel digabung dengan Partial Adjustment Model oleh Lev (1969). Hipotesis yang diuji pada penelitian ini dilakukan dengan cara membandingkan hasil dari t-test dengan nilai dari t-table. Hasilnya menunjukkan bahwa terjadi konvergensi pada empat rasio yang diuji pada penelitian ini; yaitu pada current ratio, quick ratio, debt-to-equity ratio, dan total assets turnover ratio. Untuk inventory turnover ratio, tidak terjadi konvergensi. Arah penyesuaian terjadi dengan dua arah berbeda; positif untuk current ratio dan total assets turnover, dan negatif untuk quick ratio dan debt-to-equity ratio. Kecepatan penyesuaian yang terjadi relatif cepat dengan rasio yang melakukan penyesuaian tercepat adalah total assets turnover ratio (β=0.819647) dan rasio terlambat yang melakukan penyesuaian adalah quick ratio (β=0.503138).

Kata kunci: *Konvergensi; rasio keuangan; partial adjustment model; properti; real estat; Indonesia*

ABSTRACT

Property and real estate in Indonesia is one of the most potential industries given houses are one of the primary human needs. Its potential still attracts investors in the upcoming years. Financial ratios are useful for analyzing, monitoring, planning or starting point for improving the performance of the company in the future as well as provide information for investors in consideration of decision making. This research aims to determine convergence (adjustment) of financial ratios, mainly current ratio, quick ratio, debt-to-equity ratio, inventory turnover ratio, and total assets turnover, in property and real estate companies. The method used in this research is panel data regression, combined with Partial Adjustment Model introduced by Lev (1969). Hypothesis in this research is tested by comparing the value of t-test and t-table. The result indicates the existence of convergence in four financial ratios tested; current ratio, quick ratio, debt-to-equity ratio, and total assets turnover. For inventory turnover ratio, the convergence does not exist. The direction of adjustments is made with different directions; positive for current ratio and total assets turnover ratio, and negative for quick ratio and debt-to-equity ratio. For the speed, the adjustment is relatively fast with the fastest ratio to adjust is total assets turnover (β=0.819647) and the slowest ratio to adjust is quick ratio (β=0.503138).

Keywords: *Convergence; financial ratios; partial adjustment model; property; real estate; Indonesia.*

1. INTRODUCTION

Property and real estate in Indonesia has a lot of room to grow. The inability of the companies in the industry to meet the demand by 200,000 to 800,000 is the real proof [1]. This potential is also supported by the fact that trading of shares for the companies in the industry is strong and has positive trends in the last decade.

This potential in property and real estate is supported by the plan of the new government to boost the infrastructure development in the upcoming years. Indonesia's strong foundation in demographics and economic growth is another reason to support the further development of the industry [2].

Generally, financial ratios are used to compare the risk and return. It can also provide a profile of firm, its characteristics and competitive strategies, and its unique operating, financial and investments characteristics [4]. Financial ratios also tend to adjust (converge) towards industry average. This is most likely to happen in companies in the same industry [3]. Converging financial ratios indicates that companies are moving towards a direction,

either positive, negative, or both. The existence of the convergence of financial ratios can also become a consideration for investors for investment decisions.

From the introduction above, this research is focused to answer the following questions:
1. Is the convergence of financial ratios in property and real estate companies listed in Indonesia Stock Exchange (IDX) during the period of 2007-2014 exist?
2. How are the direction and speed of the adjustment of financial ratios in property and real estate companies listed in Indonesia Stock Exchange (IDX) during the period of 2007-2014 to the industry average?

2. THEORETICAL REVIEW AND METHODOLOGY

2.1 Theoretical Review

This research is using model based on Lev's study (1969), partial adjustment model. The model is used to test the tendency of the financial ratios of an industry, and to find out whether the firms in the industry are moving towards the industry average (converge).

For the duration of the adjustment, one of the following conditions must be satisfied to obtain the information: (a) the actual target level is known, or (b) the form of the adjustment is known. Target levels can be proxied by the respective industry average.

A brief description of the Lev's model is as follows:

$$y_t - y_{t-1} = \beta (y_t^* - y_{t-1}), \qquad 0 < \beta \le 1 \tag{2.1}$$

where:

y_t = the natural logarithm of a firm's financial ratio at time t,

y_{t-1} = the natural logarithm of a firm's financial ratio at time t-1,

y_t^* = the natural logarithm of a firm's financial ratio at time t,

Since y_t^* is not observable, target, y_t^* is determined by observable x_{t-1}.

$$y_t^* = x_{t-1} \tag{2.2}$$

where:

x_{t-1} is the industry mean of the ratio which determines the target according to (2.2). The combination of (2.1) and (2.2) defines the partial adjustment model.

$$y_t - y_{t-1} = \beta (x_{t-1} - y_{t-1}). \tag{2.3}$$

The size of the coefficient β represents the speed of adjustment towards the industry mean, with the value is estimated to fall between 0 and 1. The closer β is to 1, the faster the periodic adjustment.

Figure 1 – Research Framework
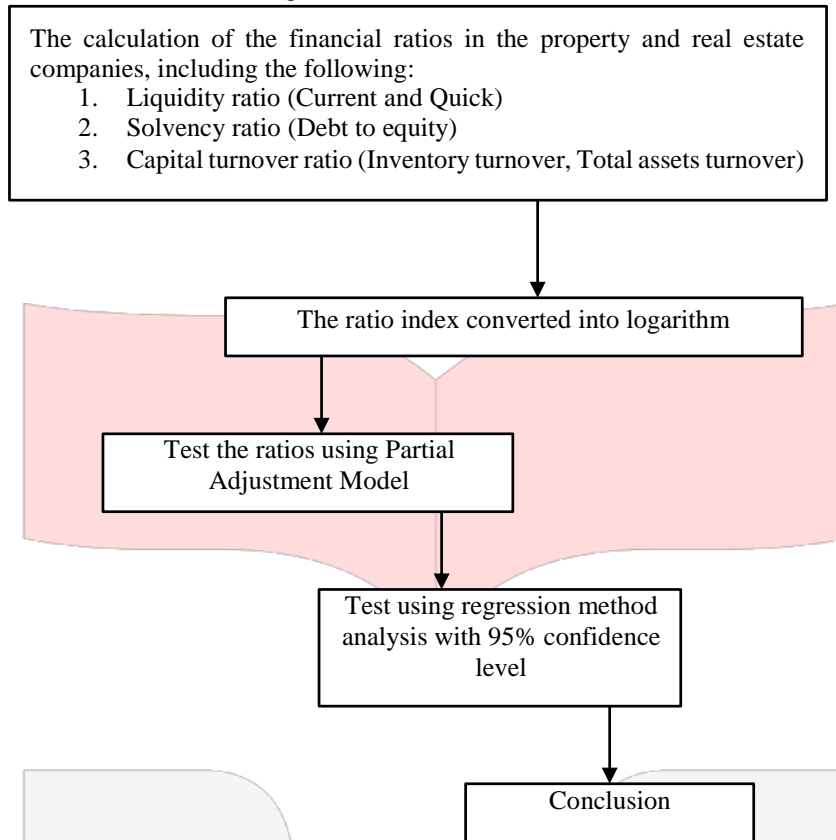
2.2 Methodology

This methodology of this research is descriptive and verification. The sampling technique used in this research is non-probability sampling, which is purposive sampling. The number of sample meet the criteria set is 29 property and real estate companies listed in Indonesia Stock Exchange (IDX). The data analysis technique used in this research is data panel regression, combined with Partial Adjustment Model. The operational variable in this research are as follow:

Table 1 – Operational variable

Number	Variable	Operational Variable Definition	Indicator & Formulation	Scale
1	Current ratio	The ratio of current assets to current liabilities	[4]	Ratio
2	Quick ratio	The ratio of current ratio with the elimination of inventories from current assets	[4]	Ratio
3	Inventory turnover	The ratio of sales to inventory	[5]	Ratio
4	Total assets turnover	The ratio of sales to total asets	[5]	Ratio
5	Debt-equity ratio	Te ratio of long-term debt to stockholders' equity	[5]	Ratio

3. RESULTS
3.1 MODEL TESTING

Table 2 – Model testing result

Financial Ratios	Chow Test		Hausman Test	Result
	F-statistic test Prob.	Chi-Square test Prob.		
Current Ratio	0.0135	0.0044	0.0000	*Fixed Effect Model*
Quick Ratio	0.0247	0.0090	0.0000	*Fixed Effect Model*
Debt to Equity Ratio	0.0000	0.0000	0.0000	*Fixed Effect Model*
Inventory Turnover	0.3291	0.2142	-	*Pooled Model*
Total Asset Turnover	0.0000	0.0000	0.0000	*Fixed Effect Model*

The first step is to determine the appropriate model for each ratio. The value of Chow test for current ratio, quick ratio, debt to equity ratio, and total assets turnover ratio is more than the significance level of 5% or 0.05%. Therefore, the appropriate model for these four ratios is fixed effect model.

3.2 DATA PANEL REGRESSION RESULT

Table 3 – Data panel regression result for current ratio

Current Ratio	Coefficient	Std. Error	t-Statistic	Prob.
α (Constant Term)	0.005268	0.040449	0.130231	0.8965
β	0.510782	0.062195	8.212592	0.0000

Table 4 – Data panel regression result for quick ratio

Quick Ratio	Coefficient	Std. Error	t-Statistic	Prob.
α (Constant Term)	-0.005351	0.031332	-0.170772	0.8646
β	0.503138	0.063224	7.958018	0.0000

Table 5 – Data panel regression for debt-to-equity ratio

Debt to Equity Ratio	Coefficient	Std. Error	t-Statistic	Prob.
α (Constant Term)	-0.022508	0.034047	-0.661066	0.5094
β	0.607711	0.058824	10.33106	0.0000

Table 6 – Data panel regression for inventory turnover ratio

Inventory Turnover	Coefficient	Std. Error	t-Statistic	Prob.
α (Constant Term)	-	-	-	-
β	0.125340	0.026277	4.769959	0.0000

Table 7 – Data panel regression for total assets turnover ratio

Total Asset Turnover	Coefficient	Std. Error	t-Statistic	Prob.
α (Constant Term)	0.011492	0.024461	0.469806	0.6391
β	0.819647	0.071095	11.52892	0.0000

Table 3-7 shows the result for data panel regression analysis. The result indicates the convergence exists in current ratio, quick ratio, debt-to-equity ratio, and total assets turnover ratio where value of coefficient α is less than t-table (α=1.699). However, the convergence does not exist in inventory turnover ratio. The direction of the adjustment positive for current ratio and total assets turnover ratio, and negative for quick ratio and debt to equity ratio. The speed of adjustment is rather fast, with the fastest is total assets turnover ratio (β=0.819647) and the slowest is quick ratio (β=0.503138).

4. CONCLUSION AND SUGGESTION

4.1 Conclusion
From the discussion above, the research can be concluded as follow:

The convergence in property and real estate companies listed in Indonesia Stock Exchange (IDX) during the period of 2007-2014 exists in current ratio, quick ratio, debt to equity ratio, and total assets turnover ratio, and does not exist in inventory turnover ratio. The direction of adjustment is positive for current ratio and total assets turnover ratio, and negative for quick ratio and debt to equity ratio. The speed of adjustment is relatively fast, with the fastest shown in total assets turnover ratio and the slowest shown in quick ratio.

4.2 Suggestion

From the conclusion above, there are several suggestions to be considered:

A. Theoretical Aspect

It will be better for future research to consider the following suggestions:
1. Adding more sample by adding companies from different industry as comparison
2. Extending period of study since the data usually becoming more valid as the period of study gets longer
3. Adding more ratios, such as profitability ratio and market ratio

B. Practical Aspect

The existence of convergence of financial ratios may help firms anticipate what might happen in the future, both in the short run and in the long run. A scenario where the convergence exists show that top performing companies may suffer from market overestimating their future growth, and leading to underperforming in the following year, while the poor performing companies will have the opposite fate. This event will most likely make top performing companies to produce inferior investment results compared to poor performing companies [6].

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