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TOBIN'S Q AND MARKET BUBBLE PHENOMENON IN INDONESIA PROPERTY SECTOR IN 2011-2013

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Abstract-Property has been one of the most interesting subject for investment since people believe that the prices of property won't fall, but that kind of expectation can lead to irrational exuberance which can trigger bubble condition. Many media issued that Indonesia has shown the sign of bubble in property sectors, but is there really a bubble in the property or is it because the demand that is higher than the supply. The method that is chosen to analyze this research is valuing the 4 most liquid stocks in property sector using discounted cashflow valuation and then compares it with the market value. The result then analyzed using paired sample t-test to see whether there is significant difference between the market value and book value. The result shows that there is no significant difference between the market value and book value of property sectors which mean there hasn't been any bubble sign in the property market. The increase or property prices aren't caused by the speculation of the investors but it is supported by a massive amount of demands that excess the supply of housing in Indonesia. Even though there is no bubble sign in the property sector, there is a company that has a significant difference between market value and book value with the market value is bigger than the book value. It means that the company has shown a bubble sign which can be dangerous for investor if someday the bubble burst and make the stock price fall. Indonesia as a developing country shows that its fundamental economy condition is still good with no sign of bubble in the property sectors which is safe for investors and home buyers to buy property since the prospect for the future is good since the demand is double than the supply.

Keywords Property, valuation, paired t-test, investment, stocks, bubble

Introduction

Financial crisis has become a booming issue recently and there are a lot of possibilities that can cause financial crisis. Financial crises come in many forms but most of them are started with these following events: substantial changes in credit volume and asset prices, severe disruption in financial intermediation and the supply of external financing to various actors in the economy, large scale balance sheet problems (of firms, households, financial intermediaries, and sovereigns), and large scale government support (in form of liquidity support and recapitalization).

The closes financial crisis was happened in US in 2008 where the bubble housing burst. Home prices weren't moving up through most of the early 1990s, but in 1995 with a new regulation from the government resulted on a more relaxed standards for mortgage loans there were increasing amount of people who want to buy houses with mortgage loans. With a higher demand from relaxed standards for mortgage loans, the house price has started to increase. When all people convinced that home prices would continue to rise, then the irrational exuberance also have the role in the housing bubbles.

Irrational exuberance is a phase when people speculate that an asset price will always increase no matter what without looking at the fundamental of the company, market, and the global condition. In 2002, there was the first warning of housing bubble. In the 1st quarter of 2003, the prices of houses increased by 59% compared with the 1st quarter of 1997. The house prices were on the peak at 2006 before it finally went down because of the housing bubble burst.

It is true that right now the demand of house is still greater than the supply. And according to the law of supply and demand, if the demand is greater than the supply than the demand line will move to the left which then will make a new equilibrium with a higher price. In 2013, the house demand for a year is 800.000 units while the supply of house for sale is only 400.000 units.

With the booming issue of Indonesia housing bubble, researcher is willing to identify whether the issue is just an issue or a real housing bubble is really happening to Indonesia. The theory of bubble according to Bank Indonesia is that the increasing price of property asset doesn't show the real price of the property asset (Surat Edaran Bank Indonesia No.15/40/DKMP). So to be able for the researcher state whether there is bubble property sign or not, researcher has to calculate the real value of property assets in Indonesia and compare it with the market price of property assets. But to be able to evaluate the price of house in the real asset, the researcher can't get enough data required so the researcher will value the property asset from the stock valuation.

If the Bank Indonesia state bubble is an event where the property asset doesn't show the real price, it means that the market value is higher than the fundamental value of the property company. To get the value of the market value the researcher use the stock price times the common stock outstanding. The fundamental value is a valuation method that involves the financial statement of the company and directly related to the company, not the overall state of the market or technical analysis data.

Theoritical Framework

Bubble Property
An Economic bubble is a situation where there is a significant increase in the price of asset in the market but it is not followed by a strong fundamental to withstand the increase of price which similiar to a soap bubble it getting bigger until someday the price will fall to the real value of the asset, or so called bubble burst. a shaIDR rise in price of an asset or a range of assets in a continuous process, with the initial rise generating expectations of further rises and attracting new buyers-generally speculators interested in profits from trading in the asset rather than its use or earning capacity. The rise is usually followed by a reversal of expectations and a shaIDR decline in price often resulting in financial crisis. (Charles Kinderberger, 2000).

Most bubble economic is related with the irrational exuberance, a hightened state of speculative fervor (Shiller, 2005). The first use of irrational exuberance term was in December 1996 when Alan Greenspan hinted that the stock prices might unduly escalated due to irrational exuberance which then burst in the dotcom bubble event. This shows that bubble is not only happening on the real assets but also happening in financial assets. But speculation is not only the soap that can produce bubble, as Shiller said "Bubbles are created when investors fail to recognize when rising asset prices become detached from underlying fundamentals." This once again pushed that valuation is very important in investing.

Tobin's Q
Another approach to see whether a company market price is higher than the company real value is Tobin's Q. Tobin's Q is used to compare company physical assets and the market price. Tobin's Q with

value greater than 1 means their market value is bigger than their real assets which can raise the possibility of a bubble on the company market value.

Paired t-test

A paired t-test is used to compare two population means where one sample can be paired with observation in the other sample. This is how the researcher can proof whether the property stocks market price is higher than the book value significantly or not. The researcher will compare the samples from book value population and paired with the samples from market value population.

Null Hypothesis (H_0)   : There is no significant difference between two samples of population.
Alternative Hypothesis (H_1)   : There is significant difference between two samples of population
The hypothesis is tested based on the SPSS result:

If Sig. (2-tailed) < 0.05, it means that there is significant difference, H_0 is rejected and H_1 is accepted. If the H_1 is accepted means that there is a sign of bubble in the property sector in Indonesia.
If Sig. (2-tailed) > 0.05, it means that there is no significant difference, H_1 is rejected and H_0 is accepted. If the H_0 is accepted means that there is no sign of bubble in the property sector in Indonesia.

Result and Discussion

   I.   Tobin's Q

Tobin's Q	2011	2012	2013
ASRI	1,75	1,01	1,60
BSDE	1,76	1,49	1,34
LPKR	2,44	2,71	2,02
PWON	1,68	0,61	0,65

From the calculation of tobin's Q, the average tobin's Q value from four stocks in three years is abobe 1 which means the stock price value is bigger than the company assets or considerably overvalued.

Alam Sutra Reality has Tobin's Q which are bigger than 1 in 2011, 2012, and 2013. This means that the market is expecting more from the company than the real condition of the company. This Tobin's Q results only align with the discounted cash flow valuation in 2012 where the market value of ASRI is higher than its book value. The result in 2011 and 2013 tell a different story with discounted cash flow since the free cash flow valuation also see the amount of cash available for the company. In 2011 ASRI has increased its current liabilities more than its current assets which make the company free cash flow bigger and finally have a bigger book value than market value. In DCF, an increase in current liability can increase the book value, but in Tobin's Q calculation an increase in current liability can increase the Q value which means a bigger expectation from the market than its current condition. The same thing happened in 2013 where the changes in NWC show negative value which means a bigger current liability than current asset.

   II.   Discounted Cashflow Valuation
       ASRI
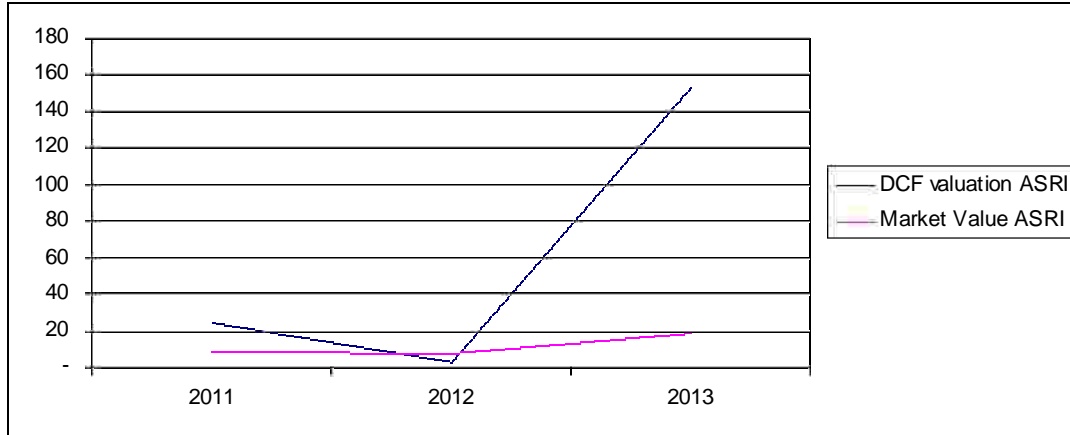
The comparison result of Asri Market Value and discounted cash flow value show that in 2012 the market value of ASRI is higher than the book value, but then it get beaten by the book value in 2013. In 2011 also show a small gap between DCF value and market value of ASRI with DCF value is greater than market value. In overall ASRI can manage their cashflow well because they have their capital expenditures smaller than their operating cashflow in 2011 and 2013. A jump in 2013 is caused because their change in net working capital is negative which mean they got a fresh liquid asset from their short term debt.

BSDE
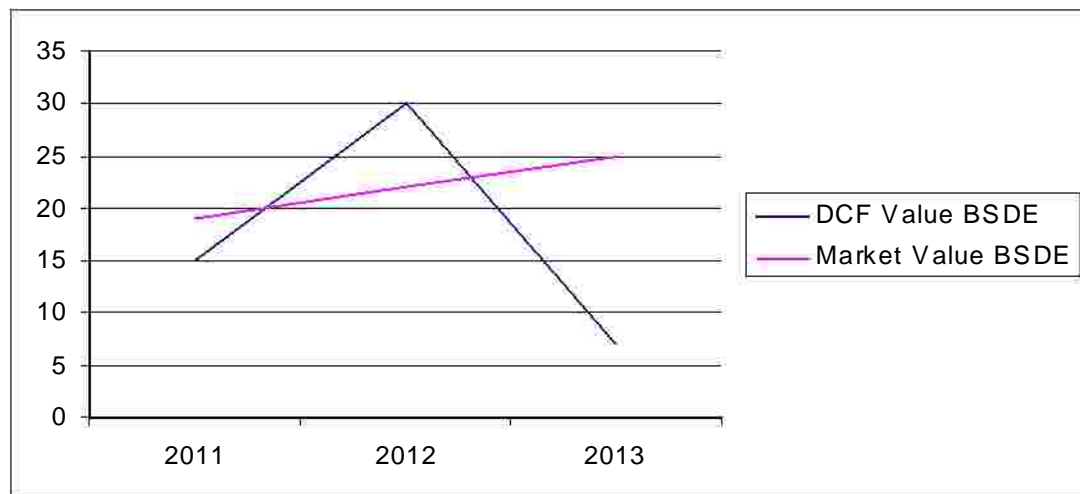
The comparison result of BSDE Market Value and discounted cash flow value show that in 2012 the DCF value of BSDE is higher than the market value, but then it get beaten by the market value in 2013. In 2011 also show a small gap between DCF value and market value of BSDE with market value is greater than DCF value. In overall BSDE can't manage their cashflow well because they have their capital expenditures bigger than their operating cashflow in 2011 and 2013. A DCF value fall in 2013 is caused because they have more capital expenditures than their operating cash flow which result a negative free cash flow but it get positives in the forth year of valuation and get a positive terminal value which make the valuation still positive even though the capital expenditures is bigger than operating cash flow in 2013.

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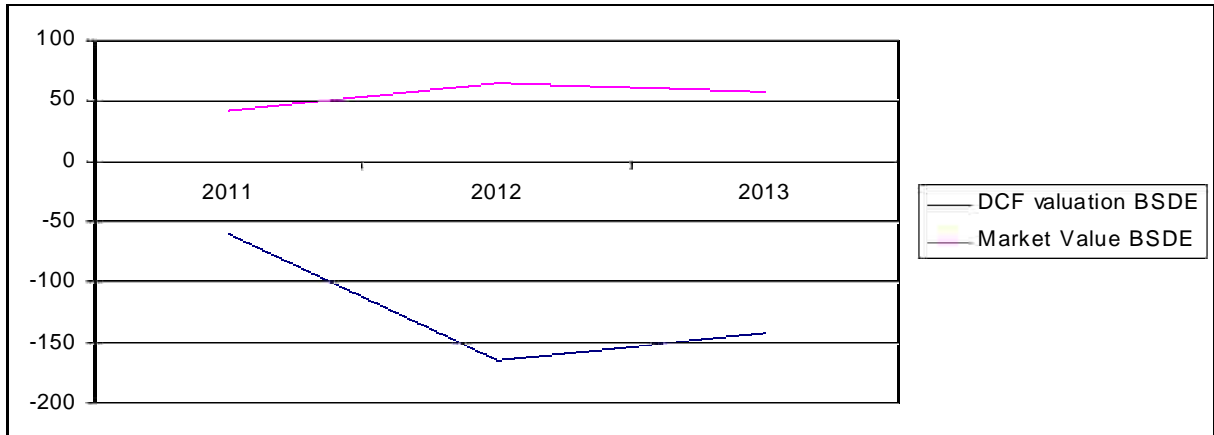
LPKR

LPKR comparison of book values and markets value show that the company book values are lower than the market values in this three year and even get a negative free cash flow valuation in 2012 and 2013. The negative free cash flow value is caused by a massive capital expenditure in buying new fixed assets and current assets. These capital expenditures are also bigger then the company operating cash flow which results in negative free cash flows. According to Aswath Damodaran in his book Investment Valuation: Second Edition, there are some limitations which might make discounted cashflow valuation into trouble and need to be adapted. One of the reasons is if the firms in trouble where the company has negative cashflows.

PWON
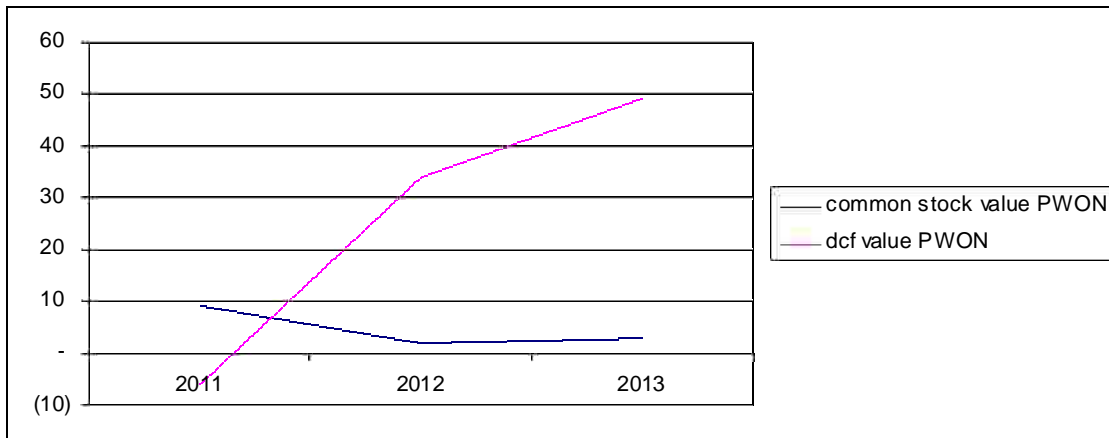
PWON comparison between market value and DCF value show that PWON can secure their book values in 2012 and 2013 from being lower than market values. In 2011 the company capital expenditures is 18% bigger than the company operating cash flow which cause the negative free cash flow. But in 2012 and 2013, PWON successfully deliver a great performance by almost doubling their operating cash flow from 2011 to 2012 and also reduce their capital expenditures. In 2013 PWON also successfully increase their operating cashflow to 46% compared to 2012 which again make their book value higher than the market value

III.   Paired Sample t-test

Table 5.1 Paired Sample t-test Result

Paired Sample t-test		
Company		
ASRI	-0,866	
	-4,66	
BSDE	0,563	
	8,002	
LPKR	4,626	
	3,831	**
PWON	-1,124	
	1,87	
Sector		
Property	-1,089	
	2,895	

The result from paired sample t-test between book value and market value of the property sector shows that H_1 is rejected and H_0 is accepted because the p-value is bigger than the confidence level($\alpha= 0.05$). The H_0 state that there is no significant difference between the book value and the market value of four most liquid property company stocks for 2011, 2012, and 2013. Even though the mean of market value are bigger by IDR 31trillion, the statistics say that there is not enough evidence for the bubble property sign in Indonesia.

The property sector has no sign of bubble because three company stocks that the researcher use are also has no sign of bubbles since there is no significant difference between the market value and book value. But LPKR has shown a sign of bubble because it has significant difference between the market value and book value with the market value bigger than the book value.

Conclusion

From the result of paired t-test between book value and market value, we can see that the p-value is bigger than 0.05 so the null hypothesis is accepted which mean there is no significant difference between book value and market value. Even though the mean of market value is bigger than the book value by IDR 31 trillion, there is still not enough evidence that there are potential bubble property signs in the property market in Indonesia. This can be explained by seeing the fundamental of Indonesia economy right now. Indonesia has more than 200 million citizens and most of them live in Java and Sumatra islands and more than 50% of the citizens are not categorized as poor (approx. 120 millions in 2010). With a centralized living region and good wealth condition make a boost in the property demands with about 800.000 house demand in 2010. But with a limitation on the lands and resources the supply provided was only 400.000 which is lesser than the demand. According to the law of supply and demand if the demand exceeds the supply the supply curve will move to the left and make the equilibrium price higher. According to the paired sample t-test, there is no sign of bubble property in property sector in stock market because there is no significant difference between book value and market value.

Since there is still no sign of bubble, it is fine for investors to hold the property company stocks. But investors must put more attention to the value of the stocks, if their stock price is higher than the value it is better if investors is preparing to sell the stocks.

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