Stock Return Predictability by using Market Ratio, Trading Volume, and Stock Variance

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Abstract
The objective of this research is to examine the effect of financial ratios, such as book-to-market ratio, dividend-yield ratio, dividend-price ratio, dividend-payout ratio, earnings-to-price ratio, cash flow-to-price ratio, trading volume, and stock variance, as the independent variable to stock return predictability on IDX Composite and 9 sectors listed on Indonesia Stock Exchange. This research uses quantitative perspective with linear regression and model in a panel data for all of the research’s observation that used in this research. The number of observation in this research are 1125, consists of 225 firms that has been enlisted on Indonesia Stock Exchange for 2011-2015 period. The result shows that book-to-market ratio, dividend-yield ration, cash flow-to-price ratio, and stock variance have positive significant effect on stock return predictability. Earnings-to-price ratio shows that it has a negative significant effect on stock return predictability, while dividend-payout and trading volume appear to be having no significant effect on stock return predictability.

Keyword: Stock return predictability, financial ratio, trading volume, stock variance

Research Background
Each year, Indonesia capital market has become more interesting for investors. Indonesia capital market shows a positive growth, which can be seen from the increasing number of firms listed on BEI. The increase in number of firms listed on BEI from 2011-2015 indicates that Indonesia capital market is still interesting for investor, resulting in even more firms starting to enlisted themselves on BEI. When investor starts to invest their money in capital market, investor expects to gain, not only return, but also profit worths the risk they are accounted with, from their investment. Moreover, investor organize a portfolio to diversify risk and gain higher profit.

Bannigidadmath and Narayan (2016) did research on stock return predictability and factors affecting predictability in India capital market. Financial ratios, such as dividend-yield, dividend-payout, dividend-price, earning-to-price, book-to-market, were examined of its effect to stock return predictability. There are 4
results generated from the test: (1) Not all of 5 financial ratios used as predictor able to predict return; (2) Return predictability is specific to sector and there are few sectors can be predicted, but there are few sectors that can not be predicted; (3) mean-variance investor able to gain profit that statistically significant through predictive regression model based on financial ratio and few sectors that can generate higher profit than market profit; (4) The result shows that risk, both expected and unexpected risks, turns out to be the determinant of sectoral return predictability and profit from mean-variance investor, however, determinant of predictability and profit are more heterogeneous if using unexpected financial ratio risk.

Previously, Phan, Sharma, and Narayan (2015) had examined the determinant factor of sectoral stock return predictability by finding the relation between predictability and sectoral characteristic variable. Sectoral characteristics examined are book-to-market ratio, dividend-yield ratio, price-earning ratio, trading volume, and market capitalization. The result of this research is stock return predictability has a linkage to certain industrial characteristics, such as book-to-market ratio, dividend-yield ratio, price-earning ratio, trading volume, and market capitalization. Book-to-market ratio, dividend-yield ratio, and trading volume affect stock return predictability positively, while price-earning ratio and market capitalization affect sectoral stock return predictability negatively.

Before examining factors that affect sectoral stock return predictability and market in India, Narayan and Bannigidadmath (2015) had researched stock return predictability in India using book-to-market ratio, dividend-payout ratio, dividend-price ratio, dividend-yield ratio, earnings-price ratio, cash flow-to-price ratio, inflation, and stock variance. The result of this research shows that stock in India is predictable, despite of the sector-specific return predictability.

This research will combine journals of Bannigidadmath and Narayan (2016), Phan, Sharma, and Narayan (2015), and Narayan and Bannigidadmath (2015) with stock return predictability as the dependent variable and dividend-yield ratio, dividend-payout ratio, dividend-price ratio, earning-to-price ratio, book-to-market ratio, cash flow-to-price ratio, trading volume, and stock variance. This research will use all firms listed on BEI in 2011-2015, consecutively, have not been suspended for at least 1 year or more, have published complete and audited annual report from 2011-2015, annual report of 2011-2015 that ended in December, have not done corporate action (stock split, right issue, stock warrant, and stock dividend that causes a large change in number of shares outstanding) in 2011-2015, do not have negative book value, have trading volume in 2011-2015, not currently in privatization stage, and have Exchange Member Approval Letter (SPAB).

**Literature Review**

Stock return is the expectation of investors that the funds invested through the stock will receive yield and capital gains (Hartono, 2010:198). Narayan dan Bannigidadmath (2015), Phan, Sharma, and Narayan (2015), also Bannigidadmath dan Narayan (2016), provide that return saham can be predictability using by historical value of financial variable and macroeconomic such as expected inflation (Bodie, 1976; Fama, 1981), short term interest rate, (Fama dan Schwert, 1977), dividend-yield ratio (Rozeff, 1984; Shiller,1984; Fama dan French; 1988), and rasio earning-to-price.

Campbell dan Shiller (1988) shows that return predictability can be determined financial ratio, trading volume, and stock variance. Narayan and Bannigidadmath (2016) explain that book-to-market ratio can be positive influence to predictability
stock return. Pontiff dan Schall (1998) dan Berk dan Sharathchandra dan Thompson (1994) in Narayan dan Bannigidadmath (2016) said that book-to-market ratio catch information future return because book value is a proxy from expected cash flow. book-to-market ratio is a proxy cash flow to current price. If discount rate changes it can impact increase stock price. So, increase discount rate will be increase book-to-market ratio. Hypotheses developed in this research are

H1: Book-to-market t ratio affects stock return predictability t+1 positively.

Phan, Sharma, dan Narayan (2015); Narayan dan Bannigidadmath (2015); also Bannigidadmath dan Narayan (2016) explain that dividend-yield ratio influence positive return predictability. Hirt (2006) said dividend-yield is one of indicator can be influence stock return. Guler dan Yimaz (2008) provide high dividend-yield show that undervalued capital market, if the stock price smaller than the value, so this stock must be buy and hold to get capital gain when stock price increasing. If dividends are distributed higher, investor will trend to buy. The relationship indicates that positive correlation between dividend-yield and return predictability.

H2: Dividend-yield t ratio affects stock return predictability t+1 positively.

Narayan and Bannigidadmath (2015), dividend-price is a ratio that compare dividend per share and stock price. It is same with dividend-yield, when dividend-price increase so the return also increase.

H3: Dividend-price t ratio affects stock return predictability t+1 positively.

Phan, Sharma, and Narayan (2015), Narayan and Bannigidadmath (2015), also Bannigidadmath dan Narayan (2016) examine that dividend-payout influence positive stock return predictability. Kurniati (2003) said that increasing the dividend-payout ratio also increasing stock price. Investor has certainty about dividend. Dividend increase encouraging improvement of the stock and increase the price (Amarjit, 2010). So, higher dividend-payout ratio indications increasing net income and will be positive signal to investor buy the stock.

H4: Dividend-payout t ratio affects stock return predictability t+1 positively.

Narayan and Bannigidadmath (2015); Bannigidadmath and Narayan (2016) provide that earning-to-price ratio influence positive stock return predictability. Earning-to-price ratio is a reverse the price-to-earning ratio. Hanadi and Halim (1996). Increasing revenue of the firm will be positive impact to stock price. That is show expected investor about the company.

H5: Earning-to-price t ratio affects stock return predictability t+1 positively.

Narayan and Bannigidadmath (2015) explain that cash flow-to-price ratio influence to positive stock return predictability. Da (2009) said that cash flow directly to contain the risk of asset compensation. Thus, the greater the cash flow is reflected in the stock price, will have positive influence on stock returns due to the increased cash flow means the risk that the company offers higher, resulting in increased return obtained by investors.

H6: Cash flow-to-price t ratio affects stock return predictability t+1 positively.

Phan, Sharma, and Narayan (2015) explain that trading volume have a positive impact to stock return predictability. Dow Theory state that volume is a one of important component in market movement. Bullish or Bearish market will be followed with increase or decrease trading volume. When the stocks have higher trading volume, its mean that stocks are in demand. Chordia et al. (2000) show when the share are actively traded means have higher trading volume and will be produce higher return. Other investors are not yet in possession of these shares will use the information as a trade volume of investment decisions because more shares bought by investors then the price will rise up to enhance return for investors.
H7: Trading volume \( t+1 \) affects stock return predictability \( t+1 \) positively. Narayan and Bannigidadmath (2015) provide that \textit{stock variance} influence positive stock \textit{return} predictability. Variants indicate the risk of the investment. Keown (2005) explain about ten fundamental principle on financial management where the first is “\textit{The Risk-Return Trade-Off}”. This principle show that “\textit{We won’t take on additional risk unless we expect to be compensated with additional return.}”, its means the higher the risks covered will increase the risk premium paid so that will increase the profits required by investors.

H8: Stock variance \( t+1 \) affects stock return predictability \( t+1 \) positively.

**Research Method**

This research is a basic research, which is the kind of research that is intended to develop previously researched topic. As from the aim of this research, this research is categorized as causal research due to its purpose to test the effect of independent variables (book-to-market ratio, dividend-yield ratio, dividend-price ratio, dividend-payout ratio, earning-price ratio, cash flow-to-price ratio, trading volume, and stock variance) to dependent variable (stock return predictability of firms listed on BEI in 2011-2015). Furthermore, based on its approach, this research is a quantitative research because it uses quantitative data. This research will test the effect of book-to-market ratio, dividend-yield ratio, dividend-price ratio, dividend-payout ratio, earning-price ratio, cash flow-to-price ratio, trading volume, and stock variance to stock return predictability of firms listed on BEI in 2011-2015.

This research will also undertake robustness test to test each sector in BEI because each sector has its own characteristic different to another sector. By undertaking this test, researcher will examine the effect of independent variables to dependent variable if applied on different sector with different characteristic. The main model of this research will be on all firms listed on BEI, while the other model will be on 9 sector in BEI, such as manufacture sector, finance&banking sector, property sector, agriculture and farming sector, mining sector, infrastructure sector, trading sector, service and investment sector, and consumer goods sector. Robustness test is done by applying regression test on the 9 sectors.

**Result And Discussion**

<table>
<thead>
<tr>
<th>Variabel Independent</th>
<th>Koefisien</th>
<th>Sig.</th>
<th>Hyphoteses</th>
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<tbody>
<tr>
<td>C</td>
<td>0.000195</td>
<td>0.1594</td>
<td></td>
</tr>
<tr>
<td>BM</td>
<td>-0.00260</td>
<td>0.0000***</td>
<td>Positive</td>
</tr>
<tr>
<td>DY</td>
<td>0.00655</td>
<td>0.0000***</td>
<td>Positive</td>
</tr>
<tr>
<td>DP</td>
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<td>Positive</td>
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<tr>
<td>EP</td>
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<tr>
<td>STV</td>
<td>0.755202</td>
<td>0.0000***</td>
<td>Positive</td>
</tr>
</tbody>
</table>

R-Squared: 0.296973
Adjusted R-Squared: 0.292567
S.E. of Regression: 0.001804
F-statistics: 67.40627***

* is significant on \( \alpha = 10\% \); ** is significant on \( \alpha = 5\% \); *** is significant on \( \alpha = 1\% \)

Source: data processed
The result of this research for book-to-market ratio shows that book-to-market ratio has a negative significant effect to stock return predictability. This result is supported by Fama and French (1995) and Lakonishok et. al. (1994).

As for dividend-yield ratio, the result shows that dividend-yield ratio has a positive significant effect to stock return predictability and is supported by Bannigidadmath and Narayan (2016), Liolen (2004), Rozeff (1982), and Lamont (1998).

The result of dividend-payout ratio shows that this ratio has positive insignificant effect to stock return predictability. This result is supported by Modigliani and Miller argument against dividend policy theory of Gordon and Lintner, The Bird In Hand. To Modigliani and Miller, dividend-payout ratio does not have any effect because eventually, investor will re-invest the dividend in the same firm or another firm with relatively the same risk.

Earning-to-price ratio appears to have negative significant effect to stock return predictability. This result is supported by the finding of Narayan and Bannigidadmath (2015), and argument stated by Lamont (1998:1563) about the relation between earning and return in certain market condition.

The result of this research on cash flow-to-price shows that this ratio has a positive significant effect to stock return predictability. This result is supported by Da (2009) saying that cash flow directly consists of risk compensation of an asset and the “Risk-Return Trade-Off” theory.

Trading volume appears to have positive insignificant effect to stock return predictability. This result is supported by Campbell et. al. (1993), Wang (1994), and Llorente et. al. (2002).

The result of the research for stock variance shows that stock variance has a positive significant effect to stock return predictability. This result is supported by Keown (2005), saying that there are 10 principals that underlying Financial Management learning, in which the first principal is “The Risk-Return Trade-Off.

The F test on model 1 has probability below 5% and R-Squared in Indonesia is 0.296973. This number shows that independent variables (book-to-market ratio, dividend-yield ratio, dividend-price ratio, dividend-payout ratio, earning-price ratio, cash flow-to-price ratio, trading volume, and stock variance) are able to explain the dependent variable (stock return predictability) as big as 29.70%, while the rest is explained by another variables that are not included in this research. Robustness test in this research is done by applying regression test on the 9 sectors in bEI. The result of the robustness test can be seen on Table 2.

Table 2.
Regression Result at 9 Sector on IDX

<table>
<thead>
<tr>
<th>Sector</th>
<th>BM</th>
<th>DY</th>
<th>DP</th>
<th>EP</th>
<th>CFP</th>
<th>TV</th>
<th>STV</th>
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<td>-0.000316**</td>
<td>-2.712071</td>
<td>-0.000195**</td>
<td>2.626923</td>
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<td>Agriculture and Livestock</td>
<td>-0.000572** -3.090817</td>
<td>0.002558</td>
<td>0.000244</td>
<td>-0.000942**</td>
<td>-2.126831</td>
<td>-0.002301**</td>
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<tr>
<td>Mining</td>
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<td>0.03271***</td>
<td>-0.002763*</td>
<td>-2.240077</td>
<td>-0.002417*</td>
<td>-2.014631</td>
<td>0.001345**</td>
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<tr>
<td>Basic and Chemical Industry</td>
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<td>0.012444</td>
<td>-0.000818</td>
<td>0.000707</td>
<td>1.423695</td>
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<tr>
<td>Various Industry</td>
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<td>-1.568701</td>
<td>-4.76E-05</td>
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</table>
### Conclusion

The regression result of book-to-market ratio has a coefficient of 0.00260 and significance level of 0.0000. It means that book-to-market ratio has a negative significant effect to stock return predictability. According to Fama and French (1995) and Lakonishok et al. (1994), stock with high book-to-market ratio tends to have low income, while stock with low book-to-market ratio tends to belong to a strong firm (currently at growth stage) with high income. Lakonishok et al. (1994) and Haugen (1995) argue that market undervalue distressed stock and overvalue stock at growth stage. The regression result for dividend-payout ratio is not in accordance with the hypothesis, which appears to have insignificant effect to return predictability. This result is supported by Modigliani Miller theory that argues dividend policy theory of Gordon and Lintner. As for earning-to-price ratio, the regression result shows that this ratio has a negative significant effect to stock return predictability. This result is supported by the economy cycle theory that suffers recession after the booming cycle. Trading volume is proven to not affecting stock return predictability. This result is in accordance to Campbell et al. (1993), Wang (1994), and Llorente et al. (2002) stating that volume can not individually affecting stock price and requires another variables.

### References


<table>
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<tr>
<th>Consumer Goods Industry</th>
<th>0.025474</th>
<th>-0.000689</th>
<th>0.001329</th>
<th>-0.001708</th>
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<td></td>
<td>4.570733**</td>
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<td>0.889802</td>
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<td>1.510327**</td>
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<td>0.838023</td>
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</table>

* is significant on α = 10%; ** is significant on α = 5%; *** is significant on α = 1%

Source: data processed


http://finance.yahoo.co.id (acessed on 30 March 2016)
http://icamel.co.id, (acessed on 20 March 2016)
http://britam.com (acessed on 02 September 2016)
http://www.duniainvestasi.com/bei/ (acessed on 02 September 2016)
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