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The Effect of Fundamental Factor Analysis on Blue Chips Stock Returns on the Indonesia Stock Exchange

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ABSTRACT

The purpose of this study was to determine the effect of fundamental analysis consisting of price earning ratio, net profit margin, price to book value, return on equity, debt to equity ratio, and dividend payout ratio on stock returns on blue chips on the Indonesia Stock Exchange. The research method used is multiple linear regression analysis method, and hypothesis testing is done by testing the significance of the effect simultaneously (simultaneously) using the F-test and testing the significance of the partial effect using the t-test. This study uses secondary data in the form of financial statements of companies listed in blue chips on the Indonesia Stock Exchange in 2005–2007. The results showed that simultaneously (simultaneously) operational effectiveness (price earning ratio, net profit margin, price to book value, return on equity, debt to equity ratio, and dividend payout ratio) have a significant effect on stock returns. Partially there is a negative and significant effect between the price earning ratio on stock returns. Partially there is no significant effect between net profit margin on stock returns. Partially there is no significant effect between price to book value on stock returns. Partially there is a positive and significant effect between return on equity on stock returns. Partially there is a positive and significant effect between debt to equity ratio on stock returns. Partially there is a positive and significant effect between the dividend payout ratio on stock returns.

1. Introduction

Investment can be interpreted as a commitment to place funds in one or several investment objects with the hope of getting profits in the future(Sullivan, 2013). An investment that is quite attractive but classified as high risk is stock investment, where shares are a sign of the participation or ownership of a person or entity in a company or limited liability company. Investing in stocks is not a risk-free investment(Guiso et al., 2008). The risk of investing in shares is experiencing capital loss, losing the opportunity to invest in other instruments (opportunity cost), and the possibility that the issuer will be liquidated(Stulz, 2013).

The investment decision in a stock must be preceded by an analysis process of the variables that are expected to affect the price of a stock due to the nature of the stock which is very sensitive to changes that occur, both caused by internal factors and external factors. Internal factors come from within the company, namely the company's performance, both financial performance and management performance, company conditions and company prospects, while external factors include various information outside the company, namely financial market conditions, capital market conditions (supply and demand), politics, and other issues. Issues currently circulating can also drop the price of a stock (Köksal, 2008).

Investors who invest in the capital market must be able to utilize all information to analyze the market and their investments in the hope of obtaining maximum profits or minimizing risk because every stock trading transaction on the stock exchange, investors/investment managers are faced with the choice to buy or sell shares. Errors in making investment decisions will cause losses for the investors themselves, or result in the net asset value of the managed mutual funds decreasing (Chandra, 2008)(Ivković & Weisbenner, 2009).

Blue chip stocks are stocks of large companies that have proven to have good reputations and

historically have a record of profit growth from year to year, consistently provide dividends to shareholders, and are very actively traded on the stock exchange. (Tambunan, 2007:21). These companies are managed with a high standard of professionalism to produce high quality products/services and implement the principles of good corporate governance well(Salvioni & Astori, 2013). The market price of blue chip stocks is generally relatively expensive but the rate of return in the form of dividends is also relatively worth it(Park, 2009)(Białkowski & Jakubowski, 2008).

Investors usually rely on the prospectus and the company's financial statements in assessing the performance of a company using fundamental analysis(Park, 2008)(Olagunju, 2011). Fundamental analysis with financial ratios is a way of selecting appropriate types of shares to be used as valuations for securities traded in the capital market by conducting stock valuations and studying or observing various indicators related to macroeconomic conditions and industrial conditions of a company (company analysis) including various indicators. finance and company management or in other words analysis based on various real data to evaluate or project the value of a stock (Darmadji, 2006:189).

2. Method

Operational limitations in this study are analysis of the financial performance of blue chips with fundamental analysis measured using net profit margin, price earning ratio, price to book value, return on equity, debt to equity ratio, and dividend payout ratio as well as analyzing the effect of fundamental analysis on blue chip stock returns(Hájek et al., 2013)(Jais et al., 2012).

The population used in this study is the population of companies that are included in blue chip stocks from 2005-2007 and listed on the Indonesia Stock Exchange, while the sampling uses a "non-probability random sampling" approach with the "purposive sampling" method where the sampling technique is using certain criteria/considerations (Sugiyono, 2003:78). The sampling criteria used include: (a). Issuers listed in LQ 45 shares from 2005–2007 (for 3 consecutive years). (b). Issuers who have complete financial statement data for the period 2005–2007. (c). Issuers who paid dividends in cash during the period 2005–2007. Samples that meet these criteria are 17 industrial companies, namely:

Table 1. Research Sample

No.	Code	Company name
1	AALI	PT Astra Agro Letasi, Tbk
2	ANTM	PT Aneka Tambang, Tbk
3	ASRII	PT Astra International, Tbk
4	BBCA	PT Bank Central Asia, Tbk
5	BBRI	PT Rakyat Indonesia, Tbk
6	BDMN	PT Bank Danamon, Tbk
7	BLTA	PT Berlian Laju Tanker, Tbk
8	BMRI	PT Bank Mandiri, Tbk
9	BANGA	PT Bank Niaga, Tbk
10	EARTH	PT Bumi Resources, Tbk
11	INCO	PT International Nickel Indonesia, Tbk
12	INDF	PT Indofood Sukses Makmur, Tbk
13	ISAT	PT Indosat, Tbk
14	TINS	PT Timah, Tbk
15	TLKM	PT Telekomunikasi Indonesia, Tbk
16	UNTR	PT United Tractors, Tbk
17	UNVR	PT Unilever Indonesia, Tbk

Source: www.idx.co.id

The operational definitions and measurement of variables used in this study are as follows:
Stock return (RS) as dependent variable (Y) (Luthra & Mahajan, 2014)

$$\text{Return } Share = \frac{Share\ Price_{t} - \text{Share Price}_{t-1}}{\text{Share Price}_{t-1}} + \text{Yield}$$

where:
t = stock price in period t
t-1 = stock price in period t-1

$$\text{Yield} = \frac{\text{Devidend}}{\text{Share Price in the period}_t}$$

Stock return shows the ability of a stock to gain capital gain (purchase price < selling price) or capital loss (purchase price > selling price). (Tambunan; 2007).

Fundamental analysis as an independent variable (predictors) is measured by several variables (Tambunan; 2007), namely:

Net profit margin (NPM), is a profitability ratio calculated by dividing net profit by total sales. This ratio shows the net profit with total sales that can be obtained from each rupiah of sales.

$$\text{NPM} = \frac{\text{Net Profit}}{\text{Total Sales}}$$

Price Earning Ratio (PER), describes the market appreciation of the company's ability to generate profits. PER is calculated in units of times.

$$\text{PER} = \frac{Share\ Price}{\text{EPS}}$$

Price to Book Value (PBV), describes how much the market appreciates the book value of a company's shares (Tambunan; 2007). The higher this ratio, the more the market believes in the company's prospects:

$$\text{PBV} = \frac{Share\ Price}{\text{Share Book Value}}$$

Return on Equity (ROE), is a financial ratio that is widely used to measure company performance, especially regarding company profitability (Tambunan; 2007).

$$\text{ROE} = \frac{\text{Net profit}}{Equity} \text{x } 100\%$$

Debt to Equity Ratio (DER), is a ratio that measures the extent to which the amount of debt can be covered by own capital. (Tambunan;2007)

$$\text{DER} = \frac{\text{Total D}ebt}{\text{E}quity}$$

Dividend Payout Ratio (DPR), is a ratio that measures the ratio of dividends to company profits. (Tambunan; 2007)

$$\text{DPR} = \frac{Dividend\ per\ Share}{\text{EPS}}$$

The author uses secondary data, namely data obtained indirectly from other parties or in the form of a document. Secondary data used in the form of the company's annual financial statements which are included in blue chip stocks for the period 2005 - 2007. These data were obtained by utilizing the internet site (www.idx.co.id), website search website (www.google.com) on November 15, 2008.

Based on the type of data used, the authors did not come directly to the company, but by utilizing internet sites that provided the required data, while the research period was from January 2009 to March 2009.

The technique used by the author to collect the data needed to assist this research is a documentation study, namely researching and temporarily evaluating documents in the form of balance sheets and company income statements sourced from the internet and mass media related to the scope of the research.

The method used by the author to analyze the data is by means of quantitative analysis with a multiple linear regression analysis technique approach. The data analysis model is expressed in a function, namely:

Y = 0 + 1 X1 + 2 X2 + 3 X3+ 4X4 + 5X5 + 6X6 +

Y = Stock Return
0 = Constant Return

1, 2, 3, 4 = Regression Coefficient of Independent Variables
X1 = Net Profit Margin
X2 = Price Earning Ratio
X3 = Price to Book Value
X4 = Return on Equity
X5 = Debt to Equity Ratio
X6 = Dividend Payout Ratio
= Interrupt Error (error)
In addition to the above equation, a Feasibility Test of the Model will also be carried out, (Distribution Normality Test, Multicollinearity, Autocorrelation, Heteroscedasticity, Linearity), Hypothesis Testing (Simultaneous Effect, Partial Effect Test).

3. Results and Discussion

Analysis of the Performance of Fundamental Factors and Blue Chips Stock Returns, the following is table 1 of the average blue chip stock return and the average fundamental variable, namely:

Table 1 Average Fundamental Variables and Blue Chips Stock Returns in 2005 – 2006 (in %)

Information	2005	2006	2007
RS	32.77	81.86	119.84
PER	16.69	16.50	17.25
NPM	20.26	16.86	21.76
PBV	5.72	4.14	9.83
ROE	40.98	38.55	52.61
DER	3.78	3.57	3.61
DPR	43.58	74.62	91.92

Source: Indonesia Stock Exchange (data processed, 2009)

Stock Return (RS)

Stock return is the result obtained from investment in a certain period consisting of capital gain (loss) and dividend yield. Table 1 shows that the average return of blue chips in 17 companies was the lowest in 2005 at 32.77. The average value is the lowest when compared to 2007 at 119.84 and 2006 at 81.86. This means that in 2005, blue chip stocks had a small return capacity, both from capital gains (losses) and dividends given by each company on blue chips, while in 2006 and 2007 blue chip stocks had an increase in stock returns and dividends (appendix 1).

Price Earning Ratio (PER)

Price earning ratio is the price ratio calculated by dividing the current share price by earnings per share (EPS), EPS itself is a ratio that shows how much profit the investor or shareholder gets per share. The higher the EPS value, of course, the shareholders are happy because the greater the profit provided to the shareholders. PER describes the market appreciation of the company's ability to generate profits. Table 4.1 shows that the lowest average PER in 2006 was 16.50 and the highest in 2007 was 17.25. The higher the PER value of a stock, the better the company's performance from management, and has a low risk.

Net Profit Margin (NPM)

Net profit margin is the ratio of profitability which is calculated by dividing net profit by total sales. This ratio shows the net profit with total sales that can be obtained from each rupiah of sales. Table 1 shows that the lowest average NPM in 2006 was 16.86 and lower than 2005 at 20.26 and the highest average NPM in 2007 was 21.76. This means that the net profit ratio of 17 companies listed on blue chips decreased by -0.16 in 2006 when compared to 2005 and the net profit ratio increased by +0.29 in 2007. The higher the NPM value of a stock, the better the company's performance. when compared to similar companies.

Price Book Value (PBV)

Price book value or PBV describes how much the market appreciates the book value of a company's shares. The higher this ratio, the more the market believes in the company's prospects. Table 1 shows that the lowest average PBV of blue chips in 2006 was 4.14 and lower than 2005 at 5.14 and the highest average PBV in 2007 was 9.83. This means that blue chip stocks in 2007 had a high PBV and were stocks that were superior from 2005 to 2006

Return on Equity (ROE)

Ratio which is a financial ratio that is widely used to measure company performance, especially regarding

the company's profitability or measuring the company's ability to generate returns on its own capital. Table 1 as a whole identifies that the lowest ROE of blue chip stocks in 2006 was 38.55 (lower than the previous year at 40.99) and the highest in 2007 was 52.61. Higher It means that in 2007 the companies listed in blue chips had the highest rate of return on their own capital (attachment 5) when compared to 2005 and 2007.

Debt to Equity Ratio (DER)

Debt to equity ratio is a comparison between total debt (total interest-bearing debt, both long-term and short-term) with total equity. This ratio is used to measure the company's capital and indirectly also to measure the company's ability to meet its debt obligations. Table 4.1 shows that the lowest average DER for blue chips in 2006 was 3.57 (smaller than in 2005 at 3.78) and the largest in 2007 was 3.61. This means that in 2007, on average, companies listed in blue chips had debt that was greater than the average debt in 2005 and 2007.

Dividend Payout Ratio (DPR)

The dividend payout ratio is a ratio that measures the ratio of dividends to company profits. Table 1 shows that the highest average dividend payout ratio in 2007 was 91.92, then in 2006 it was 74.62 and the lowest was in 2005 at 43.58. This means that the average blue chip company gives an increase in dividends every year (attachment 8) and the average earnings per share (EPS) of the blue chip company also increases every year. The higher the DPR, the identification that the company provides a high rate of return (yield).

Statistical Data Analysis, Leaflet Normality Test.

Table 2. One-Sample Kolmogorov-Smirnov Test

		RS	PER	NPM	PBV	ROE	DER	DPR
N		51	51	51	51	51	51	51
Normal Parameters(a,b)	Mean	78.0220	16.8147	19.6265	6.5651	44.0467	3.6535	70.0402
	Std. Deviation	114.79197	11.27335	12.33803	10.28958	27.77099	3.57762	129.69234
Most Extreme Differences	Absolute	.202	.150	.105	.281	.158	.274	.375
	Positive	.202	.150	.105	.264	.158	.274	.375
	Negative	-.192	-.149	-.068	-.281	-.083	-.166	-.322
Kolmogorov-Smirnov Z		1.440	1.072	.749	2.007	1.127	1.958	2.681
Asymp. Sig. (2-tailed)		.132	.201	.628	.089	.158	.151	.172

a Test distribution is Normal.
b Calculated from data.

Table 2 shows that the Kolmogorov-Smirnov Test value of all variables is greater (>) 0.05 and the significant value is above = 0.05. This situation illustrates that all data used in the regression model are normally distributed.

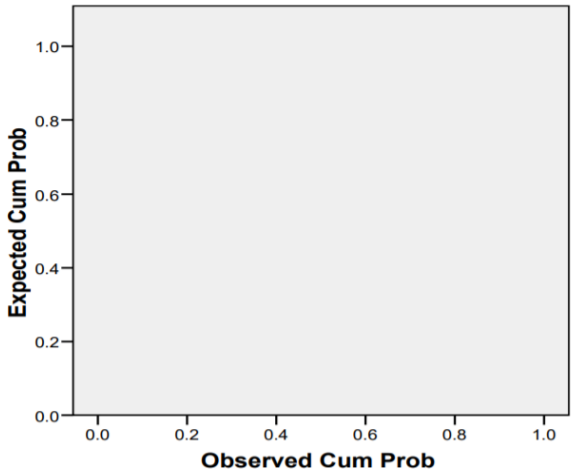

Figure 1. Normal P – P Plot (Normality Test)

Graph 1. illustrates the distribution of existing data that is evenly distributed and forms a straight line (linear). This situation illustrates that all data used in this study are normally distributed. Thus, based on the

Kolmogorov-Smirnov Test test tool and the Normal PP plot display, the evidence is strong enough to state that one of the classical statistical assumptions, namely the normality of the data required to perform regression testing as an analytical tool in parametric statistics, is met.

Multicollinearity

Table 3. VIF

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	PER	.658	1.520
	NPM	.440	2.272
	PBV	.186	5.366
	ROE	.323	3.100
	DER	.675	1.480
	DPR	.288	3.472

a Dependent Variable: RS

Table 3 shows that the VIF value for all predictors is 1.520 for Price Earning Ratio, 2.272 for Net Profit Margin, 5.366 for Price Book Value, 3.100 for Return on Equity, 1.480 for Debt to Equity Ratio, and 3.472 for Dividend Payout Ratio. The requirement to be said to be free from multicollinearity problems is if the VIF value does not exceed a value of 10 or ranges from 1 or lower than 10. The conclusion is that the regression model is free from the assumption of multicollinearity.

Autocorrelation

Table 4. Durbin Watson

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.405(a)	.164	.050	111.88856	2.333

a Predictors: (Constant), DPR, PER, DER, NPM, ROE, PBV
b Dependent Variable: RS

Table 4. shows that the Durbin-Watson value is 2.333. According to Cornelius, (2004: 98) to detect the presence or absence of autocorrelation can be tested with the following conditions: (1). $1.65 < DW < 2.35$, the conclusion is that there is no autocorrelation. (2). $1.21 < DW < 1.65$ or $2.35 < DW < 2.79$, the conclusion cannot be concluded. (3). $DW < 1.21$ or $DW > 2.79$, the conclusion is that there is an autocorrelation. So based on the provisions above, it can be concluded that the regression model is free or does not occur autocorrelation due to $1.65 < 2.333 < 2.35$.

Heteroscedasticity

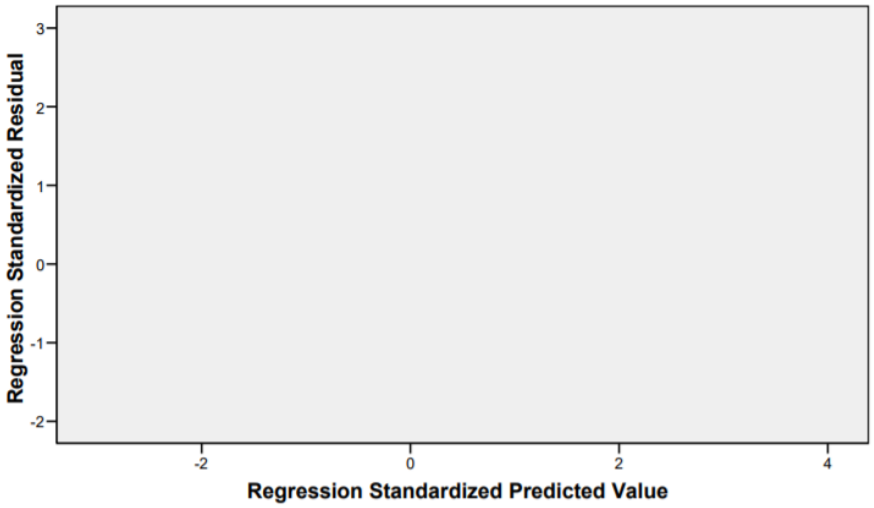

Figure 2. Scatter plot (Test of Homogeneity)

Figure 2 Scatter Plot can be seen that the state of the data does not form a certain regular pattern or does not accumulate in one particular corner. The data distribution appears to be in all directions and fills the area above and below zero evenly. This indicates that the regression model is not affected by the problem of heteroscedasticity.

Table 5. Park Gleyser

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	46.883	29.885		1.569	.126
	PER	-.321	.797	-.084	-.403	.689
	NPM	.643	.820	.197	.784	.438
	PBV	.276	1.452	.078	.190	.850
	ROE	-.163	.390	-.119	-.418	.679
	DER	.963	2.185	.081	.441	.662
	DPR	-.087	.092	-.311	-.949	.350

a Dependent Variable: Absut

Table 5 shows that the value of sig. t > 0.05 then the regression model used in this study did not occur heteroscedasticity symptoms.

Linearity

Table 6. RS Linearity Test and PER

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * PER	Between Groups	(Combined)	,046	49	,002	25,681	,038
		Linearity	,024	1	,024	338,161	,003
		Deviation from Linearity	,022	48	,001	12,661	,076
	Within Groups		,000	2	,000		
	Total		,047	51			

Table 6 shows that the value of sig. Deviation from Linearity (0.076) > 0.05, it can be concluded that the relationship between Stock Return (RS) and Price Earning Ratio (PER) is linear.

Table 7. RS Linearity Test and NPM

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * NPM	Between Groups	(Combined)	,045	50	,002	,956	,684
		Linearity	,017	1	,017	9,296	,202
		Deviation from Linearity	,028	49	,001	,622	,783
	Within Groups		,002	1	,002		
	Total		,047	51			

Table 7 shows that the value of sig. Deviation from Linearity (0.783) > 0.05, it can be concluded that the relationship between Stocks (RS) and Net Profit Margin (NPM) is linear.

Table 8. RS Linearity Test and PBV

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * PBV	Between Groups	(Combined)	,046		,002	3,940	,222
		Linearity	,005	49	,005	10,017	,087
		Deviation from Linearity	,041	1	,002	3,687	,235
	Within Groups		,001	2	,000		
	Total		,047	48			

Table 8 shows that the value of sig. Deviation from Linearity (0.235) > 0.05, it can be concluded that the relationship between Stock Return (RS) and Price Book Value (PBV) is linear.

Table 9. RS Linearity Test and ROE

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * ROE	Between Groups	(Combined)	,044	50	,002	,935	,738
		Linearity	,004	1	,004	,747	,532
		Deviation from Linearity	,041	49	,002	,799	,516
	Within Groups		,002	1	,002		
	Total		,047	51			

Table 9 shows that the value of sig. Deviation from Linearity (0.726) > 0.05, it can be concluded that the relationship between Stock Return (RS) and Return on Equity (ROE) is linear.

Table 10. RS and DER Linearity Testing

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * DER	Between Groups	(Combined)	,046	49	,002	1,681	,038
		Linearity	,047	1	,014	235,161	,023
		Deviation from Linearity	,035	48	,001	12,661	,142
	Within Groups		,011	2	,024		
	Total		,057	51			

Table 10 shows that the value of sig. Deviation from Linearity (0.142) > 0.05, it can be concluded that the relationship between Stock Return (RS) and Debt to Equity Ratio (DER) is linear.

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Table 11. Hospital Linearity Testing and DPR

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
RS * DPR	Between Groups	(Combined)	,045	50	,002	,856	,684
		Linearity	,015	1	,025	18,234	,103
		Deviation from Linearity	,024	49	,001	,712	,082
	Within Groups		,012	1	,012		
	Total		,032	51			

Table 11. shows that the value of sig. Deviation from Linearity (0.082) > 0.05, it can be concluded that the relationship between Stock Return (RS) and Net Profit Margin (NPM) is linear. Overall, it can be concluded that there is a linear relationship between the independent variables (predictors) in the model, namely price earning ratio, net profit margin, price book value, return on equity, debt to equity ratio, and dividend payout ratio with the dependent variable being stock returns. . Thus the regression model is free from linearity problems.

Test of Conformity (Goodness of Fit)

This test aims to test the accuracy of the sample regression model in estimating the actual value. Statistically it can be measured from the value of the coefficient of determination (R2) where the value of the coefficient of determination is 0 R2 1.

Table 12. Goodness of Fit

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.892(a)	.856	.830	.000825	2.388

a Predictors: (Constant), DPR, PER, DER, ROE, NPM, PBV
b Dependent Variable: RS

Table 12 the value of R square is 0.856, meaning that the overall ability of the predictors in the regression model to explain the variation of the dependent variable is very high because the value of R2 (0.856) is close to 1. A value that exceeds 50% causes the regression model to be said to be feasible and able to explain variations from dependent variable

4. Conclusion

Conclusions based on the results of data analysis and hypothesis testing that have been described include: Simultaneously, fundamental analysis as measured by price earning ratio, net profit margin, price book value, return on equity, debt to equity ratio, and dividend payout ratio have a significant effect on return share. Partially, the price earning ratio has a negative and significant effect on stock returns; net profit margin has no significant effect on stock returns; price book value has no significant effect on stock returns; return on equity has a positive and significant effect on stock returns; debt to equity ratio has a positive and significant effect on stock returns; and dividend payout ratio has a positive and significant effect on stock returns.

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