Comparative economic value added on Southeast Asian banking industry

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Abstract

This study analyses the bank's performance comparison across countries in some ASEAN members which are listed in the stock exchange, as well as to analyse the influence of Economic Value Added (EVA) and some financial ratios on the company stock return. Analysis suggests some results. In Indonesia, Thailand and the Philippines, the movement of EVA follows the movement of Gross Domestic Product (GDP). This study also finds that Earning per Share (EPS), only in Singapore, and Return on Equity (ROE) and Return on Assets (ROA), only in the Philippines, have an influence on stock return. Only in the Philippines where EVA together with ROA has an effect on stock return.

**Introduction**

Commercial bank is a bank that accepts deposits from customers and grant loans, such as commercial loans and real estate loans (Saunders & Cornett, 2011). Starting from this definition, a bank's survival depends on the ability of the bank ability to raise funds and manage of these funds to be disbursed as loans to the public (consumer) in the form of consumer loans and commercial loans. In the event of a disruption to both the form of customer deposits withdrawals simultaneously (rush) or loans that given to the debtor to be problematic, it will affect the liquidity of the bank, its worst effects the bank can go bankrupt (Saunders & Cornett, 2011).

The global crisis of 2008 began as a result of the U.S. sub-prime mortgage collapse in the U.S. real estate industry. This causes financial industries were destroyed, with peaks of the crisis was Lehman Brothers filed for bankruptcy on September 15, 2008 so that its impact extends to the whole world (Indonesian Central Bank, 2010). Murtiyanti et al. (2015) mention the importance of capital adequacy of banking industry in Indonesia.

The 2008 global crisis also has effects in some Southeast Asia countries, which can be traced from the drop in the stock price index in some countries such as Indonesia, Malaysia, Philippines, Thailand and Singapore which can be seen in Figure 1.

Decline in the stock price index indicates a massive withdrawal primarily by corporate investors who are major players with funds on stock exchanges each country driven by the financial crisis in the United States in 2008’s fund lost. The withdrawal cause immediate impact on their respective stock exchanges in each country is the decline in stock price index.

In Figure 2 it can be seen that the exchange rate in the country of Indonesia, Malaysia, Philippines, Thailand and Singapore also experienced a big decline on the U.S. Dollar exchange rate against their own currency.
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To cope with large withdrawals by investors leading to decreased stock index and the weakening of the currency against the U.S. dollar in the Indonesia, Malaysia, Singapore, the Philippines and Thailand, some countries in Southeast Asia lowered its benchmark interest rate starts from Malaysia to change its policy rate from 3.5% to 3.25% on November 21, 2008, followed by Thailand with a country changing its policy rate to 3.75% on November 21, 2008, and on December 3, 2008 Indonesia lowered its BI Rate to 9.25% and the Philippines down to 5.5% at December 18, 2008. While Singapore chose another way to cope with the impact of the global crisis of 2008 with the focus to maintain the stability of the country’s currency against foreign currencies especially the U.S. dollar (Green, 2010).

In the measurement of bank performance, researchers use Economic Value Added (EVA) methods. Researchers using this method because the traditional measurement of accounting like financial ratios, accounting distortions that are not able to measure the added value created in a certain period. In some empirical literature also found not one single financial ratio that could explain changes in shareholder wealth (Worthington & West, 2001).

Based on the explanation above, this study will be investigating on the comparative performance of banks in the country of Indonesia, Malaysia, Singapore, Thailand and Philippines that are listed on the Stock Exchange of each country using Economic Value Added (EVA) and research at its role at explanatory power in stock return with other traditional measures for the period 2007-2011.

Economic Value Added (EVA) is one of the analytical measurement tools to measure the performance of the company. EVA was developed by Joel Stern & G. Bennet Stewart III in 1982 (Grant, 2003). Economic Value Added (EVA) is used as a tool to measure value creation for shareholders in the firm (Grant, 2003). For investors in a company, they wants a high return rate, so that the company's performance must be analysed to determine the level of high returns, and one of the tools to analyse it is Economic Value Added (EVA).

Previous studies of bank performance measurement using Economic Value Added (EVA) are done by Munteanu & Brezeanu (2012) that study EVA measurement on the banking institution in Romania. The sample of this research are 12 largest banks in Romania that capture market share of 80% in Rumania within study period from 2006 to 2010, this studies had results in the period before the 2008 financial crisis, from 2006 to 2007 by 67% of the object of study is the creator of value added for its investors, while in 2008 it decreased to 50% and then rose again to 58% in 2009 and 75% in 2010. This study conclude that the financial crisis in 2008 also affect bank in Romania using Economic Value Added (EVA) methods.
Mandilas, Floropoulus, Pipiliagkopoulus, & Angelakis (2009) studies the explanatory power of Economic Value Added (EVA) on stock return compared to traditional measurement methods that Earning Per share (EPS), Return on Asset (ROA), and Return On Equity (ROE) and then this research also studies EVA's explanatory power on stock return when combined with each of the traditional measurement method on Athens Stock Exchange, Greece. The study gets the results that EPS has the greatest explanatory power on the stock return and if EVA combined with the EPS, the explanatory power of these measurements both in the stock return is greater than the explanatory power of each variable (i.e. EVA and EPS) on the stock return.

Above study is a continuation of research conducted by Maditinos, Sevic, & Theriou (2009) with the same sample but different research study period with the method developed by Easton & Harris (1991) namely relative information content and incremental information content. This study also found the same thing with the above studies is that the EPS has the greatest explanatory power on the stock return and if EVA combined with the EPS, the explanatory power of these measurements both in the stock return is greater than the explanatory power of each variable (i.e. EVA and EPS) on the stock return.

Next studies is researched the explanatory power of Economic Value Added (EVA) and other traditional measurements namely Earning Per share (EPS), Return on Asset (ROA), and Return On Equity (ROE), and Residual Income (RI) at 605 companies in the United States in 1983-1992 to stock return done by Chen & Dodd (1997). The results of this study found that traditional measurement has a greater correlation to stock returns than EVA.

Biddle, Bowen, & Wallace (1997) studies on the explanatory power of Economic Value Added (EVA) and traditional measures against stock return in United States with a sample of 773 companies and the study period from 1984 to 1993 with the same method that Mandilas & Maditinos used, this study showed that the traditional measurements more correlated with stock returns than Economic Value Added (EVA) method.

Next research on the effects of explanatory power of Economic Value Added (EVA) and traditional measures of the stock return are done by Worthington & West (2001) on 110 Australian companies with the period 1992-1998 using the same method with Biddle, this study found the same results that traditional measurements are more correlated with stock returns than Economic Value Added (EVA) method.

Turvey et al. (2000) studies on the 17 food processing companies listed on Canadian stock exchanges about the explanatory power of Economic Value Added (EVA) on stock return, this study found that there was no relationship or explanatory power of Economic Value Added (EVA) on stock return.

Research Method

Object of this study are the banks that are listed on stock exchanges in each country and the bank name data is available in the Database Thomson Reuters in January 2009 until June 2011. Countries in Asian which became the object of study are Indonesia, Malaysia, Singapore, Thailand and Philippines.

The selection of this countries was based on those countries are the fifth largest country in Southeast Asia in terms of monetary economy, demand and supply in the market of the ASEAN organization (Cortinhas, 2003). While criteria on the sample banks are commercial banks that are listed on stock exchanges in each country and the complete data is available on Thomson Reuters Database from January 2009 until June 2011, the banks in the object of study must be listed on the stock exchange of each country because in this study researchers also analyse the explanatory power of the Economic Value Added (EVA) of the stock return. Determining the type of bank that are commercial banks because the commercial bank is an intermediary institution that directly relate to the general public.

The period of research on the comparative performance of banks in Indonesia, Malaysia, Singapore, Thailand and Philippines using measurement methods Economic Value Added (EVA) is restricted from January 2007 to December 2011. The number of banks that became the object of the study were 30 banks in Indonesia, in Malaysia were 9 banks, 4 banks in Singapore, Thailand were 10 banks and 14 banks in Philippines, bringing the total bank that became the object of study is 67 banks.

Sources of data used in this study are the annual financial statements and daily stock price of each bank as well as its index for each country for the year 2006 to 2011, the data was obtained from Thomson Reuters database, the risk free rate data in Indonesia is Indonesian Government Bond (Sertifikat Bank Indonesia/SBI) published by the Indonesian Central Bank, the risk free rate data for other countries is Treasury Bills with a tenor of 3 months which was published by the Ministry of Finance Malaysia, Singapore Central Bank, Bank of Thailand and Philippines National Statistical Coordination Agency Board. The market risk premium data for each year is obtained from measurements made by Damodaran (2013).
Economic Value Added (EVA) is the value added created by the company at any given time with a Net Operating Profits After Taxes (NOPAT) at this year reduced by the capital charges last year (Fiordelisi, 2007). Bank is an institution of intermediary and liability management that receives funds, including debt (savings) that transform into productive inputs compared to its non-bank companies that views debt position as a source of funding (financing source). As a result if the calculation of Economic Value Added (EVA) using the formula of weighted average cost of capital (WACC), the Economic Value Added (EVA) will be biased because interest expenses in WACC are also included in operating expenses in the bank and enter into the calculation of the Net Operating Profits After Taxes (NOPAT), this view also supported by research done by Uyemura with sample of banks on United States in 1996, from that views or opinions, it can be concluded that the valuation of the bank belonging to the equity valuation framework with the following formula according Fiordelisi & Molyneux (2010):

\[
EVA_t = NOPAT_{adjt} - (Capital\ Invested_{adj(t-1)} \times Cost\ of\ Equity)
\]

The formula calculating Net Operating Profits After Taxes (NOPAT) without accounting adjustments according Fiordelisi & Molyneux (2010) are as follows:

\[
NOPAT = Operating\ Profit - Taxes
\]

Bank institutions is different in accounting adjustments to Capital and Net Operating Profits After Taxes (NOPAT) in the calculation of Economic Value Added (EVA) as compared to non-bank institutions. With the accounting adjustments in the Capital Invested and NOPAT, generate NOPAT_{adj} and Capital Invested_{adj} as follows (Fiordelisi, 2007): Deferred tax, Loan Loss Provision and Loan Loss Reserve, Research and Development (R&D), Restructuring Charges, and Security Accounting. Deferred tax emerge as a result of differences between the taxes bases of accounting that are recorded to the tax that are paid to the government. Loan Loss Provision and Loan Loss Reserve was set aside funds from the company if the customer fails to pay the debt to the bank, so it does not reflect the actual expenditure of funds and should be passed back to the book record.

Research and Development (R&D) in a company could be record as expenses in the book keeping, but R & D is seen as an asset in the company so its needs to be capitalized as Capital and to be amortize each year to get into the calculation of NOPAT. Regarding the restructuring charges, in some argument states that EVA’s Restructuring Charges should be capitalized as an asset but Fiordelisi form an opinion that Restructuring Charges is not an asset and because of that does not enter into the calculation of EVA. Regarding security accounting, in many countries such as USA, Italy, France, and England, Securities Available for Sale Securities (AFFS) is calculated in market price and is considered as a zero sum game so that in evaluating NOPAT should be excluded from its calculation, but other from those countries the AFFS market data cannot found, so that in calculating NOPAT the AFFS was omitted.

Capital invested are all the funds that have been entered into the company and not affected by source of funding, accounting names, or intended use, also do not regard the origin of the investment whether debt or equity and the purpose of investment whether for working capital or buying fixed assets (Stewart, 1991).

Calculation of the cost of equity use Capital Asset Pricing Model (CAPM) methods as quotes from book authored by Ross, Westerfield, & Jaffe (2010) is as follows:

\[
Cost\ of\ equity = R_f + \beta \times (R_M - R_F)
\]

where:

- \(R_f\) : risk-free rate is the interest rate that is usually derived from securities issued by a country.
- \(\beta\) : beta is systemic risk from an investment in the company that is sensitivity from the stock return against market return.
- \(R_M - R_F\) : market risk premium is the difference between the market return (R_M) with the risk-free rate.

Calculation to obtain stock return of a company as quotes from study by Maditinos et al. (2009) is as follows:

\[
R_t = \log\left(\frac{Price_t}{Price_{t-1}}\right)
\]

Formula of the Earning Per Share (EPS) of a company as quotes from book authored by Ross, et al. (2010) is as follows:

\[
EPS = \frac{Net\ Income}{Total\ Outstanding\ Shares}
\]
Formula of the Return on Asset (ROA) of a company as quotes from book authored by Sinkey Jr. & Joseph (2002) is as follows:

$$ROA = \frac{Net\ income}{Average\ total\ asset}$$

Formula of the Return on Equity (ROE) of a company as quotes from book authored by Bodie, Kane, & Marcus (2011) is as follows:

$$ROE = \frac{Net\ income}{Average\ stockholder\ equity}$$

In this study, it will consider two goals, the first goal is an average of Economic Value Added (EVA) in each country to determine whether the performance of banks in those countries was affected by the 2008 financial crisis or the performance of banks in those countries was affected for whole different things.

The second goals to discuss is the analysis of the relationship between Economic Value Added (EVA) and stock return. We use a model developed by Easton & Harris (1991) and has been used by many researchers such as Easton & Harris (1991), Biddle, et al. (1997), Chen & Dodd (1997) and Worthington & West (2001). Easton & Harris (1991) model is a connection between stock returns, earnings levels and changes in the level of each earnings as quotes in study by Maditinos et al. (2009). Based on the explanation above, the model is developed from Easton and Harris’s Model to analyze the relationship between Economic Value Added (EVA) and the company’s financial ratios with company’s stock return based on study done by Maditinos et al. (2009) and this model is also used on study by Mandilas et al. (2009).

Maditinos et al. (2009) states that in analyzing EVA use Easton and Harris model, it is used two approaches, first approach is relative information content approaches model that research the explanatory power of the Economic Value Added (EVA) and company’s financial ratios such as Return on Asset (ROA) and Return on Equity (ROE) on the company stock return. Second approach is incremental information content approaches model that research the explanatory power of the Economic Value Added (EVA) along with each company’s financial ratios such as EPS, ROA, and ROE on the company stock return.

The dependent variable used in this model is stock return of the company. To get the stock return that is already reflected the value of Economic Value Added (EVA), is a stock return of the 4th month after the current fiscal year up to the 3rd month after the fiscal year end as quotes in Easton & Harris (1991), Biddle, et al. (1997), Chen & Dodd (1997), and Maditinos et al. (2009).

The independent variables of the model consists of several measurements as quotes from study by Maditinos et al. (2009) and study by Mandilas et al. (2009) is as follows:

1. Economic Value Added (EVA) in period $t$ and the changes in EVA ($\Delta EVA$) for period $t-1$ by the formula

$$\Delta EVA = \frac{EVA_t}{EVA_{t-1}}$$

2. Earning Per Share (EPS) in period $t$ and the changes in EPS ($\Delta EPS$) for period $t-1$ by the formula

$$\Delta EPS = \frac{EPS_t}{EPS_{t-1}}$$

3. Return On Asset (ROA) in period $t$ and the changes in ROA ($\Delta ROA$) for period $t-1$ by the formula

$$\Delta ROA = \frac{ROA_t}{ROA_{t-1}}$$

4. Return On Equity (ROE) in period $t$ and the changes in ROE ($\Delta ROE$) for period $t-1$ by the formula

$$\Delta ROE = \frac{ROE_t}{ROE_{t-1}}$$

Relative information content approaches model as quotes from study by Mandilas et al. (2009) are as follows:

$$Return_t = a_0 + a_1 \frac{EVA}{P_{t-1}} + a_2 \frac{\Delta EVA}{P_{t-1}} + u_1$$

$$Return_t = b_0 + b_1 \frac{EPS}{P_{t-1}} + b_2 \frac{\Delta EPS}{P_{t-1}} + u_2$$

$$Return_t = c_0 + c_1 ROA + c_2 \Delta ROA + u_3$$

$$Return_t = d_0 + d_1 ROE + d_2 \Delta ROE + u_4$$
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where \( P_{t-1} \) is the stock price at the beginning of calculation of stock return that is the 4th month in the current fiscal year.

Incremental information content approaches model as quotes from study by Mandilas et al. (2009) are as follows:

\[
\begin{align*}
\text{Return}_t &= \gamma_0 + \beta_1 \frac{\text{EPS}}{P_{t-1}} + \beta_2 \frac{\Delta \text{EPS}}{P_{t-1}} + \alpha_1 \frac{\text{EVA}}{P_{t-1}} + \alpha_2 \frac{\Delta \text{EVA}}{P_{t-1}} \\
\text{Return}_t &= \gamma_0 + c_1 \text{ROA} + c_2 \Delta \text{ROA} + a_1 \frac{\text{EVA}}{P_{t-1}} + a_2 \frac{\Delta \text{EVA}}{P_{t-1}} \\
\text{Return}_t &= \gamma_0 + d_1 \text{ROE} + d_2 \Delta \text{ROE} + a_1 \frac{\text{EVA}}{P_{t-1}} + a_2 \frac{\Delta \text{EVA}}{P_{t-1}}
\end{align*}
\]

where \( P_{t-1} \) is the stock price at the beginning of calculation of stock return that is the 4th month in the current fiscal year.

This model are calculate use a regression model called Ordinary Least Square (OLS) with significance level of 5% and using multiple classical assumption of regression such as multicollinearity, heteroscedasticity, normality, and autocorrelation, which most of the classical assumption of regression calculation shows that the results do not violate the classical assumptions and some methods have been applied into the model to fix it so that it fits with the classical regression assumptions.

Results and Discussion

The purpose of this study is to look at the descriptive Economic Value Added (EVA) bank in each country as well as the relationship between stock return with the Economic Value Added (EVA) and traditional measurement of a company’s financial ratios based on the model developed by Easton & Harris (1991).

Analysis of Economic Value Added (EVA) by each country

This section will discuss the results of the Economic Value Added (EVA) of each country in relation to banking events that occurred in that country.

Table 1. The number of banks that have positive and negative value of EVA every year

| Year | Indonesia | Malaysia | Singapore | Thailand | Philippines |
|------|-----------|----------|-----------|----------|-------------|
| 2007 | 30%       | 60%      | 100%      | 0%       | 0%          |
|      | 40%       | 60%      | 100%      | 40%      | 36%         |
| 2008 | 33%       | 67%      | 22%       | 78%      | 0%          |
|      | 30%       | 70%      | 100%      | 20%      | 80%         |
| 2009 | 33%       | 67%      | 44%       | 56%      | 0%          |
|      | 20%       | 80%      | 100%      | 20%      | 57%         |
| 2010 | 17%       | 83%      | 11%       | 89%      | 0%          |
|      | 10%       | 90%      | 100%      | 10%      | 90%         |
| 2011 | 30%       | 70%      | 0%        | 100%     | 0%          |
|      | 21%       | 79%      | 100%      | 10%      | 90%         |

Figure 3. The Average Value of EVA every year (in the currency of each country and in thousands)
Based on Table 1, Figure 1, Figure 2, Figure 3 and Figure 4, it can be conclude that the increase and decrease value of the Economic Value Added (EVA) in all countries mostly followed the rise and fall of GDP in each country. In Indonesia is implied that Indonesia’s macro economy was not disrupted by the 2008 financial crisis, although at the time the crisis occurred, Indonesia was affected as indicated by the rise and fall of the Indonesian Composite Stock Price Index and the exchange rate of Indonesia currency against the U.S. dollar States at the end of 2008, while in Thailand and the Philippines are implied that the macro economy were a little disturbed by the 2008 financial crisis which reflected at fluctuations in stock price index in both countries and the exchange rate of each country against the U.S. dollar by the end of 2008. Bank of Thailand (2010) states that the impact of 2008 financial crisis on the banking sector in Thailand was rate loans decreased by 3.1%, but for the level of its net profit tends to increased and in the Philippines, Guinigundo (2010) states that Philippines banking sector maintain liquidity for bank at some level during the global financial crisis of 2008, enhance the ability of short funding by 86% in September 2008 up to 89% in September 2009, and then at the end of the 2009 quarter, banking sector in Philippines has successfully gain the net profit by 5% compared to the same period last year, indicating that banks in the Philippines began to recover towards the impact of financial crisis 2008. For Malaysia and Singapore it can conclude that the increase and decrease value of Economic Value Added (EVA) in Malaysia and Singapore are least affected by the financial crisis of 2008, its impact are showed by the rise and fall of the stock price index in each country and the exchange rate of each country against the U.S. dollar by the end of 2008. Sabari (2010) states that the impact of financial crisis 2008 in Malaysia are lasts short term, in the Malaysian banking sector due to blanket guarantee of government as well as a quick reaction by lowering the policy rate bank that maintain liquidity with loan to deposit ratio was 81.43% at the end of June 2009, which means having surplus in liquidity that loan funds rely almost entirely on deposits. In Singapore all bank company in Singapore has a positive value of EVA throughout the study period, indicating that Singapore banks are not overly affected by the global financial crisis. Thangavelu (2009) states that the impact of the 2008 financial crisis in the institutions of Singapore commercial banks is limited because the market is already well-regulated.

Based on Table 2, it showed that all the regression of EVA against stock returns in all countries are not have significant results or in another word EVA cannot explain its stock return, this finding is also same with finding in research conducted by Turvey et al. (2000). In the regression of financial ratio (i.e. EPS, ROE, ROA) against stock returns in all countries, only a few calculation of regression that has an explanatory power on stock return, first country is Singapore with Earning Per Share (EPS) that have a 43.6% explanatory power on stock return and the second one are Philippines with Return On Asset (ROA) that have a 35.5% explanatory power on stock return and Return on Equity (ROE) that have a 12.4% explanatory power on stock return, all regression have a 5% significance level. These results are consistent with research conducted by Maditinos et al. (2009), Mandilas et al. (2009), Worthington & West (2001), and Biddle, et al. (1997).
Based on Table 3, it showed that virtually all regression calculations of each financial ratios combined with EVA on stock return do not have significant results or in another word EVA combine with each financial ratios cannot explain its stock return, only in the Philippines that EVA combined with ROA have a 36.7% explanatory power on stock return, at a 5% significance level, so it can be conclude that EVA combined with ROA has greater explanatory power than the explanatory power of each variable on stock return, which the results are in accordance with the study conducted by by Maditinos et al. (2009) and Mandilas et al. (2009).

**Conclusion**

In accordance with the first goals of this study that is a descriptive view of Economic Value Added (EVA) bank in each country as well as the relationship between stock return with the Economic Value Added (EVA), it can be conclude that the increase and decrease value of the Economic Value Added (EVA) in all countries mostly followed the rise and fall of GDP in each country. The performance of banks in Indonesia using EVA methods, its value follow an increase or decrease in GDP of Indonesia each year. The perfor-
mance of banks using EVA methods in Malaysia, its value is up and down that caused by the impact of the global financial crisis in 2008. The performance of all banks using EVA methods in Singapore has a positive EVA value during the period research, it shows that Singapore banks are not overly affected by the global financial crisis, Next is the performance of banks in Thailand using EVA methods, its value follow an increase or decrease in GDP of Thailand each year, so it must be observed macroeconomic trends in the future at Thailand in order to be able to estimate the performance of banks in Thailand and the performance of banks using EVA methods in Philippines has a number of banks with a positive value of EVA declined from beginning of this study period until 2009 and rose again in 2010 in the creation of value for shareholders through the measurement of Economic Value Added (EVA), this result is most likely because the impact of the global financial crisis in 2008 and the value of EVA in Philippines are line with the rise and fall of the GDP of the Philippines every year.

The second goals of this study is looking into the relationship between stock return with the Economic Value Added (EVA) and that traditional measurement of financial ratios based on the model developed by Easton & Harris (1991), from the result it can be concluded that all the regression of EVA against stock returns in all countries are not have significant results or in another word EVA cannot explain its stock return and only a few calculation of regression that has an explanatory power on stock first country is Singapore with EPS and the second one is Philippines with ROA and ROE that have explanatory power on stock return. In model that calculate of each financial ratios combined with EVA on stock return, only in the Philippines that EVA combined with ROA have a 36.7% explanatory power on stock return, so it can be conclude that EVA combined with ROA has greater explanatory power than the explanatory power of each variable on stock return which ROA only have a 35.5% explanatory power on stock return, this finding is in line with previous research that EVA can be used as a variable in explaining stock return.

Based on the above discussion, it can be drawn a final conclusion that bank's assessment of performance using Economic Value Added (EVA) method can describe the fundamental face of the bank and macroeconomic conditions in that country may affect the value of EVA in that bank and bank efficiency levels can affect a country's macroeconomic so banking sector and macroeconomic in a country is to have a symbiotic mutualism relationship.

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