THE EFFECT OF CREDIT RATING ANNOUNCEMENT TO MARKET REACTION

PENGARUH PENGUMUMAN KREDIT RATING TERHADAP REAKSI PASAR

by:
Eunike Zega[1]
James D.D Massie[2]
Hizkia H.D Tasik[3]

Faculty of Economics and Business, International Business Administration, Management Program
University Sam Ratulangi Manado

E-mail:
[1]eunike50@gmail.com
[2]jamesmassie@gmail.com
[3]hizkiatasik1@gmail.com

Abstract: Credit assessment for sovereign is generally done by a Credit Rating Agency such as Standard & Poor's that increase Indonesia rank as a good news for the investment sector in Indonesia, also firm's variables such as size used for trading strategies that can outperform the market. This study aims to analyze the market reaction to the announcement of Indonesia Investment Grade. The method that used is event study methodology. Sample used 22 companies of LQ 45 in IDX. Analysis using the 7-days window period with daily stock price and market index. The expected return calculated by market model. T-Test be used to examine the significance of Average Abnormal Return around the announcement. The results of the study is there is a significant abnormal return the day after the announcement of Investment Grade. Another aims in this research is to analyze is whether firm size related to market reaction. The data used is daily market capitalization. The method used is three panel data model : Pooled Model, Fixed Model, and Random Model. Throughout the three models, the firm size hypothesis has positive significant relationship on abnormal return. Findings suggest to extend the sample thus able to reflect Indonesian capital market.

Keywords: *credit rating (investment grade) announcements, event study methodology, abnormal return, firm size, panel data, market reaction*

Abstrak: *Penilaian kredit pemerintah pada umumnya dilakukan oleh credit rating agency seperti Standard & Poor's yang telah meningkatkan peringkat kredit di Indonesia sebagai kabar baik bagi sektor investasi, dan disisi lain variabel perusahaan seperti ukuran perusahaan digunakan untuk strategi pemasaran yang dapat mengungguli pasar. Penelitian ini bertujuan untuk menganalisis reaksi pasar terhadap pengumuman Indonesia Investment Grade. Metode yang digunakan adalah metodologi studi peristiwa. Sampel menggunakan 22 perusahaan LQ 45 di BEI. Analisis menggunakan 7 hari window period dengan harga saham harian dan indeks pasar. Expected Return dihitung berdasarkan Market Model. Uji-T digunakan sebagai alat menguji signifikansi Rata-rata Abnormal Return di sekitar pengumuman tersebut. Hasil penelitian ini adalah adanya abnormal return yang signifikan sehari setelah pengumuman Investment Grade. Tujuan lain dalam penelitian ini adalah untuk menganalisis apakah ukuran perusahaan terkait dengan reaksi pasar. Data yang digunakan adalah kapitalisasi pasar harian. Metode yang digunakan adalah tiga model data panel: Pooled Model, Fixed Model, dan Random Model. Hasil dari ketiga model tersebut, hipotesis ukuran perusahaan memiliki hubungan positif yang signifikan pada abnormal return. Temuan menyarankan untuk memperluas sampel sehingga mampu mencerminkan pasar modal Indonesia.*

Kata Kunci: *pengumuman kredit rating (investment grade), metode studi peristiwa, abnormal return, ukuran perusahaan, panel data, reaksi pasar*

INTRODUCTION

Research Background

Credit ratings are one of several tools that investors can use when making decisions about purchasing bonds and other fixed income investments. A credit rating can be assigned to any entity that seeks to borrow money – an individual, corporation, state or provincial authority, or sovereign government. Credit assessment and evaluation for companies and governments is generally done by a Credit Rating Agency (CRA) such as Standard & Poor's, Moody's and Fitch, where the two first mentioned of them control about 80 % of the total global credit rating market in terms of customers.

The CRAs hold a tremendous amount of power since they can affect the financial status of institutions. A country's credit rating (Sovereign Rating) is important because it affects the domestic market which means the companies and their stock prices. There are only a few credit rating agencies that have international recognition where S&P's most influential.

On May 19th 2017, Indonesia's sovereign bonds are rated investment grade by Standard & Poor's and lifted its rating on the country's debt**.** Standard & Poor's upgraded the ratings of debt (sovereign) Indonesia from BB + / Positive to BBB- with a stable outlook. There are two important factors in the rating, the rating and outlook. The rating is the level of ability to pay the debt, while the outlook is the view of whether the rating company ratings will increase, decrease, or remain the next assessment period.

An increase in Indonesia rank is a word that is regarded as good news for the investment sector in Indonesia. The increase in Indonesia's debt rating to BBB-, implies that Indonesia predicate worth the investment (Investment Grade). The benefits for a country of a good credit rating include being able to access funds from outside their country, so the investors both from within and outside the country do not have to worry again will fail credit because of the probability that debt will not be repaid on time in full. At the corporate, it is usually in the best interest of a company to look for a credit rating agency. Investors often times base part of their decision to buy bonds, or even the stock. They will invest in a company that have investment grade status to reduce the default because they tend to keep their investment long term. Better quality of portfolio flows will evidently promote stability in capital market.

Credit Rating Agencies have an important role as intermediaries in financial markets and their ratings have informational value, Baghai et.al (2014). The information of Credit rating can be useful to investors. Fama (1970) reports a theory which states that financial markets are efficient. He states that efficient markets are markets in which "security prices at any time fully reflect all information".

In such an emerging market, funds managers, institutional investors, security analysts and other market players are constantly searching for trading strategies that can outperform the market. In this perspective, an excessive empirical studies have shown the possibility of extra normal returns by using active business and investment strategies based on a number of firm's variables such as size by Banz (1981). Size effect is studied as an inverse relationship between two variables, size and returns of companies. While several assumption and modification were made, Banz (1981) indicated that the negative relationship has been reinforced throughout the time by practically observing 50-year performance of the New York Stock Exchange. The size anomaly is not a widely applicable theory which can be implemented in all markets. Thus, it appears necessary to study the size effect (i.e., the relationship between firm size and firm's returns) in Indonesia financial market, particularly Indonesia stock exchange.

Therefore, the researcher is interested to further investigate whether there is a market reaction to Investment Grade Announcement or how quickly do security prices reflect public information announcement, and also investigate whether firm-specific factors such as firm size affect its abnormal return announcement, with the title is The effect of Credit Rating Announcement on Market Reaction.

Research Objectives

Based on research problem, the objectives of this research is to find out a significant :

1. Average Abnormal Return (AAR) around the Investment Grade Announcement date
2. Negative relation between firm size and market reactions

THEORITICAL FRAMEWORK

Random Walk

The random walk by Kendall (1953). He found to his great surprise that he could identify *no predictable* patterns in stock prices. Prices seemed to evolve *randomly*. New information, by definition, must be unpredictable; if it could be predicted, then the prediction would be part of today's information. Thus stock prices that change in response to new (unpredictable) information also must move unpredictably. In addition, market price moves randomly defined as rising and falling stock prices depend on new information to be received.

Efficient Market Hypothesis

Fama (1970) suggested that there are three different forms of market efficiency :

1. Weak-Form Efficiency, the weak form of the EMH states that all information contained in past stock price movements is fully reflected in current market prices.
2. Semistrong-Form Efficiency, the Semistrong-Form of the EMH states that current market prices reflect all publicly available information.
3. Form Efficiency, the strong form states that current market prices reflect all pertinent information, whether publicly available or privately held.

Stock Return

Stock return is the advantage enjoyed investors on stock investment does. Return has two components: current income and capital gains.

Actual Return

Return is a profit on an investment. An actual return is the actual gain or loss of an investor or what investors actually receive from their investments during a given period.

Expected Return

The expected return (referred to as normal return) is defined as the expected return without conditioning on the event taking place. Normal return is the return that should be obtained if no event occurs. A number of approaches are available to calculate the normal return (expected return) of a given security. According Mackinlay (1997), the approaches can be loosely grouped into two categories like statistical and economic.

Abnormal Return

In the world of stock market trades, abnormal return is the difference between the actual return of a security (single stock or portfolio's performance) and the expected return. An abnormal return can be positive or negative, depending on whether the stock outperformed or underperformed the market performance. Abnormal returns are usually associated with an event or market change that directly affects the stock or portfolio in question.

Firm Size

Ohlson (1979) studied the behaviour of security prices to different financial disclosures. He had documented that the reaction of small firms were much more pronounced than the reaction of the large firms. Banz (1981) finds the firm sizeable to determine the variations of expected return of stock. He states that there is a negative liner relationship exist between firm size and stock return. The stocks with smaller market capitalization earn higher return than stock with bigger market capitalization.

Information Asymmetry

Akerlof (1970) showed how a market with unbalanced information, called information asymmetry, where there is information asymmetry between buyer and seller and where the overall quality of goods and services offered is reflected to the entire group of sellers rather than on individual sellers. Lack of seller differentiation could force high-quality sellers to flee the market because their quality and reputation can\not be rewarded.

Previous Research

Habib, Y., Nazir, M. I., & Hashmi, S. H. (2015), has conducted research about Credit Rating Announcements and Stock Returns: Evidence from the Banking Sector of Pakistan. his study The study finds that credit rating announcement has no significant impact on sample banks' abnormal stock returns. This study also documents the reaction of stock returns to the upgrade and downgrade announcement of credit rating. The study reveals that downgrade announcement show significant positive response, whereas the upgrade announcement provides insignificant negative response. Research that showed same result is Li, H., Visaltanachoti, N., & Puspakaran, K. (2003) has conducted research about The Effects of Credit Rating Announcements on Shares in the Swedish Stock Market. For the rating assignments, positive outlooks and affirmations announcements, there is no significant share price reaction following credit rating announcements in both the long-term and short-term. There is another research that test a number of factors such as Firm Size contribute to the stock abnormal return. The Effects of Credit Rating Announcements on Stock Performance in Malaysia conducted by Husin, N. b., & Foong, W. M. (2016). This study reveals that Firm Size has a positive significant relations to abnormal return and this is contradicted the hypothesis.

Conceptual Framework

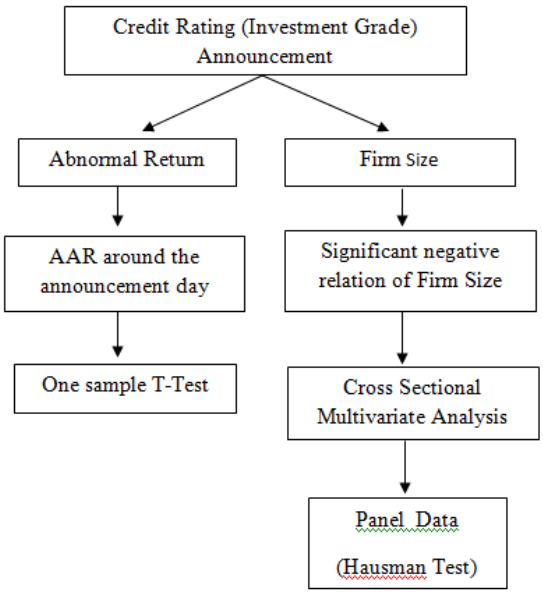

Figure 1. Conceptual Framework
Source: Conceptual Theory (2017)

Hypothesis

From the overall explanation in the previous parts, there two main hypothesis that can be drawn and further examined, which are :

H1 : Is there a significant Average Abnormal Return around the Investment Grade Announcement date?

H2 : Firm size has a significant negative relation with market reactions.

RESEARCH METHODOLOGY

Type of Research

Type of research that used in this research is event study methodology. An event study is a statistical technique that is normally used to measure the effect of an event on stock prices (returns). Using financial market data, an event study measures the impact of a specific event on the value of a firm.

Place and Time of Research

This research is conducted in Indonesia Stock Exchange (IDX). The window period is the time in this study. Investment Grade Announcement day on 19 May 2017 as the event day (t_0). The event window is from t-90 to t-3, namely the estimation period used for estimating the parameters of expected return model. The event period including 3 days prior to the event and 3 days after the event as the period of observation. The day from t-3 to t0 as prior to the event begin in 16 May 2017 until 18 May 2017 and the day from t0 to t+3 as after the event begin in 22 May 2017 until 24 May 2017.

Population and Sample

The population in this research is LQ 45 companies that listed in the period January – June 2017. The sample in this research is 22 companies in Indonesia Stock Exchange.

Data Collection Method

The secondary data of this study are stock prices, Jakarta Composite Index, market capitalization. The secondary data collected in varied of sources and the sources are Indonesia Stock Exchange, Yahoo Finance and Bloomberg.

Operational Definition of Research Variable

An investment grade is a rating that indicates that a municipal or corporate bond has a relatively low risk of default. The abnormal return due to the event is estimated as the difference between the stock's actual return and this benchmark. The cumulative abnormal return is the sum of all abnormal returns. Firm Size used in this study is represents the natural log of the market capitalization.

Data Analysis Method

In this study, the Single Index Market Model used to estimate the normal returns. The SIMM hypothesizes a linear relationship between the returns from a given security and market portfolio. The systematic risk of a security is obtained by employing an Ordinary Least Squares (OLS) regression using daily security returns within the estimation period. This model is shown as follows:

$$E(Rit) = \alpha i + \beta i(Rmt) + \varepsilon i \quad (1)$$

where E(Rit) is returns on security i in period t, αi is constant term for security i, βi is beta estimate for security i, Rmt is returns on the market portfolio on event day t and the term of εit denotes residual error for security i in period t (k days in the estimation period).

To determine the abnormal return of a security i for period t is calculated as follows

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \quad (2)$$

Where, $AR_{i,t}$ is abnormal return on security i on date t and $R_{i,t}$ is actual return on security i on date t. $E(R_{i,t})$ is expected return on security i on date t

To observe the effect of the event at a certain point of time, several firms' data must be aggregated. The Average Abnormal Return (AARt) is calculated by dividing the average abnormal returns for all assets on day t by the number of assets (N):

$$AAR_t = \frac{\sum_{i=t}^{n} AR_{i,t}}{n} \quad (3)$$

To observe the whether the firm size has a relationship with abnormal return, sum of all abnormal returns be used as dependent variable in second hypothesis.

$$CAR_i = \sum_{t=t_1}^{t_2} AR_{it} \quad (4)$$

Where, CAR *i* = cumulative abnormal return on security *i* and AR *i,t* = abnormal return of security *i* on time *t*

The cross-sectional multivariate regression model is employed in this study to determine the firm-specific and bond-specific factors that may be significantly associated with market reactions to the credit rating change announcements. The control variables used in this study is Firm Size.

$$CAR\ (-1, 1) = \alpha + \beta 1\ FIRM\ SIZE + \beta 2\ AR + \varepsilon \quad (5)$$

Where CAR (-1,1) is Cumulative Abnormal Return for 3 days, β_n is the regression coefficients of variable, Firm Size represents the natural log of the market capitalization, and AR is Abnormal Return.

Normality Test

Prior to testing the hypothesis on the data of average abnormal return, the assumption must be met before performing the calculation is a test normality of data. Probabilities > 0.05 mean the data are normal. Probabilities < 0.05 mean the data are not normal.

One Sample t-test

The t-statistics is used to test the AARs are significantly different from zero. This test is done by comparing the t_{value} with t_{table}. The level of significance is 5% ($\alpha = 0.05$). If t_{value} is greater than t_{table}, Ho is rejected and H1 is accepted.

Panel Data

1. Pooled regression model is one type of model that has constant coefficients, both intercepts and slopes
2. Fixed effects model has assumptions that members of the panel have intercept differences among one another
3. Random effects model has the assumption that the model is specified correctly and attempts to express any misspecifications of the intercept in the error term

Hausman Test

As a consequence, to decide between a random effects and fixed effects model. Ho : Random Effect Model is appropriate (p>0.05). H1 : Fixed Effect Model is appropriate (p<0.05)

RESULT AND DISCUSSION

Normality Test

Table 1. Kolmogorov-Smirnov Test

		AAR
		7
Normal Parameters[a,b]	Mean	.00
	Std. Deviation	.009
Most Extreme Differences	Absolute	.139
	Positive	.138
	Negative	-.139
Kolmogorov-Smirnov Z		.368
Asymp. Sig. (2-tailed)		.999

a. Test distribution is Normal.
b. Calculated from data.
Source : SPSS Output 2017

Because of Asymp.Sig is 0.999 > 0.05 thus the results show that all the data are normally distributed.

One Sample T-Test

Table 2. One Sample T-Test Result

Periode	Date	Value AAR	Sig.t	Description	Hyphotesis
t-3	16-May-17	0.0130	0.076	No	Ho accepted, H1 rejected
t-2	17-May-17	-0.0051	0.141	No	Ho accepted, H1 rejected
t-1	18-May-17	-0.0007	0.456	No	Ho accepted, H1 rejected
t0	19-May-17	-0.0138	0.054	No	Ho accepted, H1 rejected
t1	22-May-17	0.0100	0.020	Yes	Ho rejected, H1 accepted
t2	23-May-17	0.0043	0.111	No	Ho accepted, H1 rejected
t3	24-May-17	-0.0005	0.448	No	Ho accepted, H1 rejected

Source : SPSS Output 2017

Investment Grade Announcement day on 19 May 2017 (t0) has no significant AAR in 0.054. It shows that the event will not really affect the activity of investors in the capital market. It means that market not react significantly. Most investors were taking in a "wait and see" approach to investing as they were waiting to see how the Investment Grade Announcement were likely to have an impact on the economy and as well as the stock market. Another reason why on the announcement date (t0) was negative is because there is unbalanced information between local investors and foreign investors. The news is likely to have been known to foreign investors since 2 months ago, that's what causes foreign investors continue to enter the stock since in March. Considering the amount of foreign accumulation that occurs, then the possibility of Investment Grade will actually be given to Indonesia.

The value of the significant average abnormal return (0.020) is encountered at 22 May 2017 (t+1), 1 day after to the announcement of the increase in Indonesia's rating occurred. The change in abnormal return to be significant means that the capital market reacted to the Investment Grade Announcement, and news has information content that is economic value so that investors react. At this time, local investors have entered the phase of euphoria. Local investors will race to buy shares, causing the stock price to rise. And this is the reason why AAR change to be positive significant. The motive is none other investors because they want to take advantage of obtaining abnormal return over the emergence of the information which they consider to be the good news. The increase in stock prices was followed by a rise to abnormal stock returns.

On 16 May 2017 until 18 May 2017, before Investment Grade Announcement, there is no significant AAR. This is probably because there is no leakage of information received by local investors the day before the announcement, causing no market reaction from investors.

On 23 May 2017 until 24 May 2017, the researcher found there is no significant average abnormal return in t+2 (0.111) and t+3 (0.448) after significant abnormal return in t+1, means that the market has been efficiently in semi-strong form which prices already reflected in public information. There is another evidence that after t+1, the market has been efficiently in semi-strong tha the trend has decreased from t+1 to t+3. This caused by consolidation in stock index, when the stock index moves in search of new direction, strengthened or weakened forward. Investors react by using information in full and rapidly, so the price of the security change should properly reflect that information to achieve a new equilibrium price (Hartono,J.2015:14)

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This is similar with the result from Habib et.al (2015) the study find that downgrade announcement show significant positive response, whereas the upgrade announcement provides insignificant negative response. Thus H1 is accepted, because there is AAR around the event period, means that Credit Rating (Investment Grade) Announcement significant effect the market reaction.

Panel Data

Table 3. Panel Data Model Result

Model	Intercept	Firm Size	R2	F-statistic
Pooled OLS Model	-0,028509 (0,8684)	0,000990 (0,8586)	0,093375	3,244250 (0.04)
Fixed Model	-15,39289 (0,0000)	0,497484 (0,0000)	0,948964	33,95431 (0,000)
Random Model	-0,155529 (0,6010)	0,005093 (0,5959)	0,394022	20,48210 (0,000)

Source : EViews Output 2017

Pooled OLS Model the P-value of F-Statistic shows that regression is significant in 0.04 and coefficients are not zero. R-Squared is relatively low in 0.09 which means that explanatory power of this model is poor. Firm size variable shows positive coefficient at 0.000990 thus mean that the coefficient sign is inconsistent with the expectations. These findings is insignificant at 0,8586 thus indicating that the relationship between CAR and Firm Size is weak and contradictory with hypothesis.

In fixed model, the P-value of F-Statistic shows that regression is significant in 0.000 and coefficients are not zero. R-Squared is relatively high in 0,948964 which means that explanatory power of this model is strong. Firm size variable shows positive coefficient at 0,497484 thus mean that the coefficient sign is inconsistent with the expectations. While the the expected sign of the coefficient is inconsistent, the variable is significant at 0.000 thus indicating that there is the relationship between CAR and Firm Size and consistent with hypothesis.

In Random Model, the P-value of F-Statistic shows that regression is significant in 0.000 and coefficients are not zero. R-Squared is relatively high in 0,394022 which means that explanatory power of this model is moderate. Firm size variable shows positive coefficient at 0,005093 thus mean that the coefficient sign is inconsistent with the expectations. While the the expected sign of the coefficient is inconsistent, the variable is significant at 0.000 thus indicating that there is the relationship between CAR and Firm Size and consistent with hypothesis.

From three model above, the coefficient of firm size variable are positive thus not consistent with what is expected as indicated by Elayan et.al (2003) that firm size is negatively related to market reactions since larger and more visible firms should benefit less from the credit rating assignment. However, this result similar with Husin et.al (2016). that examine upgrade and downgrade in two securities such as PDS and IPDS. They found that firm size for upgrade is positive coefficient and downgrade has positif and negative coefficient, even though both is not significant.

Hausman Test

Table 4. Hausman Test Result

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	23.187894	2	0.0000

Source : EViews Output 2017

Based on the result, the probability (p-value) is 0,0000 means that the p-value < 0.05. So, the null hypothesis (Random Model) rejected and alternative hypothesis accepted (Fixed Model). The Second Hypothesis for this research that examine whether firm size has a significant negative relation with market reactions will be explained by Fixed Model. The result of Fixed Model, shows positive coefficient at 0,497484 thus mean that the coefficient sign is inconsistent with the expectations. While the the expected sign of the coefficient is inconsistent, the variable is significant at 0.000 thus indicating that there is the relationship between CAR and Firm Size and consistent with hypothesis. So, H2 is rejected because there is no has a significant negative relation between firm size and market reaction.

Discussion

The increase in Indonesia's debt rating indicates that Indonesia has won the title of Investment Grade entry into investment grade level. A ranking that shows government debt or companies that have a relatively low risk of default of opportunities, so has the level of trust that is sustainable in the long term. The rating upgrade reflects Indonesia's strong economic growth, the ratio of public debt is low and continues to decline, strengthening external liquidity, and macro policy framework carefully.

Based on the results obtained that the events of the increase in Indonesia's debt rating to get into Investment Grade level sufficient to give the effect of a shock to the market and increase their activity in the capital markets where we can see there is the value of a significant average abnormal return around the announcement of the increase in rating precisely on the day after the announcement, suspected cause is information asymmetry between foreign investors and local investors.

The impact of this increase in rating is not only felt by the country, but the several sectors in Indonesia. The impact will be felt great on the financial sector, because banking sector will be easier and cheaper to get bigger loan. Infrastructure sector also get the impact because give benefit the lower loan interest rates so that their debt burden will be reduced. Therefore, the government should give focus to the improvement of infrastructure in order to support the smooth running of the Indonesian industry sector and to optimize the gain this level of investment grade.

According to the firm size hypothesis, shows positive coefficient thus mean that the coefficient sign is inconsistent with the expectations, which the expected sign is negatively related to market reactions since larger and more visible firms should benefit less from the credit rating assignment, thus indicating that there is the relationship between CAR and Firm Size and inconsistent with hypothesis.

However, this result contains several limitations. The first limitation is the market capitalization and the returns do not share a linear relationship. This means low market capitalization does not always lead to higher return, so there is a certain level of possibility for the inverse cases to happen.

CONCLUSION AND RECOMMENDATION

Conclusion

1. There is significant Average Abnormal Return around the Investment Grade Announcement on 22 May 2017, encountered 1 day after to the announcement of Investment Grade occurred.
2. There is no has a significant negative relation between firm size and market reaction, because the result shows the positive significant.
3. Using three models in Panel Data, only Fixed and Random models has a significance.

Recommendation

1. In subsequent studies suggested to extend the study sample with the addition of the sample analysis results are expected to be able to reflect the Indonesian capital market conditions.
2. Then can also be considered to use other models in statistical and economic model to estimated the expected return to make a comparative analysis
3. Additional the control variables be sides firm characteristic to find out another specific factors that may be significantly associated with market reactions

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