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WHERE BETA IS GOING – CASE OF VIET NAM HOTEL, AIRLINES AND TOURISM COMPANY GROUPS AFTER THE LOW INFLATION PERIOD

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Abstract. Tourism, airline, hotel are industries those can be affected much by environment and social risks. Vietnam hotel, entertainment, airline & tourism industries are growing fast and contributing much to the economic development and have been affected by inflation. This paper measures the volatility of market risk in Viet Nam Hotel, entertainment, airline & tourism industries after this low inflation environment (2015-2017). The main reason is the necessary role of these financial companies and their system in Vietnam in the economic development and growth in recent years always go with risk potential and risk control policies. This research paper aims to figure out how much increase or decrease in the market risk of Vietnam Hotel, entertainment, airline & tourism firms during the post-low inflation environment 2015-2017. First, by using quantitative combined with comparative data analysis method, we find out the risk level measured by equity beta mean values in the Hotel, entertainment, airline & tourism industries are acceptable, as they are lower than (<) 1. Then, one of its major findings is the comparison between risk level of hotel industry during the post-low inflation period 2015-2017 compared to those in the airline & tourism industries. In fact, the research findings show us market risk level of entertainment industry, one kind of financial risks, is the highest among 3 groups. Whereas risk fluctuation in airline & tourism industry is the highest. Finally, this paper provides some ideas that could provide companies and government more evidence in establishing their policies in governance. This is the complex task but the research results shows us warning that the market risk need to be controlled better during the post-low inflation period 2015-2017. And our conclusion part will recommend some policies and plans to deal with it.

Keywords: risk management; asset beta; financial crisis; airline & tourism industry; hotel industry; entertainment industry; macro policy

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1. Introduction

Over many recent years (2006 until now), Viet Nam Hotel, entertainment, airline & tourism market are evaluated as one of active financial markets, which has certain positive effect for the economy and become one of vital players in the financial system of the nation.

The Vietnam economy experienced acceptable inflation (exhibit 1) during a long time (2009-2014) and it reached a low inflation rate of 0.6% in the year 2015. High inflation may harm the whole economy in general and Hotel, entertainment, airline & tourism sectors in specific whereas low inflation may stimulate the local economy by reducing borrowing interest rates. This is why we would like to see, what the real scenario of market risk level of financial sector in Vietnam is during the post-low inflation environment, i.e. 2015-2017 years.

This study will calculate and figure out whether the market risk level during the post-low inflation time (2015) has increased or decreased compared in three industries.

The paper is organized as follows: after the introduction it is the research issues, literature review, conceptual theories and methodology. Next, section 3 will cover main research findings/results. Section 4 gives us some risk analysis, then section 5 presents discussion and conclusion and policy suggestion will be in the section 6.

Research issues

The scope of this study embrace the following issues.

Issue 1: Whether the risk level of hotel, entertainment and tourism firms during post-low inflation period 2015-2017 increase or decrease considerably, especially under the debt leverage impact, shown by asset beta measure?

Issue 2: Because Viet Nam is an emerging and immature financial market and the stock market still in the starting stage, whether the dispersed distribution of beta values become large in the three industries, especially under the debt leverage impact, shown by asset beta measure.

Hypothesis for testing:

Because stock market and financial market in Vietnam is still young, the market risk level of hotel, entertainment and tourism companies can be high.

2. Literature review

Leverage and risk level of firms has certain correlation. First of all, Martin and Sweder (2012) pointed out that incentives embedded in the capital structure of banks contribute to systemic fragility, and so support the Basel III proposals towards less leverage and higher loss absorption capacity of capital. Najeb (2013) suggested a positive relationship between efficient stock markets and economic growth, both in short run and long run and there is evidence of an indirect transmission mechanism through the effect of stock market development on investment.

Yener et. all (2014) found evidence that unusually low interest rates over an extended period of time contributed to an increase in banks' risk. Mohamad et. all (2014) showed that by applying both ROA and ROE in the performance equation, financial risk is significant. Furthermore, by considering financial performance in the risk equation as endogenous, both ROA and ROE are significant. The implication of this result is that the inverse relation of financial risk and performance cannot be avoided; hence, the commercial banks together with the bank supervisors should make a trade-off between risk and performance.

Next, Emilios (2015) mentioned that bank leverage ratios are primarily seen as a microprudential measure that intends to increase bank resilience. Yet in today's environment of excessive liquidity due to very low interest rates and quantitative easing, bank leverage ratios should also be viewed as a key part of the macroprudential

framework. As such, it explains the role of the leverage cycle in causing financial instability and sheds light on the impact of leverage restraints on good bank governance and allocative efficiency.

Atousa and Shima (2015) found out the econometric results indicate that life insurance sector growth contributes positively to economic growth. Shevyakova et al. (2019) stressed impact of tourism industry on economic development of a country. Then, Gunarathna (2016) revealed that financial leverage positively correlate with financial risk. However, firm size negatively affects the financial risk.

Aykut (2016) suggested two main findings: (i) Credit risk and Foreign exchange rate have a positive and significant effect, but interest rate has insignificant effect on banking sector profitability, (ii) credit and market risk have a positive and significant effect on conditional bank stock return volatility. Then, Mojtaba and Davoud (2016) generated results show that public banks are more successful in using risk management tools in compared with private banks. More meaningful relationship has been found between financial risk management tools and shareholder wealth in public banks.

Last but not least, Riet (2017) mentioned that after the euro area crisis had subsided, the Governing Council of the ECB still faced a series of complex and evolving monetary policy challenges. As market volatility abated, but deflationary pressures emerged, the main task as from June 2014 became to design a sufficiently strong monetary stimulus that could reach market segments that were deprived of credit at reasonable costs and to counter the risk of a too prolonged period of low inflation. Hami (2017) showed that inflation has a negatively significant effect on financial depth and also positively significant effect on the ratio of total deposits in banking system to nominal GDP in Iran during the observation period. Last but not least, Lubos et. all (2018) confirmed that entrepreneurs who started their business because of money perceived the effects of crisis on their company's financial risk more intensely.

Finally, Chizoba et. all (2018) revealed that inflation rate had a positive but insignificant effect on insurance penetration of the Nigerian insurance industry. The implication is that the macroeconomic variable (inflation) increase the level of insurance penetration in Nigerian insurance industry but it increase was not significant. And Miguel et. all (2018) found a consistently negative and nonlinear effect of price increases on financial variables; in particular, it is statistically significant in the full sample of countries, significant in developing countries, and insignificant in developed countries. Marcelo (2018) observed that the use of unrealistic assumptions (Modernist perspective) in risk management increases model risk, and is thus not suitable for risk model estimation. However, the absolute lack of measurement of the Postmodernist paradigm can be too radical in the sense that, in the practical field, there is a crucial need for quantitative information to enable financial institutions and investors to protect their investments.

Conceptual theories

Positive sides of low inflation: Low (not negative) inflation reduces the potential of economic recession by enabling the labor market to adjust more quickly in a downturn, and reduces the risk that a liquidity trap prevents monetary policy from stabilizing the economy. This is explaining why many economists nowadays prefer a low and stable rate of inflation. It will help investment, encourage exports and prevent boom economy. The central bank can use monetary policies, for instance, increasing interest rates to reduce lending, control money supply or the Ministry of finance and the government can use tight fiscal policy (high tax) to achieve low inflation.

Negative side of low inflation: it leads to low aggregate demand and economic growth, recession potential and high unemployment. Production becomes less vibrant. Low inflation makes real wages higher. Workers can thus reduce the supply of labor and increase rest time. On the other hand, low product prices reduce production motivation. The central bank might consider using monetary policy to stimulate the economic growth during low-

inflation environment. It means that an expansionary monetary policy can be used to increase the volume of bank loans to stimulate the economy.

There are various ways to classify risks. For instance, business risk can be categorized into: market risk, credit risk and operational risk. In banking operation, market risk includes interest rate risk, liquidity risk and foreign exchange rate risk.

On the other hand, risks can be classified into two types: systematic risk (such as market risk) and unsystematic risk. Systematic risk, known as market risk or volatility or undiversifiable risk, affects to the overall market. It cannot be avoided totally by diversification, but only by using asset allocation strategy. If you want to know the market risk, you can estimate beta (this study suggests 2 beta calculations: equity beta and asset beta, under debt leverage impact). Another example of systematic risk is interest rate risk which affects the whole market and the entire stocks.

Beta equals to 0: means the stock price uncorrelated to the market. Beta negative (less than 0): means the stock price go opposite to the market index. Beta equals to 1: means the portfolio moves in the same direction with the market and sensitive to market risk. Beta higher than ($>$) 1: means there are more volatility, the portfolio moves in the same direction with the market and very sensitive to market risk. Beta between 0 and 1: i.e less volatility and stock price moves in the same direction with market index. Beta is a popular measure of market risk which cannot be eliminated by diversification due to its nature, but it can be insurable. Investors can only reduce a portfolio's exposure to systematic risk by sacrificing expected returns.

On the contrary, unsystematic risk, known as diversifiable risk or nonsystematic risk or residual risk, is specific risk in each industry or firm or security. For instance, risk coming from competitors in the market and market share will affect our business and profit. This kind of risk might be reduced via diversification strategy. So it is also called controllable risk. Unsystematic risk normally happens due to internal factors (ex. Employees, industry regulation change, manipulation in financial statements...) which are associated with that business only and affect a single stock or segment.

Risk can also be divided into various groups: market risk (due to risk factors such as interest rate, foreign exchange or stock price), market liquidity risk (a real example is the real estate market in Vietnam during the financial crisis 2007-2009), funding liquidity risk (unexpected outflow of funds), credit risk, operational risk (such as processing risk, IT system risk, legal risk, Human resource risk, reputational risk, Information risk, tangible asset risk).

Financial and credit risk in the bank system can increase when the financial market becomes more active and bigger, esp. with more international linkage influence. Hence, central banks, commercial banks, electrical and computer firms and the government need to organize data to analyze and control these risks, including market risk.

For the hotel, entertainment and tourism industry, high inflation may harm the electric companies and cause higher losses and increase the operational costs. In case of low inflation, interest rates may fall and hence, it is not a benefit for investment portfolio. Hence, risk assessment and control mechanisms are necessary for them to reduce these losses.

3. Methodology and data

We use the data from the stock exchange market in Viet Nam (HOSE and HNX) during the post – low inflation time 2015-2017 to estimate systemic risk results. We perform both fundamental data analysis and financial techniques to calculate equity and asset beta values.

In this study, analytical research method and specially, comparative analysis method is used, combined with quantitative data analysis. Analytical data is from the situation of listed hotel, entertainment and tourism firms in VN stock exchange.

We use quantitative research method to collect, gather quantifiable data from stock market and analyze data with mathematical techniques of calculating equity beta var and asset beta var during the period 2015-2017. This sampling method helped us a lot with the available data from the live stock market in public domain. We choose quantitative method because it is objective and investigational in nature.

We select a sample of 26 listed firms in three (3) industries or groups of company: hotel, entertainment and tourism sectors. Then, estimating equity beta has been done by using the traditional covariance formula, and we estimate asset beta under the impact of leverage. We also make a comparison of equity and asset beta values in these three (3) industries, calculate and analyze the gap between groups. We choose cross-industrial survey and sampling in a condition that these 3 industries are linked together in a whole financial system. This is, in fact, a simple random sampling, but we also pay attention to selecting key players in each category of three industries. The sample size will reflect and represent for the target market.

Under our beta calculation and comparison, we can draw a picture of the whole market risk of Vietnam electrical and computer industries. Hence, we can answer research questions or issues on how much market risk in each company group increases or decreases, and later we can figure out the above hypothesis test is true or false. Then, the research results can be generalized for the whole market.

Last but not least, government macroeconomic data are also collected and presented in 4 Exhibits. This will helps us to see the macro picture of Vietnam economy during the post-low inflation environment and through a long time (10-year periods). Our quantitative data are shown by tables, charts, graphs to make it easy to understand. In summary, quantitative method is mainly used because it helps to collect data quickly, concisely with reliable and accurate data. When we conduct this research, the number presents the honest picture of research and accurate, as well as less time consuming. It, hence, eliminated biasing of results which are fair in this study. In data analysis section, we also combine interpreting the data results and descriptive analytical method.

Finally, we use the results to suggest policy for both these enterprises, relevant organizations and government.

4. Main results

4.1 General Data Analysis

We get some analytical results form the research sample with 12 listed firms in the airline & tourism market, 8 hotel firms and 8 entertainment companies with the live data from the stock exchange.

4.2 Empirical Research Findings and Discussion

In the below section, data used are from total 28 listed hotel, entertainment and tourism companies on VN stock exchange (HOSE and HNX mainly). Different groups are created and comparison of the calculation of risk data among 3 groups has been made.

Market risk (beta) under the impact of debt, includes: 1) equity beta; and 2) asset beta. We model our data analysis as in the below figure 1:

Post – low inflation period	Risk level (equity beta)	Risk level (asset beta)	Other measures	Gap
Entertainment group				
Hotel group	Scenario ...	Scenario ..	Scenario ..	Analysis
Airline & tourism group				

Figure 1. Analyzing market risk under two (2) scenarios: post – low inflation period 2015-2017 compared to the financial crisis 2007-2009

A. Airline & tourism industry during the post – low inflation environment (see table 1):

Table 1. The Volatility of Market Risk (beta) of airline and tourism industry in the post- low inflation environment 2015-2017

Order No.	Company stock code	2015-2017 (post - low inflation)		Financial leverage	Note
		Equity beta	Asset beta (assume debt beta = 0)		
1	CTC	-0.185	-0.065	64.6%	assume debt beta = 0; debt ratio as in F.S 2015; FL calculated as total debt/total capital
2	DLC				
3	DLV				
4	FDT	0.127	0.035	72.7%	
5	HOT	-0.704	-0.528	25.0%	
6	PDC	0.654	0.488	25.4%	
7	PGT	0.490	0.483	1.5%	
8	TCT	0.097	0.093	5.0%	
9	TTR				
10	MAS	0.220	0.000	48.8%	
11	HVN	0.020	0.003	86.4%	
12	VJC	0.113	0.020	82.2%	

The above table shows us there is no firm having beta higher than 1.

Table 2. The Statistics of Volatility of Market Risk (beta) of airline and tourism industry in the post- low inflation environment 2015-2017

Statistic results	2015-2017 (post - low inflation)	
	Equity beta	Asset beta (assume debt beta = 0)
MAX	0.654	0.488
MIN	-0.704	-0.528
MEAN	0.092	0.059
VAR	0.1509	0.0917

Note: Sample size : 12 (We just take a sample of 12 firms to make comparison)

The gap between max and min values is 1.358, which means higher than that of hotel industry.

Both equity beta max value and equity beta mean value are lower than 1, which is acceptable in this industry.

Asset beta max, asset beta var and asset beta mean values have been decreasing, as shown in the above table. It shows us the debt leverage impact on reducing the risk level.

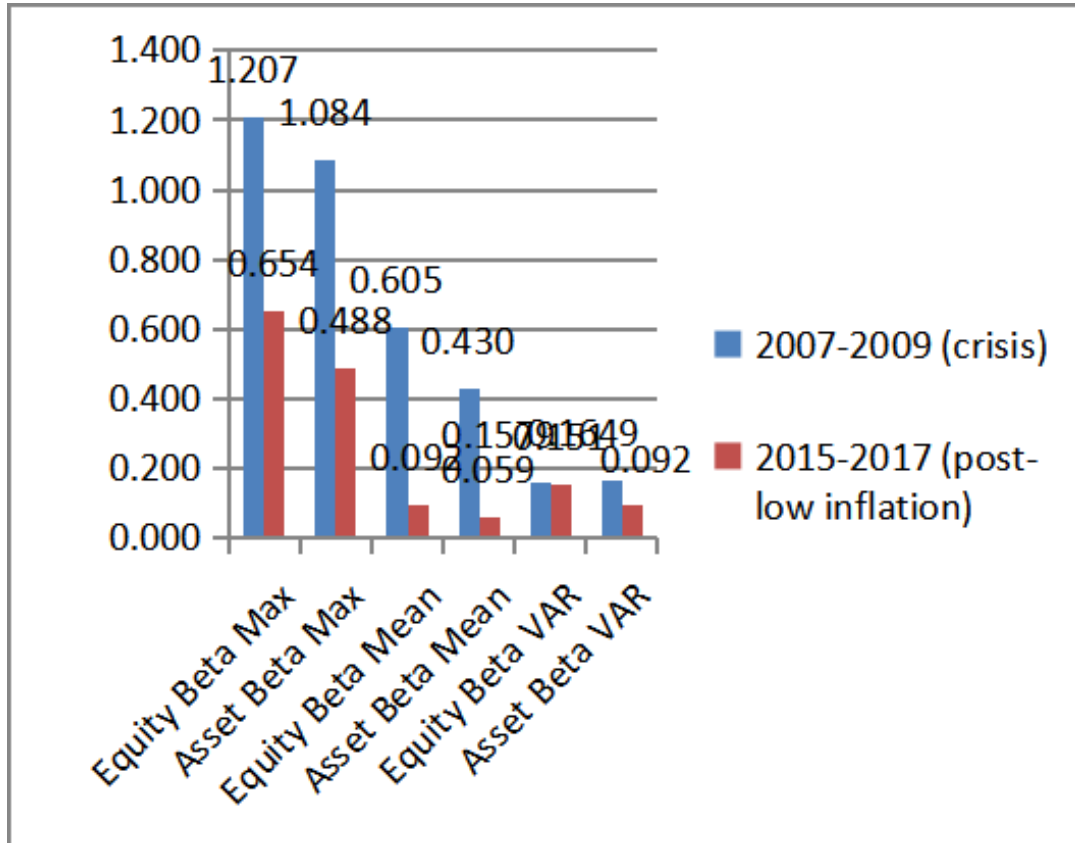


Chart 1. Statistics of Market risk (beta) in VN airline and tourism industry in the post – low inflation period 2015-2017 compared to the financial crisis 2007-2009

The above table1 shows us that there is no firm with beta values > 1. And table 2 shows that beta mean values are acceptable < 1.

We summarize the data in the above chart 1 as the analysis follows:

For the airline and tourism industry, different from hotel industry, the market risk volatility has been just slightly decreasing during the post-low inflation environment (2015-17) as shown by equity beta var in the above chart, whereas the risk level (equity and asset beta mean) decreased much. We also realize that there is a big gap between equity beta max in the crisis (1.207 and 1.084) compared to those in the post-L inflation time (0.654 and 0.488).

B. Hotel Industry during the post – low inflation environment:

Table 3. The Volatility of Market Risk (beta) of Hotel industry in the post- low inflation environment 2015-2017

Order No.	Company stock code	2015-2017 (post - low inflation)		Financial leverage	Note
		Equity beta	Asset beta (assume debt beta = 0)		
1	DLD	-0.111	-0.047	58.1%	assume debt beta = 0; debt ratio as in F.S 2015; FL calculated as total debt/total capital
2	DXL	-0.383	-0.128	66.7%	
3	MTC	0.016	0.015	5.9%	
4	OCH	-0.277	-0.106	61.9%	
5	SGH	-0.040	-0.027	33.5%	
6	VIR	-0.059	-0.055	7.4%	
7	VNG	-0.042	-0.018	55.8%	
8	DAH	0.004	0.001	70.0%	

The above table 3 shows us there is no company having beta higher than 1. And asset beta values have been decreased.

Table 4. The Statistics of Volatility of Market Risk (beta) of Hotel industry in the post- low inflation environment 2015-2017

Statistic results	2015-2017 (post - low inflation)	
	Equity beta	Asset beta (assume debt beta = 0)
MAX	0.016	0.015
MIN	-0.383	-0.128
MEAN	-0.112	-0.045
VAR	0.0204	0.0025
Note: Sample size : 8		

The gap between max and min values is 0.399, which means lower than that of tourism group. Both equity beta max and equity beta mean values are lower than 1, which is acceptable in this industry.

Also, asset beta var has been decreased considerably, as shown in the above table. It shows us the debt leverage impact on reducing the risk level.

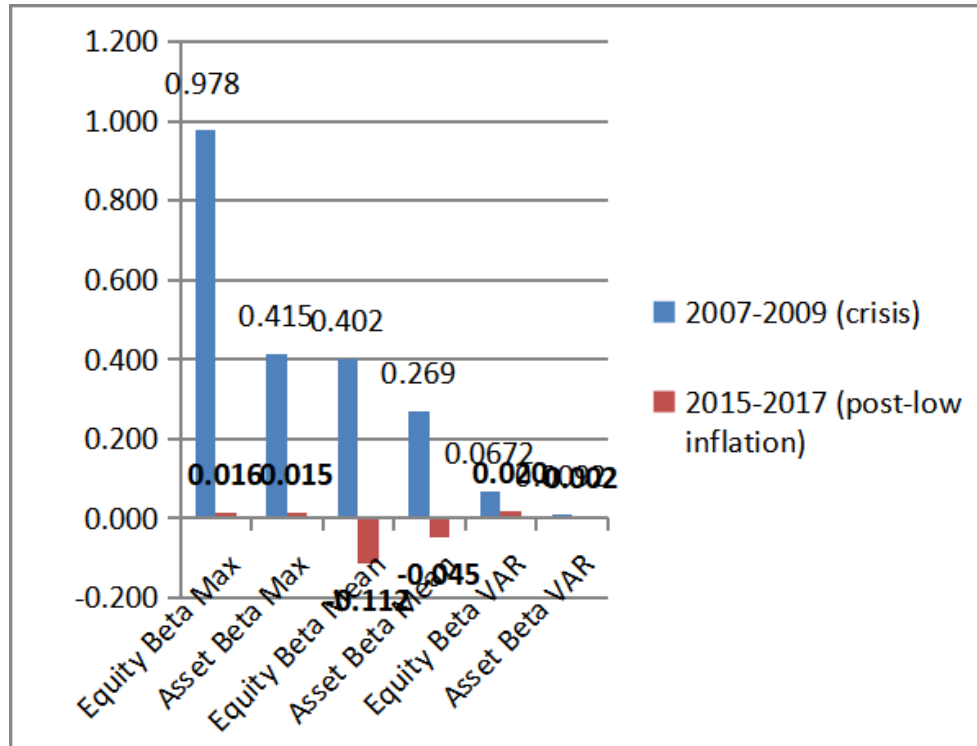


Chart 2. Statistics of Market risk (beta) in VN Hotel industry in the post – low inflation period 2015-2017 compared to the financial crisis 2007-2009

The above table 3 shows us that there is no firm with beta values > 1. And table 4 shows that beta mean values are small and negative.

We summarize the data in the above chart as the analysis follows:

For the hotel industry, the market risk level has been reduced during the post-low inflation environment (2015-17) as shown in the above chart, while the risk fluctuation has decreased much (equity and asset beta var). We also realize that there is a big gap between equity beta max in the crisis (0.978 and 0.415) compared to those in the post-L inflation time (0.015 and 0.015).

Entertainment Industry during the post – low inflation environment:

Table 5. The Volatility of Market Risk (beta) of Entertainment Industry in the post- low inflation environment 2015-2017
(Source: Vietnam stock exchange. Note: N/A: data of listed firm not available)

Order No.	Company stock code	2015-2017 (post - low inflation)			Note
		Equity beta	Asset beta (assume debt beta = 0)	Financial leverage	
1	DNT	0.220	0.169	23.3%	assume debt beta = 0; debt ratio as in F.S 2015; FL calculated as total debt/total capital
2	DSN	0.014	0.014	4.5%	
3	GTT	-0.099	0.015	115.6%	
4	RIC	0.490	0.384	21.6%	
5	VPL	N/A	N/A	N/A	
6	HES	0.013	0.011	12.5%	
7	VEF	0.486	0.482	0.9%	
8	BTV	0.011	0.009	24.0%	

The above table shows us there is only 1 company having negative beta. And asset beta values have been decreased.

Table 6. The Statistics of Volatility of Market Risk (beta) of Entertainment Industry in the post- low inflation environment 2015-2017

Statistic results	2015-2017 (post - low inflation)	
	Equity beta	Asset beta (assume debt beta = 0)
MAX	0.490	0.482
MIN	-0.099	0.009
MEAN	0.162	0.155
VAR	0.0585	0.0402
Note: Sample size : 8		

The gap between max and min values is 0.589, which means lower than that of tourism industry. We also see equity beta max value and equity beta mean value < 1: It is acceptable in this industry. Asset beta max, asset beta var and asset beta mean values have been decreased considerably, as shown in the above table 5. It shows us the debt leverage impact on reducing the risk level.

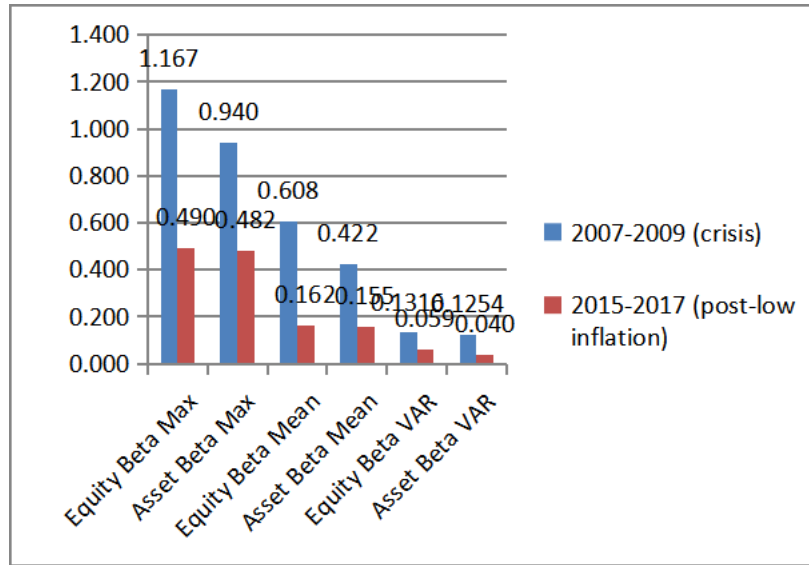


Chart 3. Statistics of Market risk (beta) in VN Entertainment industry in the post – low inflation period 2015-2017 compared to the financial crisis 2007-2009

The above table 5 shows us that there is no firm with beta values > 1. And table 6 shows that beta mean values are acceptable < 1. We summarize the data in the above chart 3 as the analysis follows:

For the entertainment industry, different from hotel industry, the market risk level has been decreasing during the post-low (L) inflation environment (2015-17) as shown by equity beta mean in the above chart, while the risk fluctuation has been reduced (equity beta var). We also realize that there is a big gap between equity beta max in the crisis (1.167 and 0.94) compared to those in the post-L inflation time (0.49 and 0.482). Comparison of three (3) industries: Hotel, entertainment, airline & tourism (in Chart 4)

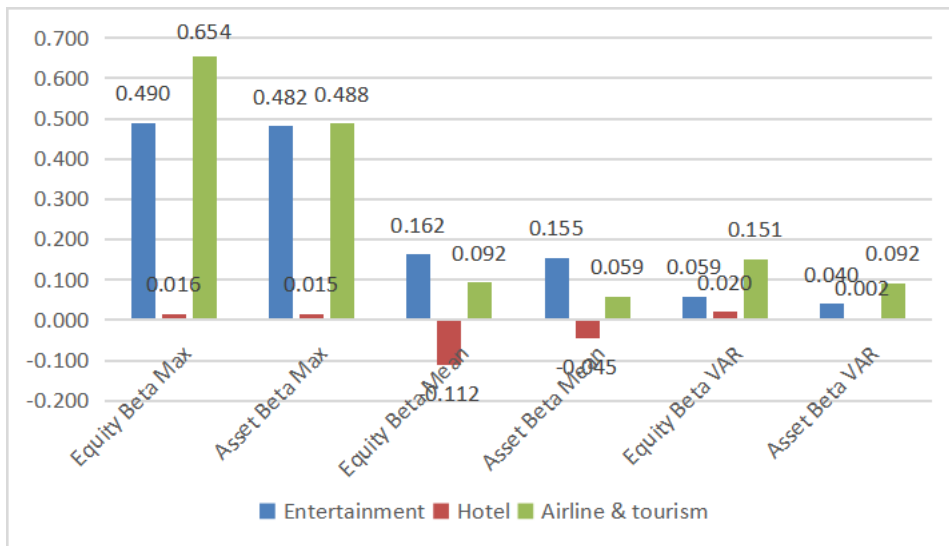


Chart 4. Statistics of Market risk (beta) in 3 industries in the post – low inflation period 2015-2017: Hotel, entertainment, airline & tourism industry group

Based on the above calculation result table, we analyze data as follows:

Firstly, the above chart tells us value of equity beta mean in the airline & tourism and hotel industries are lower than that of entertainment industry, which means lower risk level.

Then, shown by equity beta var, risk volatility in the hotel industry is the lowest, while that in airline & tourism industry is the highest.

4. Risk analysis

Inflation can affect negatively on market capitalization, but low inflation could be beneficial to economic recovery and might have benefits for financial system as investors can perform more transactions. However, Vietnam inflation rate in 2015 is at a low level, still acceptable, in the context that global economies in many developed countries also reached low rate.

Furthermore, when the Vietnam financial system has been becoming more active and bigger in size, there will be potential risk, esp. in the context of the global impact from international financial markets became bigger.

There are several factors affecting market risk level and fluctuation including, but not limited to: the entire financial market instability of global financial or economic crisis or catastrophic events can cause market risk, or fluctuations and volatility interest rates, foreign exchange rate or stock price.

5. Discussion for further researches

We can continue to analyze risk factors behind the risk scene (risk increasing as above analysis) in order to recommend suitable policies and plans to control market risk better. Also, the role of risk management and risk managers need to be developed more.

Specifically, Vietnam stock market has been established and developed since 2005-2006 until now, it has gained a lot of operational experiences with many newly-established companies, and some bankruptcies as well. Our analysis stated the risk level of Hotel, entertainment, airline & tourism group has been decreasing, but risk management tools always needed to enhance to prevent losses happened as it was in the financial crisis 2007-2009.

Vietnam Hotel, entertainment, airline & tourism companies can reduce risk by using reinsurance contracts and improve risk management practices, or perform good contract appraisal, or improving customer service to receive, evaluate customer awareness and client feedback to have proper plans to reduce customer complaints.

For all three (3) financial industries: Hotel, entertainment, airline & tourism companies, in order to reduce risk, they all need to enhance corporate governance structure, mechanisms and standards. Vietnam Hotel, entertainment, airline & tourism firms, as well as in other developing and developed countries, need to adapt to international corporate governance standards which are standardized and recommended by many international organizations such as ADB, OECD, IFC, WB, ECODA, CFA.... In addition to, these financial service firms also pay attention to technology, process and esp., to people or human resources in order to train them about risk management tools and practices to reduce business risk. Establish risk management team will help to manage all market risk, credit risk and operational risk. This risk management team, with management accountability and with experienced supervisory board, will bring together risk management model assessment, technology expertise and regulatory experience. To put in another word, the need of risk management and corporate governance has been increasing since the financial crisis 2007-2009. The roles of risk team and roles of compliance officer, internal control (self-control) and audit committee need to be clarify more in management system. Even in some specific cases, some companies might consider hiring a third-party firm (for example, law firm) to perform risk

management activities. Not only Hotel, entertainment, airline & tourism firms take care of operational risks and technology-driven change and higher competition level, but also they manage financial risks. The fundamental step is to quantify market risk or financial risks with a risk management model which is cost-effective and analyzes or involves risk factors. Therefore, it is necessary to consider and evaluate both benefits and drawback of implementing cost saving risk functions. Another thing to consider is the biases happening and affecting the decision making process in many Hotel, entertainment, airline & tourism companies; hence, we need to reduce bias when making decision by using debate techniques to recognize them and then, eliminate biases to achieve a fair and true decision. For better and transparent processes to eliminate financial risks, Hotel, entertainment, airline & tourism firms also take care of implementing ISO 9001 standards to build up their operational processes for all functions and departments. Financial risk could be considered as one of core arts of strategic planning.

Market risk or systematic risk can be insurable or reduce through hedging techniques. The meaning of hedging just similar to insurance, i.e hedge and reduce losses when an unexpected event or bad scenario in future happens. For instance, investors might buy and use options to hedge risk, or reduce risk of a stock or portfolio when the price of the underlying asset goes down. Another method to avoid market risk is choosing modern portfolio theory to identify investor risk tolerance and then build an optimal portfolio by using statistical measures to examine the correlation between assets, between risk and returns. Using statistical techniques and software constructs an efficient frontier which shows a linear relationship between risk and return. Portfolio managers and investors and firms might consider using hedging techniques to manage and reduce their exposure to risk. Hedging, known as using financial instruments or derivatives such as options and future, helps you to reduce losses, rather than making money and you have to pay premium or cost of hedging (this is the price of hedging). Our discussion on risk factors, risk management framework, and risk management model here might be applied and might be true for several developing countries in which central bank and bank system play a major role and leading role in corporate restructuring, and with the young, newly established and active stock market. For investment strategy, it depends on risk attitude of each investor when they choose a portfolio based on risk level measured by beta values. For instance, risk-adverse investors may prefer stocks with beta less than 1 so that they will reduce losses when the market declines sharply. On the other hand, risk takers might prefer stocks with higher beta which aim for higher profits.

As we can see from Exhibit 1, the risk management plan and scheme need to be put in the context that Vietnam economy has controlled inflation well in many years (4-5%), and achieved good GDP growth rate (see Exhibit 2) annually more than 5%. Also, in the whole picture of the local economy, loan growth rate also slightly decreases and has been controlled at rate of about 16% (see exhibit 3) whereas the lending rate tends to reduce and the gap between deposit rates and borrowing rates also have been shorten since 2017.

6. Conclusion and policy suggestion

In general, Hotel, entertainment, airline & tourism companies system in Vietnam have been contributing significantly to the economic development and GDP growth rate of more than 6-7% in recent years (see Exhibit 2). The above analysis shows us that most of risk measures (equity beta max, mean and var) are decreasing under leverage impact during the post-low inflation period. However, these 3 groups of companies in Vietnam need to continue increase their corporate governance system, structure and mechanisms, as well as their competitive advantage to control risk better. For instance, Hotel, entertainment, airline & tourism system might consider proper measures and plans to manage bad scenarios in future. Another way is increasing productivity while reducing management or operational costs. It is the time for our Hotel, entertainment, airline & tourism companies to set a private budget for risk management practices and risk management team, not only foresee the risk and opportunity to capitalize on. In many big corporations, they organize not only ALM committee and audit committee but also risk management committee (might cover and have a linkage with Human resource, IT, Legal, compliance and Public relation departments) in their corporate governance structure to foresee, access and manage market risk, credit risk and operational risk. They also need to clearly define responsibilities, tasks and roles between divisions,

code of conduct and ethical guidelines, set clear reporting lines and control measures and head quarter, group and branch levels. We can continue to expand risk governance discussion in Hotel, entertainment, airline & tourism sector in order to standardize risk management framework and build up organization characteristics.

This research paper provides evidence that the market risk potential has decreased under the impact of debt leverage in 2015-2017 post-low inflation period (looking again chart 1 – equity and asset beta mean values), while the Exhibit 3 also suggests that the credit growth rate increased in 2016 and slightly decrease in later years (2017-2018). It means that the local economy is trying to control credit growth reasonably and logically, however we need to analyze risk factors more carefully to reduce more market risk. Additionally, central banks and other governmental bodies also need to evaluate good impact of debt leverage and continue to issue suitable credit programs rationally and loan packages to various economic sectors to both stimulate the economic growth and reduce market risk.

This research paper generates quantitative results on market risk in order to give warning for specific industry in case there is any high increase in market risk level and volatility. From this, Hotel, entertainment, airline & tourism companies might continue to measure and control risk level more rationally and better. They can build their own risk management model to evaluate and measure market risk and other risks periodically, annually. Good risk management involves the meanings of identifying, assessing and mitigating risk.

Last but not least, as it generates the result that the risk level became lower under the leverage impact in the post-low inflation period, the government and relevant bodies such as Ministry of Finance and State Bank of Vietnam need to consider proper financial policies (including a combination of fiscal, monetary, exchange rate and price control policies) aiming to reduce/control the risk better and hence, help the stock market, 3 above groups as well as the whole economy become more stable in next development stage. For these firms, they need policies to encourage SMEs development and capital to participate in global supply chain.

The global financial crisis has passed since 2007-2009, but several corporate scandals and bankruptcies still left lessons for failures in risk management and corporate governance framework and structure of financial institutions and corporations. It is the time for our Hotel, entertainment, airline & tourism firms to enhance standards and mechanisms as well as new perspectives in management, corporate governance and leadership. Tourism and hotel industries in Vietnam need to invest and develop in depth, not in width, and with safety and environment protection.

Finally, this study opens some new directions for further researches in risk control policies in Hotel, entertainment, airline & tourism system as well as in the whole economy. For instance, how increasing inflation and deflation affects the risk level of Hotel, entertainment, airline & tourism industry and how much inflation is sufficient for financial system and economic development.

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Exhibits

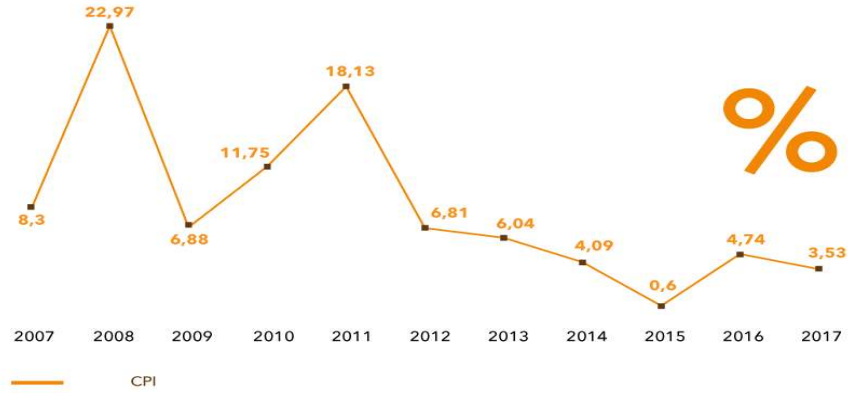


Exhibit 1. Inflation, CPI over past 10 years (2007-2017) in Vietnam

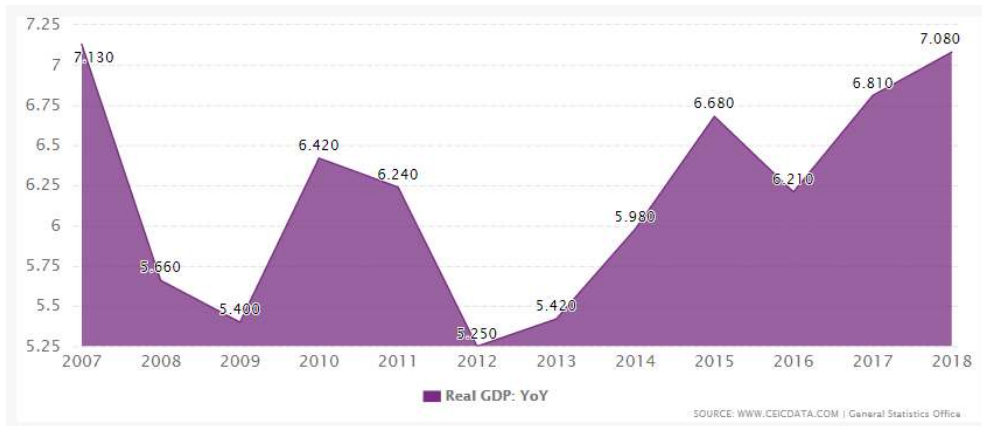


Exhibit 2. GDP growth rate past 10 years (2007-2018) in Vietnam

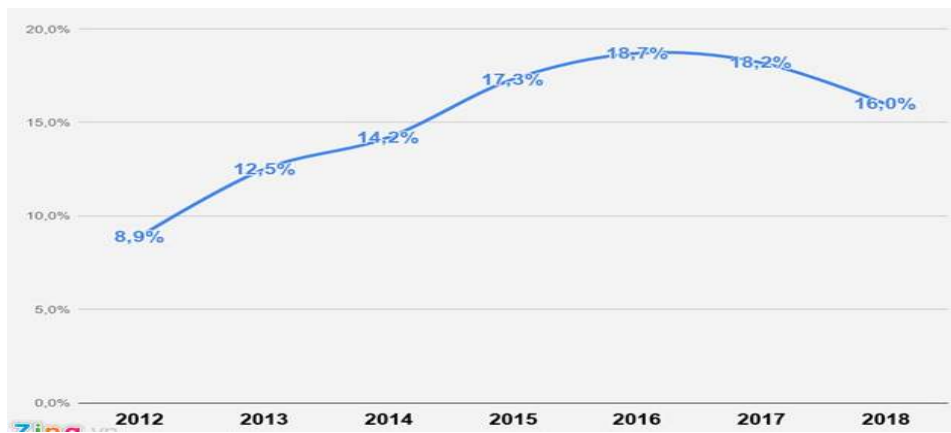


Exhibit 3. Loan/Credit growth rate in the past years (2012-2018) in Vietnam

Source: <https://www.ceicdata.com/en/indicator/vietnam/real-gdp-growth>

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