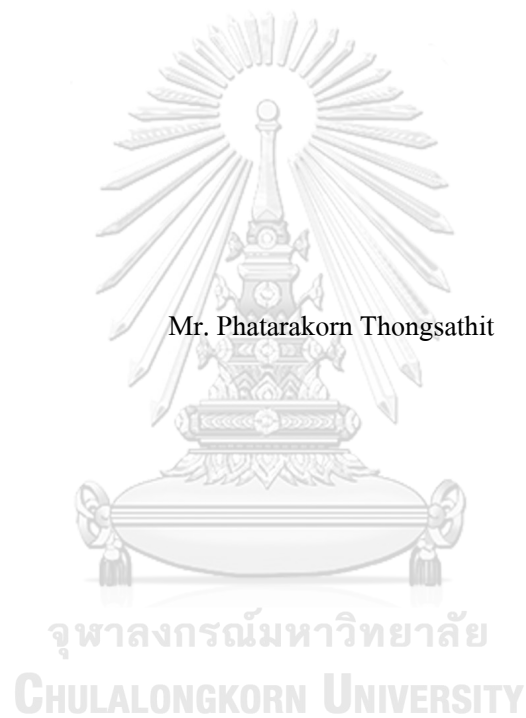


The Effect of U.S. Presidential Elections on Stock Market Liquidity in Emerging Economies



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ผลกระทบของการเลือกตั้งประธานาธิบดีของประเทศสหรัฐอเมริกาต่อสภาพคล่องในตลาด
หลักทรัพย์ของเศรษฐกิจเกิดใหม่



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การวิจัยนี้ศึกษาผลกระทบของการเลือกตั้งประธานาธิบดีของประเทศสหรัฐอเมริกาต่อสภาพคล่องในตลาดหลักทรัพย์ของประเทศเศรษฐกิจเกิดใหม่ โดยทำการศึกษาในช่วงปีที่มีการเลือกตั้ง ระหว่างปี ค.ศ. 2000 ถึง ค.ศ. 2016 งานวิจัยนี้แยกความเสี่ยงจากการเลือกตั้งประธานาธิบดีของประเทศสหรัฐอเมริกาออกเป็น 2 ประเภท ได้แก่ ความไม่แน่นอนทางการเมือง และ ความไม่แน่นอนของการเลือกตั้ง ความไม่แน่นอนทางการเมืองมีผลกระทบต่อสภาพคล่องในตลาดหลักทรัพย์ผ่านทาง การเปลี่ยนแปลงของปัจจัยพื้นฐานของเศรษฐกิจที่มีผลมาจากการเปลี่ยนแปลงนโยบาย ส่วนความไม่แน่นอนของการเลือกตั้งนั้นคือความไม่แน่นอนเกี่ยวกับการที่พรรคใดพรรคหนึ่งจะได้เป็นประธานาธิบดีจากการเลือกตั้ง ซึ่งมีผลกระทบต่อสภาพคล่องในตลาดหลักทรัพย์ผ่านทางพฤติกรรมของนักลงทุนโดยตรง การศึกษาครั้งนี้ได้นำข้อมูลจาก Iowa Electronic Markets เพื่อใช้หาความน่าจะเป็นที่แต่ละพรรคจะชนะในการเลือกตั้ง ผลการวิเคราะห์พบว่าความไม่แน่นอนทางการเมืองมีผลกระทบต่อสภาพคล่องในตลาดหลักทรัพย์ของเศรษฐกิจเกิดใหม่ อย่างมีนัยสำคัญทางสถิติ แต่การวิจัยครั้งนี้ไม่ค้นพบผลกระทบจากความไม่แน่นอนของการเลือกตั้ง ทั้งนี้ความไม่แน่นอนทางการเมืองยังมีผลต่อสภาพคล่องในตลาดหลักทรัพย์ของเศรษฐกิจเกิดใหม่แม้ว่า ได้ทำการควบคุมความเป็นไปได้ของสหสัมพันธ์ระหว่างความน่าจะเป็นที่แต่ละพรรคจะชนะในการเลือกตั้งและตัวแปรของเศรษฐศาสตร์มหภาคแล้ว ผลการวิเคราะห์ชี้ให้เห็นถึงความสำคัญของการแยกความไม่แน่นอนจากการเลือกตั้งออกเป็น 2 ประเภทให้แก่นักวิจัยที่ต้องการศึกษาความไม่แน่นอนจากการเลือกตั้งนี้

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This paper examines the effect of uncertainties that arises from U.S. presidential elections on emerging stock market liquidity over five period of elections from 2000 to 2016. The U.S. presidential elections created two uncertainties, which are political uncertainty and election uncertainty, before the election day. It is argued that the political uncertainty affects the emerging stock market liquidity through the change in future macroeconomic fundamentals while the election uncertainty is an uncertainty about the eventual winner of the election that affects the emerging stock market liquidity through market sentiment. Using monthly Iowa Electronic Markets data, this paper finds the evidence that the political uncertainty has a statistically impact on emerging stock market liquidity while this paper does not find the evidence for the impact of the election uncertainty. The effect of the political uncertainty still has statistically impact on the emerging stock market liquidity even I control the potential effect of macroeconomic variable to the political uncertainty. The result also implies the importance of seperating the two uncertainties during election period into the political uncertainty and the election uncertainty.

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CHAPTER 1

INTRODUCTION

1.1 Background

This paper investigates whether political risk from big economy affects stock market liquidity in small economy or not. This paper will use U.S. presidential election as a proxy of foreign political risk as this event can induce the political risk and we know when this event is come. The political risk is very importance. The political risk is a risk that is resulted from incumbent government action and other political events both inside and outside of nations, such as general strikes, terrorism, and war. The political risk includes uncertainty from a new government policies and a change in government policy which could create an impact on the future macroeconomic fundamentals. However, the political risk is hard to quantify. Although various approaches have been suggested to measure political risk, some of these approaches still have many drawbacks. In portfolio management, investors face with two main risks in their portfolios which are price risk and liquidity risk. Although these two risks is importance, past literatures are still lack of study on liquidity risk. Most investors focus on price risk because it reflect their return while the liquidity risk is importance as well. The liquidity risk shows how investors easily get match in the market. If the liquidity in the market is low, investors may lose their opportunity to trade with current price and need to postpone their investment to another period of time which they does not know what price will be. For instance, the change in political risk could result in a change in stock market liquidity and force portfolio managers to rebalance their investment portfolios with a higher rebalancing cost. Moreover, when clients want to withdraw their investments, fund managers would require a liquidation by selling securities in the market for cash. So, it will be better if fund managers know which period have lower liquidity as they can prepare their portfolio by rebalance their portfolio which they could invest more in riskless asset instead of stocks. Thus, it will be best if we know more factors that influence or send a signal of changing in stock liquidity.

There are many literatures which study on the relationship between the political risk and financial market. Huang et al. (2015) found evidence that there is a link between political risk and

government bond yields. Chan and Wei (1996) found that good political news caused the stock market return become higher in Hong Kong and vice versa. Le and Zak (2006) found that political uncertainty affected capital flight in developing countries by changing investors' asset allocation decisions. Xiaolei et al. (2017) found that political uncertainty, due to the event of Bo Xilai scandal¹, caused a significant lower in stock prices which the lower is from a change in a discount rate. However, these studies focus on the political risk from its own countries while foreign political risk especially from major economies is also as important as domestic one. It is arguable that the influence of foreign political risk could become more appearance and more important overtime as the world economic become more integrated. Thus, this paper aims to fill the gap in the literatures by examining the link between foreign political risk and domestic stock market.

This paper aims to examine whether the political risk from a big economy affects financial market conditions of smaller economies or not. This paper uses presidential election period to represent a period of political risk and use future presidential market, which is Iowa electronic market, to capture degree of the political risk. Although there many events that can induce the political risk, most of them is hardly to know when those events will occur. The presidential election is one of the events that induces the political risk and we also know when this event will occur as a presidential election must be announced and occurs every four years. In this paper, we have to choose a country that originates the political risk. The country should be the one with big economy as its' election outcome can determined the future world economic which will affect to other economic performance as well. Thus, this paper decided that the country should be United States of America. The U.S. presidential elections can cause the uncertainties as they creates uncertain about the future economic policies between political parties. In U.S., there are two major political parties which are Republicans and Democrats. Although both parties' policies aim to boost the economy, they have totally different ways or economic policies to reach their target. (see e.g., Hibbs (1977); Hibbs (1986); Chappell and Keech (1986); Alesina and Sachs (1986); Pastor and Veronesi (2012)). However, Uncertainties

¹ Bo Xilai, the former Communist Party chief in Chongqing, have been faced with prosecution for corruption and abuse of power in 2012.

arising from presidential elections due to the difference policies could have an effect on stock market as well. Pastor and Veronesi (2012) created a model and found that stock price will be lower when the government implements new policy or change a policy.

Due to these differences of policies, researchers have been studied on the influence of U.S. elections on U.S. stock market and found the significance relationship between them. Prior literatures document that there is an impact of U.S. elections on U.S. stock market volatility. (see e.g., Li and Born (2006); Goodell and Vähämaa (2013)). The literatures also found the impact of U.S. presidential elections on U.S. stock market price (see e.g., Li and Born (2006); Goodell and Bodey (2012)). While all these papers show their finding that change in stock market volatility occur through the transmission of changes in market sentiment, the transmission can be through the change in the fundamental. For example, Julio and Yook (2012) found the evidence that when there is a high political uncertainty, firms will reduce and delay their spending. Thus, investors may perceive this change of firms' behavior and react it in the stock market. There are few papers that interested in the impact of U.S. presidential election on other countries' stock market as well. Nippani and Arize (2005) study on the 2000 election where the result of the election is delayed causing many investors to wonder about the delayed result. They found that the delayed result give a negative impact to stock market return to both U.S. stock market and other stock markets which are Mexican and Canadian stock market. From these all papers, their finding show the existing relationship between uncertainties arising from U.S. presidential election and stock market performance.

1.2 Research Gap and Motivation

First, past literatures did not separate and defined the two uncertainties, political uncertainty and election uncertainty, clearly. Moreover, they did not put those two uncertainties in the same model which will cause the result become biased and misunderstand the result. Most researchers usually study on an impact of uncertainty arising from U.S. elections affected directly on stock market which is the election uncertainty. However, there is not only one uncertainty causing from U.S. election. There is the political uncertainty as well. This uncertainty is the uncertainty that is derived from a prospect of policy change from election outcome which affects

through macroeconomic fundamentals and thus stock market performance. Moreover, when there is a change in the probability winning of one-party, the movement of these two uncertainties can be difference. Without separating between the political uncertainty and the election uncertainty in an election period, the impact of political risk on financial market may be misunderstand and give a biased result. For instance, the impact of political uncertainty is likely represent impact on fundamental factors, whereas the impact of election uncertainty is likely represent impact on market sentiment. Thus, this paper will separate the uncertainties from the U.S. election into two uncertainties and include those two uncertainties in the same model which are political uncertainty, my variable interest, and election uncertainty. First, the political uncertainty capture prospect of macroeconomic fundamentals change from election or information about the likelihood of future macroeconomic policy from a particular eventual winner. Second, the election uncertainty is the uncertainty about the eventual winner of the election. The election uncertainty will be captured by the different of probability winning of each parties. The highest level of election uncertainty is when the probability winning in each parties is fifty percent. If the probability of one party becomes smaller (bigger) which cause probability winning of another party becomes bigger (smaller), the election uncertainty will become lower.

Second, most past literatures focus on the effect of political uncertainty on its own market or study on domestic political risk while foreign political risk is importance as domestic one. There are only few papers that interested in the impact of U.S. elections on other stock markets. However, those literatures focus the impact between developed market and developed market while the impact of political risk from large developed country on emerging markets has largely been overlooked. Diamonte et al. (1996) found that change in political uncertainty has more impact on emerging market than on developed market by looking on a difference between average return of two portfolios, i.e. downgrade portfolio and upgrade portfolio, between emerging countries and developed countries. Thus, this paper will examine the effect of political risk from other big economy on small economy.

Third, most past literatures focus on price risk which are stock price, stock return and stock market volatility. The relationship of U.S. election uncertainty and stock market liquidity

has been overlooked as liquidity is important which could affect the cost of rebalancing portfolio. When investors invest in financial market, there are two important risks which are price risk and liquidity risk. The price risk is reflecting to their return while the liquidity risk shows how easy for investors to trade at the specific price in the market. The two uncertainties from U.S. presidential elections may change the liquidity in the stock market and cause the investors to have lower ability to trade a stock at specific price. Although the liquidity will result in a change in stock market price and stock market return. The liquidity has more meaning than that. The liquidity in stock market means the ease of trading. If the stock market has low liquidity even though the return is now satisfied, investors may not get the satisfied return by selling all their shares at this time due to low liquidity. They will have to sell in other period of time which they do not know what price will be in the future. With this importance, there is still lack of literatures on the liquidity risk. So, this paper will focus on liquidity rather than stock price. Moreover, the impact of U.S. presidential elections on emerging countries will become more importance and have higher magnitude overtime since the world's economics become more integrated. Thus, this paper aims to find the impact of uncertainties from the U.S. presidential election on emerging stock market liquidity.

1.3 Research Question

This paper examines whether there is an effect of uncertainties arising from U.S. presidential elections on emerging stock market liquidity or not. This paper studies on the period before the elections are settle as, in this period, the probability winning in each party has large deviation until the election day. This paper selects a five-time period of U.S. presidential elections from 2000 to 2016 and from February to November in each election cycle, i.e. 2000, 2004, 2008, 2012 and 2016. This paper uses Iowa electronic markets (IEMs) presidential contracts in the pre-election periods to find the probability winning in each party which has been used as a proxy of uncertainties from U.S. election by past literatures. This paper selects sample among emerging countries from ASEAN which are Indonesia, Malaysia, Philippines, Singapore and Thailand due to available data of each countries in ASEAN.

Research Question: Does uncertainties arising from U.S. election influence emerging stock market liquidity? Are there difference in the effects between election uncertainty and political uncertainty?

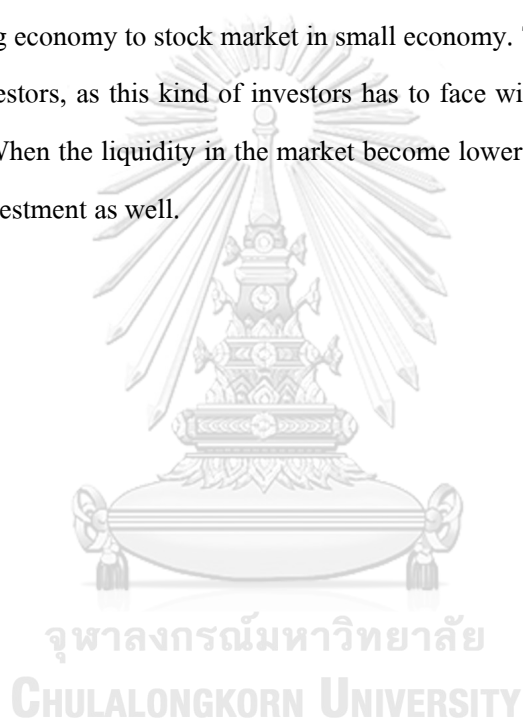
1.4 Research Objective

In order to answer these two research questions, first, this paper will find the relationship between political uncertainty from U.S. presidential elections and emerging stock market liquidity which the effect of the political uncertainty is mainly driven by the policy change in developed market. The political uncertainty has been overlooked by many researchers and they usually study only on the effect of election uncertainty. This paper will increase the step wise of control variables to see the effect of political uncertainty in the different model specifications. After that, this paper will put the election uncertainty variable into the model specifications which the effect of the election uncertainty is mainly driven by the change in investors' sentiment. This paper will see whether these two uncertainties need to separate and actually has a different meaning or not after putting these two uncertainties in the same model. This paper will find the relationship between uncertainties and stock market on each countries as well. Moreover, this paper will implement two additional tests for robustness check. First, this paper will test those relationship after controlling the potential effect of macroeconomic variable on the probability winning of incumbent government. Second, as the liquidity has various meaning and literatures has provide various aspects, this paper will use the liquidity measure from another aspect which is trading activity aspect to see whether it will give a different results or not.

1.5 Contribution

This paper could raise the importance of foreign political risk to portfolio managers, investors and researchers. This paper could help investors to have more well-preparation on their portfolio structure before period of the U.S. presidential elections due to the change in stock liquidity that might lead to the change in price. For portfolio managers, uncertainties arising from U.S. election may lead to a decrease in stock market liquidity. The stock market liquidity reflects ability to trade. The decrease in stock liquidity could imply that the cost of trade is become higher. Thus, portfolio managers will find it more difficult or more costly to rebalance their

portfolios during this period. For fund managers, when their client want to redeem their investment, it would be hard to liquidate the money by selling stocks in a market. Moreover, when fund managers or financial institutions measure the liquidity risk in the market, they usually measure the liquidity by forecasting from historical data while this paper provides them a link between U.S. political uncertainty and stock market liquidity. If they can forecast change in the probability winning in each party or receive an information about change in this probability, they could forecast the change in stock market liquidity. Thus, this paper will help investors in risk management strategies. Moreover, this paper provides an evidence on the relationship between political risk from big economy to stock market in small economy. This paper would be benefit to all short horizon investors, as this kind of investors has to face with the liquidity risk, and large portfolio investors. When the liquidity in the market become lower, they would have to face with the higher cost of investment as well.



CHAPTER 2

LITERATURE REVIEW

2.1 Politic, Election and Real Economy

2.1.1 Policies of Political Parties

In U.S., there are two major political parties which are Republican party and Democratic party. Although both parties' policies aim to boost U.S. economic performance, they have totally different ways or different in economic policies to reach their target. With these differences, it could create the uncertainty in U.S. election. Moreover, the past literatures have been confirmed on these differences. Hibbs (1977) affirmed that macroeconomic performance were not only from the result of the economy itself but the macroeconomic performance were also depending on what the policy of government has been implemented. The long-term and short-term policy give a different result of growth between long-term and short-term economic growth. As we know the policy between Democrats and Republicans is difference. For example of the evidence in real economy, Alesina and Sachs (1986) found that the first two year annual gross national product (GNP) when Democratic is incumbent government (5%) is higher than when Republican is incumbent government (1.2%). They studied on the annual gross national product (GNP) from 1948 to 1984. The higher GNP in first two year would stimulate the incentive of short horizon investors to enter the market and this kind of investors trade a stock in short period of time which would make the stock market liquidity become higher.

Moreover, Hibbs (1986) has been argued that Democratic party is likely to implement expansionary policies than when Republican is the incumbent government. However, he argued that Republican party is better in control the inflation rate than Democratic party. For instance, Chappell and Keech (1986) presented that average inflation rate in time of Democratic as incumbent government is 2.5% higher than when Republican is incumbent government. The inflation rate affects the liquidity in the stock market as well. The higher of the inflation rate would result in higher stock liquidity as investors lose their purchasing power and need more return to compensate the higher inflation rate which they will enter into the stock market and cause the stock liquidity become higher. This shows that there is the difference in stock market

liquidity if the president is change to another political party. The difference in economic policies would create uncertainty during the election about the future macroeconomic policy and may affects to the stock market performance as there might be potential that the policy will change from the elections. Pastor and Veronesi (2012) created a model and found that stock price will be lower when the government implement the new policy or change in policy.

2.1.2 Real Economy and Elections

It has been studied and found that macroeconomic variables affect to voter behavior in both the presidential elections and the congressional elections (see e.g., Chappell and Keech (1985); Lynch (1999), Lynch (2002)). Chappell and Keech (1985) argued that the macroeconomic variables that influence voter in presidential elections are changing through time. For instance, when the inflation rate is high, the lower of unemployment rate will give a positive impact on the probability winning of the incumbent government. Lynch (1999) used regression model to find the stability of the link between voting behavior and macroeconomic variables and found that the macroeconomic variables have an impact on voting behavior of presidential elections from 1872 to 1996 and the gross national product become more important variable after 1946. Moreover, Lynch (2002) suggested that economic variables were dominant for congressional elections in 1874-1914 because of the important role that Congress shapes the macroeconomic policy and the media on that day has report act of congress every day. He also finds macroeconomic conditions is the great determinant of the election outcomes. Moreover, the macroeconomic policies of the party that win the election influence fundamental factors (see e.g., Chappell and Keech (1986); Alesina and Sachs (1986)). Lewis-Beck (1988) argues that if macroeconomic variables influence the probability winning of incumbent government, we should expect the change in U.S. stock markets during U.S. election cycles. However, this paper also use the macroeconomic variables to control for level of stock market liquidity. Thus, this paper will implement the solution for controlling the potential effect of macroeconomic variables on the probability winning of incumbent government which is an inverse proxy of political uncertainty. This paper will see whether there is an effect of political uncertainty on emerging stock market liquidity or not after we control for this potential effect of macroeconomic variables.

2.2 U.S. Presidential Election and Stock Markets

Over the past decade, the well-known literatures have been studied on the influence of U.S. elections on U.S. stock market performance and found the significance relationship between them. Prior literatures document that there is an impact of U.S. election on U.S. stock market volatility. Li and Born (2006) study the U.S. presidential elections and found that stock market volatility become higher before elections when the election uncertainty is high or when neither of the candidates has a dominant lead in the presidential election polls. Goodell and Vähämaa (2013) found that stock market volatility of the S&P 500 index increases with the increase in the probability of the eventual winner which they use it as a proxy of political uncertainty. However, the proxy of political uncertainty of them is involved with the assumption that market know who will be the president on the election. This assumption make this proxy become hardly to implement on reality.

The well-known literatures have been explored the influence of U.S. presidential elections on U.S. stock market and documented that the uncertainty caused by the elections is reflected in stock prices. For instance, Li and Born (2006) documented that U.S. stock prices become higher before U.S. presidential election day when there is no party has a dominant lead in the election. Goodell and Bodey (2012) found that when the election uncertainty become lower, it will lead to a decrease in stock market valuations as the decreasing election uncertainty which cause a price to earnings ratios of each stock become lower. While all these papers showed their finding that change in stock market volatility occur through the transmission of a changes in market sentiment, The transmission may from the change in the fundamental. For example, Julio and Yook (2012) found the evidence that when there is a higher uncertainty from U.S. elections, U.S. firms will reduce and delay their spending. Thus, investors may perceive in this change of firms' behavior and react it in the stock market and caused the stock price become lower. However, there are few papers that interested in the impact of U.S. presidential election on other countries' stock market as well. Nippani and Arize (2005) studied on the 2000 election where the result is delay causing investors to wonder about the delayed result. They found that the delayed result give a negative impact to stock market return to both U.S. stock market and other stock markets which are Mexican and Canadian stock market. From these all papers, their finding

showed the existing relationship between uncertainties from U.S. elections and stock market performance.

2.3 Measurement of Market Liquidity

The liquidity of financial markets, defined as “the ease of trading”, Amihud et al. (2005). If liquidity in the market is low, market participants’ buying or selling orders may hardly get match. This could force investors who need cash by selling at lower price. Moreover, there might be a case where investors are satisfied the return in the market at that time and want to sell the asset. However, investors may fail to receive the appropriated return and cannot sell all of their shares at current market price due to the low liquidity and have to delay their selling to other point in time which the return can increase or decrease and losing their opportunity to gain the satisfied return. So, the liquidity is very importance in the financial markets. However, liquidity is a loose word. Stock market liquidity has several dimensions and has a broad concept with various facets, and past literatures have provided many proxies and meaning for measuring liquidity. There are three big aspects which are price impact, trading activity and transaction cost.

2.3.1 Price Impact Aspect

Price impact aspect indicate the responsiveness of prices to order flow. For instance, the Amihud (2002) illiquidity ratio has been used in many literatures on stock market liquidity and asset pricing. This ratio quantifies the response of returns to one dollar of trading volume by dividing the absolute value of return with trading volume. The change in return implies a change in price. For example, if the price is not changing while trading volume is very high, this mean stock has high liquidity as the large amount of transaction does not cause price to move. Thus, Amihud (2002), which this paper is mainly use, is an inverse proxy for the liquidity which an increase in these variables means that the stock liquidity become lower. According to Goyenko et al. (2009), Amihud measures the price impact of a stock well compared with other price impact measures. It should be note that Amihud illiquidity ratio is involve with a disagreement between investors about new information, following Harris and Raviv (2015), which means that when investors agree perceived the new information, the stock price will changes by investors agreement not from any trading while a disagreement between investors the stock price is change

due to trading volume. In this aspect, it will show the ability of the investors to sell or buy an amount of stock at a specific price. For example, if the Amihud illiquidity ratio in stock market A is much greater than in stock market B, investors in stock market A would find it is hard to trade all their share they want to trade at current market price which they would have to postpone some of their share again in other period of time which stock price is unknown.

2.3.2 Trading Activity Aspect

However, there are other aspects of measuring the liquidity that capture the size of trading, such as stock turnover rate and traded volume in US dollar. Among them, turnover and trading volume in US dollar are popular and these two liquidity measurements shows how the investors trading behavior is in the market, Chordia et al. (2001). Trading activity is considered as an indirect measure of a stock liquidity. For example, the first one is the stock turnover rate (TO). This liquidity measure has been implement by Datar et al. (1998). This liquidity measure is calculated by dividing the number of share traded by the number of share outstanding. The stock turnover rate can interpret as the reciprocal of average holding period of investors or how long investors hold their stock in their portfolios. According to Amihud and Mendelson (1986), the short investment horizon investors will held the liquid stock in their portfolio. This would create larger trading activity for those stock in the market as investors will hold it for buy and sell it in short time. The stocks that have high value of this turnover rate means that they are on average hold for shorter time period which means higher trading activity as Amihud and Mendelson (1986) argument. The second popular liquidity measurement in this aspect is the traded volume in US dollar. According to Brennan et al. (1998), this liquidity measure has a straight forward meaning where the stock that has a high value of the traded volume in US dollar (TV) means the higher the liquidity for that stock. The two popular liquidity measures in trading activities is unlike the Amihud illiquidity ratio where the higher, the lower the liquidity.

2.3.3 Transaction Cost Aspect

Transaction cost in stock market is not only commission from the transaction but also includes a spread between bid and ask price. The ask price that has been quoted by market makers represented as price where investors can buy the securities instantly. Similarly, the bid price that

has been quoted by market makers represented as price where investors can sell the securities instantly. Thus, the spread between them can be used as a measure of illiquidity. The bigger of this spread means the financial market have low liquidity as investors can sell (buy) instantly with a low (high) price. This makes the investors become more afraid of investment and have to take more time to making a decision. Amihud and Mendelson (1986) found that the returns of financial assets are an increasing and concave function of a spread between bid and ask. The overall return of the portfolio that investors hold will increase with their bid-ask spread. The slope of this function will decrease as the spread become wider. Moreover, the clientele effect exist in this relationship. The investors with long horizon investment will select the assets or securities that has higher spread among them. Therefore, we can say that the higher the spread between bid and ask of the financial assets, the lower the liquidity in that financial assets. However, this paper does not use this aspect of liquidity because this paper does not study on one country but five countries which each country has different market makers such as budget constraints and strategies. This makes the bid-ask spread of each country reflecting to different aspects due to their market makers. So, it need to have control variables for controlling that difference. Moreover, some countries does not have market maker which the bid-ask spread shows on the market is the investors orders such as in stock market of Thailand. Thus, this paper decided to use liquidity measure only in price impact and trading activity aspects.

This paper mainly use Amihud (2002) illiquidity measure because it has been used in many literatures on stock market liquidity and asset pricing. According to Goyenko et al. (2009), they found that Amihud illiquidity ratio is the best measure of the price impact aspects as they found that Amihud can measure the liquidity of stocks well when it is compared with other liquidity measures in price impact aspects. However, Amihud ratio still give some disadvantage that it need the assumption that there is a disagreement between traders. Moreover, there are not only the liquidity in price impact aspects but also other aspects, which are trading activities and transaction cost, as I mention above. Except for the Amihud illiquidity ratio, the stock turnover rate, which measures the liquidity in trading activity aspect, is appropriate for my paper as this ratio can be calculated in a daily frequency like my main liquidity measure of Amihud illiquidity ratio. Moreover, in the past literatures, they have been used as the monthly average as well.

Therefore, this paper decided to use the stock turnover rate as additional test for the robustness check for another liquidity aspect.

2.4 Measurement of Political Uncertainty and Election Uncertainty

2.4.1 Poll and Future Market

Past literatures that studied on uncertainties arising from presidential elections usually use the probability winning of each party to capture the uncertainty. There are two major ways to capture this probabilities which are polls and future presidential markets, which the future contract payoff in this future presidential markets depends on the election result. For instance, if investor A buy a democratic contract and the election outcome is that Democratic party win the election, investor A will receive \$1 if not investor A will get zero payoff. For instance, Li and Born (2006) used Gallup Poll to capture the election uncertainty while Goodell and Bodey (2012) use future presidential market (IOWA Electronic Market) to capture political uncertainty and election uncertainty. However, there might be some question. Which one is the best approximated for the probability winning of each parties in the next coming election? The general difference is that, first, polls usually use the telephone to survey the random sample while future market only has the sample that is already interested in the U.S. election. Second, while probabilities result from polls will reflect public opinion, probabilities result from future markets will reflect all available information as participants in this future presidential market will use all available information to estimate an appropriate probability winning in each party and use that probability to speculate in the market because they need to use a real money to invest in the future presidential market. So, samples in future market have more effort than sample in polls have. From this reason, this paper uses the Iowa Electronic markets to capture this probability.

2.4.2 Presidential Future Market

However, there are many researchers studied on the performance for these two measurements of probability between polls and future market. They found that the future market might be better than polls. Leigh and Wolfers (2006) confirmed that the president future markets is reliable. While Berg et al. (2008) found that the probability winning of the political party resulting from president future markets is much more closer to the actual winner than the

probability that calculated from the polls. He explains that both measures, the president future markets and the polls, intend to answer the different question. The president future markets usually forecast the probability of electoral college vote while the polls forecast the popular vote of each party in the coming election as the samples of polls were ask to registered and vote the political party which they want to be the president or win the election. However, there are some election year that the political party who win the election is won by having the highest number of electoral college vote not from popular vote. Thus, it is the electoral college vote not from the popular vote that determined who is the winning of the election. For instance, Obama won the 2012 U.S. presidential election. His electoral college votes in 2012 election is 61.7% while the popular vote is only 51.1%. This is why Berg et al. (2008) found that the probability from president future markets is better than polls. Moreover, Goodell et al. (2015) studied which is the best measure of the political uncertainty between presidential future markets, including IOWA and INTRADE, and the polls. They found that the polls give unstable result and are not very informative. They found the evidence that there is a highly cointegrated between IOWA and INTRADE. However, the polls are not cointegrated with them. They also found the potential that price of IOWA contracts can forecast the price of INTRADE contracts as there is a evidence that IOWA Granger-caused INTRADE and INTRADE is a lagging of IOWA in short-term.

2.4.3 INTRADE and IOWA Future Presidential Market

In the presidential future market, there is a two big and well-known markets which are INTRADE and IOWA. There might be some question about which market is more efficient to measure both probability winning in each parties and the uncertainties. Oliven and Rietz (2004) found that market making traders in Iowa Electronic Markets are more rational than price-taking traders which make this future market work more efficient. Moreover, it seem that IOWA has lower chance of being manipulated than INTRADE. It has been suggested that the manipulation are more likely to change the probability result from INTRADE market than the probability result from IOWA market. For instance, in 2012 election, the media speculation about Barack Obama will be re-elected president again make chaos among the voters. This media speculation make the probability winning of Obama in 2012 election from INTRADE market lower than the probability from IOWA market. So, there might be an idea of arbitrage between IOWA and INTRADE.

However, it hardly to be done as the maximum investment between IOWA and INTRADE are too different. The IOWA only allow for \$500 for one portfolio while INTRADE allow for a \$2000 deposit limit in the first month and \$5000 thereafter.

Berg et al. (2008) noted that IOWA has been used institutional features that protect the market from the manipulators. IOWA implement a unit portfolio issuance approach. The unit of portfolio issuance approach is the approach that one portfolio, which payoffs are sum equal to one, that are issued by the IOWA will sell it to the traders and traders then can trade the contracts in portfolio separately in the market. The point of this approach is that IOWA will not bear any risk from this market by letting the traders become the one who issue the contract. Let assume that this market is just opening and there is no contracts trading in the market. The traders can issue the contract by buying a unit portfolio from IOWA. A unit portfolio is including one of all available future contracts in the market which means that, in the future presidential market, it will include one unit of portfolio include one of Democratic contract and one of Republican contract. This unit portfolio will be trade at \$1 which is fairly price because it is equal to the payoff of this portfolio. No matter which party is win in this U.S. election. The payoff of this portfolio will be surely equal to 1 for the traders who hold the unit portfolio. Thus, IOWA will have ability to pay back to contract holder at the end of election and traders can then speculate this contract in the market. This will ensure that there is always a contract for each candidate. So, market manipulators will not only push up the price of one contracts but will have to push down the price of another contract as well. Note that traders in this market can close their position by either selling directly in the market or selling back to IOWA as unit portfolio of \$1. So, the sum of their price should be always not greater than \$1 if not it will be an arbitrage in the market which will drive the sum price of them to become or lower than \$1 again.

CHAPTER 3

HYPOTHESIS

In the literatures of determinant of liquidity, there are many factors that affect stock market liquidity. The uncertainties of U.S. presidential election is one of them. The uncertainties would affect investors perspective which influence stock market valuation and, thus, their investment decision. Ederington and Lee (1993) found that an unanticipated information cause market volatility become higher. Although the probability winning in each party from Iowa Electronic market is an anticipated information, the direction of change in this probability is the unanticipated information. Chung and Chuwongnant (2014) found that stock market volatility is a great determinant of liquidity. Thus, we could expect the change in liquidity when there is uncertainty arrival.

3.1 Political Uncertainty Hypothesis

The uncertainty on whether the incumbent government will be back in the office represent the risk of macroeconomic policy change. This is called “political uncertainty”. The political uncertainty hypothesis is about the information which involves with the probability winning of the political party. This probability can be an information that represents the future macroeconomic policy which affected to the fundamental. As Malley et al. (2007) found that political uncertainty endangers macroeconomic uncertainty as it is possible that macroeconomic fundamental will change from economic policy of each party which affects economic performance. According to Arora and Vamvakidis (2006), they found the relationship of macroeconomic performance between U.S. and other countries, especially in developing countries. The possibility of change in macroeconomic fundamental would affect stock market valuations and investors’ perspective. Thus, the political will impact on the emerging stock market liquidity. Furthermore, Næs et al. (2011) found that when the economy have a good condition, the liquidity will become higher than when the economy have a bad condition which they found that the process of change in stock liquidity is driven by a “flight to quality” when the economic have bad condition. From all of these finding, this paper concludes a transmission that

when the political uncertainty arising from U.S. election become higher, the liquidity in emerging stock market will become lower.

Hypothesis 1: When the U.S. political uncertainty becomes higher, the emerging stock market liquidity become lower.

3.2 Election Uncertainty Hypothesis

Election uncertainty refers to as the uncertainty on the eventual outcome of the election. This uncertainty directly reflects on change in market sentiments. The election uncertainty hypothesis predicts a negative relationship between emerging stock market liquidity and uncertainty about the eventual winner of the election. The stock market liquidity would be lower when there is no high probability winning of the one political party, such a 50/50 percent chance for two parties. The election uncertainty hypothesis is derived from the uncertain information hypothesis that is an idea of Brown et al. (1988) who found when there is higher uncertainty, asset valuation will reduce which is associated with the higher required of return. Thus, according to Brown et al. (1988), this implies that when election uncertainty increase, it will reduce the stock valuation which reduces an incentive for the buy-side investors to enter the market as it require higher required return. This will cause liquidity in emerging stock market become lower. According to Cukierman (1980), he found that when there is higher uncertainty, investors find it is profit to delay their investment decisions in order to consider more information before they take any action. For the investors who already hold the stock in their portfolios, they will postpone their investment decision both buy more and sell what they hold. They will not take any action in the market which cause the liquidity in the emerging stock market become smaller until the election uncertainty is disappear. Thus, unlike political uncertainty, the election uncertainty affects emerging stock market liquidity through market sentiment, not through a future macroeconomic fundamental change. For these two reasons, this paper formed a hypothesis that when the election uncertainty become higher, it would affect emerging stock investors to delay their investment decision and caused a lower in stock market liquidity.

Hypothesis 2: When the U.S. election uncertainty becomes higher, the emerging stock market liquidity become lower.

3.3 Period Before the Election Hypothesis

This paper studies on the uncertainties arising from U.S. presidential elections in the period before elections from February to November. This hypothesis is about the additional effect of these two uncertainty. The effect of these two uncertainties in a month that is closer to the election date will have higher impact as people will pay more attention to the U.S. election in the month that is getting closer to election month. Moreover, in this period, a change in probability winning in each party would have higher impact on investors sentiment than other period. Thus, holding the level of uncertainty constant, as the election comes closer, we could see the higher of magnitude of effect of uncertainty. For example, we could see higher magnitude of this impact in November than in the other months as the U.S. election usually settle in November.

Hypothesis 3: As the U.S. presidential election date become closer, the effect of uncertainties on emerging stock market liquidity become higher.

CHAPTER 4

METHODOLOGY

4.1 Measurement of Uncertainties

First, the main variable of uncertainty in my empirical analysis, $PROBWIN_{us,t}$, measures the probability winning of the incumbent government. This variable is used as an inverse proxy for political uncertainty. The higher of this variable, $PROBWIN_{us,t}$, means that there is less potential that policy will change from this election which mean the lower the political uncertainty. The probability winning of the incumbent government, $PROBWIN_{us,t}$, is calculated by using Iowa presidential future market. The contracts in this market, IOWA presidential contract, are futures presidential contracts which the payoff is depends on the election outcome. For example, the payoff of the Republican party contract will be \$1 if the Republican party wins the next coming election and \$0 if the Republican party loses as same as Democratic party contract. So, the price of these contracts is already reflected as the probability winning of each party. The probabilities derived from this future market have an assumption to ignore third party. According to the assumption, when we buy one contract of both Republican and a Democratic contract, this implies we have surely received \$1 in the maturity date of contracts. Thus, the price of this contract is already reflecting the probability winning in each party. For example, if the Republican contract is currently \$0.60, the Democratic contract should be \$0.40. The sum of price will be equal to \$1 or the payoff of buying one contract of them. The result is that probability of Republican party winning would be 60% and the probability of a Democratic party winning would be 40%. Thus, the contract price from this market can be use as the probability winning in each party.

Second variable of uncertainty, $ELECUN_{us,t}$, a measure of election uncertainty. This variable will affect emerging stock market liquidity directly through investor sentiment. It is the difference between the probability winning of one political party and the probability winning of another political party. The higher of this variable means the higher the election uncertainty. This election uncertainty variable is calculated by using an equation (1).

$$ELECUN_{us,t} = 1 - |PROBWIN_{us,t} - (1 - PROBWIN_{us,t})| \quad (1)$$

where $PROBWIN_{us,t}$ represents the probability winning of the incumbent government. Because the probability winning of two party can be sum up to one, the value in the absolute term is the difference or the gap between probability winning of one party compare to another and this value does not include the meaning of which party has a dominant lead in that time. So, this value will always positive and truly reflect the gap. When both parties have an equal probability to win in this election or there is no gap of the probability winning between them (i.e., $PROBWIN_{us,t}$ equal to 0.5), $ELECUN_{us,t}$ equals one which is the state when the election uncertainty is maximized. On the other hand, when one of the political party has certain probability to win the election (i.e., $PROBWIN_{us,t}$ equals to zero or one), then $ELECUN_{us,t}$ will equal to zero which is the state when the election uncertainty is minimized.

Although $PROBWIN_{us,t}$ and $ELECUN_{us,t}$ provide the same impact on the emerging stock market liquidity, they have totally different meaning in number and aspects. As shown in the table below, while the probability of the incumbent government winning changes from 0.48 to 0.52, shows a huge change in political uncertainty as there is less potential that policy will change from this election and causing the political uncertainty become lower, $ELECUN_{us,t}$ remains unchanged which 0.96 and 0.96 respectively. For example, If the $PROBWIN_{US,10}$ in October = 0.48 and $PROBWIN_{US,11}$ in November = 0.52, Election uncertainty in both October and November = 0.96. In other words, the probability of incumbent government winning, $PROBWIN_{us,t}$ increases while the difference between the probability winning of one political party and the probability winning of the another political party is the same or $ELECUN_{us,t}$ does not move. Moreover, in appendix A, Figure A.1 shows the difference movement of these two uncertainties in five election cycles. We can see that there are period when these two uncertainties are moving in different directions, for instance, in 2000 election, $PROBWIN_{us,t}$ is decreasing from month 9 to month 11 while $ELECUN_{us,t}$ is increase from month 9 to month 11. This difference has more appearance in 2016 election where these two uncertainty have apparently moving in different ways.

Table 1 Example for the different direction of two uncertainties

	$PROBWIN_{us,t}$	Another candidate
OCTOBER	0.48	0.52
NOVEMBER	0.52	0.48

4.2 Measurement of Liquidity

Liquidity is a loose word so that this paper uses few of liquidity measure to capture two aspect of liquidity which are price impact aspect and trading activity aspect. First, this paper uses Amihud (2002) illiquidity ratio as a proxy for the illiquidity because this measurement has been used in many literatures on stock market liquidity and asset pricing. Moreover, according to Goyenko et al. (2009), they found that Amihud illiquidity ratio is the best liquidity measure among the liquidity measurements in price impact aspect. The Amihud (2002) illiquidity ratio captures the sensitivity of price change to traded volume. This ratio will show an ability of investors to trade amount of share with current price in the market. The higher of this ratio means the lower of this ability and lower of liquidity. This illiquidity measure is very well established since Hasbrouck (2009) and Goyenko et al. (2009) report its adequacy as a measure of price impact. The higher Amihud value, the more illiquidity of the stock.

$$Amihud_{i,t} = \frac{|r_t|}{Volume_t} \quad (2)$$

where r_t is return on day t and Volume is dollar volume on day t. As you can see from the equation (2), this illiquidity ratio uses the absolute return which means that no matter return is positive or negative. This ratio will see the magnitude of the price change compare to the volume. If the volume is high while there is no change in price or not change at all, this mean that this stock has high liquidity. However, this Amihud illiquidity ratio still have disadvantage. It needs to assume that there is a disagreement between traders about new information which means that when there is good news or bad news come out, the stock price change with volume as well. So, this paper uses other liquidity ratio as the additional test as well.

This paper will use another liquidity proxies which is from trading activity aspects. Unlike Amihud (2002), this liquidity measurement is a proxy for liquidity in stock market. The higher of stock turnover rate, the higher liquidity of the stock. The stock turnover rate ($Turnover_t$) has been used by many literature as it easily to use and has standardized rather than used trading volume alone. It should be note that stock turnover rate disentangles the effect of firm size from trading volume alone. This measure calculated by divided the monthly sum (over D_t days in that month) of the daily number of shares traded (ST_t) by the number of share outstanding ($Share\ Outstanding_t$) as the equation (3). Thus, this ratio will show how investors trade in the market or how easily of investors to get match in the stock market in particular time. This ratio can interpret as the reciprocal of average holding period of the investors. The higher of stock turnover rat, the shorter time period of investors hold the stock in their portfolio and, thus, the higher the liquidity in stock market. However, the result of this question below will the stock turnover rate of each stock in each month. Then I will use equally-weighted average for all of stock to calculate the monthly stock turnover rate of that stock market.

$$Turnover_{i,t} = \frac{\sum_{d=1}^{D_t} ST_t}{Share\ Outstanding_t} \quad (3)$$

According to Fernández-Amador et al. (2013), I compute monthly illiquidity (liquidity) measure for each stock by using an equally-weighted averages of them. For the illiquidity (liquidity) measure of stock market, I also compute them by using the equally-weighted averages. The replacement characters LIQ are each of the above described liquidity measures. Note that LLIQ represents for illiquidity measures and LIQ represents for liquidity measures. The calculation shows in equation (4) and (5).

$$LLIQ_{iym} = \frac{1}{D_{iym}} \sum_{d=1}^{D_{iym}} LLIQ_{iymd} \text{ or } LIQ_{iym} = \frac{1}{D_{iym}} \sum_{d=1}^{D_{iym}} LIQ_{iymd} \quad (4)$$

$$LLIQ_{ym} = \frac{1}{N_{ym}} \sum_{i=1}^{N_{ym}} LLIQ_{iym} \text{ or } LIQ_{ym} = \frac{1}{N_{ym}} \sum_{i=1}^{N_{ym}} LIQ_{iym} \quad (5)$$

Where D_{iym} is the total number of days of stock i in month m of year y , and N_{ym} is the total number of all stocks in month m of year y .

4.3 Model Specification

As the data shows as a panel data, this paper will use Hausman test to find whether the fixed effect model is an appropriate model or not. I empirically examine the relationship between uncertainties arising from U.S. presidential elections and emerging stock market liquidity by regressing emerging stock market liquidity ($SL_{i,t}$) on the probability winning of the incumbent government ($PROBWIN_{us,t}$), a measure of election uncertainty ($ELECUN_{us,t}$), and a set of control variables. The equation (6) is shown below. However, it should be note that model are more like cross-sectional than time series. The industrial production, the proxy of Gross Domestic product, use as a level to control the stock market liquidity for the different in each countries size. The bigger size of industrial production would result in higher stock market liquidity in natural. It means that all observations are independent through time.

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWIN_{us,t} + \beta_2 ELECUN_{us,t} + \beta_3 REP_{us,t} + \beta_4 INF_{i,t} + \beta_5 IP_{i,t} + \beta_6 ER_{i,t} + \beta_7 \ln MV_{i,t-1} + \beta_8 PI_{i,t} + \beta_9 NOV_{i,t} \cdot PROBWIN_{us,t} + \beta_{10} NOV_{i,t} \cdot ELECUN_{us,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t} \quad (6)$$

where $SL_{i,t}$ is the emerging stock liquidity at market level in country i and the month m , $PROBWIN_{us,t}$ is the probability winning of the incumbent government which is an inverse proxy of political uncertainty, $ELECUN_{us,t}$ is the a measurement of election uncertainty, $REP_{us,t}$ is a dummy variable that equals one if the incumbent government of the election is Republican party, $INF_{i,t}$ is inflation rate as a change in Consumer Price Index (CPI), $IP_{i,t}$ is monthly change in industrial production which is a proxy of Gross domestic product (GDP), $ER_{i,t}$ is equity return in each market, $\ln MV_{i,t-1}$ is the natural logarithm of market capitalization and $PI_{i,t}$ is net portfolio investment in balance of payment (BOP). I also include the slope dummy variable ($NOV_{i,t} \cdot PROBWIN_{us,t}$) to see whether the effect of uncertainty higher when the sample getting closer to the election date or not. Moreover, in the model specification, this paper will include a dummy variable to capture the country fixed effect and account for potential heterogeneity across countries. The intercept in the model will represent for first country and dummy will represent as intercept for the other countries. However, this paper has to see the result of Hausman tests first whether it has to use fixed effect model or random effect model. In order to test the hypothesis of U.S. political uncertainty, this paper looks into the statistical significance of β_1 . For the

hypothesis of U.S. election uncertainty, this paper looks into the statistical significance of β_2 . And, last, for the hypothesis of period before the election, this paper looks into the statistical significance of β_9 .

I intend to do the following step for each sample countries. First, I will regress stock liquidity at a market level ($SL_{us,t}$) on the probability of success of the incumbent government ($PROBWIN_{us,t}$). Second, I will increase each group of the control variables, such macroeconomic variables, stock market characteristic and capital flow. Finally, I then put the election uncertainty ($ELECUN_{us,t}$) to control for uncertainty about the eventual winner and the potential effect of particular party ($REP_{us,t}$) which is a dummy variable that equals one if the incumbent government during the period before election is Republican party.

Then, I have two additional tests to check the robustness of our findings. First, It has been studied and found that macroeconomic variable affect to voter behavior in both the presidential election and the congressional elections (see e.g., Chappell and Keech (1985); Lynch (1999), Lynch (2002)). I will regress the probability of success of the incumbent government ($PROBWIN_{us,t}$) with one-month lag of macroeconomic variables for the potential effect of macroeconomic variables on probability winning of each party. The residual term will be a measure of the political uncertainty of probability winning of incumbent government that is not influenced by the macroeconomic variables. Then, I regress like main test again but, this time, I will replace with residual term from previous regression. The result will be the effects of the political uncertainty on emerging stock market liquidity which it has already excluded the potentially effects of the probability winning in each party being influenced by changes in macroeconomic variables. Second, as there are other dimensions of liquidity rather than the price impact Amihud (2002), this paper will further examine the impact of U.S. election on emerging stock market liquidity with different aspects which is trading activity aspect, i.e. stock turnover rate, by regressing the same model by using other liquidity measure as proxy.

Table 2 Variable description

Variables	Descriptions	Transmissions	Effect on Liquidity
$PROBWIN_{us,t}$	The probability winning of the incumbent government winning, which is a proxy of political uncertainty	The higher this variable, the lower political uncertainty which would increase stock market liquidity through macroeconomic uncertainty or policy change from hypothesis 3.1.	+
$ELECUN_{us,t}$	The measurement of election uncertainty	The higher this variable, the higher election uncertainty which would reduce stock market liquidity through uncertain information hypothesis of Brown et al. (1988) from hypothesis 3.2.	-
$REP_{us,t}$	A dummy variable that is equals to one when the incumbent government during election is Republican party	Marshall et al. (2018) find that asymmetric information is higher under Republican presidents and Glosten and Milgrom (1985) find the asymmetric information is a determinant of liquidity. I expect that the liquidity will be lower in the time of republican as government.	-
$INF_{i,t}$	The inflation rate as a change in Consumer Price Index (CPI)	The higher inflation would reduce purchasing power and, in turn, stimulate investors to invest in financial market for more return to compensate the inflation, higher liquidity.	+
$IP_{i,t}$	The monthly change in industrial production as a proxy of GDP	The countries that has higher GDP should have more level of stock market liquidity. The increasing in GDP will ensure the investors' confidence about the market which create a willingness of investors to enter the market.	+
$ER_{i,t}$	Equity return	The decline in stock price reduces the aggregate collateral of the market making sector and higher margin requirement, which cause lower in liquidity.	+
$\ln MV_{i,t-1}$	The natural logarithm of market capitalization	A larger stock issue has smaller price impact for a given order flow which return is used in Amihud illiquidity ratio.	+
$PI_{i,t}$	The natural logarithm of net portfolio investment in balance of payment (BOP).	The negative net portfolio investment means there is higher investment from foreign investors which will cause the liquidity in stock market become higher.	-

CHAPTER 5

DATA

This paper considers liquidity of five stock markets among emerging countries, namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Using a five-time period of election between 2000 to 2016, I investigate the data from February to November in each election, ie. 2000, 2004, 2008, 2012 and 2016. The stock data include all Indonesia stocks traded at Indonesia stock exchange (IDX), all Malaysia stocks traded at Bursa Malaysia (BM), all Philippines stocks traded at Philippine Stock Exchange (PSE), all Singapore stocks traded at Singapore Exchange Limited (SGX) and all Thailand stocks traded at The Stock Exchange of Thailand (SET). The source of the stock market data including the stock liquidity and stock characteristic variables is derived from Bloomberg database. All macroeconomic variables are also from Bloomberg database except for the industrial production where the data is derived from World Bank database. The capital flow variables are from International Monetary Fund (IMF) database. The probability winning in each parties, which used to calculate the political uncertainty and election uncertainty, are derived from the IOWA future presidential market. Although IEM election data is available from 2000 onwards, my study begins in 2000 due to unavailability of data on industrial production of Thailand.

5.1 Countries Selection

This paper focuses on emerging countries in The Association of Southeast Asian Nations (ASEAN) which its members are Brunei Darussalam, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Stock markets in ASEAN have provided attractive investment opportunities to both foreign and domestic investors. They have become investment icons in the global financial market. Their stock market expected to continuously grow in the market capitalization along with the steady GDP growth. However, Brunei Darussalam does not have its own stock market and Some stock markets are too young to study which are Cambodia, Lao, Myanmar and Vietnam and cause these countries' stock market data to not available from 2000 to 2016. So, there would be only five stock markets to study which are Indonesia, Malaysia, Philippines, Singapore and Thailand.

5.2 Control Variables

In the model specification, according to Chordia et al. (2001) Goyenko and Ukhov (2009), I include stock characteristic which is the monthly market returns. I use the gross index return, which include both of capital gain and dividend yield, for each market from Bloomberg to use as the monthly market returns. According to Brunnermeier and Pedersen (2009), They form a theory about returns from previous month may influence stock liquidity in current month and Hameed and Viswanathan (2010), who found the evidence that market return is negatively associates with stock liquidity, have provided confirming empirical evidence. In collateral-based models, market makers make markets by absorbing temporary liquidity shocks. However, market makers have to face with their budget constraints and make financing by posting margins and secure the financial assets, which they hold, as collateral. Thus, when securities' price are dramatically decline, the intermediaries hit their margin constraints and are forced to liquidate. In Brunnermeier and Pedersen (2009), for instance, They shows that market shock can switch the stock market liquidity from high to low while the new high margin equilibrium results in larger margin requirements for market makers. They found that when there is a large decrease in the stock prices, it will reduce the aggregate collateral of the market making sector, which results in higher co-movement in stock market liquidity. Moreover, Amihud (2002) argue that liquidity is negatively associated with a stock's market value as a larger stock has smaller price impact for a given order flow than small stock and Amihud illiquidity ratio use return to find the illiquidity, this paper will also put the logarithm of the market capitalization of stocks.

There is the potential effect of one particular party. Marshall et al. (2018) find that asymmetric information is higher in the period of Republican administration and Glosten and Milgrom (1985) find the asymmetric information is a determinant of liquidity. Thus, when the Republican is in a position, the liquidity will be higher than usual. Moreover, the relationship between stock liquidity and macroeconomic variables has been theoretically represented by Eisfeldt (2004), who claim that the better economic condition will increase the investment in risky asset as the adverse selection problem lower and this improving liquidity. Moreover, it has been empirically, for instance, investigated by Næs et al. (2011). Thus, I follow Marshall et al.

(2018) and, then, I put the macroeconomic variables to control for the potential effect of them on emerging stock market liquidity. I include Inflation rate and gross domestic product (GDP). The higher inflation would reduce saving and, in turn, stimulate investors to invest in financial market for more return to compensate the inflation. The increasing in GDP will ensure the investors' confidence about the market which create a willingness of investors to enter the market. Moreover, the countries that has higher GDP should have more level of stock market liquidity. However, the monthly data for gross domestic product is unavailable. I use the industrial production as a proxy of GDP because it give a high correlation between them. Industrial production measures the volume of output of some industries in economy such as mining and quarrying, manufacturing and public utilities.

Moreover, the change in emerging stock market liquidity may be a result of the foreign investors' action. I include the net portfolio investment in balance of payment (BOP) variable to control for the capital flow in debt and equity securities. Net portfolio investment (PI) is a cross border transactions and positions involving debt or equity securities. This variable will be higher when domestic ownership of foreign assets increases. On the other hand, it will be lower when the foreign ownership of domestic assets decreases. The assets in portfolio investment is include equity and debt security. Following International Monetary Fund (IMF), net portfolio investment is the change in assets minus the change in liabilities. Thus, the negative in net portfolio investment means that there is higher investment from foreign investors which will cause the liquidity in stock market become higher.

Table 3 reports the data descriptive of the variables that used in an empirical analysis for five countries. As we can see on the table, the mean and standard deviation of Amihud illiquidity ratio shows that Thailand's stock market has the highest in means and standard deviation. This shows that Thailand' stock market has the lowest in liquidity and has a high change in the liquidity compare to other four countries. Although Thailand has the lowest liquidity in the Amihud illiquidity ratio, the turnover rate surprisingly give a different result. It shows that Thailand's stock market has the highest turnover rate among five countries. This is because these two liquidity measures has different in aspects. The Amihud see the price change in a given

traded volume while the turnover rate see how the stock has been traded compare to its share outstanding. This mean stock market of Thailand is so sensitive to the change in traded volume and there is high traded in the market compare to its share outstanding. It should be note that $PROBWIN_{us,t}$ and $ELECUN_{us,t}$ has the same mean and standard deviation for each countries as this variable will be used to test the hypothesis and is a proxy for the two uncertainties from U.S. election. The means of $PROBWIN_{us,t}$ is close to 0.50. This means, in overall, the political uncertainty usually are quite high uncertainty. There is no guarantee whether the policy will change after the incoming election or not which would make the stock liquidity in five countries become lower. $ELECUN_{us,t}$ is quite high which means that the election uncertainty is high in this five election. This will make the stock market liquidity of emerging market become lower. Moreover, in Appendix B, this paper implementd Levin-Lin-Chu test, Levin et al. (2002), for testing unit root among variables reports in Table B.1. The results of Levin-Lin-Chu test are that all variables is stationary.

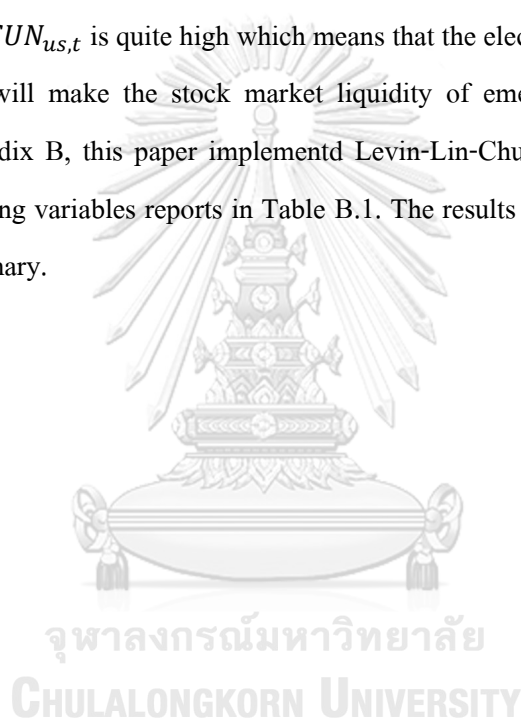


Table 3 Descriptive statistics

	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Amihud	0.0237	0.0224	0.0526	0.0713	0.6077	0.1463	0.1295	0.2845	0.9765	1.3317
Turnover rate	0.0378	0.0101	0.0191	0.0051	0.0228	0.0091	0.0427	0.0151	0.4898	0.2306
$PROBWIN_{us,t}$	0.5477	0.1355	0.5477	0.1355	0.5477	0.1355	0.5477	0.1355	0.5477	0.1355
$ELECUN_{us,t}$	0.7660	0.1635	0.7660	0.1635	0.7660	0.1635	0.7660	0.1635	0.7660	0.1635
$INF_{i,t}$	0.0055	0.0046	0.0024	0.0063	0.0048	0.0039	0.0021	0.0033	0.0016	0.0063
$IP_{i,t}$	0.0907	1.0334	0.0065	0.2230	0.0312	0.2728	0.0005	0.2829	0.0867	0.3261
$ER_{i,t}$	-0.0055	0.0779	-0.0082	0.0431	-0.0051	0.0539	-0.0043	0.0597	-0.0088	0.0737
$\ln MV_{i,t-1}$	25.8363	1.0181	25.5522	0.6546	25.9760	0.7880	26.0982	0.5416	25.7462	0.9434
$PI_{i,t}$	-0.0023	0.0027	0.0001	0.0059	0.0001	0.0006	0.0067	0.0087	-0.0005	0.0019

The table shows the descriptive statistics for the all variables that used in the empirical analysis over five time period of U.S. election from 2000 to 2016 and from February to November for each election cycle. There are three liquidity measures ($SL_{i,t}$) show on the table which are Amihud ratio and Turnover rate. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $\ln MV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment.

CHAPTER 6

RESULT

Table 4 shows the correlation coefficients between the variables used in an empirical analysis. We can see on the table that the $PROBWIN_{us,t}$ and $ELECUN_{us,t}$ has a negative and low correlation. This is why this paper wants to separate this two uncertainty and put those two uncertainties in the same model. Although these two seem to has perfect correlation as the $ELECUN_{us,t}$ is calculated by using $PROBWIN_{us,t}$, they totally capture different aspects. $PROBWIN_{us,t}$ is about the policy change in the future due to the new incumbent government while $ELECUN_{us,t}$ only capture the market sentiment. This is why this paper tries to separate the effect of these two uncertainties. It should be note that the stock market liquidity ($SL_{i,t}$) in the table is Amihud illiquidity ratio, my main liquidity measure, which the higher of the Amihud ratio means the lower the stock market liquidity. $PROBWIN_{us,t}$ is an inverse proxy of political uncertainty which the higher of this variable means the lower political uncertainty. The stock market liquidity ($SL_{i,t}$), which is represented by the Amihud illiquidity ratio, has a negative correlated with the political uncertainty ($PROBWIN_{us,t}$) as same as my hypothesis of political uncertainty. While the $ELECUN_{us,t}$ seem to show a different from my hypothesis of election uncertainty which the sign of correlation should be positive. This means when $ELECUN_{us,t}$ or election uncertainty become higher, the stock market liquidity will be higher which is not make sense as investors should be afraid on this period and cause the liquidity become lower.

For other control variables, they seem to consistent with the literature like shown in Table 2. $REP_{us,t}$ appears to have a positive correlated with stock market liquidity, Amihud illiquidity ratio, and $INF_{i,t}$, $IP_{i,t}$, $ER_{i,t}$ and $lnMV_{i,t-1}$ appear to have a negative correlated with stock market liquidity as expected which consist with the existing papers. However, the sign of correlation between $PI_{i,t}$ and $SL_{i,t}$ seem to different from Table 2 which means that when foreign investors buy asset in the country greater than domestic investors buy asset outside country of the capital inflow to a market, the stock market liquidity will become lower which is not consistent with the existing paper which it find that the stock market liquidity should become higher. It shows the negative correlated with Amihud illiquidity ratio.

Table 4 Correlations among variables

	$SL_{i,t}$	$PROBWIN_{us,t}$	$ELECUN_{us,t}$	$REP_{us,t}$	$INF_{i,t}$	$IP_{i,t}$	$ER_{i,t}$	$lnMV_{i,t-1}$
$PROBWIN_{us,t}$	-0.2819							
$ELECUN_{us,t}$	-0.0470	-0.2038						
$REP_{us,t}$	0.1587	-0.6359	0.1811					
$INF_{i,t}$	-0.2406	-0.1521	0.2873	0.1972				
$IP_{i,t}$	-0.0296	-0.1521	-0.2873	-0.1359	-0.0332			
$ER_{i,t}$	-0.2481	0.3380	0.0923	-0.1950	0.0015	0.0253		
$lnMV_{i,t-1}$	-0.2047	0.4125	-0.4681	-0.1941	-0.0630	0.1829	0.0684	
$PI_{i,t}$	-0.0311	-0.0519	0.0582	-0.0146	-0.0280	-0.3627	-0.0148	0.0002

The table shows the correlation between the variables that used in the empirical analysis over five time period of U.S. election from 2000 to 2016 and from February to November for each election cycle. The liquidity measures ($SL_{i,t}$) show on the table is Amihud, the main liquidity measure. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $lnMV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment.

6.1 Regression Results

First, this paper will first to find the political uncertainty which many papers overlooked it and usually study on the election uncertainty. I define it as the possibility of macroeconomic policy change in the future which is represented by the probability winning of the incumbent government winning ($PROBWIN_{us,t}$). In Table 5, I run a regression of the emerging stock market liquidity, which use Amihud illiquidity ratio to measure the liquidity, and the political uncertainty with no election uncertainty variable. This table reports the results of the alternative models of equation (6). In each model, I will increase the stepwise of the control variables. For example, in first model, I will include only the stock characteristics which are equity return and market capitalization. All of the model shows in the Table 5 give a results of F-statistics that are significant at the 1% level in all model. The R-square in each model is around 25% except for the first model. All of 4 models has 215 observation and number of group is 5 which represented as the countries. As I mention above, this paper will use Hausman test to identify whether I use the fixed effect specification or random effect specification. The Hausman tests are also reports on the table for each model. It indicate that the first model should use the random effected specification as it more efficient than fixed effected specification while the other three models use fixed effect specification.

First, model 1 in Table 5, I only include the stock market characteristic which are equity return ($ER_{i,t}$) and logarithm of one-month lag market capitalization ($lnMV_{i,t-1}$). In this model, an inverse proxy of political uncertainty ($PROBWIN_{us,t}$) have a negatively and statistically significant with Amihud illiquidity ratio ($SL_{i,t}$) at 0.05 level of significance. This suggests that the decrease in political uncertainty or the increase of a probability of the incumbent government winning ($PROBWIN_{us,t}$) is associated with an increase in emerging stock market liquidity or lower Amihud illiquidity ratio ($SL_{i,t}$). This finding support my political uncertainty hypothesis. The coefficient suggests that the increase in 1% of $PROBWIN_{us,t}$ will decrease the Amihud illiquidity ratio by -0.855. For the control variables, I include in this model. The coefficient estimate of $ER_{i,t}$ and $lnMV_{i,t-1}$ are negatively and statistically significant at 1% and 5%, respectively. It indicates that an increase in equity return and market capitalization will decrease

Amihud illiquidity ratio or emerging stock market liquidity become higher which consist with the existing papers.

According to Brunnermeier and Pedersen (2009), They form a theory about past returns may influence stock liquidity and Hameed and Viswanathan (2010), who find that negative market returns decrease stock liquidity, have provided confirming empirical evidence. Therefore, I put more control variables to the model 1 and form and model 2 that include both stock market characteristics and macroeconomic variables as show in Table 5. In this model, the inverse proxy of political uncertainty ($PROBWIN_{us,t}$) have a negatively and statistically significant with Amihud illiquidity ratio ($SL_{i,t}$) at 0.01 level of significance. This suggest that the decrease in political uncertainty or the increase of a probability of the incumbent government winning ($PROBWIN_{us,t}$) is associated with an increase in emerging stock market liquidity or lower Amihud illiquidity ratio ($SL_{i,t}$) as same as model 1. This finding also support my political uncertainty hypothesis. The coefficient suggests that the increase in 1% of $PROBWIN_{us,t}$ will decrease the Amihud illiquidity ratio by -1.051. For the control variables, the coefficient estimate of $ER_{i,t}$ and $lnMV_{i,t-1}$ are negatively and statistically significant at 1% and 5%, respectively, which consist with the existing papers. Moreover, the new control variables in this model, $INF_{i,t}$ is negatively and statistically significant at 1% while $IP_{i,t}$ is negatively but not statistically significant which consist with the existing papers. It indicates that an increase in equity return, market capitalization, inflation rate and industrial production will decrease Amihud illiquidity ratio or increase emerging stock market liquidity.

However, it's not only the domestic investors who drive the liquidity in the stock market but also foreign investors can drive and cause a change in the liquidity due to the capital flow. As now world become more integrated and also the capital control in many countries become more liberalized. It make the foreign investors become more easier to enter and invest in the stock market. Therefore, I put more control variable for capital control which is net portfolio investment ($PI_{i,t}$) in model 3. The net portfolio investment ($PI_{i,t}$) is a cross border transactions and positions involving debt or equity securities. As I collect the data from IMF, it is calculated by minus liability from asset. Thus, the higher and positive of the net portfolio investment ($PI_{i,t}$) means

that domestic investors invest outside country than foreign investors invest in the country which cause the stock market liquidity become lower. The result of model 3 also shows that the inverse proxy of political uncertainty ($PROBWIN_{us,t}$) still give a negatively and statistically significance at 1% level even I put the net portfolio investment ($PI_{i,t}$) in the model. This suggest that the decrease in political uncertainty or the increase of a probability of the incumbent government winning ($PROBWIN_{us,t}$) is associated with an increase in emerging stock market liquidity or lower Amihud illiquidity ratio ($SL_{i,t}$) as same as all other models. This finding also support my political uncertainty hypothesis. For the control variables, the coefficient estimate of $ER_{i,t}$ and $lnMV_{i,t-1}$ are negatively and statistically significant at 1% and 5%, respectively, which consist with the existing papers. $INF_{i,t}$ is negatively and statistically significant at 1% while $IP_{i,t}$ is negatively but not statistically significant which consist with the existing papers. However, the result shows that net portfolio investment ($PI_{i,t}$), the new control variable, is positively, which consist with the existing papers, but not statistically impact on emerging stock market liquidity.

The last control variable I will put in the model is the dummy variable that capture whether the incumbent government is Republican or not. This is because there will be potential effect of one particular party. Marshall et al. (2018) find that asymmetric information is higher in the period of Republican administration and Glosten and Milgrom (1985) find the asymmetric information is a determinant of liquidity. Thus, when the Republican is in a position, the liquidity will be higher than usual. The result of model 4 shows that the inverse proxy of political uncertainty ($PROBWIN_{us,t}$) still give a negatively and statistically significance at 1% level even I put the dummy variable of Republican ($REP_{us,t}$) in the model. This suggest that the decrease in political uncertainty or the increase of a probability of the incumbent government winning ($PROBWIN_{us,t}$) is associated with an increase in emerging stock market liquidity or lower Amihud illiquidity ratio ($SL_{i,t}$) as same as all other models. This finding also support my political uncertainty hypothesis. For control variable, the coefficient estimate of $ER_{i,t}$ and $lnMV_{i,t-1}$ are negatively and statistically significant at 1% and 5%, respectively, which consist with the existing papers. $INF_{i,t}$ is negatively and statistically significant at 1% while $IP_{i,t}$ is negatively but not statistically significant which consist with the existing papers. Net portfolio investment ($PI_{i,t}$) is positively but not statistically impact on emerging stock market liquidity which consist with the

existing papers. However, the dummy variable $REP_{us,t}$, the new control variable, is positively but not statistically significance which its direction consistent with the past literatures.

Table 5 Regression results of the political uncertainty

	Model 1	Model 2	Model 3	Model 4
$PROBWIN_{us,t}$	-0.855** (0.011)	-1.051*** (0.002)	-1.050*** (0.002)	-0.944** (0.021)
$REP_{us,t}$				0.0446 (0.658)
$INF_{i,t}$		-36.26*** (0.000)	-36.34*** (0.000)	-36.82*** (0.000)
$IP_{i,t}$		-0.0530 (0.456)	-0.0527 (0.460)	-0.0498 (0.487)
$ER_{i,t}$	-2.191*** (0.001)	-2.094*** (0.001)	-2.093*** (0.001)	-2.100*** (0.001)
$lnMV_{i,t-1}$	-0.118** (0.026)	-0.124** (0.016)	-0.123** (0.017)	-0.125** (0.016)
$PI_{i,t}$			1.417 (0.851)	1.677 (0.825)
Constant	3.877*** (0.004)	4.245*** (0.001)	4.226*** (0.001)	4.210*** (0.001)
Hausman test	Random 0.07 (0.965)	Fixed 69.09*** (0.000)	Fixed 68.28*** (0.000)	Fixed 68.02*** (0.000)
R-squared	0.169	0.256	0.256	0.257
F-stat	42.40*** (0.000)	14.09*** (0.000)	11.69*** (0.000)	10.01*** (0.000)
No. of obs.	215	215	215	215
No. of groups	5	5	5	5

P-value is in parentheses and ***, **, * Denote significance at the 1%, 5% and 10% levels, respectively. The

table reports the estimates of alternative versions of the following regression specification:

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWIN_{us,t} + \beta_2 REP_{us,t} + \beta_3 INF_{i,t} + \beta_4 IP_{i,t} + \beta_5 ER_{i,t} + \beta_6 lnMV_{i,t-1} + \beta_7 PI_{i,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t}$$

Where The liquidity measures ($SL_{i,t}$) show on the table is Amihud, the main liquidity measure. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $REP_{us,t}$ is a dummy variable equal to 1 if incumbent government is Republican party $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $lnMV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment. The regressions include dummy variables to control for country fixed effects across countries.

However, there is more uncertainty, that arise from U.S. election, rather than the political uncertainty which is election uncertainty. Although they have the same impact on emerging stock market liquidity, they can move in the different direction through time as mention above. Moreover, past literature did not separate these two uncertainties clearly and did not put these two variables in the same model. The impact of these two uncertainties may be misunderstand. As you can see on Table 4, The correlation between the proxy of political uncertainty and election uncertainty is quite low. This also support the different between these two uncertainties. Therefore, in next model, I include this election uncertainty ($ELECUN_{us,t}$) to control for the uncertainty that change the market sentiment in Table 6. In Table 6, it show the regression result when I consider both the political uncertainty and the election uncertainty. The R-square of these three model are around 26%. The F-statistics gave a statistically significant at 0.01 level of significance. The Hausman-test shows that the fixed effect specification is more efficient than random effect for all three models.

In model 5 where I include the election uncertainty ($ELECUN_{us,t}$) into model 4, the result find that there is no effect of election uncertainty on emerging stock market liquidity. I expected that the effect of political uncertainty may be greater than or already include the effect of election uncertainty. So, I will exclude the inverse proxy of the political uncertainty ($PROBWIN_{us,t}$) and put only election uncertainty as shown in model 6. However, the result is the same. It shows that the election uncertainty is not statistically significance. This implies that it is the risk from government policy change that affects emerging stock market liquidity, not the risk from election uncertainty which directly impacts on investors sentiment in emerging stock markets. However, this result ensures that the political uncertainty and the election uncertainty is totally different. Moreover, in model 7 and model 8, I include the slope dummy variables of each un certainty ($NOV_{i,t} \cdot PROBWIN_{us,t}$ and $NOV_{i,t} \cdot ELECUN_{us,t}$) to find whether the month closer to election have higher magnitude of this effect or not. The result shows the both coefficients of $NOV_{i,t} \cdot PROBWIN_{us,t}$ and $NOV_{i,t} \cdot ELECUN_{us,t}$ are not statistically significance. This means the impact of political uncertainty and election uncertainty is not higher when the election come closer. The magnitude of the political uncertainty and election uncertainty is the same for all time before election from February to November.

Table 6 Regression results of the political uncertainty and election uncertainty

	Model 5	Model 6	Model 7	Model 8
$PROBWIN_{us,t}$	-0.917** (0.025)		-0.937** (0.022)	-0.953** (0.022)
$ELECUN_{us,t}$	-0.414 (0.133)	-0.442 (0.112)	-0.420 (0.128)	-0.424 (0.126)
$REP_{us,t}$	0.0577 (0.567)	0.192** (0.020)	0.0531 (0.600)	0.0525 (0.605)
$INF_{i,t}$	-33.42*** (0.000)	-32.73*** (0.000)	-33.68*** (0.000)	-33.65*** (0.000)
$IP_{i,t}$	-0.0500 (0.484)	-0.0566 (0.433)	-0.0529 (0.461)	-0.0545 (0.450)
$ER_{i,t}$	-1.967*** (0.002)	-2.387*** (0.000)	-1.936*** (0.003)	-1.914*** (0.003)
$lnMV_{i,t-1}$	-0.165*** (0.005)	-0.213*** (0.000)	-0.165*** (0.005)	-0.166*** (0.004)
$PI_{i,t}$	1.920 (0.800)	2.854 (0.709)	2.133 (0.779)	1.975 (0.795)
$NOV_{i,t} \cdot PROBWIN_{us,t}$			-0.120 (0.607)	
$NOV_{i,t} \cdot ELECUN_{us,t}$				-0.0855 (0.603)
Constant	5.514*** (0.000)	6.238*** (0.000)	5.538*** (0.000)	5.596*** (0.000)
Hausman test	Fixed 68.60*** (0.000)	Fixed 68.57*** (0.000)	Fixed 68.34*** (0.000)	Fixed 68.34*** (0.000)
R-squared	0.265	0.246	0.266	0.266
F-stat	9.098*** (0.000)	9.472*** (0.000)	8.087*** (0.000)	8.088*** (0.000)
No. of obs.	215	215	215	215
No. of groups	5	5	5	5

P-value is in parentheses and ***, **, * Denote significance at the 1%, 5% and 10% levels, respectively. The table reports the estimates of alternative versions of the following regression specification:

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWIN_{us,t} + \beta_2 ELECUN_{us,t} + \beta_3 REP_{us,t} + \beta_4 INF_{i,t} + \beta_5 IP_{i,t} + \beta_6 ER_{i,t} + \beta_7 lnMV_{i,t-1} + \beta_8 PI_{i,t} + \beta_9 NOV_{i,t} \cdot PROBWIN_{us,t} + \beta_{10} NOV_{i,t} \cdot ELECUN_{us,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t}$$

Where The liquidity measures ($SL_{i,t}$) show on the table is Amihud, the main liquidity measure. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $REP_{us,t}$ is a dummy variable equal to 1 if incumbent government is Republican party $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $lnMV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment. The regressions include slope dummy variable of each uncertainty. The regressions include dummy variables to control for country fixed effects across countries.

6.2 Additional Test

This paper also have two additional test as a robustness of the finding. First, It has been studied and found that macroeconomic variable affect to voter behavior in both the presidential election and the congressional elections (see e.g., Chappell and Keech (1985); Lynch (1999), Lynch (2002)). If this is true, previous result that political uncertainty affect emerging stock market liquidity may be driven by macroeconomic variables. In order to see whether the earlier results are reliable and subject to this problem or not. I will regress the probability of success of the incumbent government ($PROBWIN_{us,t}$) with one-month lag of macroeconomic variables as shown in equation (7).

$$PROBWIN_{us,t} = \alpha_{i,t} + \beta_1 INF_{i,t-1} + \beta_2 IP_{i,t-1} + \varepsilon_{i,t} \quad (7)$$

The residual term ($\varepsilon_{i,t}$) from equation (7) will be a measure of the component of political uncertainty that is uncorrelated with the economic variables which it will be called “ $PROBWINRES_{us,t}$ ”. Then, I regress like I do in model 5 but, this time, I will replace with residual term ($PROBWINRES_{us,t}$) from previous regression. The result, which shown in Table 7, will be the impact of political uncertainty on emerging stock market liquidity which I already exclude the potential effects of the probability winning of the incumbent government ($PROBWIN_{us,t}$) being influenced by changes in macroeconomic variable. The result of additional test is in Table 7. The R-square is 26% and F-statistics is significant at 1% level. The inverse proxy of the political uncertainty that has been exclude the potential effect of macroeconomic is negatively and statistically significance at 5% level. This suggest that the decrease in political uncertainty or the increase of a probability of the incumbent government winning ($PROBWIN_{us,t}$) is associated with an increase in emerging stock market liquidity or lower Amihud illiquidity ratio ($SL_{i,t}$). This finding also support my political uncertainty hypothesis. The election uncertainty still not statistically significance at any level. However, this additional test give a robust to my finding on the relationship between the political uncertainty arising from U.S. presidential election and stock market liquidity in emerging economies.

Table 7 Additional test: Control the change in PROBWIN due to macroeconomic variables

	Model 9
$PROBWINRES_{us,t}$	-0.910** (0.026)
$ELECUN_{us,t}$	-0.417 (0.130)
$REP_{us,t}$	0.0624 (0.532)
$INF_{i,t}$	-33.29*** (0.000)
$IP_{i,t}$	-0.0410 (0.567)
$ER_{i,t}$	-1.992*** (0.002)
$lnMV_{i,t-1}$	-0.165*** (0.005)
$PI_{i,t}$	2.032 (0.788)
Constant	5.010*** (0.002)
Hausman	Fixed 68.51*** (0.000)
R-squared	0.265
F-stat	9.084*** (0.000)
No. of obs.	215
No. of groups	5

P-value is in parentheses and ***, **, * Denote significance at the 1%, 5% and 10% levels, respectively. The table reports the estimates of alternative versions of the following regression specification:

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWINRES_{us,t} + \beta_2 ELECUN_{us,t} + \beta_3 REP_{us,t} + \beta_4 INF_{i,t} + \beta_5 IP_{i,t} + \beta_6 ER_{i,t} + \beta_7 lnMV_{i,t-1} + \beta_8 PI_{i,t} + \beta_9 NOV_{i,t} \cdot PROBWIN_{us,t} + \beta_{10} NOV_{i,t} \cdot ELECUN_{us,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t}$$

Where The liquidity measures ($SL_{i,t}$) show on the table is Amihud, the main liquidity measure. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $REP_{us,t}$ is a dummy variable equal to 1 if incumbent government is Republican party $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $lnMV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment. The regressions include dummy variables to control for country fixed effects across countries.

However, liquidity is a loose word. There are more than one aspects of liquidity. In literatures, they suggest three main aspects of liquidity which are price impact aspect, trading activity aspect and transaction cost aspect. This paper uses the trading activity aspect, which are stock turnover rate, to capture the liquidity as the robustness check. In Table 8, I run a regression like model 5 in Table 6. The regression results show that when capture the stock liquidity by using stock turnover rate, the inverse proxy of political uncertainty is statistically insignificant. This means the political uncertainty tend to affect emerging stock market liquidity in price impact aspect, not trading activity aspect. This implies that the political uncertainty is not affecting an ability of investors to get match easily in the market but it is an ability of investors to trade a stock at specific price as price will become more volatile in this period due to low liquidity as the Amihud illiquidity ratio measures the sensitivity of price to order flow while the trading activities measure the trading frequency in the stock market. Thus, when the political uncertainty become higher, investors would face with the risk that they cannot trade all their share at a current price in emerging stock market.

6.3 Discussions

In general, empirical findings provide evidences on the hypothesis of political uncertainty, like Goodell and Vähämaa (2013) who found the relationship political uncertainty and U.S. stock market volatility. The estimated coefficients of the probability winning of incumbent government are positively and statistically significant for all of alternative model specifications in Table 5. It indicated that the higher of the probability winning of incumbent government is associated with the higher of stock market liquidity as there is less chance of future macroeconomic fundamental will change. However, the empirical findings does not support the election uncertainty hypothesis. The estimated coefficients of election uncertainty variable are statistically insignificant which the sign of coefficients is not follow the hypothesis as well. There is no effect of election uncertainty on the stock market unlike Li and Born (2006) and Goodell and Bodey (2012) who found the evidences that election uncertainty affects stock market performance. However, they focus on U.S. stock market while this paper focuses on emerging stock market. Thus, the result of the effect of election uncertainty could be difference. With these empirical findings, it implies that it is the change in future macroeconomic policy that affects

emerging stock market liquidity, not the uncertainty about the eventual winner that affects through investors' sentiments.

Table 8 Additional test: other liquidity measures

	Turnover rate
$PROBWIN_{us,t}$	0.0275 (0.696)
$ELECUN_{us,t}$	-0.0257 (0.590)
$REP_{us,t}$	0.0267 (0.127)
$INF_{i,t}$	1.707 (0.214)
$IP_{i,t}$	0.0103 (0.408)
$ER_{i,t}$	0.291*** (0.009)
$\ln MV_{i,t-1}$	0.0515*** (0.000)
$PI_{i,t}$	-0.817 (0.534)
Constant	-1.218*** (0.000)
Hausman test	Fixed 165.8*** (0.000)
R-squared	0.224
F-stat	7.277*** (0.000)
No. of obs.	215
No. of groups	5

P-value is in parentheses and ***, **, * Denote significance at the 1%, 5% and 10% levels, respectively. The table reports the estimates of alternative versions of the following regression specification:

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWIN_{us,t} + \beta_2 ELECUN_{us,t} + \beta_3 REP_{us,t} + \beta_4 INF_{i,t} + \beta_5 IP_{i,t} + \beta_6 ER_{i,t} + \beta_7 \ln MV_{i,t-1} + \beta_8 PI_{i,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t}$$

Where The liquidity measures ($SL_{i,t}$) show on the table is the stock turnover rate. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $REP_{us,t}$ is a dummy variable equal to 1 if incumbent government is Republican party $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $\ln MV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment. The regressions include dummy variables to control for country fixed effects across countries.

However, the effects of political uncertainty and election uncertainty is difference among five countries. In Appendix C, Table C.1 provides the regression results of stock market liquidity, Amihud (2002) illiquidity ratio, and two uncertainties among five countries. The results among five countries are totally difference due to its own characteristics of stock market and economy which results in the impact of U.S. election to be difference. Thailand stock market seem to receive an impact of two uncertainty unlike other four countries. It shows that political uncertainty cause Thai stock liquidity become higher as same as hypothesis. However, Singapore stock market shows a different result. The estimated coefficient of probability winning of incumbent government is positively and statistically significance which means when political uncertainty become higher, stock liquidity will become higher. For Indonesia stock market and Thailand stock market, the effect of election uncertainty is difference from the hypothesis. The estimated coefficient is negatively and statistically significance. Instead of decreasing in liquidity, the higher of election uncertainty cause stock liquidity become higher. While Philippines stock market shows that the higher of election uncertainty make stock liquidity become higher.

The result would give best interest to investors for implementation of investment and risk management strategies. Unlike Goodell and Vähämaa (2013) who use the probability winning of eventual winner as a proxy of political uncertainty, this paper provides the proxy of political uncertainty which is easy to use and does not exploits ex ante information about the eventual winner of the U.S. presidential election. If investors can forecast the change in this probability, they will know the change in future stock market liquidity which is used for risk management strategies and rebalancing their portfolio. If the probability winning of incumbent is very high or become more certain, it could provide an information to investors that the liquidity in the market will be higher and vice versa. Moreover, fund managers usually forecast the liquidity in the market by using historical data while this paper provides them a factor that can be used in forecast the liquidity with forward-looking. If there is a signal that the probability winning of incumbent government changing, fund managers could rebalance their portfolio in the proportion between risky asset and riskless asset to meet a requirement of liquidation.

CHAPTER 7

CONCLUSION

This paper finds that the uncertainties arising from U.S. presidential elections affects emerging stock market liquidity. My finding confirms that the political uncertainty has statistically impact on emerging stock market liquidity. This paper finds that when the political uncertainty become higher, the emerging stock market liquidity will become lower and vice versa. Moreover, the political uncertainty still have statistically impact the emerging stock market liquidity even we control the potential effect of macroeconomic variable to the probability winning of incumbent government. However, my finding does not find the evidence that the election uncertainty has an impact on emerging stock market liquidity. This implies that the uncertainty surrounding change in policy and macroeconomic fundamental affects the emerging stock market liquidity. The result from political uncertainty and election uncertainty implies that it is the uncertainty in future macroeconomic fundamental that affects the emerging stock market liquidity, not market sentiment surrounding the U.S. presidential elections. Nevertheless, this paper does not find that there is additional effect of the political uncertainty when getting closer to election day. This implies that the magnitude of the effect of these two uncertainties are the same for this period. Holding the level uncertainty constant, the effect of these two uncertainty in November is not difference from the effect in February.

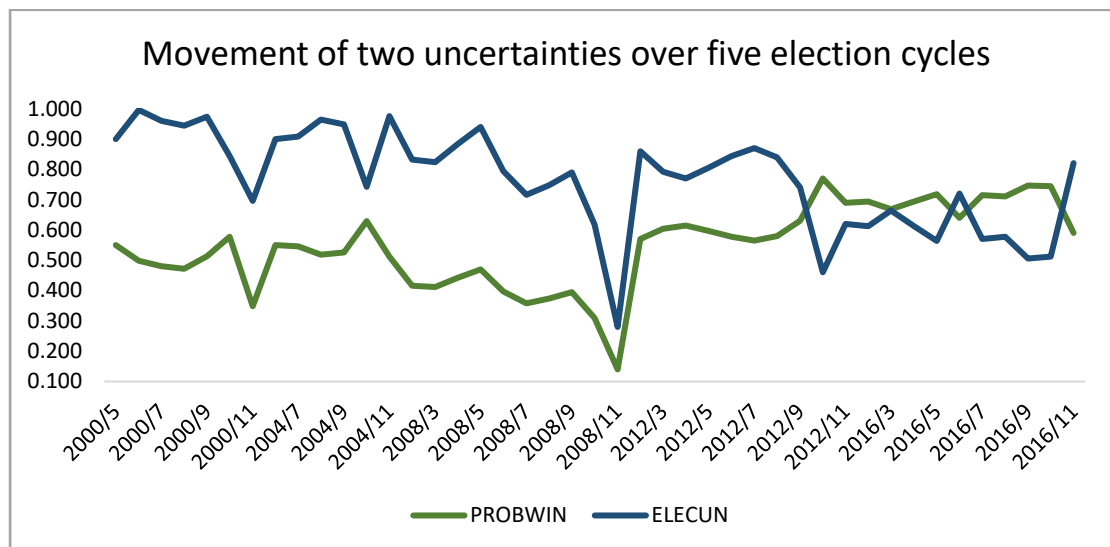
However, the effect of political uncertainty on emerging stock market liquidity depends on how the liquidity is measure. The political uncertainty tend to affect the emerging stock market liquidity on price impact aspects while there is no effect on trading activity aspects. This paper finds that when the probability winning of the incumbent government increase, the Amihud illiquidity ratio become lower but this paper does not find the evidence that the effect of political uncertainty on emerging stock market liquidity in trading activities. Thus, the political uncertainty affects the emerging stock market liquidity in price impact aspect, not trading activity aspect. This implies that the political uncertainty affects stock market liquidity while change in stock market liquidity causes a change in an ability of investors to trade the amount of share at current price in the market, not change how investors trade in the market.

This paper clearly shows the political uncertainty and the election uncertainty are difference. So, when the researchers want to study on the impact of political risk which stem from U.S. presidential elections, researchers should separate the two uncertainties between the election uncertainty and political uncertainty. Failing to do it will likely lead to a biased result and researchers will misunderstand the results. This paper raises the importance of uncertainties from U.S. election to the investors. Moreover, this paper shows that U.S. presidential elections does not only affect the U.S. stock market and developed stock market but also the emerging stock market. Moreover, this papers would benefit to all short horizon investors and large portfolio investors as these kinds of investors faced with the liquidity risk. They can use a link between stock liquidity and U.S. presidential election for risk management strategies. For example, when fund managers' clients want to withdraw their money, fund managers would need a high liquidity in a market. Fund managers would prepare their portfolios in the proportion between risky asset and riskless asset to meet requirement of liquidation due to the information of expectation of the change in probability winning of incumbent government.

APPENDICES

APPENDIX A

Figure A.1 Movement of two uncertainties in 2016 U.S. election



APPENDIX B

Table B.1 The Levin-Lin-Chu test among variables

Null Hypothesis: Panels contain unit roots

Alternative Hypothesis: Panels are stationary

	Amihud	Turnover rate	$IP_{i,t}$	$\ln MV_{i,t-1}$	$PI_{i,t}$
Unadjusted t	-5.9250	-6.6015	-14.9795	-3.9120	-6.9443
p-value	0.0007	0.0002	0.0000	0.0052	0.0001

APPENDIX C

Table C.1 Regression results among five countries

	Indonesia	Malaysia	Philippines	Singapore	Thailand
$PROBWIN_{us,t}$	0.0407 (0.292)	-0.199 (0.119)	-0.0176 (0.901)	1.056** (0.034)	-7.030*** (0.000)
$ELECUN_{us,t}$	-0.0518** (0.027)	-0.0742 (0.367)	0.265** (0.033)	-0.140 (0.536)	-2.589*** (0.000)
$REP_{us,t}$	0.0103* (0.071)	-0.0540** (0.040)	-0.00403 (0.926)	0.361*** (0.007)	-0.346* (0.084)
$INF_{i,t}$	-0.818* (0.084)	1.506 (0.304)	-8.816** (0.037)	-6.753 (0.576)	-37.51 (0.136)
$IP_{i,t}$	-0.00167 (0.524)	-0.00442 (0.866)	0.0111 (0.822)	-0.0298 (0.775)	0.0487 (0.841)
$ER_{i,t}$	-0.0255 (0.233)	0.179 (0.325)	0.350 (0.301)	0.412 (0.438)	-6.855** (0.042)
$lnMV_{i,t-1}$	-0.00871* (0.094)	-0.0820*** (0.000)	-0.126*** (0.000)	-0.369*** (0.001)	-0.0514 (0.755)
$PI_{i,t}$	-5.312** (0.029)	1.507 (0.429)	-14.05 (0.594)	3.257 (0.380)	-58.47 (0.329)
Constant	0.255* (0.072)	2.333*** (0.000)	3.726*** (0.000)	9.136*** (0.002)	8.231* (0.067)
F-Test	5.633*** (0.000)	15.92*** (0.000)	9.970*** (0.000)	3.365*** (0.000)	25.51*** (0.000)
Adjusted R-squared	0.386	0.605	0.639	0.538	0.815
No of Obs.	43	43	43	43	43

P-value is in parentheses and ***, **, * Denote significance at the 1%, 5% and 10% levels, respectively. The table reports the estimates of alternative versions of the following regression specification:

$$SL_{i,t} = \alpha_{i,t} + \beta_1 PROBWIN_{us,t} + \beta_2 ELECUN_{us,t} + \beta_3 REP_{us,t} + \beta_4 INF_{i,t} + \beta_5 IP_{i,t} + \beta_6 ER_{i,t} + \beta_7 lnMV_{i,t-1} + \beta_8 PI_{i,t} + \sum_{i=1}^{n-1} \gamma_i Country_{i,t} + \varepsilon_{i,t}$$

Where The liquidity measures ($SL_{i,t}$) show on the table is Amihud, the main liquidity measure. $PROBWIN_{us,t}$ is the probability winning of incumbent government, an inverse proxy of political uncertainty. $ELECUN_{us,t}$ is a variable that captures election uncertainty. $REP_{us,t}$ is a dummy variable equal to 1 if incumbent government is Republican party $INF_{i,t}$ is the macroeconomic variables that capture the percentage change in Consumer price index (CPI). $IP_{i,t}$ is monthly change in industrial production that is use as a proxy of Gross Domestic Product (GDP). $ER_{i,t}$ is the equity return for each markets. $lnMV_{i,t-1}$ is the natural logarithm of one-month lag of market capitalization. $PI_{i,t}$ is net portfolio investment. The regressions include dummy variables to control for country fixed effects across countries.

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