

# The Impact Of Financial Liberalization On Economic Risk In The Asia Pacific Countries

***Aulia Keiko Hubbansyah<sup>1</sup>, Feriansyah<sup>2</sup>***

<sup>1</sup>(Faculty of Economics and Business, Pancasila University)

<sup>2</sup>(Faculty of Economics and Management, Bogor Agricultural University)

\*corresponding author : keikohubbansyah91@gmail.com

## Abstract

*In this study, we analyze the non-linear effect of financial liberalization policy toward the economic risk of the Asia Pacific countries with trade openness as a threshold variable. To do that, we apply panel regression threshold proposed by Hansen (1999) as our method of analysis. Based on yearly data from 1975 – 2015, we find that there is a non-linear effect of financial liberalization on economic risk depending on the certain level of trade openness. Regarding to this finding, we find that when the trade openness is below the threshold value, financial liberalization policy can reduce the economic risk of Asia Pacific countries. However, when the trade openness exceeds the threshold value, financial liberalization will increase the economic risk. So that, we conclude that an open domestic financial market that is followed by high degree of trade openness will tend to create an economic instability.*

*Keywords: Financial Liberalization, Trade Openness, Economic Risk, Volatility*

## 1. INTRODUCTION

Globalization, which is marked by the strengthening of economic relations between countries, has increased the economic risk of countries in the world. In practice, the strengthening of economic relations between countries makes economic shocks that happen in one country can be quickly transmitted to other countries whether through financial or trade channels. As a result, there is no country in the world that can be fully protected from the cycle occurred in the world economy (Aizenman et al. 2013).

Financial liberalization and the discussion of its effects on global economic risk has become one of the important issues studied in the economic literature. In relation to

economic risk, Ozcan et al. (2003) found that financial liberalization policies can reduce a country's economic risk. This is because financial openness can help a country in obtaining additional capital which allows the country to improve its production quality. So that, financial liberalization can maintain economic stability.

However, it is still unclear whether financial liberalization really can provide positive benefit for the economy (Kose et al. 2003). This is because several other studies have shown different results compare to Ozcan (2003) and Mirdala et al. (2015). Easterly et al. (2001) which examines factors that determine economic

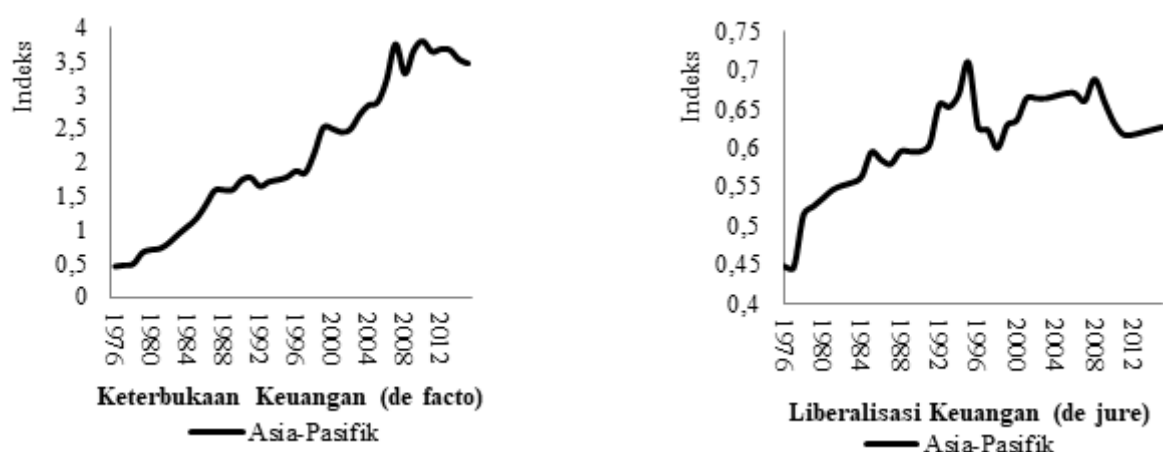
risk, have found that a liberal financial system can actually increase the volatility risk of output growth. In addition to this, Kose et al. (2003) also found that open financial sector has led to an increase in the risk of consumption and income in a country. Neaime (2005), who analyzed the Middle East and North Africa (MENA) countries, found that financial openness has increased the economic risk of countries located in this region.

However, it is still unclear whether financial liberalization really can provide positive benefits for the economy (Kose et al. 2003). This is because several other studies have shown different results compare to Ozcan (2003) and Mirdala et al. (2015). Easterly et al. (2001), for example, which examines factors determining economic risk, have found that a liberal financial system can actually increase the volatility risk of output growth. In addition to this, Kose et al. (2003) also found that open financial sector has led to an increase in the consumption risk and income risk in a country. Neaime (2005), who analyzed the Middle East and North Africa (MENA)

countries, found that financial openness has increased the economic risk of countries located in this region.

The difference in results that is found in the aforementioned studies indicate that there is still no clear conclusion regarding the impact of financial liberalization on economic risk in a country. One of the reasons why this difference could happen is that the effect of financial liberalization toward the economic risk might not be linear as always assumed by aforementioned studies. In response to this gap, the purpose of this study is to analyze the effect of financial liberalization toward economic risks in a non-linear manner. This non-linear aspect is still not widely discussed in previous studies.

To achieve the research objective, this study adapted the panel regression threshold approach developed by Hansen (1999). One of the main advantages of this approach is that the threshold value is not determined exogenously, but endogenously determined by the data. In its operations, this study suspects that the non-linear effect

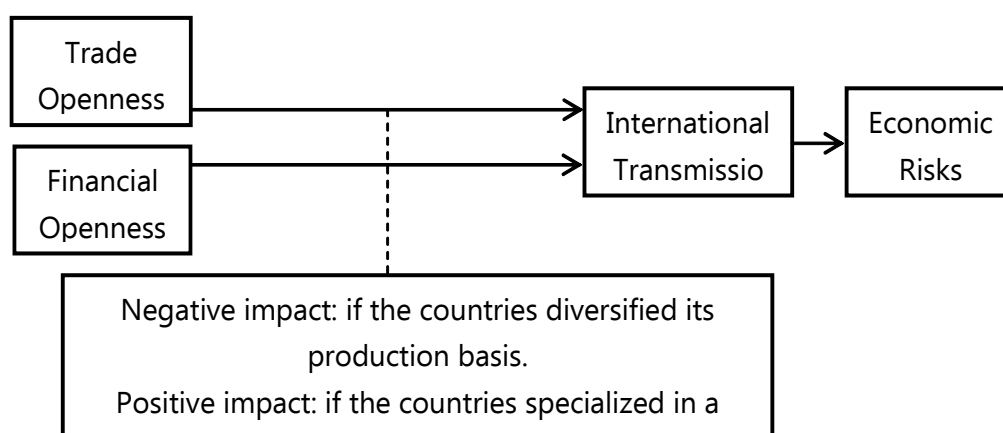


Source: External Wealth of Nations, dan Indeks Chinn-Ito (diolah)

**Picture 1. The Condition of Financial Liberalization in the Asia Pacific Region**

of financial liberalization on economic risks is due to differences in the characteristics of trade in each country. Financial liberalization followed by trade openness can affect the economic conditions of a country/region (Mirdala et al. 2015). Therefore, in relation to the financial liberalization and economic risk, the non-linear effect of financial liberalization

toward economic risk is observed through trade openness that are treated as threshold variables. This study also includes several variables that are considered important in influencing a country's economic risk as a control variable, which includes inflation volatility, fiscal policy, institutional quality and volatility of terms of trade.



Source: External Wealth of Nations, dan Indeks Chinn-Ito (diolah)

**Picture 1. The Condition of Financial Liberalization in the Asia Pacific Region**

This study uses countries in the Asia Pacific region as its sample. These Asia Pacific countries were chosen because from 1970, the openness of the financial sector in this region was very accelerated compared to other regions (Chinn et al. 2007). The increasing movement of international capital flows occurring in the Asia Pacific, according to Borensztein (2011), is characterized by the presence of free and open capital mobility. This increasing capital mobility, as a consequence of the implementation of financial liberalization policy, may effect the economic risk of the countries.

## 2. LITERATURE REVIEW

Studies discussing macroeconomic uncertainty began to develop around 1990. At that time, Ramey and Ramey (1995) had discovered a detrimental effect of the output volatility on economic growth which ended in a decline of economic prosperity. Even in the short term, the economic volatility has the opposite effect and is detrimental to the poor people. Macroeconomic volatility affects expectations of economic actors related to production, consumption, price uncertainty, and unemployment. The negative relationship between volatility and growth that ultimately affects the level of

well-being becomes one of the important problems that raises further research on what factors and sources that cause economic volatility to occur. Internally, in the modern view of macroeconomics, according to Easterly et al. (2000), uncertainty in the economy is determined by rational actions between companies and households, policy intervention by the government and even the complexity of collective behavior that brings the economy to quickly return to full employment.

In relation to the context of globalization, research on the economic crisis, which is an extreme manifestation of high economic volatility, has begun to be a concern since the 2000s. In this period, Kose et al. (2005) reveal that many crises are caused by external factors. This is because many developing countries open their economies faster than they should for trade and global finance. Theoretically, the effect of increasing trade openness and financial flows on output volatility, as a proxy for economic risk, depends on various factors, including the composition of trade and financial openness, patterns of specialization and other sources of shocks. Kose et al. (2003) revealed that in the relationship between trade openness and risk, increasing specialization of the production structure affects output volatility in the business cycle scheme. This is because the more specialized a country in certain industries, the effect of international shocks will tend to provide negative transmission and increase the economic risk.

Related to the financial openness, Kalemli-Ozcan, Sorensen and Yosha (2003) revealed that financial openness has strengths and weaknesses. The advantage of financial openness is that it can help

reduce economic risk in developing countries by providing access to capital, so that it can help them diversify the production base. On the contrary, the weakness of financial openness is because it allows the creation of specialization of production so as to make the economy more vulnerable to a specific industrial shock. As important findings from Kose et al. (2003) who found that trade openness increases output volatility in developing economies because trade flows can increase the possibility of risk sharing.

Important findings by Kose et al. (2003) regarding how external shocks exposed to the domestic economy are relevant to study. To date, the results of various studies on the effects of financial openness and trade are still debatable. This is because previous studies find both positive relationship and a negative relationship between financial openness and trade toward economic risks. From the point of view of financial openness, the debate arises because there are no clear conclusions and there are still many debates about the relationship between financial liberalization and macroeconomic volatility. The lack of clarity about the relationship is expected to occur because of the two major forces in financial liberalization. These two forces, on the one hand, may reduce economic risks, but on the other hand, they can also increase the economic risk of a country. In this case, international financial openness can reduce the economic risk because of diversification in sharing risks. But at the other side, financial openness can lead to greater specialization and thus increase the risk of the domestic economy.

Neaime (2005) found that financial and trade openness in poor regions such as the

Middle East and North Africa (MENA) have a positive relationship to economic volatility. That is, the more open and integrated financial and trade systems in MENA to the world economy, the more it will have a detrimental effect on economic risk in terms of output and consumption. Later, Ahmed and Suardi (2009) have examined the effect of trade and financial liberalization on macroeconomic volatility in the Sub-Saharan African region. The results show that there are differences in the effect between financial openness and trade on macroeconomic volatility. Using the Panel-GMM system method, the results show that financial openness has a positive and significant influence on macroeconomic volatility in the Sub-Saharan African region. It means that the more financial openness increases, the more it will increase the macroeconomic uncertainty. On the contrary, trade openness policy has a negative impact on macroeconomic risks. This means that the more liberal and integrated the trade systems in Sub-Saharan Africa, the more it will reduce the macroeconomic volatility. Similarly, Mujahida and Alam (2013) have examined the effects of trade and financial openness toward economic risks in Pakistan. Using the Autoregressive Distributed Lag (ARDL) method, the results show that in the long run trade openness has a negative and significant effect on the economic risks. Meanwhile, financial openness has a negative impact on investment risks, which reflects that an increase in financial openness causes a decrease in investment risk in the short term.

Related to the above, Yang (2011) analyzed the impact of political democracy and economic liberalization toward economic risks using the difference in

difference method for 158 countries from 1970 – 2005. The results have showed that economic liberalization %which are financial and trade openness% can reduce economic risks, but the same thing is not found in political democracy. However, the implementation of democracy after economic openness is a good choice because it gives a positive effect in reducing the economic risk. This result serves to provide additional support for policy recommendations that developing countries must liberalize their economies first and then consider to liberalize their political system by implementing democracy.

Another interesting finding, that gave rise to a new theoretical perspective is the study done by Barrot et al. (2018). Barrot et al. (2018) has identified four structural shocks - demand, supply, monetary and commodity shocks and linked their impact to state policies and structural frameworks. Shocks originating from external factors, such as trade, in the past few decades have had a greater impact on increasing the economic risk of a country compare to the shocks originating from domestic factors. Global monetary policy shocks are one of the main external sources of economic risk in developing countries. An increase in openness will increase external disruption to the economy. Another interesting fact is that in the case of trade openness, the contribution of variance to global disturbances is non-linear, following a U-shaped pattern. In this case, external disturbances will have a greater effect on low and high openness than intermediate levels. In addition to this, an important finding is that commodity intensive countries show are riskier for all types of external shocks.

### 3. METHOD, DATA AND ANALYSIS

#### 3.1 Panel Threshold Model

The main purpose of this study is to identify whether there is a non-linear effect from financial liberalization policy toward economic risk in the Asia Pacific countries. Thus, to accommodate this purpose, this research adopts an approach called panel threshold model introduced by Hansen (1999). The main advantage of this approach is that the threshold value is not arbitrarily determined, so that it allows us to get the confidence interval for the chosen interval. Besides that, the other advantage of the endogenous threshold regression technique includes (1) it does not require any specified functional form of non-linearity, and the number and location of thresholds are endogenously determined by the data, and (2) asymptotic theory applies, which can be used to construct appropriate confidence intervals. A bootstrap method to assess the statistical significance of the threshold effect is also available in order to test the null hypothesis of a linear formulation against a threshold alternative (Chang et al. 2010).

Hansen (1999) developed an econometric model that is suitable for threshold regression with panel data. The panel threshold model divides the observation into two or more regimes, depending on whether each observation is above or below the threshold level. The subscript  $i$  indexes the individual and  $t$  indexes time. The dependent variable,  $y_{it}$ , and the threshold variable,  $q_{it}$ , is scalar, and the regressor  $x_{it}$  is a  $k$  vector. The structural equation of interest is

$$y_{it} = \mu_i + \beta_1' x_{it} I(q_{it} \leq \gamma) + \beta_2' x_{it} I(q_{it} > \gamma) + e_{it} \quad 1$$

Where  $I(.)$  is an indicator function.

The observed data will be divided into two regimes, depending on whether the threshold variable  $q_{it}$  is smaller or larger than the threshold  $\tilde{a}$ . The regimes are distinguished by different regression slopes  $\beta_1$  and  $\beta_2$ . In order to be able to identify  $\beta_1$  and  $\beta_2$ , regressor variable  $x_{it}$  and threshold variable  $q_{it}$  are not time-invariant;  $u_{it}$  is the fixed individual effect, and error  $e_{it}$  is assumed to be independently and identically distributed (iid) with zero mean and finite variance.

Threshold level  $\tilde{a}$  is estimated using least square method introduced by Hansen (2000). A bootstrap procedure is adapted to get approximate critical values of the test statistics which allows us to perform the hypothesis test for the threshold effect. In this case, if the asymptotic p value is smaller than the desired critical value, we conclude that the null hypothesis of no threshold is rejected. After a threshold value is found, the confidence intervals for the threshold value and slope coefficients are then estimated (Chang et al. 2010). The same procedure can also be applied in the case of multiple thresholds. Related to this case, the potentiality of presence of more than one threshold represents another advantage of this method over the traditional approach.

Our purpose of this study is to analyze the effect of financial liberalization on economic risks with trade openness as the threshold variable. This research includes some variables that are important in affecting economic risk in a country as control variables, including (1) volatility inflation, (2) discretionary fiscal policy, (3) institutional quality, and (4) terms of trade



volatility. The empirical specification of the economic risk with financial liberalization within the panel threshold model framework is represented as follows:

$$vgdp_{it} = \mu_i + \beta'_1 finlibI(q_{it} \leq \gamma) + \beta'_2 finlibI(q_{it} > \gamma) + X_{it} + e_{it} \quad (2)$$

Where  $I(.)$  is an indicator function.

$vgdp_{it}$  is GDP volatility which is used as proxy for a country's economic risk. Volatility is calculated by finding the standard deviation of GDP for five years. This approach has been adapted in previous research, such as Kose et al. (2003), Neaime (2005), Ahmed & Suardi (2009), dan Feriansyah, Achسانی, & Irawan (2018).

*finlib* is a financial liberalization policy which is proxied by two measures, namely (1) financial integration, and (2) financial deepening. These approaches have been adapted in several previous studies, including Kose et al. (2003), Kose et al. (2006), Bekaert, Harvey, & Lundblad (2006), Ahmed & Suardi (2009), and Nicolò & Juvenal (2012). Financial integration, which is used as a proxy for external financial liberalization in this study, was built using Lane & Milesi-Ferretti (2007) calculation methods. The measure of financial integration is the sum of international financial gross assets and international financial liabilities relative to GDP. Beside financial integration, this study also adapt financial deepening as a proxy for internal financial liberalization as measured by the value of M2 relative to GDP.

Trade openness, which is treated as threshold variable, is a measure of the sum total exports and imports relative to total GDP. This measure has been widely used by various literatures as a proxy of economic

openness such as Kose et al. (2003), Neaime (2005), Dupasquier & Osakwe (2006), Ahmed & Suardi (2009), Pancaro (2010) and Balavac & Pugh (2016). To address the country specific effects, we also consider some control variables to be included in empirical model which are terms of trade volatility, inflation rate volatility, institutional volatility and discretionary fiscal policy. Specifically, the discretionary fiscal policy is constructed by using the method proposed by Fatas & Mihov (2003),

$$\Delta G = \alpha_1 + \beta_1 \Delta Y_t + \beta_2 G_{t-1} + \delta t + \varepsilon_t \quad (3)$$

Where  $G$  is the logarithm of real government spending and  $Y$  is the logarithm of real GDP. Deterministic time trends are used to capture the observed trends in government spending at all times. Discretionary fiscal policy's data is represented by the value of  $\hat{a}_t$ . To calculate this data, we use annual data for 20 Asia-Pacific countries from the period 1975- 2015 and estimate the following regression for each country.

### 3.2 Data Description

The data used in this study include (1) GDP growth volatility, (2) financial integration, (3) financial deepening, (4) trade openness, (5) terms of trade volatility, (6) inflation rate volatility, (7) discretionary fiscal policy, and (8) institutional quality.

All data are collected at an annual frequency. The data used is collected through various sources, and it covers 20 countries in the Asia Pacific for period 1975 – 2015.

**Table 1. Data and Data Source**

Variable	Year	Source
GDP Growth Volatility		World Development Indicators
Financial Integration Development Indicators		The External Wealth of Nations dan World
Financial Deepening		World Development Indicators
Trade Openness	1975 – 2015	World Development Indicators
Terms of Trade Volatility		Data Market
Inflation Rate Volatility		International financial Statistics
Discretionary Fiscal Policy		World Development Indicator
Institutional Quality		Economic Freedom World Database

Operationally, as we mentioned before, GDP Growth Volatility is used as a proxy for economic risk; meanwhile, the financial integration and financial deepening are used as a proxy for financial liberalization. These proxies are used because it represents the impact of financial liberalization on financial sector both externally (financial integration %capital inflows and outflows)

and internally (financial deep-ening). Trade openness, which is defined as the sum of import and export per GDP, is used as a proxy for trade openness condition in each country and is also treated as the threshold variable. Other variables, including terms of trade volatility, inflation rate volatility, discretionary fiscal policy, dan institutional quality are used as control variables.

**Tabel 2. Descriptive Statistics**

Variables	N	Mean	Median	Min	Max
GDP Growth Volatility	160	0.03	0.02	0.00	0.16
Financial Integration	160	2.09	3.80	0.16	23.40
Financial Deepening	160	80.81	57.64	13.43	344.21
Trade Openness	160	0.89	0.96	0.13	4.39
Volatility Inflation	160	24.91	251.79	0.32	3184.13
Discretionary Fiscal Policy	160	0.01	0.02	-0.01	0.19
Terms of Trade Volatility	160	0.05	0.05	0.00	0.27
Institutional Quality	160	6.16	1.81	2.23	9.49

Before discussing the main result of this study about the effect of financial liberalization on economic risk, the descriptive statistics of each variable is represented in the Table 3. 2. The countries

average of GDP growth volatility lies between 0.0 and 0.16. For the financial integration, the average value lies between 0.16 and 23.40. Mean-while for financial deepening, as another proxy adopted in this



study for financial liberalization, the score range between 13.43 and 344.21. For the trade openness, the score lies between 0.13 and 4.39. The somewhat high score range for volatility inflation indicate that there is a high variation of inflation in some of the sample countries.

#### 4. RESULTS

As we mentioned earlier, this study suspects that there is a non-linear impact of financial liberalization policy on economic risk in the Asia Pacific, depending on the degree of trade openness in each country. In order to be able to detect this condition, in terms of whether an economy with a high level of trade openness can show a different trend compare to the economy with a relatively low level of trade openness, this study accommodate the possibility of non-linear effect (or threshold effect) of trade openness related to the impact of financial liberalization on economic risks. As we discussed earlier, it is still unclear based on empirical results whether financial

liberalization can give a positive impact by reducing the economic risk in a country (Kose et al. 2003).

Related to the above, to test our hypothesis regarding the non-linear effect between financial liberalization and economic risk with trade openness as a threshold variable, we test for the existence of a threshold effect. This paper uses the bootstrap method to calculate the F statistics and the p value. The results are estimated with two different financial liberalization measures, which are financial integration (model 1) and financial deepening (model 2). To be noticed, the test statistic for a single threshold is significant for both financial integration and financial deepening, but the test for double and triple thresholds are insignificant. Based on this findings, we may conclude that there is a strong evidence that our hypothesis stating that there is a non-linear effect of financial liberalization toward economic risks can be accepted. The threshold regression using Hansen (2000) method are shown in Table 3 below.

**Table 3. Threshold Effect Estimation**

Model	Threshold	Conf. Interval (95%)	RSS	F Stats.	Critical value		
					10 %	5 %	1 %
1	1.4386	[1.3819,1.4689]	0.0386	10.66	10.51	13.12	15.91
2	1.4386	[1.3819,1.4689]	0.0374	16.45	11.80	13.96	16.93

Source: Data processed (2018)

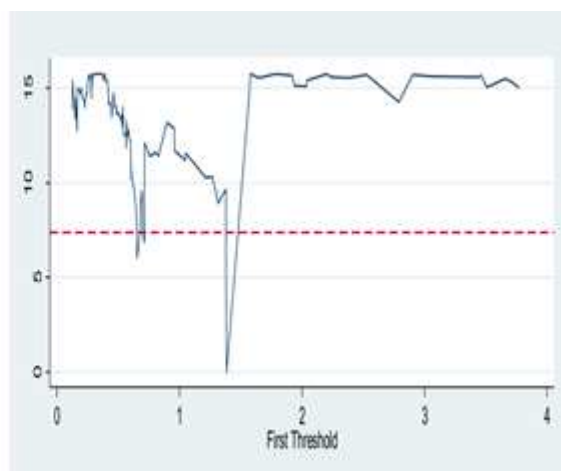
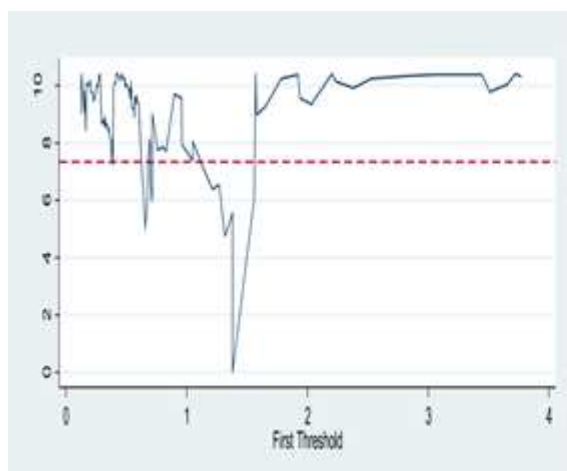
Table 3 reports the results for models 1 and 2. Based on the threshold results, the bootstrap p value shows significant results for both models. These results confirm the existence of a threshold effect between

financial liberalization and economic risk. So that, rather linear, we can conclude that the effect is non-linear. The estimated threshold of trade openness is 143.8 percent for both financial integration (model 1) and

financial deepening (model 2). To illustrate the identification of a non-rejection zone when constructing a evidence interval, draw 2 LR2 statistical plots against all possible threshold values. There are two panels representing the two models that are mentioned above. The type of LR statistics

given is calculated, the LR2 value at the estimated threshold value will always be equal to zero. The dashed line represents a critical value of 5%.

After confirming the presence of non-linear effects, we now try to divide the sample countries according to the level of



its degree of trade openness threshold value which receive a score of 143.8 percent. Table 4. shows that the majority of countries, that are almost 80 percent from 1980 – 2015, have a relatively lower trade openness value compare to the threshold level. In contrast, it is only 20 percent of the sample countries

have a higher trade openness value compare to its threshold level. Based on this findings, we may say that only a small portion of our sample countries that are vulnerable to external shocks because of their trade openness condition higher than the threshold level.

**Table 4. Percentage of Countries in Each Regime by Year**

	1980	1985	1990	1995	2000	2005	2010	2015
Trade Openness	16	17	16	16	16	16	16	16
Trade Openness > 1.4386	4	3	4	4	4	4	4	4

In this study, financial liberalization is proxied by two variables which include (1) financial integration, and (2) financial deepening. Financial integration, which is measured by the sum of capital inflow and outflow divided by GDP, is used as a proxy

for financial liberalization in terms of external. Financial integration has been used as a proxy for financial liberalization in many researches including Kose (2009), Neaime (2005), Bakaert et al. (2006), Ahmed et al. (2009) and Mirdala et al. (2015).

Moreover, the financial deepening is used as a proxy for financial liberalization in terms of internal according to Kose (2003), Neaime (2005) and Ito (2006). Table 4 reporting the regression results regarding the effect of financial integration toward economic risk of Asia Pacific Countries. The results show that financial liberalization as proxied by financial integration increases

the economic risk when the countries liberalize their trade beyond the predetermined threshold (which receive a value of 1.438). This shows that the higher level of economic liberalization as indicated by the high financial liberalization and trade liberalization can simultaneously increase the risk of the economy by increasing the volatility of GDP growth.

**Table 4. The effect of financial liberalization on economic risk**

GDP Growth Volatility	Coef.	P-value	95% Coef. Interval	
Inflation Rate Volatility	0.00002	0.000	0.00009	0.00003
Discretionary Fiscal Policy	0.15533	0.078	- 0.01778	0.32844
Institutional Quality	- 0.00381	0.051	- 0.00764	0.00002
Terms of Trade Volatility	0.04769	0.153	- 0.01786	0.11324
Financial Integration*(Trade Openness $\leq \gamma$ )	- 0.00578	0.010	- 0.01014	- 0.00142
Financial Integration*(Trade Openness $> \gamma$ )	0.00105	0.126	- 0.00030	0.00241
C				
onstant	0.04777	0.000	0.02216	0.07050
N	160			
R <sup>2</sup>	0.14			

Source: Data Processed (2018)

The similar result were also obtained when analyzing the effect of financial liberalization on economic risk using financial deepening as a proxy. Regarding to this concern, we found that financial deepening increase the GDP growth volatility when the countries liberalize their trade over the trade threshold. It means that an open domestic financial market that is followed by high degree of trade openness will tend to create an economic instability. It is because that the potential loss of foreign exchange reserves that are needed

to finance the country's international trade are greater in the financial liberalization regime. According to Cardarelli, Elekdag and Kose (2009), capital inflows create important challenges for policymakers because excessive capital inflows, that can be triggered by financial liberalization policy, may give the potential excessive pressure, lose competitiveness due to the appreciation of the exchange rate and increase the vulnerability to the economic crisis. Related to this concern, Stiglitz (2002) revealed the negative effect of financial

liberalization is that it is able to create an instability in the financial market if the economy is still not well developed. In the case of this research finding, the financial

liberalization policy will tend to increase the country's economic risk that has a high degree of trade openness.

**Table 5. The effect of financial liberalization on economic risk (proxied by financial deepening)**

GDP Growth Volatility	Coef.	P-value	95% Coef. Interval	
Inflation Rate Volatility	0.00002	0.000	0.00001	0.00003
Discretionary Fiscal Policy	0.14137	0.106	- 0.03043	0.31311
Institutional Quality	- 0.00332	0.083	- 0.00708	0.00044
Terms of Trade Volatility	0.04463	0.177	- 0.02033	0.10960
Financial Deepening*(Trade Openness $\leq \gamma$ )	- 0.00012	0.023	- 0.00023	-0.00001
Financial Deepening*(Trade Openness $> \gamma$ )	0.00010	0.077	- 0.00001	0.00022
Constant	0.04633	0.000	0.02216	0.07050
N	160			
R <sup>2</sup>	0.21			

Source: Data Processed (2018)

Table 4 and 5 also explain other factors that may affect the economic risk of Asia Pacific countries. It is found in the estimation result that terms of trade volatility show a positive but not significant effect toward economic risk. The estimation results indicate that the inflation rate volatility significantly effect the economic risk in a positive manner. It means that inflation rate volatility increase the economic risk. This finding is in line with Ahmed and Suardi (2009) and Neaime (2005). Adverse effect of inflation volatility toward economic risk is because increasing uncertainty in inflation, which is represented by increasing inflation rate volatility, can distort price

mechanism effectivity in allocating resources, thus it may increase the economic risk.

Related to the above, it also found that the discretionary fiscal policy has a positive effect to the economic risk in both model. This is due to undisciplined fiscal policy can lead to output fluctuation giving pressure to the economic risk of a country through the decreasing governments credibility. In terms of the institutional quality, the result show that this variable can reduce economic risk of a country. It means that the existence of a good institutional quality can help a country to lower its economic risk. This risk

reducing role played by institutional quality that is found in this study in line with Ahmad and Suadi (2009) which showed that good financial market institution can help to reduce capital flight so that it will maintain the economic stability.

## 5. CONCLUSION

The purpose of this study is to analyze the effect of financial liberalization toward economic risks in a non-linear manner. In analyzing the non-linear effect of financial liberalization, we use trade openness as threshold variable. By using panel regression threshold introduced by Hansen (1999), we confirm that there is a non-linear effect of financial liberalization toward economic risk in Asia Pacific countries depending on the value of trade openness in each country. Regarding to this finding, when the trade openness is below the threshold value, financial liberalization policy can reduce the economic risk of Asia Pacific countries. However, when the trade openness exceeds the threshold value, the financial liberalization will increase the economic risk. So that, we conclude that an open domestic financial market that is followed by high degree of trade openness will tend to create an economic risk in the Asia Pacific countries.

## REFERENCES

- Ahmed, A. D., & Suardi, S. (2009). Macroeconomic Volatility, Trade and Financial Liberalization in Africa. *World Development*, 37(10), 1623–1636. <https://doi.org/10.1016/j.worlddev.2009.03.009>
- Aizenman, J., Pinto, B., & Sushko, V. (2013). Financial sector ups and downs and the real sector in the open economy/ : Up by the stairs , down by the parachute. *Emerging Markets Review*, 16, 1–30. <https://doi.org/10.1016/j.ememar.2013.02.007>
- Balavac, M., & Pugh, G. (2016). The link between trade openness, export diversification, institutions and output volatility in transition countries. *Economic Systems*, 40(2), 273–287. <https://doi.org/10.1016/j.ecosys.2016.02.001>
- Barrot, L., Calderón, C., & Servén, L. (2018). Openness, specialization, and the external vulnerability of developing countries. *Journal of Development Economics*. <https://doi.org/10.1016/j.jdeveco.2018.05.015>
- Bekaert, G., Harvey, C. R., & Lundblad, C. (2006). Growth volatility and financial liberalization. *Journal of International Money and Finance*, 25(3), 370–403.
- Borensztein, E., & Loungani, P. (2011). Asian Financial Integration: Trends and Interruptions. IMF Working Paper. <https://doi.org/10.1093/acprof:oso/9780199753987.003.0003>
- Chang, C.-L., Khamkaew, T., & Michael, M. (2012). IV estimation of a panel threshold model of tourism specialization and economic. *Tourism Economics*, 18(1), 5–41. <https://doi.org/10.5367/te.2012.0108>
- Chinn, M. D., & Ito, H. (2008). A New Measure of Financial Openness. *Journal of Comparative Policy Analysis: Research and Practice*, 10(3), 309–322. <https://doi.org/10.1080/13876980802231123>

- Dupasquier, C., & Osakwe, P. N. (2006). Singapore Centre for Applied and Policy Economics Trade Regimes, Liberalization and Macroeconomic Instability in Africa Trade Regimes, Liberalization and Macroeconomic Instability in Africa \*. Retrieved from <http://nt2.fas.nus.edu.sg/ecs/pub/wp-scape/0604.pdf>
- Easterly, W., Islam, R., & Stiglitz, J. E. (2001). Shaken and stirred: explaining growth volatility. Annual World Bank Conference on Development Economics, 191–211.
- Elektdag, S., Kose, M. A., & Cardarelli, R. (2009). Capital Inflows; Macroeconomic Implications and Policy Responses. IMF Working Paper.
- Fatas, A., & Mihov, I. (2003). The Case for Restricting Fiscal Policy Discretion. The Quarterly Journal of Economics, 118(4), 1419–1447. <https://doi.org/10.1162/003355303322552838>
- Feriansyah, Achsani, N. A., & Irawan, T. (2018). The effect of financial and capital flows on income volatility in Asia-Pacific. Bulletin of Monetary and Banking, 20(3), 259–278.
- Hansen, B. E. (1999). Threshold effects in non-dynamic panels/ : Estimation , testing , and inference. Journal of Econometrics, 93, 345–368.
- Hansen, B. E. (2000). Sample splitting and threshold estimation. Econometrica, 68(3), 575–603. Kalemlı-ozcan, S., Sørensen, B. E., & Yosha, O. (2001). Economic integration , industrial specialization , and the asymmetry of macroeconomic fluctuations. Journal of International Economics, 55, 107–137.
- Kose, M. A. A., Prasad, E. S., & Terrones, M. E. (2003). Financial Integration and Macroeconomic Volatility. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.393420>
- Kose, M. A., Prasad, E. S., & Terrones, M. E. (2006). How do trade and financial integration affect the relationship between growth and volatility? Journal of International Economics, 69, 176–202. <https://doi.org/10.1016/j.jinteco.2005.05.009>
- Kose, M. A., Prasad, E. S., & Terrones, M. E. (2009). Does financial globalization promote risk sharing? Journal of Development Economics, 89(2), 258–270. <https://doi.org/10.1016/j.jdeveco.2008.09.001>
- Lane, P. R., & Milesi-Ferretti, G. M. (2007). The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004. Journal of International Economics, 73(2), 223–250. <https://doi.org/10.1016/j.jinteco.2007.02.003>
- Mirdala, R., Svrcekova, A., & Semancikova, J. (2015). On the relationship between financial integration, financial liberalization and macroeconomic volatility. MPRA Paper.
- Mujahid, H., & Alam, S. (2014). The impact of financial openness , trade openness on macroeconomic volatility in Pakistan/ : ARDL Co Integration approach. Journal of Business Management and Economics, 5(1), 1–8.
- Neaime, S. (2005). Financial Market Integration and Macroeconomic Volatility in the MENA Region: An Empirical Investigation1. Review of



- Middle East Economics & Finance (Routledge), 3(3), 231–255. <https://doi.org/10.2202/1475-3693.1045>
- Nicolò, G. De, & Juvenal, L. (2012). Financial Integration , Globalization , and Real Activity. CESIFO Working Paper. Pancaro, C. (2010). Macroeconomic Volatility After Trade and Capital Account Liberalization. Policy Research Working Paper
- Ramey, G., & Ramey, V. a. (1995). Cross-Country Evidence on the Link Between Volatility and Growth. American Economic Review, 85(5), 1138–1151. <https://doi.org/10.2307/2118417>
- Stiglitz, J. E. (2002). Globalization and Its Discontents (1st ed.). New York: W.W. Norton & Company. <https://doi.org/10.1017/CBO9781107415324.004>
- Yang, B. (2011). Political democratization , economic liberalization , and growth volatility. Journal of Comparative Economics, 39(2), 245–259. <https://doi.org/10.1016/j.jce.2010.08.001>