Journal of Asia-Pacific Studies (Waseda University) No. 38 (January 2020)

The Impact of Financial Deepening to Manufacturing Export: The Case of ASEAN 5

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製造業の輸出に対する金融深化の影響：ASEAN 5 のケース

Although ASEAN 5 economies (Indonesia, Malaysia, Philippines, Singapore, and Thailand) have undergone through a remarkable achievement in the past regarding manufacturing export, they have not been able to successfully upgrade the level of their manufacturing export recently. Meanwhile, manufacturing export and manufacturing sector as a whole still plays a major role for ASEAN 5, and it requires support from another essential sector, which is the financial sector. The current development of the financial sector in ASEAN 5 economies are rapid and possess a massive potential to be unleashed in the future. Therefore, through financial deepening, or an increase in depth of the financial sector through diversification of financial capital allocation, it is expected that productive sector within the economy could develop further in the future ahead. By using fixed effects regression method and using financial deepening from the banking sector, stock market, and bond market as parameters for financial deepening during the period of 2001–2017 for ASEAN 5 economies, analysis regarding the impact of financial deepening to manufacturing export can be conducted. Based on the research, it is discovered that financial deepening from the banking sector and bond market have successfully generated positive and significant impact to manufacturing export, but not for the stock market. Hence, analyzing implications related to results of this research should be delivered, which cover implications for academic, policies, and business. Furthermore, key implication analysis delivered in this research mainly focus on maintaining balance between financial sector and real sector, especially in terms of aspects that related to manufacturing export.

Keywords: manufacturing, export, Asean, financial deepening

1. Introduction

South East Asian economies, or countries which are included in ASEAN (Association of South East Asia Nations) have experienced a remarkable economic achievement, especially considering their economic conditions during early 1960s and 1997 Asian Financial Crisis, as is shown by Figure 1 below:

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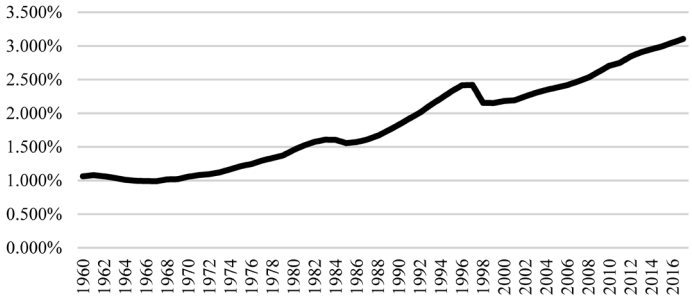

Figure 1. ASEAN 5 GDP Contribution to World GDP

Note: Presented in Constant 2010 US$
Source: World Bank (2019)

During the process of ASEAN's economic development, the presence of several commodity booms as well as a booming service sector recently assisted ASEAN's high pace of economic development. However, the kickstart and most rapid pace occurings around the early 1970s until the late 1990s before the Asian Financial Crisis. That kickstart and rapid pace of growth occured during the golden age of manufacturing sector for ASEAN 5 countries (Felker, 2003; Hill, 1997) which shows the significance of manufacturing sector for ASEAN economies.

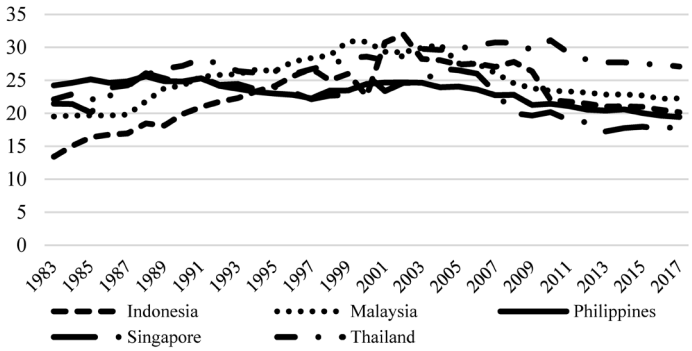

Figure 2. Value Added of Manufacturing Sector to GDP for ASEAN 5 Economies

Note: Presented in % of GDP
Source: World Bank (2019)

Aside from that, ASEAN's manufacturing sector also provided a significant contribution in terms of creating their economic fundamentals, especially during the 1980s, as it is shown in Figure 2. In addition, highlighting the early 1980s is essential, since it is the period where ASEAN 5 countries tried to conduct structural transformation from agricultural economies to industrial economies, as their peers had been doing in the East Asian region during the same period (Ungor, 2017; Fan et al., 2013).

Manufacturing sector also contributed majorly in exports, as well as obtaining a relatively high pace of growth during the period of 1980 to mid-1990s (Abidin, 1997) as is shown on Table 1 below:

Table 1. Performance of ASEAN 5's Manufactured Exports for 1980s and early to mid-1990

Country	Manufactured Exports as % of Total Exports		Annual Growth Rate (%)	
	1980	1994	1980–1990	1990–1994
Indonesia	2	53	5.3	21.3
Malaysia	19	70	11.5	17.8
Philippines	37	76	2.9	10.2
Singapore	50	80	12.1	16.1
Thailand	28	73	14.3	21.6

Note: n.a.
Source: Retrieved from Abidin (1997), sourced from World Development Report 1996

However, it seems that manufacturing sector in ASEAN countries is not as dominant as it used to be (starting from the early 2000s) and it started a slight inverted U trend as is shown by Figures 2 and 3.

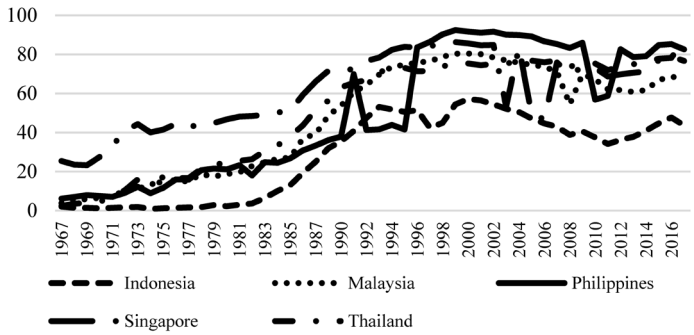

Figure 3. Contribution of Manufacturing Exports to Merchandise Exports for ASEAN 5

Note: Presented in % of merchandise exports
Source: World Bank (2019)

This condition implies that ASEAN 5 economies might focus their economy on service sector, which may decrease manufacturing exports. With the exception of Singapore, it is fair to say that ASEAN 5 countries are still middle-income economies, which still need the contribution of manufacturing sector in order to strengthen their economic foundation and lead them to better performance in other sectors beside manufacturing in the future.

In the scope of development economics, manufacturing sector plays a major role for an economy. According to Rodrik (2013), manufacturing sector is a mode of growth for developing countries that could help them achieve convergence, due to positive correlation between sector growth and productivity. In addition, Felipe et al. (2014) argues that manufacturing sector could provide employment that prepares lower or middle-income countries to obtain a higher level of income, and richer economies

are benefiting from employment in manufacturing sector. From both standpoints, it is clear that utilizing manufacturing sector is important for the majority of ASEAN countries, especially considering their current position as a middle-income economies that need to prepare themselves in order to escape from the middle-income trap problem. Productive growth through manufacturing sector is what ASEAN economies need to achieve, instead of service sector that seems to be more productive, but only valid if the country already has a strong human capital endowment.

One way to enhance the performance of manufacturing sector is by improving the role of its factor production, especially in terms of financial aspects. As is commonly recognized, financial capital is a major factor of production that could improve business production capacity and performance. Hence, improving the financial capital of business that operate in manufacturing sector is essential, especially if one needs to improve the performance of manufacturing sector.

Therefore, the answer to supporting manufacturing sector from financial sector lies in financial deepening. Generally, financial deepening is a term used to describe an effort to diversify financial resource allocation within a country (Sahay et al., 2015). Furthermore, recent trends within financial deepening is involving a more market-based resource allocation within a country, hence it primarily involves the broad and real impact from capital market (equity and debt markets) to real sector, in which the financial resources are allocated.

One might argue that the ASEAN 5's past success in manufacturing sector and manufacturing exports is mainly due to their success in attracting FDI, despite relatively low levels of financial deepening. During the 1970s and 1980s, when ASEAN countries had just started to open-up their economies, they were still perceived as relatively lower income countries, which had potentials in natural resources as well as manufacturing sector through cheap labour and vast areas.

However, considering ASEAN's current economic state, investors already perceived ASEAN countries, especially ASEAN 5 (plus Vietnam) as strong emerging economies, which not only needs to rely on potential, but also needs to rely on stability and better investment atmosphere (Baum et al., 2017; Stiglitz, 2003). Even from a global value chain perspective, aspects that could ensure production and demand stability are important to attract FDI, and it requires a strong financial sector (Felipe, 2018). Another important aspect that triggers the cruciality of financial deepening to FDI covers the aspect of financial product provided by financial sector. By obtaining a deeper financial sector, companies that conducting FDI will be able to seek for a proper and reliable financial product that could be used for re-investment.

In order to understand more the relationship between financial deepening and manufacturing sector, more specifically manufacturing exports, further examination of the impact of current financial deepening effort on manufacturing exports is needed. From there, further efforts for financial deepening could be designed, so that the contribution from the financial sector to pursue better financial capital resources, specifically for manufacturing sector could be achieved clearly.

2. Literature Review

2.1 Importance of Financial Deepening

Goldsmith (1969), as one of the earliest contributors in developing research in financial deepening, successfully obtained empirical results that showed financial intermediaries (bank, non-bank financial intermediaries, stock market) grow relative to the size of economies. In addition to that, he also drew a link between financial development and economic growth, but still limited to its causal relationship.

Another interesting research was conducted by McKinnon and Shaw (1973), who argued that market-based financial systems could provide a more positive impact to economic growth compared to repressed financial systems. Although the financial deepening concept did not appear explicitly, their research results showed the importance of market-based financial deepening to economic growth and successfully represented the importance of financial deepening for the economy.

A more recent concept pointing out that financial deepening follows a more market-based approach financing, which could spread risks and allocate financial resources more effectively according to market mechanisms (Levine, 2005). In relate to productivity, Jeong and Townsend (2007) found that financial deepening could drive total factor productivity (TFP) growth. Therefore, it can be stated that financial deepening could affect productivity in an economy.

Based on the literature review above, it can be concluded that financial deepening could create a positive impact on economic growth. Furthermore, financial deepening could become an alternative resource for financing aside from banking sector and improve productivity, and therefore create a condition where the financial sector provides an important support in terms of real productivity as well.

2.2 Importance of Manufacturing Sector

As has already mentioned, manufacturing sector plays a crucial role in supporting ASEAN's economic development. Furthermore, manufacturing sector also plays a major role in helping East Asian economies to thrive and become advanced economy at the global level (Aswicahyono and Pangestu, 2000), based on exports. Beside its importance in building a country with a strong export position, manufacturing sector also offers developing countries more opportunity for convergence and embracing a structural change bonus. Szirmai (2012), found an empirical correlation between degrees of industrialization and per capita income in developing countries, caused by higher levels of productivity in manufacturing sector compared to agricultural sector, which provides a structural change bonus, which is also in line with Su and Yao (2016). From the convergence perspective, Rodrik (2013) argues that manufacturing sector could produce tradable goods that can be integrated into global production, facilitating technology transfer, and even a higher level of domestic competitiveness. He argues that those aspects are the major driver that could make manufacturing sector becomes a way for developing countries to converge, which also shares a similar perspective with Fingleton and McCombie (1998).

From the literature review above, it can be concluded that manufacturing sector is important due to

its ability to support an economy, especially for developing countries in three major aspects: export capability, productivity, and economic convergence. Therefore, it is essential for developing countries to develop their manufacturing sector, in order to developing their economy further.

2.3 Relationship between Financial Deepening Manufacturing Export

Beck (2002), stated that financial sector plays an important role in terms of channeling savings to private sector and it would follow sectors that representing high-scale economy. It begins by assuming there are two sectors that produce goods with two different nature within an economy, which are increasing return to scale and constant return to scale. In the process of obtaining financial capital, there is asymmetric information that triggers the presence of search costs in terms of financial resources allocation to firms and entrepreneurs. In this case, financial deepening plays as an important role in minimizing search costs, leading to an increase in external financing and enhances more stimulus of firms to produce more goods with increasing return to scale. Furthermore, financial deepening could create a specialization in trade and affecting the structure of trade structure within an economy. Beck (2002) also demonstrates empirically that economies with a better level of financial deepening are performing better in terms of producing and exporting goods with increasing return to scale, or in this case, manufacturing products.

To make the theoretical framework more relatable to the case of ASEAN 5, the notion that manufacturing sector posseses increasing return to scale also refers to Rodrik (2013), which stated that manufacturing sector has an increasing productivity pattern that could lead to convergence. In addition, for the case of creating innovation for financial deepening in the model, this research refers from Levine (2005), which argues that it is important for an economy to develop not only bank-based financial deepening, but also market-based financial deepening. The importance of market-based financial deepening is based on the notion that it provides better risk management in allocating financial resources, as well as providing more sources of financial resources that can be obtained by firms. Do & Levchenko (2006) also provide further evidence, which concludes that developed financial systems could lead to more productive exports, as well as affecting a country's trade pattern.

Hence, it can be concluded that financial deepening provides a positive impact for manufacturing export. However, there is room for further research that has not been covered by previous research, especially in terms of finding a relationship between more market-based financial deepening and manufacturing export. Therefore, the literature review provided in this chapter could provide a better outlook related to important concepts in research as well as exploring research opportunities that can be explored more in this paper.

3. Data and Methodology

3.1 Logical Framework

In order to analyse the impact of financial deepening to manufacturing export in ASEAN 5, an econometrics model would be developed. From the main literature review (Beck, 2002), it can be

stated that financial deepening could enhance manufacturing export. While Beck's study is more focused on bank-based financial deepening, this research will focus more on market-based financial deepening, and thus could explore further impacts from the other side of financial deepening. However, this study still includes bank-based financial deepening, due to its significance and constant appearance in the literature, as has already been discussed in the previous section.

First, financial deepening itself is divided into two sources; bank-based and market-based financial deepening. Bank-based financial deepening refers to financing channels provided by banking sector, which is lending. On the other hand, market-based financial deepening refers to financing channel provided by capital market, which are stock and bond markets. What needs to be underlined here is the presence of financial deepening, which provides more channels for manufacturing sector to obtain financial capital.

By obtaining better access to financial resources, it is expected that manufacturing sector will improve and firms that participate in it will pursue and obtain economies of scale. This positive feature occurs not only due to better capital access, but also due to the nature of manufacturing sector itself which tend to be productive and competitive (O'Mahony and van Ark, 2003; Masahito, 2013). After this stage, it is expected that the comparative advantage in the economy would be improved, especially related to capital and innovation advantage. The main reason why innovation advantage will appear is because market—driven financing could improve business decisions to allocate more funding in innovation, in order to maintain or increase their competitiveness (Dosi, 1990; Giannetti et al., 2002). Finally, it can be stated that financial deepening would lead to an increase in manufacturing exports.

3.2 Methodology for Data Analysis

To answer the research question, several tests were needed. First, an LS regression will be conducted, in order to understand the significance of financial deepening to manufacturing export and finding which financial deepening indicators provide the most significant contribution to manufacturing export. Tests related to validity of the model will also conducted, as well as determining whether the model would use panel least square, fixed effect, or random effect.

For the LS analysis, Model 1 will be used, and transforming both parameters from the dependent variable side and independent variables to natural logarithm is conducted, due to the notion that some variables, such as GDPCAP and TOTB could be interpreted better in natural logarithm form, as it is shown by Model 1 below:

$$\begin{aligned}\ln EXMF_{it} = \alpha + \beta_1 \ln FNBB_{it} + \beta_2 \ln STMC_{it} + \beta_3 \ln BOND_{it} + \beta_4 \ln GDPCAP_{it} \\ + \beta_5 \ln LABORP_{it} + \beta_6 \ln CAPF_{it} + \beta_7 \ln SERV_{it} + \beta_8 \ln TOTB_{it} + \varepsilon \end{aligned} \quad (1)$$

It is expected that by conducting LS regression on Model 1, the impact of financial deepening indicators to manufacturing export could be specifically captured. Moreover, after conducting the Hausman test, it can be concluded that the model from (1) needs to be processed in fixed effect. This result corresponds to the notion that since each country has a different intercept, then it is better for

the model to be processed with fixed effects. In addition, robustness aspect is also included while processing the data, in order to ensure the efficiency of estimators included within the model.

Referring to Model 1's dependent variable, EXMF represents the value of manufacturing export as a dependent variable, which is sourced from manufacturing export to merchandise export. This measure is used instead of manufacturing trade indicators used in Model 1. The reason for that replacement is because this research focuses more on manufacturing export, instead of manufacturing trade as a whole.

Meanwhile, independent variables for this model are divided into two segments; variables of interest and control variables, consistent with Beck (2002). Variables of interest cover the financial deepening aspect, which consists of FNBB, STMC, and BOND. FNBB represents the value of domestic credit provided by the banking sector, in order to measure bank-based financial deepening. The rest of the two variables of interest, STMC and BOND represent the stock market capitalization and bond market capitalization respectively. It is expected that these variables of interest could achieve the main purpose of this research, which is to examine the impact of financial deepening to manufacturing export.

On the other hand, there are five control variables used in this research, three of which were already used by Beck (2002). Control variables based on Beck's literature are GDP per capita (GDPCAP), labour force participation for the age of 15–64 (LABORP), gross capital formation (CAPF), and terms of trade (TOTB). The variable of gross capital formation is modified due to its relevance for ASEAN 5 economies and data availability, since Beck is using initial real capital per capita instead of gross capital formation. Another control variable included in this research is SERV, which represents the value added of service sector. This variable is important to be included, since the service sector in ASEAN 5 economies has shifted their economic agent interest from manufacturing sector to service sector. Therefore, it is essential to measure the impact of service sector development to manufacturing export.

Most of data used in this research are retrieved from World Development Indicators, is provided by the World Bank. Data for manufacturing export, domestic credit provided by banking sector, stock market capitalization, GDP per capita, labour force participation, gross capital formation, and value added of service sector are provided by World Development Indicators. Meanwhile, data for bond market capitalization are retrieved from Asian Development Bank (ADB), more specifically from Asian Bonds Online.

4. Result and Discussion

4.1. Regression Result and Discussion

Based on the model and methodology that discussed in Section 3, Table 2 shows the result of the impact of financial deepening to manufacturing export:

Based on results shown in Table 2, it can be observed that generally, variables of interest used in this research provide statistically significant impact to manufacturing export. Variables of interest that generate significant impact to manufacturing export are domestic credit provided by the banking

Table 2. Regression Result for Model (1)

VARIABLES	ln EXMF
Domestic Credit Provided by Banking Sector to GDP	0.374* (−0.148)
Stock Market Capitalization	− 0.033 (−0.047)
Bond Market Capitalization	0.325*** (−0.070)
GDP Per Capita (Constant 2010 US$)	− 0.402** (−0.104)
Labour Force Participation	0.039 (−0.812)
Gross Capital Formation to GDP	0.163 (−0.194)
Value Added of Service Sector to GDP	− 0.085 (−0.473)
Net Barter Terms of Trade Index	− 0.122 (−0.350)
Constant	4.316 (−2.404)
Obs.	85
R-squared	0.35

Note: Robust standard errors in parentheses: *** $p<0.01$, ** $p<0.05$, * $p<0.1$; Analysis are conducted by using double-log model.
Source: Author's Calculation

sector and bond market capitalization to GDP, which represent financial deepening from the banking sector and market-based financial deepening from debt market.

In the ASEAN 5 context, there are several reasons why banking sector is able to bloom, and most importantly, supporting manufacturing export significantly. The main reason lies in the past that always haunting ASEAN 5 economies, which is 1997 Asian Financial Crisis. The crisis that hit ASEAN 5 economies at that time was mostly caused by a weak banking sector, especially in terms of governance and oversight, which triggered rent-seeking activity in banking sector and high amount of non-performing loans (NPL).

After the crisis occurred, ASEAN 5 economies realized that it was important to strengthen the framework of their banking sector, to prevent similar situations happening again (Chowdhury and Islam, 2001). Hence, effort to improve the quality of banking sector, especially to pursue better prudential, governance, and oversight was implemented by ASEAN 5 economies (Macintyre, 2001). That leads to an increase in aggregate savings rates in ASEAN 5, which also followed by a steady decrease in NPL levels (Mohanty and Turner, 2010).

Furthermore, several empirical studies also supported the result for bank-based financial deepening in this research. The notion that banking sector supports and enhances productivity of sectors that rely on external financing, which includes the manufacturing sector, is presented by Lai et al. (2016). In addition, the banking sector supports industrialization and structural transformation for economies to become industrialized, which applies across the world (Da Rin and Hellmann, 2002) including during the industrial revolution (Heblich and Trew, 2017).

Moving on to the second variable of interest, which is the stock market, in the case of the ASEAN 5, stock market capitalization is not generating significant impact on manufacturing export. It is interesting to discover why this is so, particularly as this seems to contradict the model and hypothesis proposed in this research.

The first possible scenario is unequal sectoral development and distribution within stock markets, whereas not all of sectors are enjoying the benefit of rapid stock market development in the region.

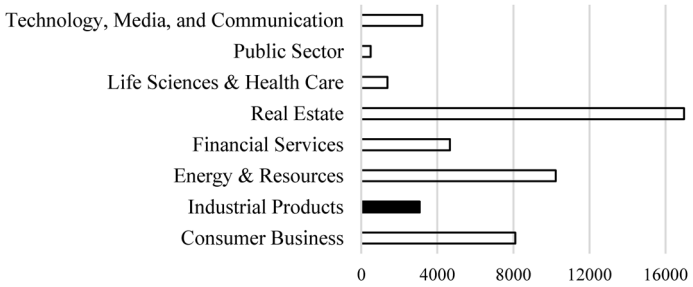

Figure 4. Amount Raised from IPO per Sector in Southeast Asia for the Period of 2014 to 2018

Note: Presented in SGD Millions
Source: Deloitte (2019)

More specifically, recent trends in Southeast Asia shows the amount raised from IPO for industrial products is relatively small compared to other sectors. The small amounts raised from IPO for the manufacturing sector indicates that financial resources allocated to this sector from stock markets forms a smaller portion compared to other sectors. From this standpoint, it can be implied that the development of stock markets in Asia, including Southeast Asia is not inclusively involving manufacturing sector.

Inefficiency and lack of quality within the stock market environment in ASEAN 5 economies conjointly contributes to this matter. Shaik and Maheswaran (2017), found that stock markets in Indonesia, Thailand, Malaysia, and Philippines are rejecting the efficient market hypothesis, while Singapore is the only one that fulfils the weak form efficient condition. Hence, the importance of governance and oversight of sight of stock market in ASEAN 5 must be underlined, noting it is currently still lacking, to support their rapid development and ensure that stock market in ASEAN 5 support the real development of the economy (Niblock et al., 2014).

Furthermore, high dependency on foreign investors an also create a stock market environment in ASEAN 5 economies where the quality of stock market is determined by foreign investors' interest, which lays on two major aspects: a strong exporting sector and a strong non-tradeable sector. Therefore, to assess the relationship between stock market and manufacturing export more specifically, it is important to recognize ASEAN 5 economies' economic complexity index and industrial competitiveness, whereas the latter is important as this research covering the manufacturing sector. Meanwhile, the economic complexity index could measure each country's export capability and competitiveness, with respect to their own condition, as proposed by Hidalgo and Hausmann (2009).

Both Figure 5 and Table 3 indicate that there is a distinct inequality in terms of economic complexity and industrial competitiveness among ASEAN 5 economies, which leads to inequality in terms of stock market development.

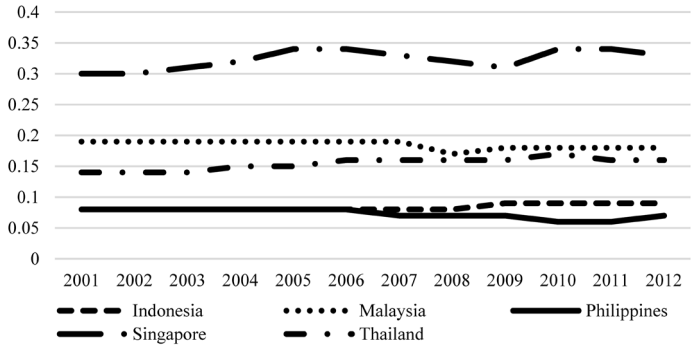

Figure 5. Competitive Industrial Performance Index for ASEAN 5 Economies

Note: n.a.
Source: UNIDO (2019)

Table 3. Economic Complexity Index for ASEAN 5 Economies in 2000–2016

Country	Economic Complexity Ranking															
	Year															
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Indonesia	57	55	57	61	56	60	61	59	61	65	63	61	56	51	52	51
Malaysia	30	26	27	26	27	28	27	30	33	36	30	27	28	27	22	14
Philippines	63	58	56	58	63	56	51	50	52	49	44	44	41	37	38	38
Singapore	13	9	12	9	9	13	9	11	8	7	9	6	7	5	5	3
Thailand	37	37	37	36	36	42	42	40	34	27	28	23	23	21	21	n.a.

Note: n.a.
Source: Our World in Data (2019)

As shown by Figure 5 and Table 3, Indonesia and Philippines consistently lag behind their peers in terms of economic complexity rankings and competitive industrial performance. Hence, it can be implied that Indonesia and Philippines' lower stock market development is caused by their lack of export capability, competitiveness, and productivity, which are covered by both indicators, and form the main sources of foreign investors' uncertainty regarding both economies.

Analysis for the last variable of interest, which is financial deepening from bond markets might share a similar scheme with financial deepening from banking sector. After the 1997 Asian Financial Crisis, to facilitate a relatively high savings rate in ASEAN 5 economies, the presence of another financial instrument that generates small (or even zero) risk became important. Before the-crisis, much of those savings were allocated to investments in speculative or real estate markets. However, during the process of strengthening financial systems after the crisis, it became important to explore further options for investment, and in this case, investment in the bond market was viewed favourably, since in ASEAN 5, it become an effective financing tool for firms as well as government funding (Plummer

and Click, 2005). Similar to Park (2017), which discussed positive trends in local currency bond financing, especially in Asian emerging markets (including ASEAN 5) that indicated greater options for financing and preventing mismatches in terms of currency and risk, hence the bond market is also useful in measuring risk in ASEAN 5 markets.

ASEAN 5 economies capacity to successfully manage their debt to GDP ratio also contributes to a better bond market atmosphere. Because of that, foreign investors have a strong confidence to invest in a debt market, since the ability of ASEAN 5 economies in managing their debt is reliable and proven.

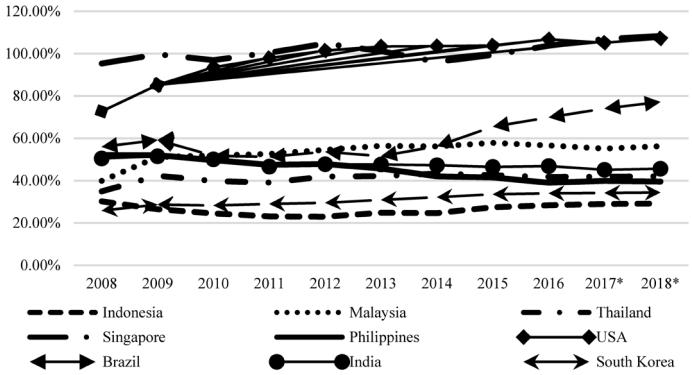

Figure 6. Government Debt to GDP Ratio for ASEAN 5＋India, USA, Brazil, and South Korea

Note: Presented in % of GDP
Source: CEIC (2019)

It can be observed from Figure 6 that ASEAN 5 economies have a relatively healthy government debt to GDP ratio (aside from Singapore), compared to South Korea, India, and Brazil. Hence, it can be implied that ASEAN 5 economies have successfully managed the level of government debt, that could attract investors to invest in their bond markets.

For the result of control variables, results for GDP per Capita that generate a positive and significant relationship with manufacturing export, correspond with the hypothesis proposed. Therefore, it can be implied that the scenario of middle-income economies in ASEAN 5 still needing a manufacturing sector in order to thrive is likely to be correct, which is in-line with the theoretical foundation from Sheridan (2014), Hausmann et al. (2007), and Rodrik (2011).

Another interesting takeaway related to control variable related to labour force participation rate. It appears that labour force participation generate insignificant impact to manufacturing export, which indicates that there is something lacking related to labour force in ASEAN 5 economies. In this research a descriptive analysis related to quality of human capital will be conducted by using Human Development Index (HDI) as indicator. Figure 7 below shows the development of HDI in ASEAN 5 ＋ East Asian economies:

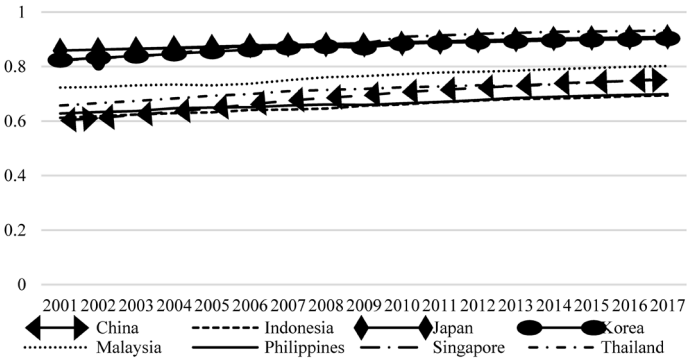

Figure 7. Human Development Index (HDI) in ASEAN 5 + East Asian Economies

Note: n.a.
Source: Our World in Data (2019)

From Figure 7, it can be observed that in general, ASEAN 5 economies (except for Singapore), are lagging behind East Asian economies in terms of HDI. The issue of HDI also relates to lack of industrial competitiveness and economic complexity, since a competitive manufacturing sector and complex product cannot be obtained without a higher level of human capital.

5. Conclusion

It can be concluded that there is a significant impact from financial deepening to manufacturing export in ASEAN 5 economies, more specifically from bank and bond markets that show a statistically significant result. Furthermore, it can also be concluded that bond market financial deepening generates the most significant impact on manufacturing export, since statistically speaking, bond-market financial deepening generates a more significant result compared to bank-based financial deepening. Meanwhile, stock markets have not been able to generate significant impact to manufacturing export performance in ASEAN 5 economies.

It is also important to emphasize the development of financial deepening, but it is more important to ensure that financial deepening contributes significantly to productive real sector of the economy. Only by optimizing the role of the financial sector to support productive real sector, a situation where rapid financial development could be prevented by crisis and enhance inclusive as well as sustainable development could be achieved, which are the main goal for ASEAN economies.

This research paves a way for future research to furtherly analyse the impact of financial deepening to manufacturing export, especially for ASEAN, or even emerging market economies. Moreover, further research in terms of policy making analysis that closely look on the impact of financial deepening to manufacturing sector or manufacturing export could be conducted.

New theoretical development regarding the impact of financial deepening to manufacturing export will be interesting to discussed with, since the emergence of market-based financial deepening and

FDI are still unable to be captured by Beck (2002), which already covered the essential aspects, but still require further development. It is expected that further research implications generated could trigger more interest as well as insights related to the impact between financial sector development to productive real sector, or specifically, the impact of financial deepening to manufacturing export.

The main research implication is related to financial resource allocation, especially for firms that operate in manufacturing export. The result indicates that bank-based financing and bond market financing is preferable if entrepreneurs or businesses wish to operate in manufacturing export. In addition, positive result generated from bond-market also indicates that ASEAN 5 economies have successfully obtained a stable condition, especially in terms of risks and debt management, which may become major indicators for business to put more trust and willingness to invest in ASEAN 5 economies. In the scope of manufacturing export, the result shows that ASEAN 5 economies have successfully provides economic environment that makes their bond market supports manufacturing export.

Furthermore, the result from stock market shows that manufacturing sector or manufacturing export in ASEAN 5 are still lagging in terms of competitiveness. Hence, for business that operate in both manufacturing sector or manufacturing export, it is important to enhance competitiveness, so that financing from stock market could also be obtained, not only from banking sector and bond market. Overall, it can be summarized that this research has generated a positive implication for business, especially in terms of generating optimism related to financial sector's support for business in manufacturing export.

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