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Industrial Development, Subsidy Reform and Export Behaviour: An Evidence from ASEAN-5 Economies

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ABSTRACT

This study explores the impact of subsidy reform on export performance in ASEAN-5 economies, whereby the output of this research may be useful for the policymakers to balance favourable subsidy reform upon sustainable economic development while controlling fiscal burden. The objective of this study is to explore the impact of subsidy reform on export growth while considering an exchange rate and the industrial value added as a control variable. This study covers a panel data of ASEAN-5 economies from the 1992 to 2015. The dynamic panel data analysis was employed to evaluate the magnitude impact of subsidy expenditure by the government, exchange rate and industrial value added on export performance. The Pooled Mean Group (PMG) model was employed to determine the long run coefficient in the model. The finding concluded that: 1) Export growth was expected to increase as the subsidy growth increases, 2) currency appreciation was expected to encourage export growth and 3) Industrial development would increase export growth as many outputs can be produced in a period of time. As an absence of subsidy would lead to a lost in export, and the government is recommended to implement an adequate offset policy to cushion any negative impact reflected by the absence of a subsidy in an economy.

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INTRODUCTION

Studies on the determinants of export have been mostly debated in thecurrent literature of small open economy. To date, the literature has covered exchange rate, internal sector and external sector as the determinants of export growth. The formers are Abeysinghe and Yeok (1998) and Thorbecke and Smith (2010). In addition, Fisher and Huh (2002), Hasan and Zaman (2002), Wong and Chong (2006), Ivrendi and Guloglu (2010) and Wang, et al. (2012) examined the exchange rate, internal and external sectors as the determinants of export via their impact on the trade balance. They discovered mixed significant findings in their empirical analysis. According to the principle of Mundell-Fleming model, currency appreciation is significant to bring harm to export as it rises the price of export goods and encourages the demand for imported goods. Thorbecke and Smith (2010) proved this argument by their empirical result in China, which significantly found that with 10% appreciation of Renminbi (RMB) is expected to reduce about 12% of Chinese export. Fernald et al. (1999), Eichengreen et al. (2007), Athukorala (2009) and Hooy et al. (2015), also documented the same conclusion. However, its impact can be on the other way around if the import input content in the production is high. Abeysinghe and Yeo (1998) studied on the impact of exchange rate appreciation and export competitiveness in Singapore and they found that currency appreciation was not to bring harm to export competitiveness in Singapore. They argued that one possible explanation of the unfavourable outcome was that Singapore had a very high import content input in its production which ultimately gave an advantage to Singaporean producers to buy more imported raw materials, and consequently increase its scale economic to produce more outputs. This result was also supported by Fang and Miller (2005) who revisited this study in Singapore by employing the GARCH model. Wong and Chong (2002), Wang et al. (2012), and Hasan and Zaman (2012) extended the current literature of this area by considering the external sector as an extended factor. Wang et al. (2012) argued it is not so relevant to just consider a factor of the exchange rate as the sole determinant of trade; thus, they extended the current literature to explore the determinant of major trading partner economies on export through trade balance in China. In addition, an economic shock of major trading partner was found to give a significant impact to export growth. Their empirical findings had proven that an increase in foreign income was significant to cause export growth and improve trade balance. This result was also supported by Wong and Chong (2006) who concluded on the same finding in Malaysia. Besides, the hike of international oil price as the economic external shock, is also significant to give an adverse impact to export growth. According to Li and Chang (2013), an increase in the international oil price was expected to bring harm to export growth in oil net importer countries; consequently, leading to trade imbalance. Adversely, an increase of the international oil price was expected to bring benefit to the net oil exporter countries in improving their trade balance through export competitiveness derived from their rising oil revenues. In addition, the international oil price was believed to have a major influence on the performance of the entire macroeconomy (Sanchez, 2011). Hasan and Zaman (2012) provided an empirical evidence for the rise of international oil price in Pakistan and it was found to be significant to decrease trade balance by about 0.34% in respect to a decrease in its export competitiveness. Riggi and Venditti (2015) also documented that the oil price shock gave an adverse impact on export growth in European countries. In addition, its negative impact was less than the impact of an external productivity shock in export growth. Le and Chang (2013) explored the impact of oil price shock on the trade balance in Japan (oil importer), Malaysia (oil exporter) and Singapore (oil refinery). They documented that only Japan and Malaysia were harmed by the oil price shock, but not Singapore.

A little study has catered the impact of subsidy reform on export behaviour. Subsidy grants by the government was leading the local exporters to gain a cost advantage that consequently increased their ability to market their product at a price that was lower than market price abroad. In addition, it encouraged the local production to extend its production as an effort to reduce dependency on imported goods and increase in export goods to be sold abroad (Sharples, 1990; Van Beers and Van den Bergh, 2001). However, it has a side effect of its implementation in an economic system. Subsidy involves with the cost transfer activity that can lead to the existence of death weight loss in the market (Ghali, 1998; Isaak, 2015). On the other side, the government faces a high fiscal pressure through its implementation. Averagely, the subsidy is valued at about 6% of Gross Domestic Products (GDP) in ASEAN-5 economies for the year 2013. The existence of a subsidy programme will push down the retail price for all subsidised goods in the market. A low price of subsidised goods will lead to problems of overconsumption and economic inefficiency. The government will face a high fiscal pressure when it comes to a situation where the market price of a subsidised good increases radically. The government

has to pay more subsidy expenses when it has a wide gap between market price and retail price. Thus, it will increase government operational expenditure and consequently increase the budget deficit. Indirectly, it increases a high opportunity cost as a huge amount of expenses has been allocated for a subsidy programme and it has given up a lot of investment on development projects, such as infrastructure expansion and industrial policy expansion. In the long run, it brings worse to the progress of a sustainable economic development.

To date, studies on a subsidy programme in an economy had focused much on energy subsidy and its impact in an economy. They were Lin and Jiang (2011), Liu and Li (2011), Jiang and Tan (2013), Jiang and Lin (2014), Plate (2014) and Solaymani and Kari (2014). All studies consistently concluded that a reduction for any value of subsidy will give an adverse impact on the macroeconomic and economic welfare. However, it manages to improve energy efficiency and reduce energy consumption and carbon dioxide (Lin and Jiang, 2011; Jiang and Lin, 2014). If the reduction of subsidy is needed to improve the economic efficiency and fiscal pressure, it is recommended for the policy makers to focus on some offsetting policies to cushion macroeconomic shocks and economic welfare (Jiang and Lin, 2014; Plate, 2014; Solaymani and Kari, 2014). Most of the studies cited above have employed the input-output analysis to evaluate their finding. Mah (2016) is the closest with this study where he explored the impact of subsidy on export in Japan. His paper is more specific on export insurance subsidy and its impact on export growth. His hypothesis of the study was to explore whether the export insurance subsidy encouraged the export growth in Japan. By employing the time series cointegration test, he found that the export insurance subsidy was not significant to cause export growth. It might be due to practical implication of countervailing duties at the importing country side that might offset the cost advantage gained by Japanese exporters from the export insurance subsidy.

This paper extends the current literature by examining the determinant of subsidy on export competitiveness in ASEAN-5 economies. Therefore, the objective of this study is to explore the magnitude impact of subsidy expenditure by the government on export growth while also considering another two basic economic factors, which are exchange rate and industrial value added. A concrete evidence of the subsidy that substantially promotes export growth is very important as this information is useful to strategise and structure the subsidy programme practices to ensure it brings benefit in an economy. If the subsidy is observed as a non-productive element, it is crucial to transform it to become more productive by allocating the amount of subsidy at the right place and time. The government also needs to consider the negative impact of reducing subsidy in an economy by compensating any alternative policy which is more cost-effective. If the subsidy programme practices add more flavour to a productive element; thus, the subsidy removal or reduction needs to be revised or else it will cause the loss of economic competitiveness to the nation. For that matter, it can be said that the value for any subsidy reduction affects some uncertain impacts in the economic system. Thus, it makes this paper more fundamental to explore the impact of subsidy on export growth to quest sustainable development in an economy. Towards an extended literature, this study proposes to explore the impact of subsidy on export competitiveness in ASEAN-5 countries by employing a dynamic panel data analysis with a multivariate model framework by considering exchange rate and industrial value added as the control variables.

The study will contribute to the current literature in the following important ways. As discussed above, there are very limited papers that specifically examine how subsidy influences export behaviour. Nevertheless, among the few studies that explicitly examined the impact of subsidy on export, almost all used cross-sectional data by employing the input-output analysis, such as Lin and Jiang (2011), Jiang and Tan (2013), Jiang and Lin (2014), Solaymani and Kari (2014) and Yusoff and Bekhet (2016). Hence, this study will contribute to the adequate evidence on the effect of subsidy on export by using a dynamic panel data analysis. As compared to the input-output analysis which uses cross-sectional data, a dynamic panel data analysis relies on abroad countries (n) and time period (t), which will cover the dynamic pattern of sample that is able to conclude a robust and reliable empirical result[1]. Second, the addition of a subsidy as another exogenous variable to examine its effect on export behaviour. As suggested by Hamid and Rashid (2012) and Solaymani and Kari (2014), it had a strong tendency for a subsidy to offer production cost advantage in an economy which simultaneously will increase export growth. Third, this study focuses on ASEAN-5 economies because these economies have recorded an openness index which has a value of more than 1 (World Bank Indicator, 2017). Therefore, an export activity is one of the major sectors that contribute to national wealth. In addition, ASEAN-5 economies

[1] Pedroni (2000, 2004) and Pesaran et al. (1999) stressed the importance of a dynamic panel time analysis.

have allocated about 5% of its GDP to grant subsidy in an economy to benefit the local producers to gain cost advantage which will consequently boost their export growth.

The rest of the paper is organised as follows. The next section presents an overview of ASEAN-5 economies. Section 3 presents data and methodology, Section 4 is on the empirical result and Section 5 presents the discussion. The last section is on conclusion and policy implication.

ASEAN- 5 OPEN ECONOMIES

ASEAN-5 economies are comprised of Indonesia, Malaysia, Philippines, Thailand and Singapore. As their economic composition are in Southeast Asia economies (consisting of 11 countries), ASEAN-5 economies contribute 93.18%, 83.71% and 80.94% for the share of total GDP, industrial value added and export of Southeast Asia in 2012, respectively. As compared to the other economic convergence of BRIC, the world economy, European Union (EU) and the United States (US), ASEAN-5 recorded 5.08% GDP growth behind BRIC (6.56%) and was more advanced than the world (2.69%), EU (1.92%) and US (1.39%) in the year 2012. Statistically, it notifies us that ASEAN-5 economies are dominant in Southeast Asia economies. ASEAN-5 economies also show a better performance in economic growth as compared to the other recognised economic convergence entities, such as EU and the US. Tellingly, the openness index of ASEAN-5 was recorded at an average of 1.78 throughout the period of 2000-2013. A high and continuing increase in openness index suggests the increasing importance of the external sector in the ASEAN-5 economies. Meaning to say here, ASEAN-5 economies are an open economy and their international trade are valued more than domestic production. In another words, ASEAN-5 economies are highly dependent on global market and their export activities are driving towards their economic growth . Therefore, internal and external economies are important to support their international trade activities; consequently, can contribute to a rapid economic growth in the future.

Table 1 Average Share of Subsidy, Population and Selected Macroeconomic Indicator in ASEAN 5, 2003-2012

Country	Pop (M)	POP Share (%)	Exchange Rate ($)	Subsidy Share (%)	Subsidy Per Capita Share	Export Share (%)	IVA Share (%)	GDP Share (%)
Indonesia	228	55.34	0.962**	52.9	9.78	13.55	38.09	34.52
Malaysia	26	6.4	0.2768	21.11	33.63	21.47	18.44	17.09
Thailand	66	16	0.2691*	15.41	9.91	18.18	22.00	20.70
Philippines	87	21.2	0.1987*	6.22	3	6.62	9.99	12.29
Singapore	4	1	0.6362	4.34	43.68	40.17	11.48	15.39

Source: Worldbank Database Indicator (2015)
Note: ** USD/1000 local currency. *USD/10 local currency.

Table 1 comprises the economic comparison on population, exchange rate (USD), subsidy, export, industrial production (where it is represented by industrial value added) and GDP averagely throughout the period of 2003-2012. Indonesia is the biggest market in ASEAN-5 economies. It accounts for the 228 million population size and coupled with 38% and 35% shares of industrial production (industrial value added) and GDP in ASEAN-5 economies, respectively. On the other side, Singapore is the most developed country in ASEAN-5 economies. Singapore has achieved the highest growth of GDP, industrial production output (industrial value added) and export of 5.8%, 5.43% and 8.95%, correspondingly. A hypothesis of a country with abundant resources will gain an economic advantage, does not make sense in the case of ASEAN-5. The figure shows that Singapore gains more economic advantage even though it lacks in resources as compared to Indonesia, which has abundant resources and yet it translates less aggressive growth of industrial production output and economic growth, except for export performance. This scenario is against the theory which says that resource-abundant countries are rich.

The Singapore Dollar appreciates the most among other ASEAN-5 currencies and it is followed by the *Ringgit* Malaysia, Thailand *Baht*, Philippines *Peso* and Indonesian *Rupiah*. On the other hand, Singapore contributes the highest value of export, which is about 40% and is followed by Malaysia, Thailand, Indonesia, and the Philippines for 21%, 19%, 14%, and 7%, respectively. Even though the Philippines *Peso* and Indonesian *Rupiah* are the more depreciated currency among ASEAN-5, t both countries do not manage to gain the biggest share of export among ASEAN-5. Basically, currency appreciation leads to the price of an export good be more

expensive and vice versa (Abeysinghe and Yeok, 1998; Fang and Miller, 2005). According to the law of demand, the higher the price the lower the quantity demand of one particular good. Based on the descriptive statistical comparison, Singapore contributes the highest export share even though Singapore Dollar is appreciated and the price of Singaporean export goods tend to be more expensive. This figure showed that the general perspective on currency depreciation in leading the country to become highly competitive in the global market is not transpired in regard to the true scenario of ASEAN-5.

Subsidy is one of the most favourable tools of a government to promote export competitiveness, cost advantage among local producers, and to redistribute income to the society as a whole. By injecting money into the economy via a subsidy programme, it is expected to have an impressive growth of output and export and lastly economic prosper. Generally, the greater size of market, the greater amount of subsidy supplied as more people or players participate in an economy. Referring to Table 1, Indonesia has absolutely allocated the highest amount of subsidy where it recorded 52.9% out of theASEAN-5 total subsidy value. It is followed by Malaysia, Thailand, the Philippines, and Singapore at 21.47%, 15.41%, 6.22% and 4.34%, respectively. However, as measured by the value of subsidy per capita, Singapore is relatively the highest country in allocating subsidy as it accounts 48.3% share of ASEAN-5 (USD580), followed by 33.63% (USD447), 9.91% (USD 132), 9.79% (USD129.96) and 3% (USD40) for Malaysia, Thailand, Indonesia and the Philippines, accordingly.

Table 2 Subsidy Growth, Export, Industrial Value Added and GDP Growth, 2003-2012

Country	Subsidy Growth (%)	Export Growth (%)	IVA Growth (%)	GDP Growth (%)
Malaysia	11.8	4.38	2.67	4.73
Thailand	6.12	4.44	4.65	4.05
Indonesia	4.51	7.69	4.13	4.91
Philippines	4.3	4.35	3.85	4.8
Singapore	-348.5	8.95	5.43	5.8
ASEAN 5	**-64.4**	**6**	**4.1**	**4.9**

Source: Worldbank Database Indicator (2015)

Table 2 shows the comparative descriptive data for the growth of subsidy, export, industrial value added and GDP. Malaysia has recorded the highest growth of subsidy among ASEAN-5 countries. It values 11.8% of growth as an average throughout the period of 2003-2012. However, its performance of export growth and GDP growth are recorded at Bottom 2 and industrial production is at Bottom 1. In contrast, Singapore recorded negative subsidy growth (-348.5%) and yet it manages to achieve the best performance of export growth (8.95%), industrial production (5.43%) and GDP growth (5.8%). Hence, it can be said that a low dependency on subsidy in an economy may drive economic competitiveness and development. The subsidy programme practices might fail to encourage economic development through cost advantage in the production input as an increase in subsidy growth tends to increase the problems of overconsumption (moral hazard) and cost transfer (deadweight-loss) that consequently lead to inefficiency to occur in an economy (Ghali, 1998; Isaak, 2015). It can be one of the reasons why a growth of subsidy causes a decrease in output and productivity as well. If those five countries are converge become one economic community is called as ASEAN-5, it shows that ASEAN-5 experienced the growth of -64.4% for subsidy and 6%, 4.1% and 4.9% for export growth, industrial value added and GDP growth, respectively.

DATA AND METHODOLOGY

This study uses the balance panel data analysis covering the period of 24 years from 1992-2015 for the ASEAN-5 countries. The data of total export, exchange rate, total subsidy and industrial value added are all extracted from the World Development Indicator (2017) and central banks of Indonesia and Malaysia. All variables were transformed to natural logarithms[2]. This study employed the following model to examine whether export competitiveness of ASEAN-5 has been responsive to changes in the amount that is allocated for the subsidy programme.

[2] As all variables are in different unit, they are transformed into natural logarithms form for consistency. This alternative has also been adopted in Osman et al. (2016).

$$LnE_{it} = \alpha + \delta\ LnX_{it} + \varphi LnS_{it} + \phi LnIVA_{it} + \varepsilon_{it} \quad (1)$$

where, *E* is Total Export (Constant 2010 US$), *X* is Exchange rate (ASEAN 5 currency/ US$), *S* is Total Subsidy (Constant 2010 US$), *VA* is Industrial Value added (Constant 2010 US$) and *Ln* is Natural logarithms.

Im, Pesaran and Shin (IPS) Panel Unit Root Test

Im, Pesaran and Shin (IPS) Panel Unit Root Test (2003) attempted to average the individual unit root ADF test statistics. Its model is as follows:

$$Y_{i,t} = a_i + \rho_i Y_{i,t-1} + \sum \varphi_k Y_{i,t-k} + \varepsilon_{it} + \mu_{it} \quad (2)$$

Where, a set of null hypothesis is each series in the panel contains a unit root ($H_0 : \rho_i = 0$ for all *i*). the model is applied for a balanced panel data to compute *t*-bar test statistic.

Panel Cointegration Test

Pedroni Cointegration test (2000, 2004) is employed to capture the long run cointegration test in the model.

There are seven different statistics based on the four statistics, which are panel v-statistic, panel rho-statistic, panel PP-statistic (within dimension) and three statistics, which are rho-statistic, PP-statistic, and ADF-statistic (between dimension). The null hypothesis of no cointegration for within dimension statistics is:

$$H_0: \gamma_i = 1 \text{ for all } i$$
$$H_A: \gamma_i = \gamma < 1 \text{ for all } i$$

The null hypothesis of no cointegration for between dimension statistics is:

$$H_0: \gamma_i = 1 \text{ for all } i$$
$$H_A: \gamma_i < 1 \text{ for all } i$$

Pool Mean Group

The Pool Mean Group (PMG) which was introduced by Pesaran et al. (1999)was applied to estimate the long run coefficient and short run coefficient simultaneously. The coefficient of error correction term (ECT) can also be estimated and is used to capture the existence of long run cointegration in the model. The rule of law is that it must be significant to reject the null hypothesis and the value of its coefficient must be a negative value. The autoregressive distributive lag (ARDL) dynamic panel specification is modelled as follows:

Assuming ARDL (1,1,1,1) equation:

$$LnE_{it} = \alpha_i + \beta_{10i} LnX_{it} + \beta_{11i} LnX_{it-1} + \beta_{20i} LnS_{it} + \beta_{21i} LnS_{it-1} + \beta_{30i} LnIVA_{it} + \beta_{31i} LnIVA_{it-1} + \tau_i LnE_{it-1} + \theta_{it} \quad (3)$$

Thus, the error correction equation is as follows:

$$\Delta LnE_{it} = \beta_{i1} \Delta LnX_{it} + \beta_{i2} \Delta LnS_{it} + \beta_{i3} \Delta LnIVA_{it} + \omega_i LnE_{it-1} - \rho_{0i} - \rho_{1i}\ LnX_{it-1} - \rho_{2i} LnS_{it-1} - \rho_{3i} LnIVA_{it-1} + \varepsilon_{it} \quad (4)$$

where

$$\rho_{0i} = \frac{\alpha_i}{1-\tau_i},\ \ \rho_{1i} = \frac{\beta_{10i} + \beta_{11i}}{1-\tau_i},\ \ \rho_{2i} = \frac{\beta_{20i} + \beta_{21i}}{1-\tau_i},\qquad \rho_{3i} = \frac{\beta_{30i} + \beta_{31i}}{1-\tau_i},\ \ \omega_i = -(1-\tau_i)$$

EMPIRICAL RESULT

The analysis was started by executing Im, Pesaran and Shin Panel Unit Root Test to cater stationary test requirement. This result is presented in Table 3. All variables are first found to be stationary and different with 99% confident level. Therefore, it wasproceeded to the cointergation test. The result of Pedroni cointegration test is in Table 4. Nine results of Pedroni cointegration test suggested that the model was significant to be cointegrated in the long run. The result of ECT in Table 5 wascalso consistent to support that the model was significant to be cointegrated in the long run. The coefficient of ECT was significant at 10% critical value with a negative value. Therefore, there was enough evidence to conclude that the model was cointegrated in the long run.

Table 3 Im, Pesaran and Shin Panel Unit Root Test

Variable	Intercept	Intercept with Trend	Intercept	Intercept with Trend
LE	-1.4534	-0.9238	-6.6188*	-5.996*
LX	-2.0575**	0.5838	-3.8537*	-3.3329*
LY	0.8681	-0.1397	-6.2048*	-6.4324*
LS	1.0548	-0.2121	-7.6066*	-4.4545*

Notes: Asterisks *indicate 1% significance level, ** indicate 5% significance level and *** indicate 10% significance level.

Table 4 Cointegration Test

	Intercept		Intercept with Trend	
	Statistic	Weighted Statistic	Statistic	Weighted Statistic
Pedroni Residual Cointegration Test				
Panel v-Statistic	1.2784***	1.1322	0.2388	0.1385
Panel rho-Statistic	-0.8977	-0.4749	0.0596	0.6262
Panel PP-Statistic	-2.5227***	-1.6318***	-1.9555**	-0.6639
Panel ADF-Statistic	-3.2049*	-2.4656***	-2.4982*	-1.0905
Group rho-Statistic	0.3811	-	1.3922	-
Group PP-Statistic	-1.4732***	-	-0.4489	-
Group ADF-Statistic	-2.6038**	-	-1.0470	-

Notes: Asterisks *** indicate 1% significance level, ** indicate 5% significance level and * indicate 10% significance level.

Table 5 Long Run Coefficient

Variable	PMG	FMOLS	DOLS
LX	-0.1083***	-10.3677***	-0.1390**
LIVA	1.3769***	1.02823***	1.4318***
LS	0.0476***	5.9242***	0.0470***
ECT	-0.5728*		

Notes: Asterisks *** indicate 1% significance level, ** indicate 5% significance level and * indicate 10% significance level.

The long run coefficient was proceeded to present, which is documented in Table 5. All variables are found to be significant to cause LE at 1% critical value. To be exact, both LIVA and LS have a positive relationship with LE, while LX has a negative relationship with LE. For robustness checking, the FMOLS and DOLS were employed to compare their consistency. Both results from FMOLS and DOLS were consistent with the result in PMG. The ceteris paribus assumption was constructed as follows:

- 1% increase of LX will lead to a decrease in LE at 0.11% while other variables are constant.
- 1% increase of LIVA will lead to an increase in LE at 1.38% while other variables are constants
- 1% increase of LS will lead to an increase in LE at 0.04% while other variables are constants

All in all, LIVA contributes to the biggest impact to LE, followed by LX and LS as its magnitude value is 1.38%.

DISCUSSION

The main result found that the subsidy leads the local producers to gain cost advantage and consequently increase their export goods to be sold abroad. A decrease in subsidy is expected to depreciate the production cost advantage that was initially granted before subsidy reformation was implemented by assuming that no offset policy was coordinated by the government. This result was supported by Solaymani and Kari (2014) who explored the impact of non-existence of energy subsidy on the Malaysian economy. One of their results indicated that the export value was expected to decrease by about 0.13% respond to the absent of energy subsidy in Malaysia. The second result suggested that a depreciation of local currency affectedd the export competitiveness to be decreased. It was not in favour of Mundel-Fleming model assumption of an appreciation of the currency will bring harm to exports and encourage imports which were supported by numerous literature (Thorbecke and Smith, 2010). However, it has two reasons that can be considered to explain why an appreciation of the currency increases export competitiveness. First is a high value of import input content in the production (Abeysinghe and Yeok, 1998: Fang and Miller, 2007). Second is the growth of external demand on export goods (Abeysinghe and Yeok, 1998). ASEAN-5 economies met those two reasons to explain the finding. According to the published statistical data of OECD (2015) Import Content of Export Indicator, the share of imported input contents in the overall exports of ASEAN-5 economies was recorded about 60%. It shows that ASEAN-5 economies used much import input content in the production. On the other hand, the external demand of export goods also show a rapid increase throughout the period of 1975-2014. First, the world's share of exported goods from ASEAN- 5 economies has shown a rapid increase where it was recorded only at 0.5% in the beginning period of 1975 and this record was improved at a rate of 1.14% in 2014. Second, the external demand of exported growth from the external market was recorded averagely about 2.19% throughout the period of 1975-2014. These figures gave a clear picture that the external demand for exported goods of ASEAN-5 economies is continuously increased. These statistics supported the finding in that the currency appreciation is expected not to harm export competitiveness. the third result suggests that the industrial value added will encourage export growth in ASEAN-5 economies. The economics of scale in the industrial sector led to export growth as it produces abundant goods to be exported abroad besides to cater for in the domestic market demand at one time. It was also beenclarified in Chow (1987) and Suga (2005) where an industrial development played a significant role to encourage an export growth in an economy.

CONCLUSION AND POLICY IMPLICATION

This paper is intended to explore the impact of subsidy reform, exchange rate and industrial development on export growth in ASEAN-5 economies. A dynamic panel data analysis was employed to run an empirical analysis of a panel dataset of ASEAN-5 economies covering from 1992-2015. In conclusion, three main findings were documented . First, subsidy reformation on reducing its value in an economy is expected to give an adverse impact export performance by assuming that no recovery action was taken by the government. Second, currency depreciation is expected to bring harm in export performance. Third, industrial development is expected to encourage export growth as many outputs are able to be produced in one period of time.

There was an effort taken by ASEAN-5 economies to reform their subsidy programme in an economy as an effort to reduce fiscal pressure and improve economic efficiency. For instance, Malaysia had implemented its subsidy rationalisation programme by removing and improving its subsidy distribution to ensure that the subsidy becomes a more productive tool to promote sustainable economic development. Since 2009, Malaysia has removed sugar and some selected energy commodities that seem unproductive to generate economic growth. As a result, Malaysia managed to reduce its amount of subsidy growth at an average of -3% throughout 2009-2014. It is followed by Indonesia, which also implemented its subsidy rationalisation programme by reducing more subsidy on energy. About -13% subsidy growth on energy has been recorded on average throughout the period 2009-2014. Singapore also showed much reduction on its subsidy allocation in its economy. Up to now, about -153% subsidy growth was recorded on average throughout the period of 2000-2012. It is difficult to remove the subsidy in an economy once the economic system highly depends on the subsidy. Specifically, the reduction of subsidy might value the loss of economic competitiveness where it leads to greater imports and reduces export in the meantime.

Since the finding offers that the reduction of subsidy will lead to a negative impact on export, it needs to be complemented by any offset policy such as the social safety net programme which can mitigate economic shocks reflected from an absence of subsidy in an economy. If there is no offset policy being implemented, an economy might turn a worse situation. Based on the empirical evidence given, the policy makers were suggested to extent the industrial policy implementation as an offset policy to cushion an adverse impact from the current subsidy reform. A wide coverage of industrial policy will encourage a sustainable industrial development that consequently compensated the loss of subsidy allocation in an economic system. A solid regional industrial sector performance will cushion ASEAN-5 economies from any external and internal shocks as the marginal return from industrial sector is among the highest to give much benefit on national wealth. It was also found that the exchange rate influenced the export growth more than subsidy, and thus, also recommended the government to have a comprehensive monetary regime enforcement to strengthen the local currency. Currency appreciation will lead the import input content to become cheaper to be bought by ASEAN-5 economies. Consequently, the local production will gain cost advantage and be able to be more competitive in the global market.

The second suggestion to offer is that since a reduction of subsidy is expected to reduce export growth, the policy makers should rationalise the distribution of subsidy to be granted in an economy. The policy makers can consider several recommendations to improve the current subsidy distribution. To increase an efficiency to channel the benefit of subsidy to the targeted sector, the non-targeted sector must be excluded from subsidy distribution access. Giving a coupon to the targeted sector is one of the alternatives that can be considered. Both industrial and transportation sectors consume about 70% energy. Thus, a reduction of subsidy especially on energy subsidy affected more to the production of those sectors. Energy coupon should be given to them to access energy subsidy granted by the government. The subsidy on energy is given according to a threshold of the energy consumption. Therefore, the higher the level of consumption of energy, the lower the level of the subsidy on energy that would be granted to the targeted groups. Through this mechanism, the problem of moral hazard may be reduced. As a result, an adverse impact of energy subsidy removal by continuing to grant energy subsidy in an economy with some improvement on its distribution mechanism can be avoided. Second, the selected subsidised item should be removed based on its magnitude impact in giving an adverse impact on an economy as a whole. The less the magnitude impact of one subsidise item, the more important it is to be removed. Through this way, the efficiency can be increased to distribute a subsidy in the economy.

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