

DETERMINANTS OF INDONESIA'S EXPORTS OF MANUFACTURED PRODUCTS: A PANEL DATA ANALYSIS

Faktor Penentu Ekspor Produk Manufaktur Indonesia: Analisis Data Panel

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Abstrak

Nilai ekspor Indonesia terus mengalami penurunan sejak 2012. Masalah ini menarik perhatian pemerintah Indonesia untuk segera meningkatkan performa ekspor, dimana salah satu sektor yang dapat ditingkatkan adalah sektor manufaktur. Studi ini menganalisis faktor penentu ekspor manufaktur di Indonesia sejak 2005 sampai 2014. Faktor utama yang dianalisis antara lain adalah nilai tukar rupiah, *foreign direct investment* (FDI), *gross domestic product* (GDP), dan kebijakan perdagangan. Faktor tersebut dianalisis menggunakan regresi data panel dengan pendekatan *random effect model*. Hasil dari analisis menunjukkan bahwa perubahan relatif dari nilai tukar, *real GDP*, jarak dua negara, dan tarif secara signifikan memengaruhi ekspor manufaktur di Indonesia. Beberapa rekomendasi terkait untuk pemerintah Indonesia antara lain adalah dengan menjaga ekspor Indonesia ke negara-negara yang memiliki GDP tinggi, memperluas pasar ekspor Indonesia, menjaga stabilitas nilai tukar rupiah, mendukung industri lokal menggunakan teknologi maju, dan mendukung penyederhanaan proses impor.

Kata kunci: Ekspor Produk Manufaktur, Nilai Tukar, Real GDP, Regresi Data Panel, *Random Effect Model*.

Abstract

Indonesia's export has been decreasing since 2012. This problem has raised government's attention to increase the export performance. One sector that can be improved is manufacturing. This study analyzes the determinants of Indonesia's manufacturing export from 2005 to 2014. The major factors examined in this study include real exchange rate, foreign direct investment (FDI), gross domestic product (GDP) and trade policies. Those factors are examined by using panel data regression with a random effect model. The results revealed that relative change of exchange rate, real GDP, distance between two countries and average tariffs significantly affected the Indonesia's manufacturing export. It is recommended that Indonesian government maintains the exports to countries which have high GDP, expand the export market, stabilize Rupiahs exchange rate, encourage local industries to use advanced technologies, and facilitate the simplification of import procedures.

Keywords: *Manufacturing Export, Real Exchange Rate, Real GDP, Panel Data Regression, Random Effects Model.*

JEL Classification: F14, F31, F41

INTRODUCTION

Indonesia's export value has been shrinking since 2012. This is shocking because it was experienced after Indonesia made history by doubling its export value over a period of five years in 2011. This fall was mainly due to the financial crisis in 2011 caused export demand from Indonesia's trading partner countries to decline; consequently Indonesia's export value fell to USD 190 billion (Sukarno, 2012). Another reason for the decline in export value was the drop in export mining commodities' prices, as shown by data of Statistics Indonesia (Syafputri, 2013). The export value, then, dropped consistently in the following years to approximately USD 176 billion in 2014 (Figure 1) (Ministry of Trade, 2015).

To address the decline in export trade, Indonesia's government, through the Ministry of Trade, established a target which was to increase Indonesia's export value by three folds in a period of five years starting from 2014. However, the Indonesian government has also introduced a policy prohibiting export of raw materials in order to guarantee natural resource sustainability and develop local industries (Gunawan, 2014). Therefore, in order to meet the target, the government aims to focus on increasing export performance in the manufacturing sector rather than resource-based export.

In the case of manufacturing export performance in Indonesia, it gradually increased from 2004 to 2011 except for a small drop in 2009 (Figure 2). This

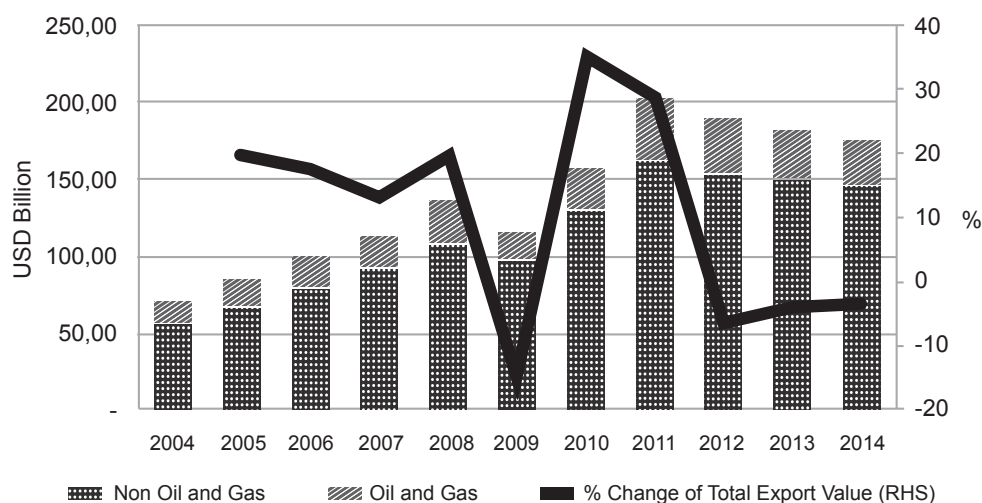


Figure 1. Indonesia's Total Export Value and its Change From 2004 to 2014

Source: Ministry of Trade (2015)

trend was almost similar to trends in Indonesia's total export. In 2004, the manufacturing export value was about

USD 36 billion, then it rose consistently to slightly above USD 50 billion in 2008. Although it dropped to about USD

47 billion in 2009, it recovered in the following year and remained stable at around USD 70 billion from 2011 to 2014. In contrast, total export value suffered decline after the 2011 economic crisis, but the manufacturing sector seemed to be robust enough to stand up with this economic shock (Soderbom & Teal, 2003).

Moreover, from 2004 to 2014, the manufacturing sector contributed

between 35 and 50 percent of Indonesia's total export. The highest percentage was in 2004 which was just over 50%. In 2014, the manufacturing sector contributed to the aggregate export by about 40%. However, the former Minister of Trade, Rachmat Gobel wanted to increase this contribution to 65% to fulfill the international demand of manufacturing products (Pusat Hubungan Masyarakat, 2015).

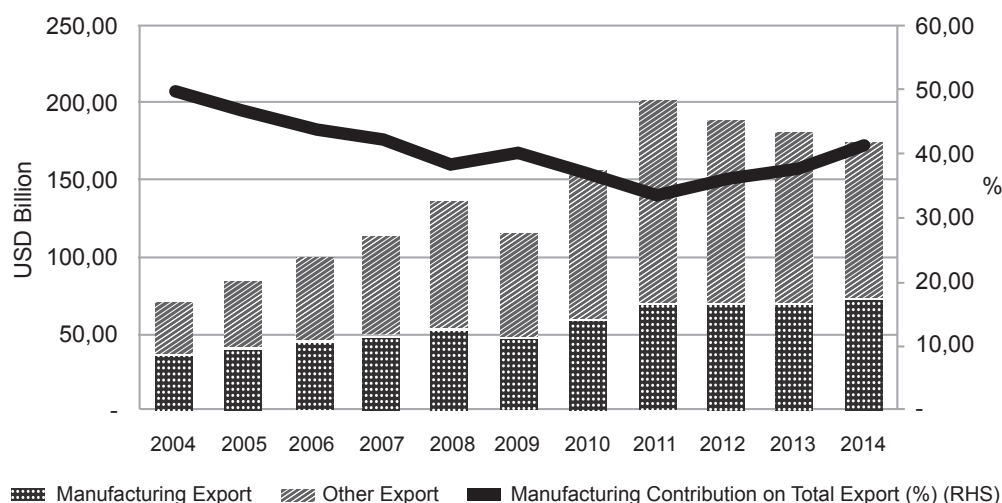


Figure 2. Manufacturing Export Value and Total Export Value in Indonesia from 2004 to 2014

Source: Ministry of Trade (2015)

This study aims to find determinants of manufacturing export performance in Indonesia. Deliarnov (1995) stated that countries do export if they have an excess of domestic supply of goods and services. On the other hand, Goldstein & Khan (1985) stated that export performance of a country is also determined by export demand from other countries. Therefore, to analyze export performance, it is better to consider factors from both

supply and demand sides to avoid bias which commonly occurs when estimating export performance of developing countries based on only one side and disregard another side (Riedel, 1998). Hence, manufacturing export determinants examined in this study come from supply and demand side. Based on the availability of data, supply factors examined consist of foreign direct investment (FDI) and other factors

covered in time dummies. The demand factors analyzed include real exchange rate, real gross domestic product (GDP), and trade policies (FTA, tariffs and importing days).

In Indonesia, there was a similar research from Rahmaddi and Ichihashi (2013) examining export performance of 11 manufacturing industries from 1990 to 2008. They found that the export performance of manufacturing products, as those in SITC 5 to SITC 8, is determined by foreign direct investment (FDI), GDP growth and exchange rate. However, this finding only covered some particulars industries which cannot explain Indonesia's manufactures as a whole. Therefore, it is needed to study further what factors significantly affect the whole Indonesia's manufacturing export performance, hence it can provide recommendations to improve Indonesia's export value.

This paper consists of four sections commencing with brief background of this study. The second section briefly describes the methodology and data for this study, followed by a discussion of the results in section three. The final section draws conclusions and offer some recommendations for the future (for MoT leaders in making policies to increase Indonesian manufacturing export performance).

RESEARCH METHOD

Method of Analysis

Manufacturing export determinants examined in this paper consist of FDI, real exchange rate, real GDP, and trade policies. To analyze the impact of each determinants on manufacturing export value, this paper uses panel data regression with gravity model. This is because, the gravity model captures bilateral factors that affect trade such as geographical distance, which is also considered in this study, and other economical factors (Yang & Zarzoso, 2014).

Gravity model applied in this paper is adopted from Sheldon, Mishra, & Thompson (2013) formulating trade flows among two countries by the following specification:

$$V^{jk} = \beta_0 (Y^j)^{\beta_1} (Y^k)^{\beta_2} (D^{jk})^{\beta_3} (A^{jk})^{\beta_4} u^{jk} \quad (1)$$

Where V^{jk} is trade value from country j to k , Y^j and Y^k are nominal GDP of country j and k , D^{jk} is distance between country j and k , and A^{jk} represents other factors that may affect trade between country j and k .

In this study, specification by Sheldon, Mishra, & Thompson (2013) with is modified by disaggregating variable A^{jk} to some more variables which will be explained later.¹ After

¹ The equation excludes a factor of Indonesia's GDP, because this study only focuses on Indonesia. The use of time dummies takes up the effect of Indonesia's GDP changes.

applying a logarithm transformation, the specification becomes:

$$\begin{aligned} \ln(X_{jt}) = & \alpha_0 + \beta_1 \ln(GDP_{jt}) + \beta_2 \ln(RER_{jt}) + \\ & \beta_3 \frac{RER_t}{RER_{t-1}} + \beta_4 \ln(Dist_j) \\ & + \beta_5 \ln(Investment_{jt-1}) + \\ & \beta_6 \ln(Disinvestment_{jt-1}) \\ & + \beta_7 \ln(Population_{jt}) + \\ & \beta_8 \ln(Importtime_{jt}) + \beta_9 Tariff_{jt} + \\ & \beta_{10} FTA_{jt} \\ & + \beta_{11} Dum06 + \beta_{12} Dum07 + \beta_{13} Dum08 \\ & + \beta_{14} Dum09 + \beta_{15} Dum10 \\ & + \beta_{16} Dum11 + \beta_{17} Dum12 + \beta_{18} Dum13 \\ & + \beta_{19} Dum14 + u_{it} \dots\dots\dots(2) \end{aligned}$$

Where $\ln(X_{jt})$ is the logarithm of Indonesia's real manufacturing export value to country j in year t , which is ranging from 2005 to 2014. $\ln(GDP_{jt})$ is the logarithm of real GDP of country j in year t . $\ln(RER_{jt})$ is the logarithm of real exchange rate against country j in year t . $\frac{RER_t}{RER_{t-1}}$ is the ratio of real exchange rate of year t and the prior year representing a relative change of exchange rate in year t . $\ln(Dist_j)$ is the logarithm of bilateral distance between Indonesia and country j . $\ln(Investment_{jt-1})$ and $\ln(Disinvestment_{jt-1})$ are the logarithms of the amount of positive total FDI inflows (investment) and the amount of negative total FDI inflows (disinvestment) to Indonesia from

country j in year $t - 1$. $\ln(Population_{jt})$ is the logarithm of the population of country j in year t . $\ln(Importtime_{jt})$ is the logarithm of number of importing days in country j in year t . $Tariff_{jt}$ is the average tariff applied by country j in year t . FTA_{jt} is a dummy variable of FTA implementation between Indonesia and country j in year t . $Dum06$ to $Dum14$ are time dummies to capture particular effects in each year affecting Indonesia's manufacturing export value.

This gravity model, then, is analyzed by panel data regression which has two approaches, Fixed Effect Model (FEM) and Random Effect Model (REM). The fixed effect model (FEM) considers the individuality of each cross-section unit and let the intercepts differ for each individual (β_{1i}). Yet, this model still assumes that the slope coefficients are constant across individuals. Gujarati (2003) formulated the model as:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it} \dots\dots\dots(3)$$

The intercept β_{1i} has subscript i to show that the intercepts of individuals may be different because of particular characteristics of each individual. However, it has no subscript t to suggest that each individual is time invariant.

Although the random effect model (REM) has the same basic model as

FEM, $Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it}$, this model does not treat β_{1i} as fixed, but assumes that β_{1i} is a random variable having mean value of β_1 , hence the intercept value for each individual is:

$$\beta_{1i} = \beta_1 + \varepsilon_i \quad i = 1, 2, \dots, N \dots \dots (4)$$

Where ε_i is a random error term with a zero mean value and variance of σ_ε^2 .

By combining equation (4) and (5), the equation becomes (Gujarati, 2003):

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_i + u_{it}$$

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + w_{it} \dots \dots (5)$$

$$w_{it} = \varepsilon_i + u_{it} \dots \dots (6)$$

The composite error term w_{it} consists of error from the cross-section (ε_i) and the combination between time series and cross-section error component (u_{it}).

To choose the more appropriate approach between FEM and REM, a

test is required. One of test that can be considered is the Hausman's test (Gujarati, 2003). Hausman (1978), as cited in Baltagi (2008), stated that coefficient of REM ($\hat{\beta}_{REM}$) is consistent with coefficient of FEM ($\tilde{\beta}_{FEM}$) under the null hypothesis $H_0: E\left(\frac{u_{it}}{X_{it}}\right) = 0$. Hausman argued that $\tilde{\beta}_{FEM}$ is consistent without considering whether H_0 is true or not. However, $\hat{\beta}_{REM}$ is only consistent and asymptotically efficient under H_0 . Gujarati (2003) concluded that if the null hypothesis is rejected, the REM approach is not appropriate; consequently, it is better to use the FEM approach.

This study utilises yearly panel data, dating from 2005 to 2014, which consists of 28 countries resulting in a total of 280 observations. Countries, chosen in this study, are the top 28 importing countries in 2014, which contribute approximately 90 percent of the total of Indonesia's manufacturing exports (Table 1).

Table 1. Indonesia's Manufacturing Export Destination Countries in 2014

No.	Country	2014		
		Value (USD)	Share (%)	Cum. Share (%)
	Total Manufacture	72,836,149,044	100.00	
1	United States	11,037,499,911	15.15	15.15
2	Japan	7,204,640,131	9.89	25.05
3	Singapore	6,419,132,836	8.81	33.86
4	RRT	5,065,533,823	6.95	40.81
5	Malaysia	3,245,642,954	4.46	45.27
6	Australia	3,046,110,879	4.18	49.45
7	Thailand	3,033,981,111	4.17	53.62
8	Korea, Republic of	2,279,452,239	3.13	56.75
9	Germany	2,103,851,051	2.89	59.64
10	Philippines	2,090,799,442	2.87	62.51
11	United Arab Emirates	2,024,392,466	2.78	65.28
12	Netherlands	1,809,358,565	2.48	67.77
13	Saudi Arabia	1,687,168,369	2.32	70.09
14	India	1,608,247,079	2.21	72.29
15	Taiwan, Province Of China	1,565,818,799	2.15	74.44
16	Viet nam	1,395,978,527	1.92	76.36
17	United Kingdom	1,289,415,547	1.77	78.13
18	Hong kong	1,226,205,453	1.68	79.81
19	Belgium	948,706,329	1.30	81.12
20	South Africa	924,937,782	1.27	82.39
21	Brazil	922,355,837	1.27	83.65
22	Turkey	909,072,558	1.25	84.90
23	France	821,568,900	1.13	86.03
24	Italy	707,362,030	0.97	87.00
25	Mexico	653,830,834	0.90	87.90
26	Spain	607,913,279	0.83	88.73
27	Canada	524,273,176	0.72	89.45
28	Egypt	452,885,580	0.62	90.07

Source: Ministry of Trade (2015)

Indonesia's nominal manufacturing export data are obtained from the Ministry of Trade, Republic of Indonesia. The nominal export data are, then, adjusted to real value by using the export price index with a year base of 2005 obtained from Bank Indonesia's Producer Prices Indices (2015). Real GDP data in constant USD at 2005 prices, the nominal exchange rate data, population

data and data of the import days of each country are sourced from the World Bank's World Development Indicator (2015). To obtain the real exchange rate, nominal exchange rate data are multiplied by the relative price between two countries represented by the ratio of consumer price index (CPI) of each trading partner and Indonesia (Siregar & Rajan, 2004). The consumer price index

is also obtained from the World Bank's World Development Indicator (2015).

Data of nominal FDI inflows to Indonesia are acquired from UNCTAD. According to UNCTAD (2013), these data are on a net basis, therefore, their value each year might be positive representing investment or negative representing disinvestment. There is a problem when these data are transformed to logarithm value. Hence, to address this problem, these data are divided into two variables: investment, consisting of positive value of FDI inflows, and disinvestment, consisting of the absolute value of the negative value of FDI inflows. According to Cavallari & d'Addona (2013), nominal FDI data are scaled by the GDP deflator of each partner country from the World Bank's World Development Indicator (2015) to obtain real values. Data of distances between each country and Indonesia are from CEPII (2015) and the average tariff data from the World Bank's WITS (2015).

RESULTS AND DISCUSSION

Finding the best approach

According to Gujarati (2003), one formal test to find the more appropriate

Table 2. Hausman's Test between FEM and REM

	Hausman Test		
	Statistic	d.f	Prob.
Chi-square	10.37	18	0.919

model between FEM and REM is a Hausman's test. The result of Hausman's test is presented in Table 2.

The null hypothesis of the Hausman's test is difference in coefficients of FEM and REM is systematic. Based on Table 2, p-value for the Chi-square statistic is 0.919 which is greater than α , therefore the null hypothesis cannot be rejected. This means that coefficients between FEM and REM are not significantly different. Consequently, the more appropriate approach for this study is REM.

The Impacts of Each Determinant

Table 3 shows the result of the panel data regression with random effects estimation of Indonesia's manufacturing export value. The estimation confirms that real GDP, ratio of real exchange rate, distance, import time and average tariff have a statistically significant effect on Indonesia's manufacturing export performance. However, results indicate that the coefficients of real exchange rate level, FDI inflows, population and the implementation of FTA are not statistically significant. Hence, those factors cannot be assumed to affect Indonesia's manufacturing export performance.

Gross domestic product (GDP) is the total production and expenditure of goods and services in a country (Mankiw, 2010). According to Table 3, the estimated coefficient of real GDP capturing market size in Indonesia's

trading partner countries is positive (0.299) and significant at the level of 1%. This means that a one percent addition of GDP in one of Indonesia's trading partners contributes to an almost 0.30% increase in Indonesia's manufacturing exports to that country. This is in line with finding from Shao et al (2012) explaining that exporters prefer to export to countries having higher GDP because they have bigger market, more number of buyers, and more stable demand. However, Shao et al (2012) also suggested to diversify export markets because concentrating export to some specific markets causes more risk.

Another major factor of export discussed in this study is real exchange rate, which is the rate or ratio between two currencies used by people to trade across countries. Depreciation or a decrease in the value of the money of a particular country causes its local products to be cheaper for other countries, which experience an appreciation under these conditions (Mankiw, 2010). However, in this study, coefficient of real exchange rate is not statistically significant, but the coefficient of the ratio of the exchange rate, representing a relative change in the exchange rate, is significant at the level of 1%. This indicates that

Table 3. Impact of Each Determinant on the Indonesia's Manufacturing Export (Random Effects)

Variable	Random Effect Model		
	Coef.	Std. Err.	P-value
Constanta	11.297**	1.556	0.000
Ln (Real GDP)	0.299**	0.064	0.000
Ln (Real Exchange Rate)	0.045	0.040	0.252
Ratio Real Exchange Rate	-0.665**	0.172	0.000
Ln (Distance)	-0.813**	0.142	0.000
Ln (Investment)t-1	-0.002	0.002	0.398
Ln (Disinvestment)t-1	-0.001	0.003	0.771
Ln (Population)	0.107	0.074	0.150
Ln (import days)	-0.275**	0.066	0.000
Average Tariff	-0.019*	0.009	0.038
FTA Implementation	0.042	0.038	0.266
Year 06	0.028	0.052	0.583
Year 07	0.133**	0.045	0.003
Year 08	-0.028	0.047	0.543
Year 09	-0.182**	0.047	0.000
Year 10	-0.086	0.056	0.125
Year 11	0.032	0.053	0.537
Year 12	-0.019	0.054	0.721
Year 13	-0.090	0.054	0.096
Year 14	-0.082	0.055	0.139

* and ** are statistically significant at level of five and one per cent, respectively.

factor affecting manufacturing export in Indonesia is not the level of real exchange rate, but the change of real exchange rate. Coefficient of the ratio of the exchange rate is (-0.655), which means that one percent increase in this ratio causes export value decreases by about 0.65%. This indicates that a depreciation of the rupiah will reduce Indonesia's manufacturing exports.

There are, at least, two possible reasons supporting this argument. Firstly, the nominal effect of the rupiah depreciation causes Indonesian products to be cheaper for international buyers using other currencies. Therefore, buyers spend less money than before depreciation although they buy the same amount of Indonesian products. As a consequence, the total value of Indonesia's export significantly decreases. The second reason is that Indonesia's manufactures rely much on the imported raw material. Rupiah depreciation causes imported raw materials to become more expensive resulting in a reduction of import of raw material for manufacturing. Consequently, manufacturing production falls and its export value decreases.

Moving on to trading time, which is one significant source of trade cost, therefore more time to trade is associated with weaker trade performance (Hummels & Schaur, 2013). The effect of the number of days for the importing process is negative

(-0.275) and significant at the level of 1%. This means that a one percent reduction on importing days causes an increase in manufacturing exports by 0.27%. A practical example of this finding is if Malaysia reduces its average importing days from 10 days to 9 days, Indonesia's manufacturing export to Malaysia is expected to increase by about 2.7 percent under a condition of no changes in other factors. Regarding to this finding, Shepherd (2013) explained that more trading time causes exporters tend to export by outsourcing their products to a specialized firm that can manage the products more rapidly, therefore it will reduce direct exports.

Next factor is tariffs which are the most popular policies used to restrict trade. The impact of the average import tariff applied by each partner can be seen in the coefficient of the average tariff which is -0.019 and significant at the level of 5%. This means that if the tariff is one percent lower; the export value increases by about 0.02%. This suggests that lower tariffs lead to higher export value. For instance, if the average import tariffs applied in Malaysia decline from around 6% to about 5%, it is expected that Indonesia's manufacturing export to Malaysia will rise by 0.02% if all other factors do not change. In other word, tariff cuts will encourage exporters to start exporting (Baldwin & Yan, 2012). Moreover, Akinkugbe (2009) stated that the practices of tariff barriers may

hinder export improvement even though upgrading of infrastructure and effective governance can expand export activities.

Moving to Free Trade Agreements (FTAs), which are a major instrument for countries seeking to expand their market access and raise export value. Yang & Zarzoso (2014) investigated the impact of the ASEAN-China Free Trade Agreement (ACFTA) on agricultural and manufacturing trade creation and trade diversion dating from 1995 to 2010. They found that the coefficients of FTA in their model were positive and significant. This means that FTA encourages manufacturing export performance of FTA member countries. On the other hand, according to Table 3, FTAs implementation in this study does not have significant effect on Indonesia's manufacturing exports. Although the coefficient of the FTA dummy is positive, this value is not significant at the level of 5%. This indicates that effects of implementation of the FTAs have been captured by tariffs, which significantly affect manufacturing export, therefore FTAs does not have effect on manufacturing export beyond the effect of tariffs.

Moving to FDI inflows, neither investment (the positive value of FDI inflows) nor divestment (the negative value of FDI inflows) significantly affects manufacturing exports because both coefficients are not significant at the level of 10%. There are possible reasons explaining this finding. Firstly, FDI inflows

in Indonesia from each country may be concentrated on particular sectors. Therefore, its effect of manufacturers as a whole is considerably weak. This explains difference between this finding and findings from Rahmaddi & Ichihashi (2013) arguing that FDI significantly encourage export of specific manufactures defined in SITC 5 to SITC 8. Another reason might be that FDI inflows cannot directly affect export performance in a year after, meaning that time lag between investment and its impact may be bigger than one year. Yet, although they are not significant, the negative value of the investment coefficient should raise concern. According to Zhang (2005) and Amighini & Sanfilippo (2014), the negative relationship between investment and export performance means that either FDI is not allocated efficiently or FDI is targeted to reach only the domestic market and not the export market.

Focusing on time dummies, in which 2005 becomes a year base, based on the estimation, export value in 2007 and 2009 significantly differ from other years. The coefficient of the time dummy in 2007 and 2009 are 0.133 and -0.183 respectively. To know the real effect of the time dummy, it needs a mathematical operation to retransform it from the logarithm form to its USD value. Then, it can be concluded that there was an addition to export value in 2007 of USD 11.46 billion, whereas in 2009, the

manufacturing export value dropped by USD 13.48 billion.

According to Bulman report (2008), the significant increase in Indonesia's manufacturing exports in 2007 was supported by three conditions. Firstly, the high growth in industries producing automotive, chemical, and agricultural products, with the highest growth being in the automotive industries, growing by 37 percent in 2007. Secondly, the increase in commodity prices, particularly palm oil rising by 55 percent in 2007, also supported improvement in Indonesia's manufacturing export performance. The third factor was that in 2007 Indonesia successfully reduced its dependency on the US as Indonesia's biggest export market. In 2007, the US was still the second largest export market for Indonesia even though its contribution to Indonesia's non-oil and gas export performance decreased, from about 17% in 2000 to 12% in 2007. At the same time, Indonesia's export to Malaysia, RRT and India increased by 48%, 22%, and 21% respectively, which in total, contributed to 22% of Indonesia's non oil and gas export. This export market diversification seems to be beneficial for Indonesia's manufacturing export performance by increasing its value. Additionally, the improvement of export performance in 2007 also contributed to economic growth in Indonesia, reaching 6.3 percent which was the highest growth since the 1990s (Bulman report, 2008).

On the other hand, in 2009, Indonesia's manufacturing exports suffered a significant decrease. This reduction started from the middle of 2008. Based on the Purna report (2009), this reduction was mainly caused by the financial crisis of 2008 which led to a slowdown in the global economy. According to Indonesia economic quarterly report (2009), the highest drops in manufacturing exports were to Japan, Singapore, the US and RRT. These declines were due to a fall in the prices of Indonesia's export commodities such as mining products, oil and rubber.

CONCLUSION AND POLICY RECOMMENDATION

Indonesia's total export value has been decreasing since 2012 due to the global economic crisis and the drop of commodity price in 2011. This study, focusing on export in manufacturing sector, is conducted to support the Indonesian government to overcome this problem. By applying panel data regression using random effect approach, this study analyses the impact of export determinants on Indonesia's manufacturing export performance to the biggest 28 partner countries from 2005 to 2014.

Results of this study show that real GDP and distance between Indonesia and its partner countries have a statistically significant effect on Indonesia's manufacturing export. Real

GDP positively affects manufacturing export, whereas distance negatively affects the export performance. However, Indonesia cannot interfere with these factors, therefore there are no direct policy recommendations that can influence these factors, except to conduct deeper research to understand and maintain Indonesia's export to rich countries which have a higher export share than other countries. In addition, the government should also consider other countries with which to diversify its export market because if GDP of those countries increase in the future, this will encourage an increase in Indonesia's manufacturing export. Moreover, this can also minimize the impact of trade shock suffered by partner countries in the future.

Moving to other factors, ratio of the real exchange rate, number of import days and average tariffs statistically negatively affect Indonesia's manufacturing export. Accordingly, there are suggestions for the Indonesian government to improve manufacturing export values. Firstly, the Indonesian government should stabilise the rupiah exchange rate to prevent the drawback of rupiah depreciation. Moreover, as suggested by Shao et al (2012), the Indonesian government should encourage domestic industries to use more advanced technologies to reduce dependency of Indonesia's export on price competitiveness influenced by the rupiah exchange rate. In regard to import

days and average tariffs, the Indonesian government can suggest simplification of import processes by, for example, promoting a national single window system and tariffs improvement through FTA negotiation in order to improve international trade between countries.

However, the results also reveal that the level of exchange rate, FDI inflows (investment and divestment), foreign population and FTA implementation do not have a statistically significant effect on Indonesia's manufacturing export performance. Focusing on FTA implementation, the Indonesian government is suggested to support the expansion of FTA scope beyond tariff reduction, such as agreement of products standards and customs process simplification. Next, regarding FDI inflows, although they do not statistically affect manufacturing export as a whole, it cannot be assumed that FDI inflows do not support Indonesia's manufactures as study by Rahmaddi and Ichihashi (2013) found that the FDI statistically affects specific sectors of manufacturing in Indonesia. Therefore, deeper study of FDI, using different methods or more specific data for each sector of manufacturing, is required to identify its real impact on manufacturers.

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