# The Relationship Between Globalization and Performance: Evidence from Indonesian Medium and Big Enterprises

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### ABSTRACT

This research investigates the effect of globalization on the firm performance in the Indonesian manufacturing sector. The globalization is proxied by the trade openness and foreign direct investment. This research uses the data from Bureau of Central Statistics (BPS) for the firm performance variable and the data from UNCommTrade for the trade openness variable. The foreign direct investment variable is sourced from the Indonesian Investment Coordination Agency (BKPM). This research uses econometrics analysis of panel data and tobit regression model.

This research found that globalization represented by export has a positive effect on the firm performance. Import has a negative effect on the firm performance as caused by the bulk of imported input in the products. Finally, the spill-over effect coming from FDI has a positive effect on the firm performance.

Keywords: globalization, firm performance, export, import, foreign direct investment

#### 1 Introduction

ASEAN economic community (AEC) will be implemented on 2015 which further eliminates the flow barriers of capital, product and human resources between countries. With respect to the trade flow, the AEC will increase the intensity of the competition between the firms in ASEAN. The domestic firms will be eliminated of their roles if the they cannot compete with the potential entrants coming from the firms in the ASEAN countries. Therefore, it is a concern of the government to apply the appropriate policies to improve the domestic firm performance.

Indonesian economy is characterized by the formal and informal sectors. Although the informal sectors are huge in the number of firms, their outputs are still low around 20% of the total output in the Indonesian economy. The sectors have a significant role in employment absorption. Further, the formal sectors of the medium and big firms are expected to be significantly influenced by the AEC.

Medium and big firms have a significant role in the Indonesian economy<sup>1</sup>. In 2011, the output of the medium and big firms contribute more than 70% on the gross domestic product (GDP). Also this firms absorp about 30% of the total employment in the Indonesian economy. With respect to their important contribution to the Indonesian economy, the performance declining of the medium and big firms must decrease the Indonesian economic performance.

The performance of the medium and big firms are affected by domestic and international factors. In the open economy, the international factors that comes from the "globalization" may have important impact on the firm performance because it can increase competitive pressure and/or higher incentives to learns for the firms (Pangarkar and Wu, 2012). Globalization integrates trade and investment between countries increasing the economic growth of the country participants. Globalization is usually followed by the increase of international trade flows such as export and import, and the increase of international investment flows such as foreign direct investment. Therefore, globalization may boost the economic growth through its effect on the firm performance (Baggs, 2005).

<sup>&</sup>lt;sup>1</sup> According to United Nation Industrial Development Organization (UNIDO), medium firm is defined as the firm having 20-99 employees. Further, the big firm is defined as the firm with 100 employees and more.

In spite of this, the effect of the globalization may not be the same to all countries as well as the firms. With differents of the economy characteristics and national culture, the globalization may have different impact on the firms of each ASEAN country. In spite of this, the medium and big firm are expected to be affected by the globalization more than the small firms because the medium and large firms have more international trade flows and investment than the small firms (see data from BPS, 2013). Moreover, the channels (trade and/or investment) from which the globalization affects the performance of firms are rarely investigated. This is important to see which channel should be encouraged to improve the firm perfromance when the globalization is oppened. Therefore, it is relevant to see what factors from globalization affecting the performance of the medium and big firms.

Finally, the investigation on the effect of globalization on the firm performance is important for policy implication. Undertanding the effect globalization from trade and/or investment will give the policy makers some insights on whether there should be some regulations to improve the efficiency of the domestic market increasing the performance of the medium and large firms as the responses to the globalization.

#### 2 Objective and Research Question

The main objective of this research is to examine the effect of globalization on the performance of medium and large firms. The objective of the research is met by addressing the following research questions:

- 1. What if the effect of the globalization on the firm performance of the medium and big firms?
- 2. Does the globalization affect the firm performance through the channel of trade and/or the channel of foreign direct investment?

#### **3** LITERATURE REVIEW

Globalization can affect the firm performance through the channel of trade and/or spillover effects of foreign direct investment (Asiedu and Freeman, 2007). Through the channel of international trade flows, the domestic firms can gain or loss from exporting and importing the products. Also the learning effect can arise from the export and import activities. Furthermore, domestic firms can gain from foreign direct investment (FDI) through spillover effects of technology and training on the domestics firms. Furthermore, Pangarkar and Wu (2012) suggested

that the globalization my increase competitive pressures and the higher incentives to learn which may improve the firm performance.

Asiedu and Freeman (2007) found that the globalization tended to have a negative effect on the performance of big and medium enterprises in USA. With respect to the emerging market, Pangarkar and Wu (2012) found that there is a positive effect of the globalization on the firm performance. In line with this, Chu and Kalirajan (2010) investigated the effect of trade liberalization on the technical efficiency of the Vietnamese manufacturing firms during the period from 2000 to 2003. They used the firm-specific level data and comprehensive trade data. They found that trade liberalization increases the firm performance.

The effect of trade policy on the firm performance has been frequently examined and most of the research showed that the trade policy affects the firm performance significantly (see Njikam, 2004; Amiti and Konings, 2007). In spite of this, the literatures are still inconclusive on the how the trade policies affect the firm performance. For example, Miljkovic and Shaik (2010) found that the trade protectionism increased technical efficiency in the US agricultural sectors while Njikam (2004), Chu and Kalirajan (2010), Topalova and Khandelwal (2011), and Amiti and Konings (2007) had the reverse conclusions. Henceforth, the study about the effect of the trade policy is still inconclusive.

Previous research found a significant effect of the trade policy on the firm performance, but the results are still inconclusive in term of the positive or negative effects of the trade policies on the firm performance. Also the exact mechanism by which the firms improve their performance as the effect from trade has never been observed. For example, Njikam (2004) investigated the effect of the trade liberalization on the productive efficiency of the Cameroon electrical industry. He concluded that the trade liberalization affected positively the productive efficiency. Using the stochastic frontier approach before and after trade liberalization, he found the increase in the technical progress and technical efficiency of the firms after the trade liberalization.

Furthermore, Chu and Kalirajan (2010) investigated the effect of trade liberalization on the technical efficiency of the Vietnamese manufacturing firms. They used the firm-specific level data and comprehensive trade data in the period from 2000 to 2003. They found that trade liberalization increases the firm performance through the increase in the better input of skilled labor supporting the higher potential output in the long-run.

Also Amiti and Konings (2007) estimates the productivity gains from reducing tariffs on output and from reducing tariff on intermediate inputs. They use the Indonesian manufacturing survey from 1991 to 2001. They concluded that the 10% point fall of input tariff increases the productivity by 12% for firms that import their inputs. With the same condition, the gains from reducing the output tariff are less at least two times than the gains from the reducing the input tariff.

Morever, Miljkovic and Shaik (2010) investigated the impact of trade openness on the technical efficiency in the US agricultural sector. They used the stochastic frontier approach to derive the technical efficiency score. The results indicated that the trade protectionism represented by the lower share of the agricultural import on the agricultural GDP increases the technical efficiency. In addition, the share of the agricultural export on the agricultural GDP does not have any impact on the technical efficiency.

In addition, Topalova and Khandelwal (2011) investigated the causal link between the tariffs and firm productivity in India manufacuring sectors. They use the standard approach: (1) estimating the firm productivity, (2) Estimating the effect of trade policies changes on the changes of the manufacturing firm productivity. Their research found that the decrease in the output tariff (pro-competitive forces) and input tariff increases firm productivity with the input tariff has a larger effect on the productivity. They argued that there are two forces driving the findings: (1) The lower tariff caused the increase in the competition which generated the better efficiency, (2) The lower tariff increased the number and volume of imported inputs causing firms to have more access and cheaper inputs.

#### **4 RESEARCH METHOD**

#### 4.1 Data

This research uses the survey data of the medium and big firms from the Bureau of Central Statistics (BPS). The sample taken from 10 (ten) major industries with the biggest export (Kemenperin, 2014)<sup>2</sup>, as follows:

- 1. Processed Coconut
- 2. Rubber
- 3. Textile
- 4. Steel, machine, and machines
- 5. Electronics

<sup>&</sup>lt;sup>2</sup> These industries are also classified as the pioneer industries which become the priority of the industrial development in Indonesia.

- 6. Coal and alumunium
- 7. Basic Chemistry
- 8. Paper and pulp
- 9. Food and beverages
- 10. Wood industry

The 10 (ten) major industries are taken using Klasifikasi Baku Lapangan Usaha (KBLI) at four digit level or four digit ISIC level. The five digit level is not available for the foreign direct investment variable. Furtheremore, the performance of the medium and big firms is aggregated through each industry to the match data of the trade and investment variables. Furthermore, this research uses the period from 2005 until 2011.

Some variables related to the globalization i.e export-import and foreign direct investment are taken from the other sources such as from UnCommTrade, Central Bank of Indonesia, Investment Coordination Board (BKPM), and Bureau of Central Statistics. Therefore, the variables for globalization is taken at the industry level.

#### 4.2 Modelling

#### 4.2.1 Measuring the Variables

This research will measure the firm performance using two indicators: profitability and technical efficiency.

a. Profitability will be measured as<sup>3</sup>:

 $Profit = \frac{Value added - labor cost}{Revenue}$ 

Where the profit is the profitability and value added (Rupiah=Rp) is the revenue (Rp) minus all the intermediate cost (Rp).

b. Technical efficient will be measured using the data envelopment analysis (DEA).

DEA assumes that there are data on N inputs and M outputs for each of I firms. For the *i-th* firm these are represented by the column vectors xi and qi, respectively. The NxIinput matrix, X, and the MxI output matrix, Q represent the data for all I firms. This

<sup>&</sup>lt;sup>3</sup> Although the formula can be defined as the price-cost margin, Bain (1956) used this as the profitability.

research uses the output-oriented DEA model by solving the mathematical programming problem as in Coelli *et al.* (2005) :

$$\max_{\theta,\lambda} \phi,$$
st  $-\phi q_i + Q\lambda \ge 0,$ 
 $x_i - X\lambda \ge 0,$ 
 $II'\lambda = 1$ 
 $\lambda \ge 0,$ 
(1)

where represents a Farrel measure of technical efficiency (Farrel, 1957) with  $\infty$ , and is the proportional increase in outputs that could be achieved by the i-th firm, with input quantities held constant.  $\lambda$  is an IxI vector of constants and  $II'\lambda=1$  is a convexity constraint, with II being an IxI vector of ones. We define as a measure of technical efficiency that assumes values in the unit interval so that the bootstrap method that follows is well defined. The input variables used for the DEA is the raw materials (Rp), Labor cost (Rp), and fixed capital (Rp). The output variable is represented by the sales of the firms (Rp).

Furthermore, the globalization is measured by trade flows and foreign direct investment, as follows:

a. Export (Exp)

Export is measured by the ratio of export value of each industry to output total of the industry:

$$Exp = \frac{Export}{Output}$$

b. Import (Imp)

Import is measured by the ratio of import value of each industry to output total of the industry:

$$Imp = \frac{Import}{Output}$$

c. Foreign direct investment (FDI)

Foreign direct investment is related to the direct foreign investment on business by buying a domestic company or expanding business in a target country.

#### 4.2.2 The Relationship between Firm Performance and Globalization

To investigate the effect of the globalization on the firms performance, this research uses panel data model, as follows:

$$Perf_{ii} = \beta_i + \beta_1 Global_{ii} + e_{ii}$$
(2)
(+)

Where *perf* is the firm performance; *global* is globalization; *i*, *t* index firm and year, respectively. The Eq. (2) will be estimated to see the effect of the globalization i.e. trade and investment variables on the firms performance. With respect to the technical efficiency as the one of the performance measures, this research uses the Tobit regression because the technical efficiency will be between 0 and 1. Globalization is hypothesized to have a positive effect on performance of the large and small firms.

Moreover, the possibility to treat the foreign direct investment and export-import as the endogenous variables can be possible if the problem of endogeneity is significant in the model. For example, in case the problem of endogeneity is significant for the FDI, it is relevant to apply the method of instrumental variables on eq. (6) by using the shifters of foreign direct investment such as tax revenue, import duties, and GDP. In addition, the correction on the models will be applied if the estimation violates the assumptions of the classical linier regression model.

#### 5 **RESULTS**

#### 5.1 Data Description

This research uses the following subsectors of the Indonesian manufacturing industry to investigate the effect of globalization on the firm performance :

- Processed Coconut (KBLI 1042 & KBLI 1043)
- Rubber (KBLI 2212 & KBLI 22199)
- Textile (KBLI 1392, KBLI 1393, KBLI 1394, and KBLI 1399)
- 4. Steel and machine

(KBLI 2711, KBLI 2811, KBLI 2817, KBLI 2819, KBLI 2821, KBLI 2822, KBLI 2823, KBLI 2824, KBLI 2825, KBLI 2826, and KBLI 2829)

- 5. Electronics (KBLI 2611, KBLI 2612, KBLI 26410, KBLI 26420, and KBLI 26490)
- Coal and alumunium (KBLI 2511, KBLI 1910, and KBLI 1929)
- Basic Chemistry (KBLI 2011)
- Paper and pulp (KBLI 1701, KBLI 1702, and KBLI 1709)
- 9. Food and beverages

(KBLI 1011, KBLI 1012, KBLI 1013, KBLI 1021, KBLI 1022, KBLI 1029, KBLI 1031, KBLI 1032, KBLI 1033, KBLI 1039, KBLI 1041, KBLI 1042, KBLI 1043, KBLI 1049, KBLI 1051, KBLI 1052, KBLI 1053, KBLI 1059, KBLI 1061, KBLI 1062, KBLI 1071, KBLI 1072, KBLI 1073, KBLI 1074, KBLI 1075, KBLI 1076, KBLI 1077, KBLI 1079, KBLI 1080, KBLI 1101, KBLI 1102, KBLI 1103, KBLI 1104, and KBLI 1109.

10. Wood industry

(KBLI 1610, KBLI 1621, KBLI 1622, KBLI 1623, and KBLI 1629)

Matching with the availability of the data, some of the listed subsectors are not included in the model.

Variable	Mean	Standard Deviation	Coefficient of Variation	Minimum	Maximum
PCM	0.203	0.153	0.753	-2.794	3.119
TE	0.400	0.249	0.622	0.100	1.000
Export	4.95*10 <sup>8</sup>	3.52*10 <sup>9</sup>	7.111	1	5.30*10 <sup>10</sup>
Import	3.05*10 <sup>8</sup>	2.33*10 <sup>9</sup>	7.639	8	$4.20*10^{10}$
Output	5.70*10 <sup>9</sup>	$2.75*10^{10}$	4.825	7500	7.33*10 <sup>11</sup>
FDI	3.76*10 <sup>12</sup>	3.48*10 <sup>12</sup>	0.926	0	$1.03 * 10^{13}$
N-Subsectors	66	66	66	66	66
Period	2005-2011	2005-2011	2005-2011	2005-2011	2005-2011

Table 1. Descriptive statistics of the variables from 1995-2006 Across Industries

Source: own calculation

Table 1 shows the descriptive statistics of the variables used in this research. The variables export and import have high variation across period and across total firms in subsectors. Export and

Import have coefficients of variation of 7.111 and 7.639 which are relatively very high indicating that firms in the industries have significant differences in their export and import.

Table 1 shows the positive average price-cost margin of the firms in the industries indicating that the firms are profitable operating in the industry. Price-cost margin has average of 0.203 or 20.3% with coefficient of variation of 0.753. Furthermore, the firms are relatively inefficient in the industry shown by the average technical efficiency (TE) of 0.40 which indicates that firms in the industry can still increase their output by 60% given the inputs. Foreign direct investment (FDI) has average of  $3.76*10^{12}$  with coefficient of variation 0.926. There are firms in the some industries which do not have any foreign direct investment during the period 2005-2011. Furthermore, output has a high variation with mean of  $5.70*10^9$  and coefficient of variation around  $2.75*10^{10}$ .

#### 5.2 The Effect of Globalization on the Firm Performances

Table 2 summarizes the estimation results of the model investigating the effect of globalization on the firm performance. The endogeneity problem in the model is not significant in the model, thus this research does not use instrumental variables for the FDI. Also the model has been corrected from the problem of heteroscedasticity using the robust parameter because using the White test of the heteroscedastity, it is found a heteroscedasticity problem at the 5% critical level.

From the Table 2, it is seen that variables of export, import, and FDI are significant affecting the price-cost margin at the 10% and 5% critical level, respectively. The Globalization affects the performance through both trade openness and foreign direct investment.

<b>x</b> 1 1 / <b>x</b> 7 · 11 <del>-</del>	Dependent Variable : PCM	
Independent Variable	Coefficients	
Intercept	0.242***	
	(0.008)	
Export	0.008*	
	(0.004)	
Import	-0.001*	
	(0.000)	
FDI	0.006**	
	(0.003)	
$R^2$	0.100	

Table 2. Regression of Globalization on the Price-Cost Margin

Independent Variable	Dependent Variable : PCM	
	Coefficients	
F-statistics	4.200***	
<i>Notes</i> : Values of SE are given within parentheses		

\* denotes test statistic significance at the 10% level

\*\* denotes test statistic significance at the 5% level

The export variable has coefficient of 0.008 and significant at 10% critical level. This indicates that the increase of export relative to the output by 1 unit, increases price-cost margin of the firms in he industry by 0.008 unit, ceteris paribus. The increase of the export variable increases the sales of the firms which raises the price-cost margin because of the reduction in the unit cost. Furthermore, the import variable has the coefficient of -0.001 and significant at 10% critical level. This indicates that the increase of import relative to the output by 1 unit, decreases price-cost margin of the firms in the industry by 0.001, ceteris paribus. Competition coming from the new imported product decreases the price-cost margin of the firms. This might be caused by the lower price of the imported products causing the domestic firms to decrease the price.

Finally, the FDI variable has the coefficient of 0.006 and significant at 5% critical level. This shows that every 1 unit increase in the FDI, increases the price-cost margin of the firms by 0.006 unit, ceteris paribus. The increase in the price-cost margin can be sourced from the better technical progress coming from the spill over effect of the FDI which may have effect in reducing the unit cost.

Table 3 shows the regression of the technical efficiency with the variables of globalization using Tobit regression estimation. The Tobit regression is applied because there is an upper limit and lower limit of the dependent variable of technical efficiency. The technical efficiency has upper and lower limit of 1 and 0, respectively. The model will have biased parameters if the model is estimated using the ordinary least square.

Table 3.	Regression	of Globa	lization on	the Tech	nnical Efficien	cy
	<u> </u>					

Independent	Dependent Variable : TE
Variable	Coefficients
Intercept	0.242***

Independent	Dependent Variable : TE
Variable	Coefficients
	(0.008)
Export	1.45*10 <sup>-5</sup> ***
	(2.68*10 <sup>-6</sup> )
Import	-0.003****
	(0.001)
FDI	0.006***
	(0.002)
<b>F-statistics</b>	10.330***

Notes: Values of SE are given within parentheses

\*\* denotes test statistic significance at the 5% level

\*\*\* denotes test statistic significance at the 1% level

As shown in the Table 3, the trade openness (export and Import) and FDI have significant effect on the technical efficiency at the 1% critical level. The export variable has a coefficient of 1.45\*10<sup>-5.</sup> This indicates that the increase of export relative to the output by 1 unit, increases technical efficiency of the firms in the industry by 1.45\*10<sup>-5</sup> unit, ceteris paribus. As expected, the export increases the competitiveness of the firms sourced from the learning effect coming from the competition in the global market. The competition intensity causes firms to be more technically efficient in transforming the input into the output.

The import variable has a coefficient of -0.003 indicating that the increase of import relative to the output by 1 unit, decreases technical efficiency of the firms in the industry by 0.003 unit, ceteris paribus. The result is not as expected, since the increase in the import is expected to increase the competition raising the technical efficiency. This could be happen if the imported products are the input of production which is the case in the Indonesian economy.

In addition, the FDI has positive coefficients on the firms technical efficiency with the coefficient of 0.006. This indicate that every 1 unit increase in the FDI, increases technical efficiency by 0.006. The spill-over effects coming from the FDI is expected to increase the ability of the firms in adopting the new technologies. The new technologies increases the technical efficiency through the efficiency in transforming the input into output.

#### **6** CONCLUSION AND POLICY IMPLICATIONS

#### 6.1 Conclusion

This research investigates the effect of globalization on the firm performance of Indonesian manufacturing industry. The globalization is represented by trade openness (export and import) and foreign direct investment (FDI). The firm performance is defined as the average of the price-cost margin and the technical efficiency. Overall, this research found that globalization has a positive effect on the firm performance. This research has the following findings:

- Trade openness represented by export has a negative effect on the firm performance in the Indonesian manufacturing industry. Export has a positive effect on both price-cost-margin and technical efficiency.
- Trade openness represented by import has a negative effect on the firm performance in the Indonesian manufacturing industry. Import affects the price-cost margin and technical efficiency negatively.
- Foreign direct investment has a positive effect on the firm performance in the Indonesian manufacturing industry. There is a spill-over effect coming from the FDI for the domestic firms.
- The globalization affects the performance of the firms through both the trade openness and foreign direct investment. The learning effect and spill-over effect coming from the respective trade openness and foreign direct investment are the positive outcome stemming from the globalization.

#### 6.2 Policy Implications

This research has policy implications for the government with respect to the response of the globalization.

- Government should help the firms in improving the technical efficiency by giving them supporting policy and funding to adopt new technology.
- The import of the input product should be reduced to increase the technical efficiency of the firms. The bulk of imported input in the domestic product causes the domestic product to be inefficient.

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## APPENDIX I: DATA

KBLI	FDI (trillion Rp)	Export (trillion Rp)	Import (trillion Rp)	Technical Efficiency
1011	1.344	0.012	0.198	0.260
1012	1.676	0.004	0.051	0.376
1013	1.344	0.033	0.111	0.364
1021	1.404	0.270	0.004	0.327
1022	1.540	1.114	0.089	0.391
1029	1.676	1.958	0.175	0.323
1031	1.344	0.104	0.523	0.260
1032	1.510	0.479	0.528	0.313
1033	1.676	0.854	0.532	0.150
1039	1.676	0.040	0.055	0.196
1041	1.344	0.607	0.040	0.322
1042	1.344	17.803	0.310	0.352
1043	1.344	8.929	1.418	0.410
1049	1.344	0.055	2.526	0.341
1051	1.344	0.000	0.001	0.403
1052	1.676	0.002	0.025	0.379
1053	1.344	0.126	0.086	0.296
1059	1.344	0.116	1.112	0.251
1061	1.391	2.266	1.104	0.334
1062	1.404	3.090	0.817	0.277
1071	1.374	1.550	3.654	0.400
1072	1.344	0.011	6.491	0.263
1073	1.344	5.082	0.185	0.247
1074	1.344	0.004	0.001	0.446
1075	1.344	0.096	0.002	0.362
1076	1.344	0.189	0.004	0.313
1077	1.565	0.031	0.008	0.321
1079	1.676	0.002	0.031	0.296
1080	1.528	0.074	0.014	0.271
1101	1.590	0.036	0.018	0.213
1102	1.598	0.037	0.021	0.237
1103	1.572	0.049	0.017	0.427
1104	1.586	0.041	0.019	0.363
1109	1.585	0.042	0.019	0.348
1392	1.984	0.013	0.057	0.282
1393	2.076	0.360	0.052	0.320
1394	2.076	0.355	0.245	0.310
1399	2.076	0.351	0.438	0.220

KBLI	FDI (million <b>D</b> m)	Export	Import	Technical
1(10	(trillion Rp)	(trillion Rp)	(trillion Rp)	Efficiency
1610	0.028	0.046	0.004	0.315
1621	0.028	1.609	0.103	0.345
1622	0.028	0.000	0.000	0.307
1623	0.028	0.045	0.002	0.298
1629	0.018	8.613	0.093	0.297
1701	0.379	0.046	0.046	0.330
1702	0.379	0.195	0.085	0.412
1709	0.379	0.152	0.034	0.286
1910	3.468	1194.429	10.814	0.317
1929	3.468	105.084	51.338	0.268
2011	2.329	0.099	0.086	0.332
2212	2.032	1.037	0.004	0.361
2511	2.610	35.406	17.143	0.272
2611	2.323	12.181	5.744	0.331
2612	10.068	2.349	8.079	0.300
2641	5.000	16.646	10.322	0.535
2642	5.797	10.392	8.048	0.247
2649	10.068	1.273	0.437	0.211
2711	7.825	0.650	3.461	0.265
2811	4.181	0.034	0.620	0.303
2817	6.144	7.776	20.516	0.219
2819	8.106	0.817	1.095	0.209
2821	8.106	0.052	0.604	0.333
2822	8.106	1.852	7.182	0.253
2824	8.106	1.541	10.914	0.315
2825	8.106	0.010	0.107	0.188
2826	7.125	0.020	0.307	0.246
2829	8.106	0.000	0.006	0.239

## APPENDIX II: REGRESSION

Tobit regression	Number of obs	=	230		
F( 3	e, 227) = 10.330				
Prob	> F = 0.0001				
Log pseudolikelihood	l = -5.5795062		Pseudo R2	=	0.2175

Robust	
Intercept	0.242
	(0.008)
Export	1.45*10 <sup>-5</sup>
	$(2.68*10^{-6})$
Import	-0.003
	(0.001)
FDI	0.006
	(0.002)
F-statistics	10.330

#### **APPENDIX III:**

Number of obs = 230 Linear regression F(3, 226) = 11.43 Prob > F= 0.0000R-squared = 0.0373 Root MSE = .09229 Robust Coef. Std. Err. P>t [95% Conf. Interval] apcm t Ex .0000571 .0000102 5.60 0.000 -.0000772 .000037 0.096 Im -.0026623 .0015913 -1.67 -.0057979 .0004733 fdi .0053106 .0025986 2.04 0.042 .00019 .0104312 \_cons .2338735 .0079088 29.57 0.000 .2182891 .249458