

Effect of Raw Material Prices, Distribution Costs and Exchange Rates on the Export Volume of Adidas T-shirts at PT. Apparel One Indonesia 2

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ABSTRACT

Based on the background of the research, the cause of Adidas's export volume which fluctuates every month from 2016-2019 is unknown yet. Factors that could be the cause of these fluctuations are the raw material price, distribution cost, and exchange rates. The research aims to analyze the effect of Raw Material Price on export volume, the effect of Distribution Cost on export volume, the effect of Exchange Rate on Export Volume, and the effect of Raw Material Price, Distribution Cost, and Exchange Rate on export volume of Adidas at PT. Apparel One Indonesia 2 and to find out how many contributions of all independent variables to dependent variable. This research is an explanatory research with quantitative approach. Multiple Linear Regression Analysis method is used in this study equipped with the Descriptive Statistics Test, Classic Assumption Test, Correlation Coefficients, Coefficient of Determination, F-Test and T-Test. Data used in this study are secondary data which are obtained by doing a literature review and observation, and collected from PT Apparel One Indonesia 2 and Bank of Indonesia from January 2016-December 2018. The output from this research shows that three independent variables which are used have a significant effect on the export volume of Adidas at PT. Apparel One Indonesia 2. Partially, it shows that raw material price influence negative and insignificant to the export volume. For distribution cost, the result shows negatively and significantly influence on export volume. The other output explained that exchange rate influence positive and insignificant to the Adidas's export volume. The result shows that only one variable has a significant influence on export volume.

Keywords: Raw Material Price, Distribution Cost, Exchange Rate, Export Volume

Pengaruh Harga Bahan Baku, Biaya Distribusi dan Nilai Tukar terhadap Volume Ekspor Kaos Adidas di PT. Apparel One Indonesia 2

ABSTRAK

Berdasarkan latar belakang penelitian, penyebab volume ekspor Adidas yang berfluktuasi setiap bulan dari 2016-2019 belum diketahui. Faktor-faktor yang dapat menjadi penyebab fluktuasi ini adalah harga bahan baku, biaya distribusi, dan nilai tukar. Penelitian ini bertujuan untuk menganalisis pengaruh Harga Bahan Baku terhadap volume ekspor, pengaruh Biaya Distribusi terhadap volume ekspor, efek Pertukaran Nilai Volume Ekspor, dan pengaruh Harga Bahan Baku, Biaya Distribusi, dan Nilai Tukar terhadap volume ekspor Adidas di PT. Pakaian One Indonesia 2 dan untuk mengetahui berapa kontribusi semua variabel independen terhadap variabel dependen. Penelitian ini adalah penelitian penjelasan dengan pendekatan kuantitatif. Metode Analisis Regresi Linier Berganda digunakan dalam penelitian ini yang dilengkapi dengan Uji Statistik Deskriptif, Uji Asumsi Klasik, Koefisien Korelasi, Koefisien Determinasi, Uji F dan Uji-T. Data yang digunakan dalam penelitian ini adalah data sekunder yang diperoleh dengan melakukan tinjauan pustaka dan observasi, dan dikumpulkan dari PT Apparel One Indonesia 2 dan Bank Indonesia dari Januari 2016 - Desember 2018. Output dari penelitian ini

menunjukkan bahwa tiga variabel independen yaitu yang digunakan berpengaruh signifikan terhadap volume ekspor Adidas di PT. Apparel One Indonesia 2. Secara parsial, hal ini menunjukkan bahwa harga bahan baku berpengaruh negatif dan tidak signifikan terhadap volume ekspor. Untuk biaya distribusi, hasilnya menunjukkan pengaruh negatif dan signifikan terhadap volume ekspor. Output lainnya menjelaskan bahwa nilai tukar berpengaruh positif dan tidak signifikan terhadap volume ekspor Adidas. Hasilnya menunjukkan bahwa hanya satu variabel yang memiliki pengaruh signifikan terhadap volume ekspor.

Kata kunci: *Harga Bahan Baku, Biaya Distribusi, Nilai Tukar, Volume Ekspor*

INTRODUCTION

In the globalization era, there is no country that completely self-sufficient. It means that the production of a country is not enough to fulfill the needs of the country's goods and services. International trade has existed since ancient times. Smith (2012) has been said in his theory of absolute advantage if each country will be benefiting from international trade because it specializes in the production and export of goods if the country has an absolute advantage, otherwise imports goods if the country has an absolute disadvantage.

There are a variety of ways to enter a foreign market. Direct export is one of the foreign market entry modes. Hill (2009) explained the advantages of this entry mode. First, it avoids the big costs for establishing manufacturing operations in the host country, and second, the firm may realize substantial scale economies from its global sales volume. As has been explained in Hecksher-Ohlin's theory in Nopirin (2017) that a country will export products that production cost is low and raw materials are abundant.

The development of the fashion industries nowadays make apparel is not only a basic needs for humans but also a new lifestyle as personal satisfaction. Thus, apparel needs are increasing. Apparel is a commodity that not all countries can meet their own needs because of differences in resources owned by each country.

Garment exports are believed to be one of the engines of Indonesian economic growth. Garment industries have the potential for an income of a country. In 2016, the

Garment Industry ranked fourth as the highest export value industries. The garment has contributed 7,21 Billion Dollar US according to the Indonesia Ministry of Industry.

One of the garment companies that contribute to export garment in Indonesia is PT. Apparel One Indonesia 2. PT Apparel One Indonesia 2 is a part of Triputra Group which runs in the garment industry. Established since 2015, PT Apparel One Indonesia 2 has the biggest customer, Adidas International Trading. This company is a manufacturing company that produces various kinds of sportswear with different models or styles and materials (fabric). All the product will be exported to many countries such as America, China, England, etc.

The amount of the export volume of Adidas at PT. Apparel One Indonesia 2 in 2016 was 5.659.731 pieces, in 2017 was 8.807.651 pieces and in 2018 was 7.603.657 pieces. It can conclude that the number of export fluctuate from year to year. But if we look at it by the month, the exports were not stable. For example, in 2016, in April, the export volume fell dramatically from 836.081 to 152.209 in a month. Then, from May until September, the number of volumes were fluctuating before rising considerably to 826.478. In 2017, in February, the export volume dropped by 532.461. However, in March the volume increased. Then in the following month, there were fluctuate considerably. In 2018, the highest export volume was in November by 1.466.662.

The rise and decline of export volume can be caused by several factors. In previous research, Makatita (2016) explained in

Analisis Faktor-Faktor Yang Mempengaruhi Ekspor Tepung Kelapa Sulawesi Utara, the factors which influence the export volume of coconut flours are exchange rate, the amount of coconut production and price.

On the other hand, Millath (2016) stated that the transportation model and INCO terms to distribute the product have an impact on export value.

In order to do export activities, production activities must be carried out. The products produced by the company have high-quality standards in accordance with the provisions of Adidas. For this reason, the raw materials used cannot be arbitrary. The raw materials used come from abroad because they have better quality and cheaper prices.

In marketing strategy, it is necessary to consider how the product will reach to consumers, so distribution activities need to be done. Distribution aims to deliver products from producers to consumers. In the process of transferring the product, costs are needed. The cost included such as shipping, storage, insurance, and other costs arising from the shipping process.

In carrying out export-import activities, PT Apparel One Indonesia 2 uses the USD (US Dollar) currency as a means of payment. Changes in the rupiah exchange rate against the US dollar have always been considered by the company.

In previous studies, raw material price was stated to had significant negative effect on the export volume of Adidas Sportswear (Kusuma, 2018). According to research conducted by Prasojo (2017) by the title "*Pengaruh Biaya Distribusi dan Harga Produk Terhadap Volume Penjualan Ekspor Pada Pupuk Organik SAN 500gr (Studi kasus pada PT. Indmira Yogyakarta)*" stated that the distribution costs have a significant and negative effect on the export volume of organic fertilizer PT. Indmira Yogyakarta. In research conducted by Ginting (2013), the exchange rate has a negative and significant influence on Indonesian exports. Vice versa, research carried out by Kusuma (2018)

presents that the exchange rate variable has a positive and significant influence on the export volume.

Factors of raw material prices, distribution costs, and exchange rates can be used as company considerations when it will make improvements to the increase in export volume. The company needs to evaluate these factors in order to be able to increase its export volume every month. This makes the company need to know which factors have the greatest influence on the export volume so that when making policy, company management knows which factors should be prioritized for review. Therefore, this study was aimed to determine the influence of raw material price, distribution cost and exchange rate partially and collectively on export volume of Adidas at PT. Apparel One Indonesia 2.

METHOD

This study used explanatory study method with quantitative approach. Data which can be computed is called quantitative data (Kothari and Garg, 2015). Quantitative data is used in this research are Exchange Rate, Raw Material Price, Distribution Cost and Export Volume of Adidas.

The data that were analyzed in this study were secondary data obtained from PT. Apparel One Indonesia 2 and Bank Indonesia (www.bi.go.id). The data were collected by documentary research and observation techniques. The data were time series data in the form of monthly reports within the period of January 2016 – December 2018.

Based on the research, the variables were categorized into dependent variable and independent variable. In this study, the dependent variable was Export Volume of Adidas and the independent variable of this study were product Raw Material Price, Distribution cost at PT. Apparel One Indonesia 2 and exchange Rate of Rupiahs.

The data was processed using IBM SPSS 25. There were several steps to complete the multiple linear regression

analysis in this research. Firstly, Descriptive Statistics. Secondly, Classic assumption test. The third was F-test and then was t-test. Next, coefficient of determination test that measures the proportion of independent variables explain the dependent variable. The last was interpretation of multiple linear regression model.

Descriptive analysis is the transformation of raw data into a form that will make it easy to understand and interpret; rearranging, ordering, and manipulating data to generate descriptive information (Zickmund, 2003). Descriptive analysis is used to describe the basic features of the data in the study.

Classic assumption test is used to find out whether there is a deviation in the data or not. According to Ghozali (2016), there are five classic assumptions test instruments. There are multicollinearity, autocorrelation, heteroscedasticity, normality, and linearity. Multicollinearity test aims to examine whether the regression model found a correlation between independent variables. Autocorrelation test is used to see that there is a linear relationship between the errors on a series of observations, sorted by time (time series). Heteroscedasticity test is used to test if there is a regression model residual variance inequality from one observation to another observation. Normality test aims to determine whether the independent variable and dependent variable normally distributed or not. Linearity test is used to determine whether two or more variables have a significant linear relationship or not.

Multiple linear regression analysis is carried out to predict the values of a dependent variable, Y , given a set of p

explanatory variables (x_1, x_2, \dots, X_p) (Tranmer, 2008). A correlation coefficient (R) is a value that shows the strength of the linear relationship between two variables. The coefficient of determination (R^2) basically measures how far the model's ability to explain variations in independent variables.

RESULTS AND DISCUSSION

Descriptive Statistics

The maximum value of export volume of Adidas was 1.466.662 PCS in November 2018 and the minimum export value was 68.715 PCS in July 2016. Out of 36 N data, the mean value of the dependent variable was 613.084,42 PCS and deviation of this variable was 334912,938 PCS.

Raw material price (RP) has highest value at 2,75 USD and the lowest value at 1,55 USD from 36 N data which then averaged at 2,1008 USD with a standard deviation of 0,25848 USD.

The highest value of the other independent variable, distribution cost (DC) was 3.816 USD and the lowest value was 2.642 USD. The average out of 36 N data was 3084,14 USD with a standard deviation of 307,371.

The highest appreciation of Rupiahs exchange rate was Rp 12.998 meanwhile the highest depreciation of Ruiahs value was Rp 15.227 with a average of Rp 13636,03 and a standard deviation of 534,742.

Classic Assumption Test

Multicollinearity test aims to test whether the independent variables with the dependent variable found a correlation. A good model is a model that does not correlate with the variables.

Table 1. Multicollinearity Test

Model		Coefficients ^a	
		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Raw Material Price	,954	1,048
	Distribution Cost	,971	1,030
	Exchange Rate	,980	1,020

Source: Secondary Data (Processed), 2019

Table 1 elucidates that the value of tolerance was greater than 0,10 and VIF value less than 10 for each variable. So, there was no presence of multicollinearity among independent variables and each variable was feasible to use in the regression model.

The autocorrelation test aims to test whether in the regression model there is a correlation between confounding errors in the period *t* and the previous period. Durbin-Watson test were used in this research.

Table 2. Autocorrelation Test Output

Model Summary ^b	
Model	Durbin-Watson
1	2,054

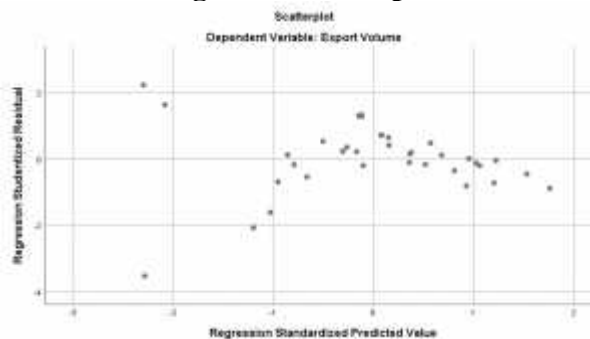
Source: Secondary Data (Processed), 2019

The value *d* was 2,054 between the value of *dU* was 1,6539 and the value of $4 - dU$ was 2,3461. So the result is $dU < d < 4 - dU$ and it was proved that there was no autocorrelation detected in this data.

variance from residual inequality occurs one observation to another observation. To test heteroscedasticity is by looking at the spread of variance on scatterplot diagram in SPSS output.

The purpose of Heteroscedasticity test is to test whether in the regression model

Figure 1. Scatterplot



Source: Secondary Data (Processed), 2019

The point distribution did not form a particular pattern. The points also spread at random areas both above and below zero (0) on Y axis. So, it can be concluded that heteroscedasticity did not occur in this analysis. In other words, this model is homoscedasticity.

The normality test aims to test whether in the regression model, between residual variables and bullies have a normal distribution. Tests carried out using one-sample Kolmogorov-Smirnov statistical test.

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test	
Asymp. Sig. (2-tailed)	,073 ^c

Source: Secondary Data (Processed), 2019

The data were normally distributed because the sig. value is 0,073 higher than 0.05.

The last test is linearity test. Linearity test is used to see whether the specifications of the model used are correct or not. Linearity test can be done by Curve Estimation.

Table 4. Linearity Test of Raw Material Price

Model Summary and Parameter Estimates	
Dependent Variable: Export Volume	
Equation	Model Summary Sig.
Linear	,248
Logarithmic	,284
Inverse	,332
Quadratic	,451
Cubic	,451
Compound	,252
Power	,286
S	,330
Growth	,252
Exponential	,252
Logistic	,252
The independent variable is Raw Material Price.	

Source: Secondary Data (Processed), 2019

The result showed that the all the equation was more than 0.05. Then, it means

that the Raw Material Price had a linear correlation with Export Volume.

Table 5. Linearity Test of Distribution Cost

Model Summary and Parameter Estimates	
Dependent Variable: Export Volume	
Equation	Model Summary Sig.
Linear	,000
Logarithmic	,000
Inverse	,000
Quadratic	,000
Cubic	,000
Compound	,000
Power	,000
S	,000
Growth	,000
Exponential	,000
Logistic	,000
The independent variable is Distribution Cost.	

Source: Secondary Data (Processed), 2019

The result showed that the linear equation was significant because sig. value 0.000 was less than 0.05, so the other

equations were ignored. Then, it means that the Distribution Cost had a linear correlation with Export Volume.

Table 6. Linearity Test of Exchange Rate

Model Summary and Parameter Estimates	
Dependent Variable: Export Volume	
Equation	Model Summary
	Sig.
Linear	,532
Logarithmic	,533
Inverse	,534
Quadratic	,530
Cubic	,529
Compound	,521
Power	,522
S	,523
Growth	,521
Exponential	,521
Logistic	,521

The independent variable is Exchange Rate.

Source: Secondary Data (Processed), 2019

The result showed that the all the equation was more than 0.05. Then, it means that the Exchange Rate had a linear correlation with Export Volume.

Multiple Linear Regression

Correlation coefficient is used to see the relationship between independent variables and dependent variable.

Table 7. Correlation Coefficients

Model Summary^b	
Model	R
1	,976 ^a

Source: Secondary Data (Processed), 2019

The R value which is the correlation between the flow of raw material prices, distribution costs and the exchange rate together which had a relationship to the Adidas export volume of 0,976. The interpretation of the relationship of independent variables together to export volume variables is very strong. A positive

sign on the R value indicates the independent variable is directly related to the dependent variable.

The coefficient of determination is used to measure the ability of the model to explain the variation of the dependent (Ghozali 2016:95).

Table 8. Determination Coefficients

Model Summary^b	
Model	Adjusted R Square
1	,947

Source: Secondary Data (Processed), 2019

The value of adjusted R² is 0,947 which means that the variability of the dependent variable (export volume) can be

explained by the variability of the independent variable (raw material prices, distribution cost, and the exchange rate) of

94.7%. While the remaining 5.3% is explained by other variables not included in the regression model.

The F-test is a test to see how the effect of all the independent variables together on the dependent variable (Ghozali, 2016:96).

Table 9. F-test

ANOVA ^a	
Model	Sig.
1 Regression	.000 ^b

Source: Secondary Data (Processed), 2019

Based on the statistic f-test, the significance value was 0,000 that was less than 0.05. Therefore, H₀₄ was rejected and H_{a4} was accepted. It means that Raw Material Price (RP), Distribution Cost (DC) and

Exchange Rate (ER) significantly influenced Export Volume of Adidas (EV).

The T-test is known as a partial test, which is to test how the influence of each independent variable individually explain the dependent variable (Ghozali 2016:97).

Table 10. T-Test

Model	Coefficients ^a			t	Sig.
	Unstandardized Coefficients				
	B	Std. Error			
1	(Constant)	24,796	3,057	8,112	,000
	Raw Material Price	-,136	,211	-,645	,523
	Distribution Cost	-6,775	,276	-24,570	,000
	Exchange Rate	1,108	,696	1,593	,121

Source: Secondary Data (Processed), 2019

Based on the results, it can be concluded that a sig. value of raw material price variable was 0,523 which was higher than 0,05. As a result, H₀₁ was accepted and H_{a1} was rejected. It means that partially there was no significant influence of Raw Material Price (RP) on Export Volume (EV).

The value of significance for distribution cost variable was 0,000 which was less than 0,05. The conclusion is H₀₂ was rejected and H_{a2} was accepted, so that Distribution Cost (DC) partially and significantly influenced Export Volume (EV).

The significance of the exchange rate variable was 0,121 higher than 0,05, then H₀₃ was accepted and H_{a3} was rejected. It means that there was no partial and significant influence of Exchange Rate (ER) on Export Volume (EV).

The regression model of this study is:

$$LgEV = 24,796 - 0,136 LgRP - 6,775 LgDC + 1,108 LgER$$

The constant value in regression model was 24,796 indicates that if the value of raw material price, distribution cost and exchange rate do not change, then the export volume will change by 24,796%.

The regression coefficient obtained from variable raw material prices was -0,136 which means every price increase of 1 %, it will decrease the export volume by 0,136% assuming other variables remains. The regression coefficient value of distribution cost was -6,775 which means that every time there is an increase in the distribution cost of 1%, it will decrease the volume of exports by 6,775%.

The last variable was exchange rate. The regression coefficient value obtained was 1,108 which means that every time there is an increase in the rupiah exchange rate of 1%, it will increase the volume of exports by 1,108%.

Discussion

Based on the data analysis, it can be obtained that all independent variables which are product price and exchange rate are influencing the dependent variable of export volume of Adidas t-shirts at PT. Apparel One Indonesia 1. The independent variables in this study are also able to explain the variance of the dependent variable for 46%.

The variable of product price has a negative and significant effect toward export volume of Adidas t-shirts. This result is also in accordance to the demand theory which stated that the relation between price and demand is negative. If the price of a goods is increased, then the demand of the goods will be decreased and vice versa. In other words, the higher the product price, the lower the demand of Adidas t-shirts, thereby reducing the export volume of the products.

On the other hand, the variable of exchange rate has an insignificant effect on export volume of Adidas t-shirts. The depreciation of domestic exchange rate will promotes export volume because the price of domestic commodity will be cheaper in the international market.

The depreciation of exchange rate is considered as an incentive for a company to increase their exports, but doesn't necessarily means that they can sell as much goods as possible. Export volume can also be affected by the importer's country needs. Other than that, the complexity of the production process of manufacture industry company can also be a factor. The depreciation of exchange rate will elevates the price of imported raw materials needed to produce the goods.

This study showed that the variable of product price is significantly influencing the export volume of Adidas t-shirts. According to that, it can be implied that in order to increase the export volume, PT. Apparel One Indonesia 1 should consider to be able to give a competitive price as this study resulted that the lower the price, the export volume will be higher.

Although the partial test stated that exchange rate has an insignificant influence on export volume, PT. Apparel One Indonesia 1 should not ignore this variable because of the fact that the f-test and the determination of coefficients (R^2) of this study stated that together, both variable of product price and exchange rate has influence on export volume for 46%.

CONCLUSIONS & SUGGESTIONS

The conclusions of this study about the influence of raw material price, distribution cost and exchange rate on export volume of Adidas at PT. Apparel One Indonesia 2 are the correlation coefficients value between independent variable and dependent variable was very strong and directly related to the dependent variable. Furthermore, the determination coefficient result was 0,947 which means export volume variable can be explained by raw material price, distribution cost, and exchange rate as much 94,7%. The remaining 5,3% was explained by other factors.

According to F-Test, it was found that raw material price, distribution cost, and exchange rate had a significant influence on export volume of Adidas at PT. Apparel One Indonesia 2.

Meanwhile, based on the t-test result, it showed that partially not all of the independent variables influenced export volume of Adidas. Merely, distribution cost negatively and significantly influenced export volume. Nevertheless, raw material price had negative and insignificant influence and exchange rate had positive and insignificant influence on export volume. Based on this research, several recommendations were obtained in the form of suggestions to increase the export volume of Adidas Sportswear PT. Apparel One Indonesia 2. PT. Apparel One Indonesia 2 needs to pay attention to the number of distribution costs incurred. Companies need to find cheap shipping price references among existing forwarding companies. The company can ask

for a special price for the forwarding party because the company will make regular deliveries.

Furthermore, the Company is advised to pay more attention to the timeliness in production activities. This is done so that distribution activities can be carried out maximally in one container shipment. If the shipment is done separately, or not as scheduled, the costs incurred will be even greater.

Variables that have influence but are not significant must also be considered by the company. Rising prices of raw materials can result in a decrease in export volume. For exchange rate, the depreciation of the rupiah will increase the volume of exports because price of products are cheaper at International price.

It is hoped that this study can be used as a reference for future studies by considering to include several other variables outside of this study.

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