

EFFECT OF TRADE OPENNESS ON UNEMPLOYMENT RATE IN KENYA

BY

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X50/80915/2015

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF ECONOMICS,
UNIVERSITY OF NAIROBI IN PARTIAL FULFILMENT OF THE REQUIREMENT
FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN ECONOMICS**

OCTOBER 2019

DECLARATION

I declare that this paper is my original work and has never been presented for a degree in any other higher institution of learning.

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APPROVAL

This paper has been submitted for the award of the degree of Master of Arts in Economics with my approval as the university supervisor

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DEDICATION

I hereby dedicate this paper to my family, my husband and children for their moral support and sacrifice of their time throughout the study.

ACKNOWLEDGEMENT

Foremost, I acknowledge the Almighty God for providing and enabling environment which has made the completion of this paper possible. I highly appreciate my supervisor Dr. Laura Barasa for the unconditional guidance she gave me throughout the paper writing. I extend my appreciation to all my classmates for their encouragement and great team work.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	vii
LIST OF ACRONYMS AND ABBREVIATIONS	viii
ABSTRACT	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study.....	1
1.1.1 Milestones in Trade Openness	2
1.2 Problem Statement	3
1.3 Objectives of the Study.....	4
1.4 Significance of the Study	4
1.5 Organization of the Paper	5
CHAPTER TWO: LITERATURE REVIEW	5
2.1 Introduction.....	6
2.2 Theoretical Literature Review	6
2.2.1 Theory of Absolute Advantage	6
2.2.2 Comparative Advantage Theory	7
2.3 Empirical Review.....	7
2.4 Literature Overview	9
CHAPTER THREE: METHODOLOGY	11
3.0 Introduction.....	11
3.1 Theoretical Framework.....	11
3.2 Econometric Specification	12
3.3 Data source, Definition and Measurement of Variables	13
3.4 Econometric Issues	13
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION	14
4.0 Introduction.....	14
4.1 Descriptive Statistics.....	14

4.2 Empirical Results	15
4.3 Discussion	16
CHAPTER FIVE: SUMMARY, CONCLUSION AND POLICY IMPLICATIONS.....	18
5.0 Introduction.....	18
5.1 Summary and Conclusions.....	18
5.2 Policy Implications	18
5.3 Areas for Further Study	19
REFERENCES.....	20
APPENDICES.....	22

LIST OF TABLES

Table 1: Description and measurement of the variables.....	13
Table 2: Summary-Descriptive Statistics.....	14
Table 3: Regression results.....	16

LIST OF ACRONYMS AND ABBREVIATIONS

GDP	: Gross Domestic Product
TO	: Trade Openness
X	: Exports
M	: Imports
WTO	: World Trade Organization
GATT	: General Agreement on Tariffs and Trade
EAC	: East African Community
US	: United States
IMF	: International Monetary Fund
EPZ	: Export Processing Zones
MUB	: Manufacture-Under Bond
VAT	: Value Added Tax
OLS	: Ordinary Least Squares

ABSTRACT

This study's purpose is to examine the association between trade openness and unemployment rate in Kenya. When trade openness increases in Kenya, unemployment rate is evidenced to be also high. It is hypothesized that in the context of third world countries in the African continent, trade openness is negatively associated with unemployment. The study employed secondary data which was collected from World Bank. This time series data range from 1970 to 2017 and multiple linear regression model was used to test the hypotheses. The study has affirmed that trade openness has a non-negative and significant effect on unemployment in the Kenyan economy. Results have also showed that both imports and exports have a negative effect on Kenya's unemployment, with imports being insignificant. Recommended policies should focus on encouraging Kenyan exports and restricting foreign workers.

Key words: Trade Openness, Exports, Imports and Gross Domestic Product

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Trade openness refers to unrestricted trade which is as a result of reduction in trade barriers and tariffs. Integration of the economy in the recent past has been enhanced through increase of products that move freely across boundaries of countries. Removal of trade restrictions took effect after the Second World War so as to enhance and promote liberalized trade. The most noticeable achievements were the completion of World Trade Organization WTO and GAAT in 1994. Both developed and developing countries have benefitted from these establishments.

There are both benefits and costs that arise as a result of free trade, among the involved economies. Benefits such as resource optimal utilization and increased economic activity can be brought forward by free trade. According to Yeboah, Naanwaab, Saleem, & Akuffo (2012); Yanikkaya (2003) and Awokuse (2008), trade openness is regarded as growth engine in an economy. It also enhances the availability of production factors such as technology, labor, capital and human capital across the global markets, which improve the productivity level of the economy (Githanga 2015). It increases the competition degree faced by home producers and in the long-term increase efficiency and encourages specialization as well as reallocation of resources to activities that reflect comparative advantage of the country.

Vamvakidis (2002) showed that economies that were open to free trade stipulated higher real GDP as compared to economies that practiced restricted protectionism. Rise in economic growth translates to rise in employment thus reducing unemployment rate. Apart from these benefits, there are also costs that result from free trade like closing down of infant industries, since they

cannot compete fully with the well founded firms from other developed countries. This reduces job opportunities resulting to increased unemployment rate.

Openness to trade in the global arena have led to more studies on the trend of unemployment but a question asked is whether there is a creation and or destruction of jobs as a resulting from international trade which is free and open (Felbermayr, Prat, and Schmerer 2011). Literature from the recent studies indicate that openness of trade has an effect on unemployment but the degree of that effect is not clear (Felbermayr, Prat, and Schmerer 2011). It is possible that employment is destroyed by trade openness (Helpman and Itskhoki 2010) that is, increasing unemployment rate in the long term. Studies such as Hasan, Mitra, Ranjan, & Ahsan (2012), also concluded that trade openness reduce rate of unemployment in the long term, contrary to the study of Şener (2001) which affirmed that trade openness has no effect on unemployment rate, and that according to Moore & Ranjan (2005), trade openness does not have uncertain effects on unemployment.

1.1.1 Milestones in Trade Openness

Unemployment is among economic challenges faced in the global world and approximately 2.2 billion persons live below US\$2 per day line of poverty. The African continent being the highest hit by unemployment problem, intra-African trade activities would accelerate sustainable development, create job opportunities and enhance mobility of technological innovation (Anyanwu 2014).

Since Kenya's independence in 1963, the government attempted to improve trade competitiveness at the global market by protecting the small and infant industries. However, the economy faced macroeconomic instability that resulted from high increase of oil prices in the

period and collapsing of the EAC in 1977 in the run-up for independence by the member states (Omolo 2011). The World Bank and International Monetary Fund revived the trade reforms between 1980 and 1995 by implementing Structural Adjustment Plans (SAPs) that focused on improving the economic growth through improving efficiency in all sectors (Rono 2002).

To encourage exports, efforts were being made so as to encourage the private sector to raise the pre-export level processing of main commodities as well as diversifying export base through programs like Export Processing Zones and Manufacture-Under Bond. The government offered incentives such as value added tax exception on import of machinery and raw materials, consequently encouraged growth of new manufacturing firms, which produced for exports and as a result provided employment opportunities (Githanga 2015).

1.2 Problem Statement

Silajdzic and Mehic (2018) noted that trade openness results into economic efficiency. Increase in trade openness means that there is an increase in free flow of commodities between the respective trading partners. As a result, the respective countries produce more goods and services at a cheaper cost for export since they are able to enjoy both absolute and comparative advantages. More goods and services are also cheaply imported which otherwise will have cost more if produced in those same countries. This increases total production which translates to increased economic growth and reduction in unemployment since more job opportunities will be created. By 2018, the unemployment rate in Kenya was 9.3 per cent and openness of trade would therefore be significant measure to enhance the employment level.

However, in Kenya when there is rise in trade openness, unemployment rate increases, imports decrease, exports decrease and economic growth decreases (World Bank 2018). This is contrary

to what theory stipulates. Studies such as Chaudhary & Amin (2012), Nwaka, Uma, & Tuna (2015), Anjum & Perviz (2016), and Awad-Warrad (2018) examined the relationship between openness of trade and unemployment as well as imports, economic growth and exports. These studies give contradicting results from country to country and there is none which has ever been done in Kenya that combines both of these variables in the same study, thus this study aims at filling this gap.

Mismatch between theory and reality prompted this study so as to fill the gap, and the study purpose is therefore to investigate trade openness effect and its components on the unemployment rate in the case of Kenya.

1.3 Objectives of the Study

The general study objective is to examine the association between trade openness and unemployment in Kenya. Specific study objective was:

- i. To determine how trade openness is affected by unemployment rate in Kenya.

1.4 Significance of the Study

This study will be of great importance to the Kenyan government, more especially to the ministry of trade while formulating and implementing its trade policies. At the end of this study, the degree to which rise in trade openness affects the unemployment rate will be clear, and this will help trade policy makers to formulate policies that will favor the economy depending on the study outcome.

The study will also be significant to the vision 2030 secretariat as they aim to make Kenya a middle income earner at the click of 2030 with improved living standards. One of the ways of improving living standards is through establishment of jobs so as to reduce unemployment level

in the country. Depending on study outcome, trade openness, imports, exports and growth of the economy will be adjusted in a way so as to improve living standards of the people.

The findings of this study will also benefit academicians and researchers. Since this is an area which has not been exploited in Kenya, researchers can study more on the same to an extent of even trying to find out the short and long term effect of trade openness and its components on rate of unemployment in Kenya and contribute to the existing knowledge gap.

1.5 Organization of the Paper

This paper is organized into five main chapters. The current chapter captures study background, problem statement, study goals and objectives as well as study significance. Second chapter presents literature review, third chapter presents the research methodology, fourth chapter presents empirical findings and fifth chapter gives the conclusion of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Theoretical and empirical literature is presented in this chapter and its overview. Under theoretical literature review some of the theories relevant to the study such as absolute advantage and comparative advantage theories will be discussed. Theoretical literature will be based on the classical economic theories of international trade. According to these theories David Ricardo and Adam Smith advocated for free trade among the nations that would encourage specialization and efficiency from resource distribution. This promoted employment opportunities in the trading countries. Empirical literature highlights some of the studies which have been done on this area so as to identify the knowledge gap.

2.2 Theoretical Literature Review

2.2.1 Theory of Absolute Advantage

Adam Smith articulated this theory in 1776 to solve challenges posed by the mercantilist beliefs and practices, more especially protectionism. Adam Smith advocated for barrier free trade which was deemed to be the new philosophy aimed at driving trade. The theory emphasized the need of maximizing profit, which delighted industrialists and attacked mercantilist assumptions that trade is a zero sum game, and advocated that foreign trade was the major wealth source.

Labor is the origin of wealth. Human beings are driven by various motives which includes; every individual acts on self-interest basis, every individual anticipates to enhance his way of life and that an individual is characterized with various features which tend to control his desires. Also economic units interests are in harmony with each other. The theory therefore concluded that each and every person is said to be his own interest's judge. Since people are talented in different

ways, countries are also endowed differently with resources. Countries or individuals therefore need to specialize in areas where they are most talented while producing goods and services. Countries need to maximize the production of commodities on which they are well endowed with the resources. Adam Smith therefore developed this theory by stating that a country need to specialize in producing of a good or service where it is deemed to enjoy an absolute advantage and engage in importing from other countries' goods and services in whose production it experiences an absolute disadvantage. There must therefore be free trade and this accelerates economic growth which leads to a decrease in unemployment.

2.2.2 Comparative Advantage Theory

David Ricardo formulated this theory in 1817. The theory shows that the theory of absolute advantage was too optimistic if not too simplistic. The theory was very much concerned in a situation whereby one country is found to have absolute advantage in all lines of trade. It explains what will happen to other country in case this happens to be the situation. Whether it will benefit or not. It was not clear whether country B will also benefit from trade. The theory agreed that country B will also benefit if it is not equally less productive in all production lines.

Ricardo's theory therefore states that it is deemed beneficial for a nation to specialize in producing of a good or service where it exercises comparative advantage and import where it experiences comparative disadvantage. All countries trading will therefore benefit from free trade and this leads to a decrease in unemployment as economic growth grows.

2.3 Empirical Review

A study by Gozgor (2014) reveal that literature of the recent times imply that there exist a significant trade openness impact, that is, globalization and liberalization on unemployment, more especially in the economies of the developed world. This study tested the influence of four

none same globalization measures and openness of trade on unemployment, in a panel framework that was not balanced. The G7 countries namely: France, Canada, Germany, Japan, Italy, America (US) as well as United Kingdom (UK) were considered. Findings from the estimates of panel data show that all globalization and trade openness measures are significant and associated negatively with the rate of unemployment. It is therefore concluded that in developed countries, the process of globalization other than the process of introducing trade barriers is of great significance in unemployment rate reduction.

Trade openness and rates of unemployment have been studied at this present time of global financial crisis, more especially in the developed world (Nwaka, Uma, and Tuna 2015). This study was taken in Nigeria to analyze the impact trade policy on unemployment. Time series data for the period 1970 to 2010 was used while adopting the methodology of vector error correction. It was found out that in the long term, an income per capita and real output result to unemployment decline, but it was also found out that the policy of trade openness is indeed associated with decline in unemployment level. On the same note, foreign policy as being represented by prices of products, exert a non-negative effect on unemployment and plays no role in equilibrium restoration of the system. Even though that is the case, in the first place, the impact of trade openness as well as shocks of foreign prices as given by dynamics of the short-term, are being observed to cause a reduction in unemployment.

Also, Anjum & Perviz (2016) established trade openness impact on unemployment while considering the capital-abundant as well as labor abundant nations. The rate of inflation, growth of population, growth of the economy as well as political rights were employed as controls. For this data covering the period between 1990 and 2012 was used for labour-abundant nations totaling to 75 and capital-abundant nations totaling to 44. It was found out that in the long term

period, openness of trade exert a significant non positive impact- on unemployment, while considering labor-abundant countries. Other variables that were found to have a non-positive impact on unemployment include institutional quality and inflation rate.

For the labor abundant countries, population growth was established to have non-negative effect on the level of unemployment. The same was also observed in the case of countries which are capital-abundant, more especially in the long term period. The inflation rate also revealed a non-positive and significant effect unemployment. While considering growth of the population, the impact on unemployment was positive and significant. The institutional quality coefficient remains insignificant for capital-abundant nations.

Keho (2017) studied on the relationship between openness of trade and economic growth in Cote d'Ivoire was also done over the period of 1965 to 2014. The study affirms inconclusive and mixed results. This might be as a result of omitting labor and capital stock role in the nexus of trade-growth. The study used a framework of multivariate nature while using regressors as stock of capital, trade openness and labor. It is affirmed that openness of trade has a non-negative influence on growth of the economy both in the short and long run. It also reveals a strong link between trade openness and capital formation.

2.4 Literature Overview

Trade openness creates a free or a less restricted flow of goods from one country to another. This increases exports, bringing foreign currency to a country thus strengthening its currency in the world market. The economy grows, creating more employment opportunities thus reducing unemployment level in the country. The same case applies to imports since as per the absolute advantage theory and comparative theory the two trading countries stand a chance to gain from trading. Even though this is the case, it may not apply to Kenya since some of the assumptions

the theories are based are not realistic. For example, the two theories use only labour to argue their case and yet labour is not the only resource that exists in Kenya.

The study has also reviewed various recent studies on the topic, and it is evident that few studies have examined the effect openness of trade on unemployment. It is also worth noting that there is no study in Kenya that has ever been done to examine trade openness effect on unemployment rate at the same time using the same econometric model. This study is therefore necessary in Kenya so as to fill this gap and try to provide a solution to the real effect of openness of trade on unemployment rate in a nation which is labor abundant like Kenya.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

The study methodology was presented in this chapter. Theoretical framework was captured together with the empirical model of the study and source of data to be used in the analysis process as well as description and measurement of study variables. The chapter also discusses various estimation techniques to be used in the study.

3.1 Theoretical Framework

The effect of trade openness on various socio-economic and economic indicators results to significant implications on employment. The relative factor endowment of a country, either capital-abundance or labour-abundance, determines the actual impact on unemployment by trade openness. Other factors that affect unemployment include growth rate in gross GDP, inflation, institutions' quality and population growth rate. Various studies have reported the impact of these variables. There is a none positive association between unemployment and inflation (Phillips 1958). Other studies like Beyer & Farmer (2007) have reported a none negative association between the two variables.

The following theoretical model will be used.

$$U_t = (TO_t, X_t, M_t, GDP_t) \quad (1)$$

Where; U_t represents unemployment rate at time t, TO_t represents trade openness at time t. It is measured by the summation of exports and imports as a GDP share, X_t represents trade exports at time t, M_t represents trade imports at time t and GDP_t represents gross domestic product at time t

3.2 Econometric Specification

Awad-Warrad (2018) used a linear regression model multiple in nature to determine trade openness, fixed capital formation, real growth rate and population growth effect on unemployment in Arab Region. The same model will be used in this study but for this analysis it will be specified as:

$$U_t = \beta + \alpha T\dot{O}_t + \gamma \dot{X}_t + \delta \dot{M}_t + \emptyset \dot{GDP}_t + \varepsilon_t \quad \varepsilon_t \sim N(0, \sigma^2_\varepsilon) \quad (2)$$

Where; β represents the constant and measures the value of unemployment rate at time t when other variables have a zero value, α represents trade openness growth parameter which measures rate of unemployment change when trade openness growth rate changes by a unit given that all other variables are kept constant, γ represents trade exports growth parameter which measures the change in rate of unemployment when trade exports growth changes by a unit given that all other variables are kept constant, δ represents trade imports growth coefficient which measures the change in rate of unemployment when trade imports growth changes by a unit given that all other variables are kept constant, \emptyset represents gross domestic product growth coefficient which measures the change in rate of unemployment when gross domestic product growth changes by a unit given that all other variables are kept constant, ε_t represents the disturbance term which takes care all of all other variables not included in the model which also have an effect on unemployment, and $\varepsilon_t \sim N(0, \sigma^2_\varepsilon)$ represents the error term at time t.

The method of Ordinary Least Squares was used to estimate the econometric model using Eviews software. All assumptions of this method were fulfilled.

3.3 Data source, Definition and Measurement of Variables

The study will employ secondary data from already published documents of World Bank which will be modified to suit the econometric model to be used from 1970 to 2017.

Table 1: Definition and Measurement of Variables

Variable	Measurement	Expected sign and literature source
X (Exports growth rate)	Percentage change in exports	Negative relationship (Gaston and Rajaguru 2013)
M (Imports growth rate)	Percentage change in imports	Positive relationship (Kim 2011)
TO (Trade openness growth rate), $(X+M)/GDP$	Percentage change in trade openness	Negative relationship (Gozgor 2014)
GDP (Gross domestic product growth rate)	Percentage change in GDP	Negative relationship (Sánchez and Liborio 2012)

3.4 Econometric Issues

Economic issues such as stationarity and multicollinearity will be tested. A stationary time series is a series whereby statistical properties like variance, mean and autocorrelation are constant over time. Augmented Dickey-Fuller (ADF) tests will be used to test this basing on Schwarz Info Criterion (SIC). In cases where two independent variables have a near perfect relationship, multicollinearity is said to exist. This will be verified by testing a null hypothesis of no perfect correlation between the independent variables. Insignificance of the independent variables will also be tested using Wald test.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

The empirical findings are presented in this chapter whereby diagnostic tests are also captured which include; descriptive statistics, correlation test and Wald test as well as heteroscedasticity and Chow forecast tests. Other tests presented in this chapter are tests of normality, Ramsey reset and recursive coefficient estimates. Regression results will be presented in this chapter as well as discussion of the results.

4.1 Descriptive Statistics

Table 2 shows data correlations and descriptive statistics. It shows that Kenya imports more than what it exports since the average value of imports is 464 Billion as compared to 2.99 Billion exports value. With these imports and exports, the average GDP is 20.3 Billion as trade opens by a value of 27.260 and total unemployment having an average value of 4,780,999. Table 2 also shows the correlations between exports and exports, imports and gross domestic product as well as exports and trade openness. Results show that openness of trade has a positive and middle correlation with exports, imports and gross domestic product.

Table 2: Descriptive statistics and correlation matrix

	Ave	Std.Deviat ion.	Min.	Max.	2	3	4	5
1 Unemploye nt	4780999.0 00	1622481.0 00	1875666.0 00	6763889.00 0				
2 Exports	299000000 0000.000	34700000 00.000	71400000 00.000	108000000 0000.000	-			
3 Imports	464000000 00.000	59900000 000.000	82600000 00.000	197000000 0000.000	0.995	-		
4 Gross domestic product	203000000 00.000	2.0500000 000.000	32600000 00.000	793000000 00.000	0.980	0.986	-	
5 Trade openness	27.260	17.024	4.290	53.680	0.729	0.676	0.612	-

4.2 Empirical Results

Appendix 2 gives results of stationarity for all variables which were used in the study. It is evident that all variables were stationary since the probability value was less than 0.05 units t-statistic value being more than 2 in absolute terms in every case, but at different levels. For instance, unemployment, exports and trade openness were found to be stationary at first differencing, gross domestic product at second differencing and imports at third differencing.

Test of normality was used to establish if the residuals are distributed normally. Appendix 2 reveals that the Jarque-Bera statistic is not zero and the probability value is more than 5.0 percent thus residuals are said not to be distributed normally. The histogram as given in Appendix 3 is also not bell shaped thus indicating non-normality. This indicates the normal case for observations that are not more than 100, hence the study continue to estimate the models using employed ordinary least squares technique.

Test of heteroscedasticity was also taken to affirm whether there is no difference in the variance of error terms in various regression functions. Breusch-Pagan-Godfrey test was used and the outcome presented in Appendix 4. The problem of heteroscedasticity is not present because the value of probability is not less than 0.05. Ramsey reset test was also undertaken to establish various types of specification errors such as correlation between endogenous variables and the error term as well as incorrect functional form and omitted variables. Appendix 5 shows that the probability value of F-statistic is 0.0001 which is not more than the level of significance of 5.0 percent, and thus concluding that the model was well specified.

Chow forecast test was taken to test for presence of structural changes in the coefficients of the model. Appendix 6 shows the p-value as 0.000 which is less than 5.0 percent, leading to a conclusion that changes in structural formations are present in the model. Stability of the variables used was tested using Recursive coefficient estimates test. There is instability when coefficient variation is significant since more of data is added to the estimation equation. Appendix 7 shows that the blue line is between two red lines, indicating that the study variables are stable.

Table 3 gives the regression results for coefficients of the exogenous variables which were employed, that is, exports, imports, gross domestic product and trade openness. These variables were regressed against the unemployment which was used as the dependent variable. The table also shows the p-values, t-statistic and standard errors of the various independent variables of the study. The outcome indicates that imports and exports have a non-positive relationship with unemployment, while trade openness and gross domestic product have a positive relationship. The regression results indicate that exports, GDP and openness of trade are significant in influencing unemployment rate in Kenya. On the other hand, the imports are non-significant in affecting changes in unemployment rate in Kenya.

Table 3: Regression results.

Variable.	Parameters	Std. Err	t-Stat	Probability
Exports	-0.00002	0.000005	-3.413	0.002
Imports	-0.000002	0.000002	-0.967	0.340
Gross domestic product	0.0002	0.00004	5.494	0.000
Trade openness	113157.700	14675.190	7.711	0.000
Constant	3167000.000	337864.500	9.374	0.000

4.3 Discussion

Unemployment relates negatively with exports and imports, but positively with GDP and openness of trade. The coefficients of exports, GDP and openness of trade are statistically significant. Constant value is also said to be statistically significant. Also the parameter value of imports is statistically not significant.

The results imply that when exports increase by 1 unit, unemployment decreases by 0.00002 units and vice versa, holding all other variables constant. This finding is similar to that of Awad-Warrad (2018) in the Arab region since exports lead to an inflow into the country which is invested in viable projects to create more job opportunities. This reduces unemployment. On the same note when imports increase by 1 unit, unemployment reduces by 0.000002 units *ceteris paribus*, and vice versa. Even though this study agrees with Awad-Warrad (2018) when

considering exports and unemployment, this is not the case when it comes to imports. This is because most of the imports into Kenya are capital goods such as machinery and crude oil. These products are commonly used in the industry sector which generates more revenue to the economy which enhances investment thus reducing unemployment.

A positive relationship is evidenced when GDP and openness of trade are considered. When GDP increases by 1 unit, unemployment raises by 0.0002 units, holding all other variables constant. This does not agree with Awad-Warrad (2018) in the Arab region whereby increase in gross domestic product leads to a decline in unemployment. This resulted due to increase in GDP which leads to creation of many jobs in case it rises at a higher rate than that of rise in population. In this case there is an increase in unemployment as GDP increases since the rate of population increase in Kenya is higher than the rate of increase in GDP.

Trade openness also shows a positive relationship with unemployment. When trade openness changes by a unit, unemployment changes by 113157.7 units *ceteris paribus*, that is, as trade openness increases by one unit, rate of unemployment increases by 113157.7 units given that all other variables are held constant. This is not the case for Nwaka, Uma, and Tuna (2015) in Nigeria whereby the study found out that unemployment and trade openness are positively related. This is because most of the companies that operate in Kenya are employing high level technology in their operations. In most cases, the level of skills and technology they require are lacking in most of the Kenyan job seekers and therefore opt to employ people from outside countries. This has led to increase in unemployment among Kenyan residents as trade openness increases. The constant value of 3.167 Million units indicates that unemployment of the same value still exists even if all other variables are taken to be zero.

CHAPTER FIVE: SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

5.0 Introduction

Chapter five contains the summary and conclusions of the findings, policy implications to be considered by policy makers and areas that will require further study.

5.1 Summary and Conclusions

The study investigated the effect of unemployment on trade openness and its components in Kenya. The exogenous variables which were considered include trade openness, exports, imports and GDP. Different diagnostic tests were undertaken on these variables and the model in general to verify the suitability of the variables, data and the model that was used. The tests used in the study include; correlation test, heteroscedasticity test, stationarity test, normality test as well as Ramsey reset test, recursive estimates test and Chow forecast test. The tests revealed the validity of the variables, data and the model. Descriptive tests revealed that imports were highly volatile followed by exports, gross domestic product, unemployment as well as trade openness in that order. The estimation technique which was used was therefore ordinary least squares method.

This study concludes that a non-negative and statistically significant openness of trade effect on unemployment exist. This is in agreement with Nwaka, Uma and Tuna (2015)'s study which was taken in Nigeria on Trade Openness and Unemployment. The study also revealed that openness of trade has a non-negative and statistically significant effect on unemployment. This finding is also in agreement with Anjum and Perviz (2016)'s study which was carried out in the case labor and capital abundant countries. In this study it was established that a non-negative effect of openness of trade openness on unemployment exist in the long term period.

Gross domestic product also gives same positive effect. Also the effect of exports on unemployment is negative and significant. This is not the case for imports even though the effect is also negative. For the case of imports, the effect is negative but statistically insignificant.

5.2 Policy Implications

The effect of openness of trade on unemployment which is positive implies that more job opportunities created as a result of openness of trade are taken by residents of other countries.

This is due to technology and skills required by most of the companies which does not exist among the Kenyan residents. The Kenyan residents therefore remain jobless even if there is an increase in trade openness. Both private and government sector have to train the Kenyan job seekers and impart in them the necessary skills required to work in these companies. By so doing, unemployment will reduce as trade openness increases.

On the same note when there is an increase in trade openness, huge inflows of foreigners who are more aggressive than country residents enter into the country. Foreigners have advanced with skills and are said to be aggressive hence able to secure job opportunities locally rendering residents of the country jobless. Many Kenyans remain jobless from one year period to another and this leads to an increase of unemployment as trade openness increases. The policy makers should therefore focus on providing measures to increase Kenyan exports and restrict on capital intense imports. Policies also need to be put in place to improve on skilled labour as well as restrict on foreign workers into the country.

5.3 Areas for Further Study

This study has formed the basis of further study in this area. Since this study has considered only Kenya, other researchers may decide to consider the entire East African region and even other East African countries as well as the continent in general.

There are many other factors which influence unemployment and it is not only trade openness and its components. The researchers therefore need to explore more on these other factors which are deemed to be of an effect on unemployment. Researchers also need to research more on this area more especially on the short run effect of openness of trade and its components on unemployment.

This study employed ordinary least square technique to estimate the model. This technique assumed linearity association between the endogenous and exogenous variables. In case of an outlier, this technique will not give viable results. In that case, the study recommends use of more advanced techniques such as least median of squares technique in case of an outlier and Lasso linear regression method in case many variables are used.

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APPENDICES

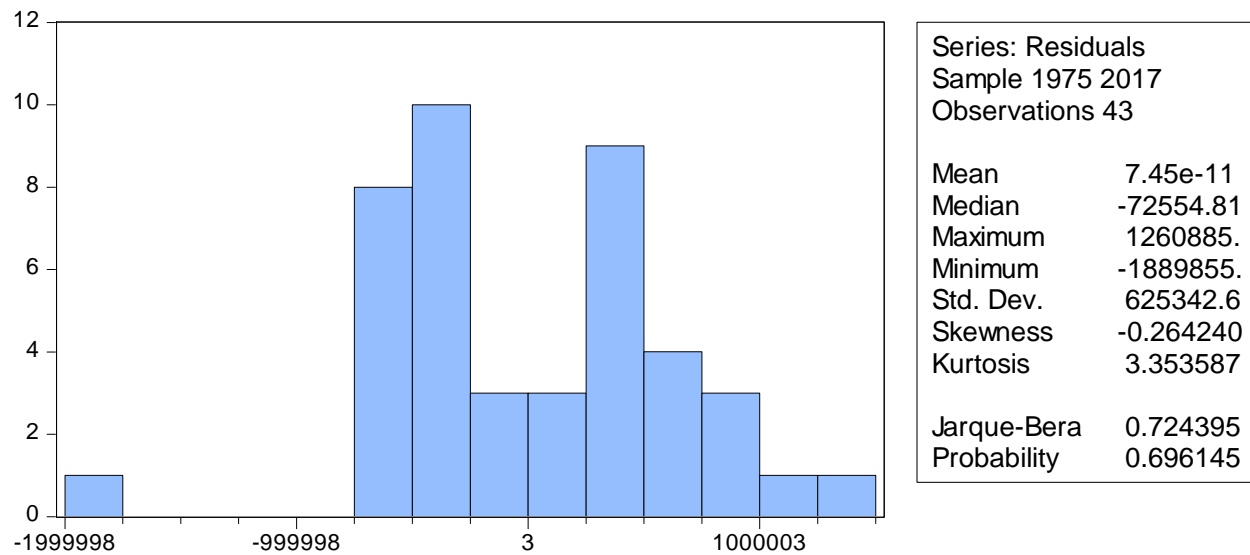
Appendix 1: Variable Stationarity

Variable	t-Statistic (at 5 % critical value)	P-value
Unemployment	-5.954942	0.0000
Exports	-4.080053	0.0027
Imports	3.426941	0.0024
Gross domestic product	-5.952231	0.0000
Trade openness	-5.971814	0.0000

Appendix 2: Normality Results

P-value	Jarque-Bera
0.696145	0.724395

Appendix 3: Normality histogram



Appendix 4: Heteroscedasticity results

F-stat	0.582664	P. F (4,38)	0.6770
Obs* R-squared.	2.484913	P. Chi-Square (4)	0.6473
Explained SS	2.283714	P. Chi-Square (4)	0.6837

Appendix 5: Ramsey Reset results

	Value.	d.f	Probability
t-stat	4.243933	37	0.0001
F-stat	18.01097	(1, 37)	0.0001
Likeli-hood ratio	17.05443	1	0.0000

Appendix 6: Chow forecast results

	Value	d-f	Probability
F-stat	7.332864	(8, 30.)	0.0000
Likelihood ratio	46.59670	8	0.0000

Appendix 7: Recursive coefficient estimates result

