

**RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT,  
EXPORTS AND ECONOMIC GROWTH IN TANZANIA: A TIME  
SERIES ANALYSIS**

**RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT, EXPORTS  
AND ECONOMIC GROWTH IN TANZANIA: A TIME SERIES ANALYSIS**

**By**

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**A Dissertation Submitted in Partial Fulfilment of the Requirements for the Award  
of the Degree of Masters of Science in Economics of Mzumbe University.**

**2013**

**CERTIFICATION**

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation titled **Relationship Between FDI, Exports and Economic Growth in Tanzania: A Time Series Analysis** in partial fulfilment of the requirements for award of the degree of Masters of Science in Economics (Msc. Econ/PPM) of Mzumbe University.

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## **DECLARATION AND COPYRIGHT**

I, Bertha Alfred Bomani, declare that this dissertation report is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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**Date:** .....

## **ACKNOWLEDGEMENTS**

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GOD bless you all.

## **DEDICATION**

I dedicate this work to my loving parents, Agnes and Alfred Michael Bomani, who laid strong foundations of my education.

## **ABBREVIATIONS AND ACRONYMS**

ADF	–	(Augmented) Dickey Fuller
ARDL	–	Autoregressive Distributed Lag
AIC	–	Akaike Information Criterion
BEST	–	Business Environment Strengthening
BRELA	–	Business Registration and Licensing Authority
DDI	–	Direct Domestic Investment
DI	–	Domestic Investment
ECM	–	Error Correction Model
ELD	–	Export Led Growth
EPZ	–	Export Processing Zones
ESRF	–	Economic and Social Research Foundation
FDI	–	Foreign Direct Investment
GDI	–	Gross Domestic Investment
GDP	–	Gross Domestic Product
HQIC	–	Hannan-Quinn Information Criterion
IIF	–	International Investment Forum
IMF	–	International Monetary Fund

NDI	–	Net Domestic Investment
NISC	–	National Investment Steering Committee
OLS	–	Ordinary Least Squares
SBIC	–	Schwarz – Bayez Information Criterion
SIDO	–	Small scale Industries Development Organization
SMEs	–	Small and Medium scale Enterprises
TCCIA	–	Tanzania Chamber of Commerce, Industry and Agriculture
TIC	–	Tanzania Investment Centre
TNBC	–	Tanzania National Business Council
TPSF	–	Tanzania Private Sector Foundation
VAR	–	Vector Autoregression
VECM	–	Vector Error Correction Model



## **ABSTRACT**

Foreign Direct Investment (FDI) and exports play a significant role in promoting economic growth in many countries. However, empirical studies have not found consistent results, with some literature indicating that FDI and export have adverse impacts to the economy. This study examined long run and causality relationships between FDI, exports and economic growth for Tanzania. The study used time series data for 30 years (1980- 2010) which were obtained from TIC and UNCTAD. By using Johansen test of cointegration, Vector Autoregression model and Granger causality test the study found that there was a single cointegrating vector. The equation was relating FDI and exports (as independent variables) to Economic growth, the dependent variable. Furthermore, there was unidirectional causality relationship with the direction from FDI and exports to GDP growth rate (economic growth). There was also a unidirectional causality with the direction from FDI to exports. Therefore, FDI Granger caused GDP growth rate and exports, while exports Granger caused GDP growth rate only. This further implied that, FDI have a direct and indirect causality to GDP growth rate. This observation necessitated the special consideration for making FDI working for growth. Likewise for total exports which had positive and significant relationship to economic growth. The findings in this study support the export-led growth hypothesis and FDI as the engine for economic growth. For export and FDI to effectively promote growth, the study recommends that policy frameworks and incentive packages should be competitive and vigorous enough.

## TABLE OF CONTENTS

CERTIFICATION.....	I
DECLARATION AND COPYRIGHT .....	II
ACKNOWLEDGEMENTS .....	III
DEDICATION .....	IV
ABBREVIATIONS AND ACRONYMS .....	V
ABSTRACT.....	VII
LIST OF TABLES .....	X
LIST OF FIGURES.....	XI
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	<b>1</b>
1.1 Background .....	1
1.2 An Overview Of FDI Performance In Tanzania .....	2
1.2.1 Factors Which Affects FDI Inflows In Tanzania.....	2
1.2.2 FDI Support Services.....	4
1.3 An Overview Of Export Performance For Selected Years.....	6
1.3.1 Factors Which Determine Total Exports In Tanzania.....	7
1.3.2 Export Promotion Status.....	7
1.4 Problem Statement .....	10
1.5 Objectives Of The Study .....	12
1.6 Significance Of The Study .....	13
1.7 Organization Of The Report.....	13
<b>CHAPTER TWO</b> .....	<b>14</b>
<b>LITERATURE REVIEW</b> .....	<b>14</b>
2.0 Introduction .....	14
2.1 Theoretical Framework .....	14
2.2 Review Of Empirical Literature .....	16

2.3 Conceptual Framework .....	21
2.4 Study Hypothesis: .....	23
<b>CHAPTER THREE .....</b>	<b>24</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>24</b>
3.0 Introduction .....	24
3.1 Source And Nature Of Data .....	24
3.2 Validity Tests .....	24
3.2.1 Stationarity Test.....	25
3.2.2 Granger Causality (Wald Test).....	27
3.3 Variables And Measurement .....	27
3.4 Econometric Model And Estimation Technique: .....	27
<b>CHAPTER FOUR .....</b>	<b>30</b>
<b>PRESENTATION OF THE FINDINGS .....</b>	<b>30</b>
4.1. Stationarity Test .....	30
4.2 Test For Heteroscedasticity .....	31
4.3 Multicollinearity.....	32
4.4. Model Specification Test .....	33
4.5 Cointegration Analysis: Johansen Cointegration Test.....	33
4.6 Vector Autoregression.....	34
4.7 Granger Causality Test.....	36
<b>CHAPTER FIVE.....</b>	<b>37</b>
<b>DISCUSSION OF THE FINDINGS .....</b>	<b>37</b>
5.0 An Overview .....	37
5.1 Specification Tests .....	37
5.2 Cointegration Results .....	38
5.3 Cointegration Equation And Granger Causality Analysis.....	38
<b>CHAPTER SIX.....</b>	<b>42</b>
<b>CONCLUSION AND POLICY IMPLICATIONS.....</b>	<b>42</b>
<b>REFERENCES.....</b>	<b>45</b>

**APPENDIX I** ..... 1

**LIST OF TABLES**

Table 3.1: Variables and measurements.....27  
Table 4.1: Unit root test for gdp growth rate, fdi stocks and total exports .....30  
Table 4.2: Test for heteroscedasticity .....31  
Table 4.3: Correcting heteroscedasticity.....32  
Table 4.4: Test for multicollinearity .....32  
Table 4.5: Model specification tests.....33  
Table 4.6 Johansen test for cointegration.....34

## LIST OF FIGURES

Figure 1.1: FDI, DDI and real GDP growth rate.....	2
Figure 1.2: Tanzania exports (Million US\$).....	7
Figure 2.1: Steady state neoclassical growth model .....	15
Figure 2.2: Conceptual framework diagram .....	23
Figure 5.1: The revised conceptual framework.....	41

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background**

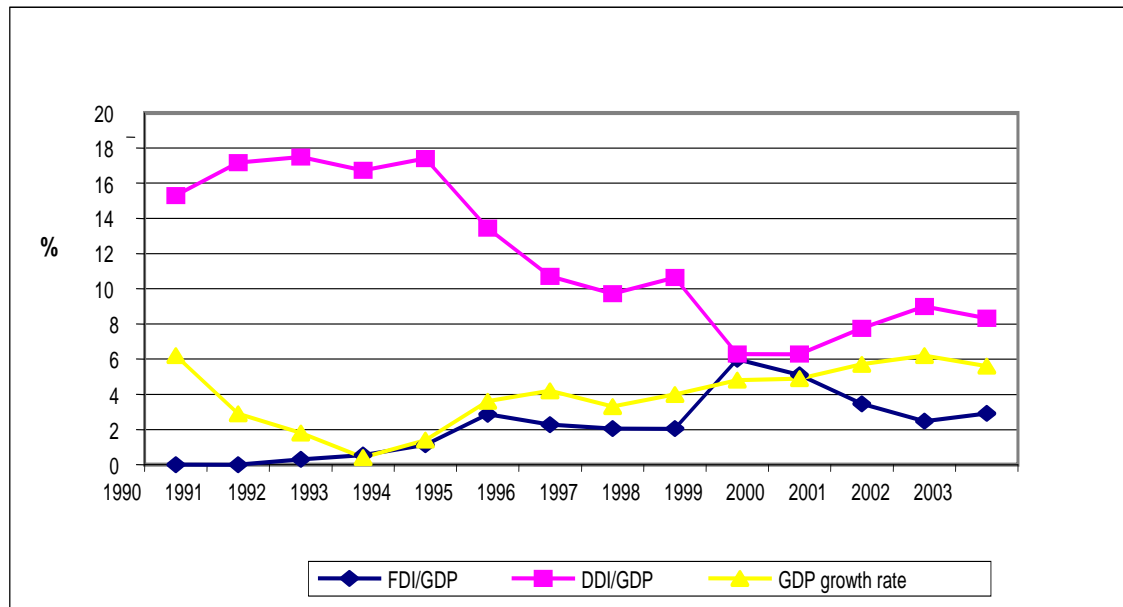
Most developing countries experience deficit in their balance of payments (goods, services and income) due to more importation of goods, services and income than what they export. So to finance the deficit they may borrow, attract foreign investment, or receive grants from abroad (surplus items). That capital, which is ultimately derived from the savings of foreigners alternatively known as the international flow of financial resources, may come in a number of forms. It can be through (1) Private foreign investment done by large multinational corporations with headquarters in the developed nations. They are known as (foreign) direct investments when they involve a control of assets such as a factory or mine, or portfolio. (2) Flows of financial capital by private international banks whose lending activities accelerated greatly during the late 1970s and helped spawn the Third World debt crisis. (3) Official/public development assistance (foreign aid) both from individual national governments and multilateral donor agencies; (4) Long-term international loans, as from the World Bank; or (5) Medium- and Short term loans from the IMF; and (6) Remittances (from international migrants).

According to the Tanzania Investment Report (2004), FDI holds the largest share of the foreign private capital flows, which also include foreign portfolio investment and long and short term loans. In 2001, for example, FDI stock accounted for about 88.6 percent of foreign private capital stock. This to some extent implies that FDI is an important foreign investment in the Tanzania's economy, although we cannot draw conclusion from only one year experience. As regards FDI components, direct equity investment forms an important component of FDI in Tanzania contributing about 76.3 percent of FDI stock in 2001. However, it is not clear to what extent FDI contribute to economic growth. Some studies conducted in Tanzania (Ngowi, 2002, 2001 and Kabelwa, 2006)

suggest that Tanzania needs an effective policy to attract these investments to the economy and play the role in achieving country's development goals.

## 1.2 An overview of FDI performance in Tanzania

**Figure 1.1: FDI, DDI and Real GDP Growth rate**



**Source: TIC (2005)**

Figure 1.1 above shows that DDI/ GDP dropped from 15% in 1991 to about 6% in 2000, contrary FDI/ GDP for the same period, has been growing slightly, and hence implying that the net increase in GDP growth rate was due to apparent growth in FDI inflows.

### 1.2.1 Factors which affects FDI inflows in Tanzania

- Governance and political stability:  
Private investors will prefer a peaceful business environment with modest political interference which will ensure sustainability and growth of their

investments. Tanzania has a good democratic and harmony records and therefore attracts foreign investors (FDIs).

- Population size and GDP growth rate (per capita GPD) which determines the market size and market growth.
- Level of technology changes which implies lower transportation and communication costs which furthermore minimizes costs and improve sales.
- Government involvement in the economy: This is done through changes in the government policies to offer incentives on issues related to establishment and running of the private sector like open trade policy, formal FDI promotions programs, tax holidays, infrastructure improvements, tariff exemption and outright subsidies.  
Strong government stance to privatization and willingness to sign international agreements, favourable monetary and fiscal policies and reduction of bureaucratic (red tape) procedures.
- Private sector involvement: This is seen mainly seen through recognition, appreciation and participation of the private sector by the government. Since FDIs constitute a substantial part of the private sector, unfavourable treatment of the private sector may discourage inflows of FDIs into a country. According to TIC (2004) the Government of Tanzania recognizes private sector as the engine for growth and job creation. Various measures have been taken to promote private sector (and therefore FDIs). For instance the establishment of TIC as the facilitator, coordinator and promoter of investment. Tanzania Private Sector Foundation as the umbrella organization for the private investors and the Tanzania National Business Council as the regulator and coordinator for dialogues between the Government, private sector and other stakeholders



at the national level. Also, Export Processing Zones targeting efficiency seeking, export oriented industries which embarks and stimulated FDI inflows into the country.

- Macroeconomic determinants: There are types of FDIs categorized according to the nature of their activities. Market seeking FDIs which penetrates the markets and persuade customers to purchase their goods and services. Resource seeking FDIs which considers resource endowments, availability of skilled and unskilled labour and the quality of fiscal infrastructure.  
Efficiency seeking FDIs which focuses in labour productivity, resources and input costs, and participation in regional integration networks.
- Openness to trade: this is practiced through internationalization of production (engaging in globalization), establishment of global supply chains and embarking open trade policy.

### **1.2.2 FDI Support Services**

The Tanzania Investment Centre (TIC) was established in 1997 by the Tanzania Investment Act to be “the Primary Agency of the Government to coordinate, encourage, promote and facilitate investment in Tanzania and to advise the Government on investment policy and related matters.” TICs functions include:

- creating and maintaining a positive climate for private sector investment;
- Providing advice to the Government on investment related matters;
- Stimulating local and foreign investments;
- Facilitating foreign and local investors;

- Stimulating and supporting the growth of Entrepreneurship and SMEs in Tanzania; Providing and disseminating up-to-date information on investment opportunities and incentive available to investors; and
- Monitoring the Tanzania business environment and growth of Foreign Direct Investment (FDI) in the Country.

Regular activities carried out at the TIC include:

- Proactive response to investor needs
- Maintenance of the Land Bank and Land delivery unit for foreign investors;
- Stimulating and facilitating development of entrepreneurship skills and growth of domestic investors including Small and Medium scale Enterprises (SMEs);
- Servicing the National Investment Steering Committee (NISC);
- Facilitating SMEs growth and their linkages with joint venture partners;
- Monitoring the flow of foreign direct investment;
- Coordinating International Investors Round Table Working Group;
- Organizing International Investment Forums;
- Continually assessing Tanzania's investment competitiveness
- Promoting Tanzania as a viable investment destination
- Policy advocacy
- Changing the government culture through sensitisation seminars

As a One-Stop-Shop investment facilitator, the TIC:

- Assists investors to obtain all permits licenses and visas.
- Grants land derivative rights to investors
- Assists investors to overcome administrative and regulatory barriers.
- Provides an after care service to all TIC registered investors
- Party to the TNBC/IRT secretariat hence establishing an important linkage between the Government and the private sector

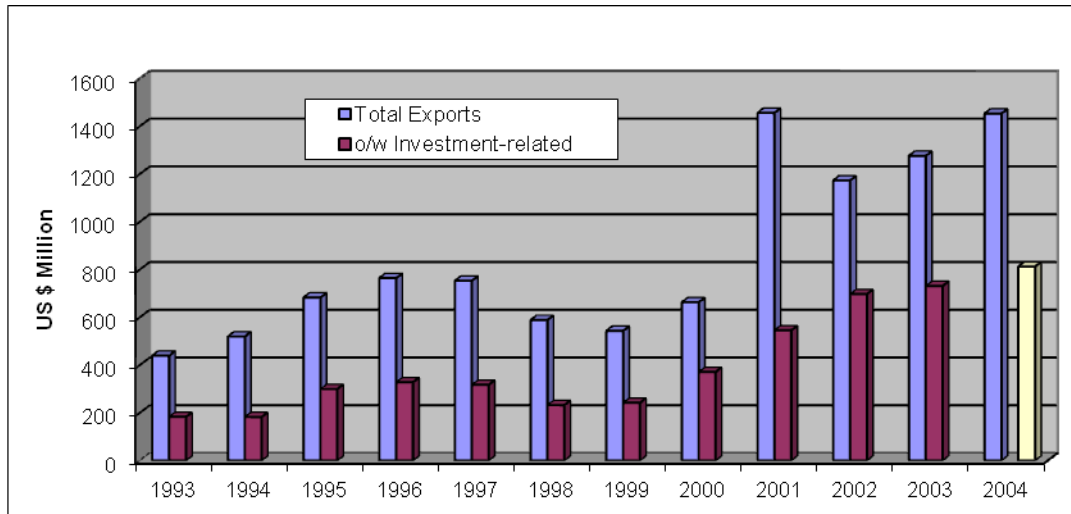
TIC's transformation began in 1996 when a number of studies were commissioned to assess TICs capability to serve investors and the investment environment. The study was carried out by consultants from the FIAS group. Consultants from the Economic Research Foundation (ESRF) were commissioned to assess the investment policy and the investment laws and regulations while the Service Group from USA evaluated the entire investment approval processes now known as the Investors Roadmap. The FIAS study revealed that the TIC then had:

- Slow and cumbersome investment approval process
- Unmotivated staff
- Unfavourable organizational culture
- Poor premises
- Poor communication and information systems
- Insufficient funding

### **1.3 An overview of Export performance for selected years**

Investment has many effects on increasing country's export earnings which in turn revamps economic growth. Affiliates of FDI's in most cases create trade flows with their home companies and in doing so increase an import/ export performance.

**Figure 1.2: Tanzania Exports (Million US\$)**



**Source: TIC (2005)**

Figure 1.2 elaborates on the relative importance of FDIs as opposed to DDIs on economic growth (real GDP growth) of Tanzania for the period between 1990 and 2004.

### **1.3.1 Factors which determine total exports in Tanzania**

- Exporter and importer GDP per capita
- Population and demographic variables as proxy for purchasing power
- Distance to importing country
- Real Exchange rates
- Conditions and restrictions cross border
- Trade policies (taxes, tariffs, quotas)

### **1.3.2 Export Promotion Status**

The government of Tanzania has taken several initiatives to promote exports performance; this is to see how export-led economic growth can work for the country. Among many is the Export Processing Zones (EPZ) program which started in 2002

under the EPZ Act of April 2002 and was amended in February 2006 to strengthen supervision and improve the incentives provided in the program.

Currently, there are 44 companies operating in EPZ, out of which 16 companies have invested in Agro processing, 8 textiles; 4 mineral processing and 16 companies in light assembly and engineering.

The main objectives of the program were:-

- ❖ To attract and promote investment for export led industrialization
- ❖ To increase foreign exchange earnings
- ❖ To create and increase employment opportunity
- ❖ To attract and encourage transfer of new technology, and
- ❖ To promote processing (value adding) of local raw materials for export.

**Incentives offered by EPZ:**

- ❖ Exemption from corporate tax, withholding tax on rent, dividends and interest for ten years
- ❖ Remission of custom duty, VAT and other taxes on production raw materials and capital goods
- ❖ Exemption from LGAs imposed taxes and levies on EPZs products
- ❖ Exemption from VAT on utility and jetty age charges
- ❖ Accessing the export credit guarantee scheme
- ❖ Allowance to sell 20% of goods to the domestic market

Some researchers claim that through technology diffusion and development of human capital FDIs may substantially promote economic growth (Tang, Selvanathan and Selvanathan, 2008). Also FDI helps to overcome capital shortage and may in some cases complement domestic investment in the host country (Noorzoy, 1979) and stimulate demand for export in resource industries of the host country.

Experience shows that there is a strong link between investment and economic growth. In particular, in the long run, economic growth is highly linked with investment in new capital and increases in productivity that is associated with investment in new technology, research and development (R&D) and training (Tanzania Investment Centre [TIC], 2005). Foreign direct investment can inject substantial financial resources into the country beyond those referred to in the statutory requirements. Such resources if channelled to new investments (Greenfield-type investments) or infrastructure (e.g. electricity, telecom, water and sanitation, roads (build-operate principles) can make marked contribution to national development. Under social benefit-cost analysis, investment inflows have to exceed outflows in terms of profit and other remittances (TIC, 2005).

Also, transnational companies can help to boost the country's exports through their foreign affiliates. In general, Foreign Direct Investment (FDI) can be an important intermediary between Tanzanian domestic producers and markets abroad. Foreign investors engaged in export-oriented primary manufacturing and service activities can be particularly useful in enhancing the county's export competitiveness in part because of their technological superiority and quality consciousness.

Experience shows that FDI is a key driver for country export promotion. For example FDI creates new trade flows with their parent companies or foreign suppliers and also export to third countries or back to the home country. Similarly to some domestic investors who are engaged in export-oriented enterprises (TIC, 2009).

Tanzania's experience to date shows there has been some impact on export earnings emanating from investments (largely FDI). Total exports earnings have risen to one half of imports compared with only a third a decade ago (TIC, 2005). This stresses that there is a growing concern that exports earnings from domestic and foreign investment is rising rapidly with time.

Export led growth thesis draws support from a success story from newly industrialized economies. For instance, Asian Tigers (Taiwan, Hong Kong, Singapore and Korea) achieved remarkable success with high and persistent economic growth rates due to outward oriented policies like free market and openness policies (World Bank, 1993). However their growth was also complemented by vigilant government interventions like tariff subsidies and protection, exchange rates improvements, management investment and industry restrictions which were both supportive and intimidating (Amsden, 1989).

Stait (2005) claimed that an export-led growth allows producers to benefit from government export policy incentives. Also, improves quality of goods to reach international competitive standards and make provision for forex which is necessary to import capital goods. Export helps to integrate countries in the world economy and reduce external shocks to the domestic economy, and allow domestic production to achieve a high level of economies of scale.

Based on the foregoing discussion, there exists a long run effects between exports and FDI on the economic growth of Tanzania. For a developing country like Tanzania, studies are needed to assess the contribution of FDI as well as export to economic growth since the country has made a number of efforts to promote them especially after embarking on market based policies.

#### **1.4 Problem Statement**

A number of studies have examined the relationships between FDIs, economic growth and exports. However, contradicting thoughts have emerged. For example, Some studies argue that FDI complement domestic investments, creates employment, improves productivity through advanced and modern technology as well as improving human capital. Also FDI helps in financing deficit balance of payments through international financial resources flow and capital investments (Magnus and Fosu, 2008; Carkovic and Levine, 200; Prassana, 2010; Borensztein, De Gregorio and Lee, 1998). In this vein, FDI influence economic growth.

Other studies claim that FDI crowds out domestic investment, and has an adverse effect on growth (Huang, 1998, 2003; Braunstein and Epstein, 2002). Yet others suggest that FDI may have no independent influence on growth. Its contribution depend on the host country's investment climate, political stability, policy frameworks, level and status of infrastructures, human capital, interest rates (lending and saving) and natural endowments /resources (Athukorala, 2003). This stream of research seems to suggest that FDI have limited effect on growth.

Pioneers of export led growth affirm that exports are the most important sources of foreign currency, provides for foreign exchange which is crucial for importing capital goods, ease pressure on the balance of payment, creates job opportunities, creating awareness of international standards of goods and services as well as enjoy benefits of economies of scale . Also integrates economies to condense external shocks which may harm the domestic economies (Sami et al. , 2009; Stait, 2005; Njikam 2003; Anwer and Sampath, 1997)

However, another stream of literature suggest otherwise. According to this research stream exports affect negatively economic growth through depriving capital formation. Similarly, exports are dominated by goods rather than services, hence for countries with low level of technology would not realize significant benefits of bulky exportation. Such countries will export raw materials. However, exports are highly subjective to government policies framework and priorities (Stait, 2005).

Based on the foregoing discussion, there seems to be existence of the relationship between exports, economic growth and FDIs. However, it is not clear if those relationships are causal. Some found unidirectional causality between FDIs and economic growth, FDIs and exports, and a bilateral causality between exports and economic growth (Melina, Chaido and Antonios, 2004).

Miankhel, Thangavelu and Kalirajan (2009) revealed that GDP growth stimulated growth in FDIs and exports only in the long run. Exports affected FDI and GDP growth



in Chile and Mexico, a unidirectional causality of GDP to exports in Thailand and a bidirectional long run relationship between exports, FDI and GDP growth in Malaysia. Hence, the empirical findings are inconsistent and therefore further research is warranted.

Additionally, many of the studies have been done in different economies, few of them in developing countries. Likewise, relationships differs from one country to another hence the importance to study for a specific country economy due to adverse country factors for instance developing countries have different preconditions and factors for growth that affect the pace and direction of growth.

Chowdhury and Mavrotas (2005) have suggested that individual country studies be done to examine the causal links between FDI and economic growth since it is at most of the time very country specific.

However, this study focuses on testing causal relationships between foreign direct investment, exports and economic growth in Tanzania

## **1.5 Objectives of the Study**

### **1.5.1 General Objective:**

Basing on the theory that most economic variables tend to influence or predict trends of other economic variables, therefore the general objective of this study is to examine the long run relationships between foreign direct investments, export and economic growth in Tanzania and to test whether or not these relationships are causal.

### **1.5.2 Specific Objectives:**

Specifically this study intended to:

- ❖ investigate the presence of cointegration (long run relationship) between Economic Growth, Foreign Direct Investment and Total Exports

- ❖ examine the presence of causality relationships among the variables of the study (Economic Growth, Foreign Direct Investment and Total Exports)
- ❖ To identify the direction of the causality relationships existing between the studied variables.

### **1.6 Significance of the Study**

This study was conducted using secondary data for FDI, Export and GDP growth rate for thirty years (1980-2010). Economic issues are very important components in addressing socioeconomic development matters; therefore a clear discerning of various economic dynamics is crucial to policy makers.

The information that this study provides will help the government and policy makers to understand if there exists long run relationships between FDIs, exports and economic growth, and whether such relationships shows causality tendency, and the direction of causality. This will help to develop policy frameworks that will consider benefits of the existing relationships and reduce costs of addressing individual macroeconomic issue. Strategies would focus on fewer sectors and the impacts are propagated and proliferated into other sectors according to their distinctive co integrations. This approach can be more efficient and cost effective.

### **1.7 Organization of the Report**

This dissertation comprises of five chapters. Chapter one presents introduction, problem statement, and objectives of the study. Chapter two presents the review of theoretical and empirical literature, and develops the conceptual framework from which hypotheses are formulated. Chapter three provides a description of the study's research methodology. In chapter four presentation and analysis of findings is done and the results are discussed. The last chapter (chapter five) summarizes the conclusion and discusses policy implications as well as limitations and avenues for further research.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter presents review of the literature. It is divided into four sections; the first section is theoretical framework, the second section is empirical framework. The third section presents the conceptual framework and the research hypothesis.

#### 2.1 Theoretical Framework

The neoclassical growth model depicts the relationships between growth and savings which in the long run leads into investment which involves both public and private (foreign and domestic) investments. For the interest of this study, investment (in manufacturing, production or in service provisioning) furthermore impacts total exports.

The Solow model, initially assumed a closed economy with no government, investment equals savings and there is depreciation in the investments.

Let  $s$  represent savings,  $k$  represent investment (capital) and  $Y$  represent total output.

Investment=savings

Change in investment ( $\Delta K$ ) = Savings-depreciation

$$\Delta K = s - d \tag{2.1}$$

In the steady state we assume;  $s$  is the savings constant fraction of income

$d$  is the constant depreciation rate of capital stock  $k$

$$\Delta K = sY - dK \tag{2.2}$$

But, from derivations  $\Delta K/K = n$  then  $\Delta K = nK$  (2.3)

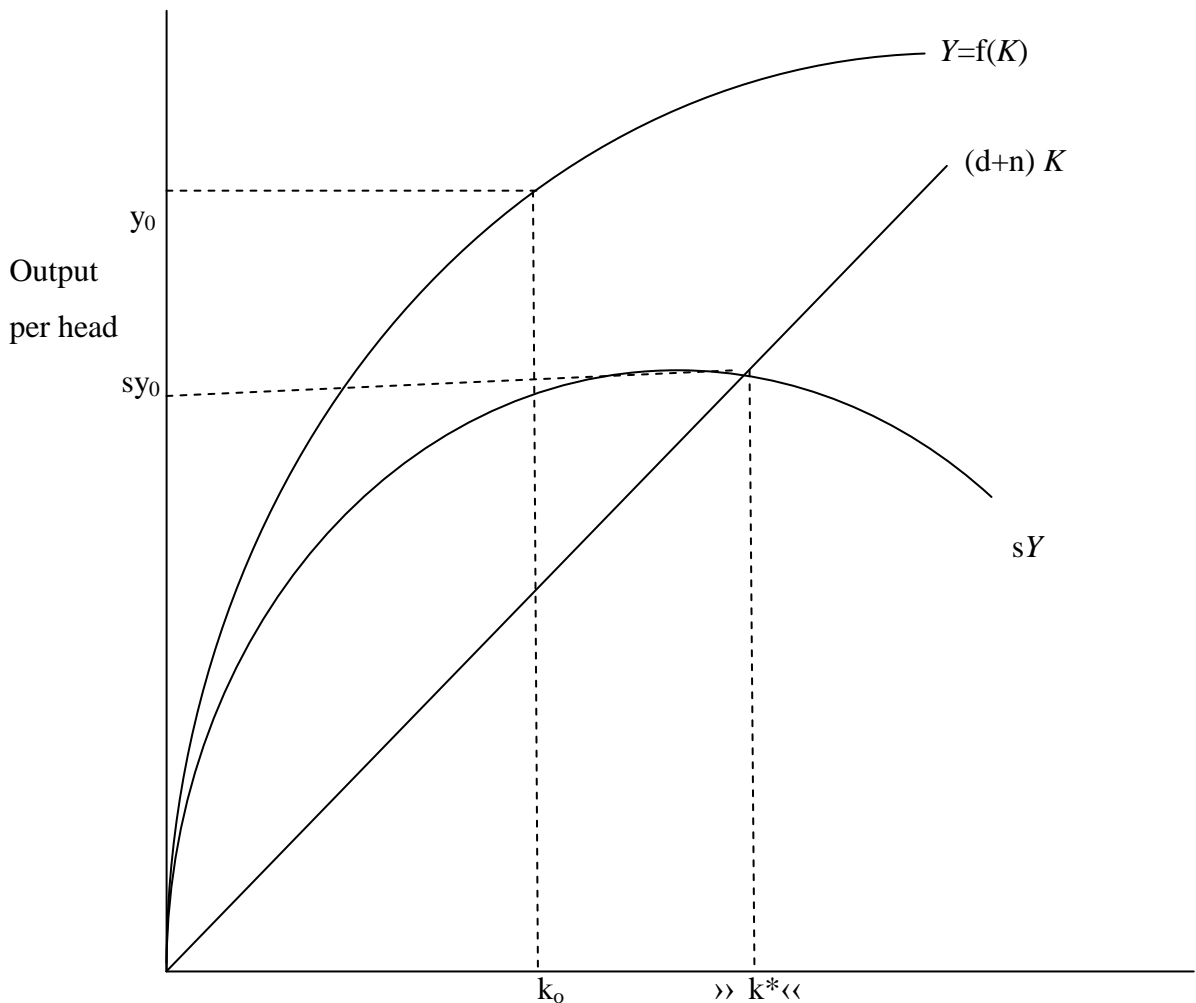
$$nK = sK - dK \tag{2.4}$$

$$sY = dK + nK$$

$$sY = (d+n) K \tag{2.5}$$

Equation (5) above describes the steady state (denoted by  $k^*$  in the figure 2.1) meaning that savings ( $sY$ ) is just sufficient to provide for enough investment to offset depreciation ( $dK$ ) and to provide labour force with capital ( $nK$ ) so that savings larger than this amount would increase capital per head and hence high income per head (Fischer and Dornbusch, 1992).

**Figure 2.1: Steady State Neoclassical Growth Model**



**Source:** Fischer and Dornbusch (1992).

In this model, growth process is subjected to rate of savings and investment against rate of depreciation and population growth. Increase in savings rate in the short run increases the short run output growth rate, and in the long run increases capital and output per head.

Increase in population growth rate reduces steady state levels of capital and output per head and is the major challenge in many developing countries. However it increases the steady state growth rate of aggregate output (Fischer and Dornbusch, 1992).

Major conclusions which can be drawn from this supply-side model, which involves foregoing of current priorities and plans for future achievements, are:

- Investment which is considered a major driver must be improved by various measures like cutting budget deficits to empower private investment (which can be local or foreign), provision of tax incentives and reducing unnecessary regulations.
- Promote investment in human capital; mobilize more and spending adequately resources and efforts in education, research and training.
- Increase investment in infrastructure (both soft and physical).

## **2.2 Review of Empirical Literature**

The literature demonstrates enormous empirical studies which have been done with regard to the long run relationships and causality between FDIs, GDP growth and exports. However, many of the studies explain relationships between two of the three variables. Either they studied the relationships between export and FDI, export and economic growth or FDI and economic growth. Few have considered both the three variables (export, economic growth and FDI) like the current study attempts to do.

Carkovic and Levine (2002) studied the influence of FDI inflow on economic development, based in the cross section of 72 countries in the period of 35 years from 1960 to 1995. Their study found that FDI inflows do not exert an independent influence on economic growth. However after disaggregating growth factors like country specific

effects, lagged dependent variables in growth regressions and sound economic policies they found that sound economic policies themselves influenced both growth and FDI. This finding is inconsistent with the original view that FDI exert a positive impact on growth that is independent of other growth determinants.

Kabelwa (2006) studied the potential impacts of FDI on economic development of Tanzania based on few case studies. The study employed qualitative analysis of particular aspects of FDI (like capital formation, employment generation, international trade, technology transfer (spillovers) and fiscal revenue). The conclusion was that, there was a strong need for effective policy to attract and make FDI work for economic development, also urged to foster domestic private investment in general development agenda.

Athukorala (2003) studied the impact of FDI to economic growth of Sri Lanka using time series data from 1959 to 2002. Using Granger causality test analysis, the study found that FDI inflows do not exert an independent influence on economic growth. By using net attitude study, findings revealed that the investment climate has not improved in Sri Lanka due to political instability, policy volatility, poorly developed infrastructure facilities, low levels of human capital. Also lack of transparency in the trade policy, discrimination against non- export oriented sectors and high lending interest rate are found as the major constraints.

Njikam (2003) investigated the relationship between exports and economic growth in 21 Sub-Saharan African countries to test the change of the direction of the causality when these countries switched from Import Substitution (IS) to Export Promotion (EP). Exports were disaggregated into agricultural and manufactured exports. Using Granger causality, during the IS period unidirectional causality was observed between economic growth towards exports in five countries, manufactured exports towards economic growth in one country. Bidirectional causality existed between economic growth and

total exports in three countries, economic growth and agricultural exports in one country and economic growth and manufactured exports in three countries.

During the EP period, unidirectional causality existed between agricultural exports towards economic growth in nine countries, manufactured exports towards economic growth in three countries, economic growth towards agricultural exports in five countries and economic growth towards manufactured exports in six countries and the only bidirectional causality existed between economic growth and agricultural exports in three countries. This shows that, agriculture exports were very much associated with economic growth during the export promotion period than during the import substitution period. Therefore export promotion is a better option for countries whose economy is dominated by agricultural production since it is closely related to economic growth.

Magnus and Fosu (2008), studied a bivariate causality analysis between FDI inflows and economic growth in Ghana. They used annual time-series data covering the period 1970-2002. Using Granger causality the study found no causality between FDI and growth for the total sample period and the pre-SAP period. FDI however Granger caused GDP growth during the post-SAP period. These findings imply that SAP program incorporated some incentives which attracted FDI into the country hence their impact to economic growth became more vivid.

Anwer and Sampath (1997) examined causality relationships between exports and economic growth for 96 countries for the period of 1960-1992 and found out that GDP and exports are integrated of different orders for 35 countries, there were no long run relationship between the two variables for 30 countries, a unidirectional causality from GDP to exports for 12 countries and from exports to GDP for 6 countries. Bidirectional causality was found in 2 countries, and no causality between GDP and exports for 11 countries. Of the 96 countries which were studied, only 6 showed optimistic impact of economic growth on exports conversely to the ordinary thinking that exports promote economic growth.

Stait (2005) tested the validity of the export led growth hypothesis for Egypt for the period of 23 years (1977 to 2000). The period included some years prior to and past Egypt's transformation, which was coupled with the structural adjustment and reform programs. The work examined cointegration between exports, imports and GDP and found out that both variables were not co integrated. However, exports were seen to Granger cause GDP growth and did not Granger cause capital formation which was another variable in the same study. Exports of goods were more significant contributor to economic growth as opposed to exports of service.

Sami, Zaman, Farooq and Javid (2009) tested the cointegration and causality between exports and economic growth in Pakistan and their results suggested that a country can attain economic growth which is one of the essential economic questions for policy makers through an export-led growth scheme which affirms that exports are the most important source of foreign exchange, and can be used to ease pressure on the balance of payments and generate job opportunities in developing countries.

Prasanna (2010) examined the impact of FDI on export performance in India for 16 years (1991-92 to 2006-07). Using OLS it was found that FDI contributed significantly to improved export performance in that period of time. However, the contribution was of the short run. In order for the benefits of FDI in India to be sustainable and vibrant, proactive policies framework which incorporates domestic efforts to expand manufacturing must be recognized and empowered. There was a strong complementary relationship between FDI policies and domestic macroeconomic policy framework, which in the long run will impact faster and sustainable growth of the whole economy.

Dominician (2006, 2008) measured the influence of sectoral FDI on Tanzanian export earnings for thirty years (1976-2007) by using OLS and error correction model. Among the findings of the study was that, sectoral capital intensiveness, investment adequacy and targeting caused adverse export results by sectoral FDI. Sectors under consideration in the study were mining and tourism (which showed higher export earnings but low



GDP contribution), agriculture and manufacturing (which had higher GDP contribution and lower export earnings). This phenomenon implies weak linkages and poor incorporation among sectors with high stocks of FDI and the rest of the economy, hence the pre-eminence of low value-added export.

Karbasi, Mohamadi and Ghofrani (2002) analyzed the impact of FDI and trade (as proxy for export) on economic growth in 42 developing countries for the period of 30 years (1971-2000). Their model was derived from production function. The findings suggested that FDI, trade, human capital and domestic investment are fundamental for economic growth in developing countries. FDI stimulated domestic investment and is affected by sub factors like institutional stability, proper macroeconomic policy framework and improved human capital.

Melina, Chaido and Antonios (2004) studied the relationship between exports, economic growth and FDIs in Greece using annual data for the period 1960-2002. They used Johansen cointegration test to test for long-run equilibrium relationship among these variables. The error correction model was applied to estimate the short-run and the long-run relationships. The study used Granger causality test and found a bilateral causal relationship between exports and economic growth. There was unidirectional causal relationship from FDI to GDP and FDI to exports.

Miankhel et al. (2009) studied the dynamic relationship between FDI, export and GDP growth for six emerging economies namely; India, Pakistan, Thailand, Mexico, Malaysia and Chile. Their study observed difference in growth stages between the countries and therefore they showed how export and FDI impacted economic growth at different stages of economic growth. The study found that there is a possible export led growth in South Asia, and in some cases GDP promoted growth in FDI and exports only in the long run. In Chile and Mexico exports affected FDI and economic growth in the long run and there was a unidirectional relationship from GDP to exports in Thailand. It

was also observed that there was a bidirectional long run relationship between exports, FDI and GDP in Malaysia.

Those are some of the literature reviewed which supplement this study so as to obtain a more robust analysis and therefore provide for practical and bona fide policy recommendation. Some of them used ECM and Granger causality test and found long run relationships and causality in various directions (Melina, Chaido and Antonios, 2004; Stait, 2005; Dominican, 2008; and Njikam, 2003). Other studies used similar or less different methodologies and found no or indirect causality (Magnus and Fosu, 2008; Athukorala, 2003; Kabelwa, 2006; and Carkovic and Levine, 2002). The studies covered different areas (group of countries or individual country), locations and levels of development whether (developed or developing). Again, there are those which studied two variables and others studied both the three variables. This study intends to clear the gaps and provide for a clear understanding of the pattern of relationship between FDI, Exports and economic growth in Tanzania.

### **2.3 Conceptual Framework**

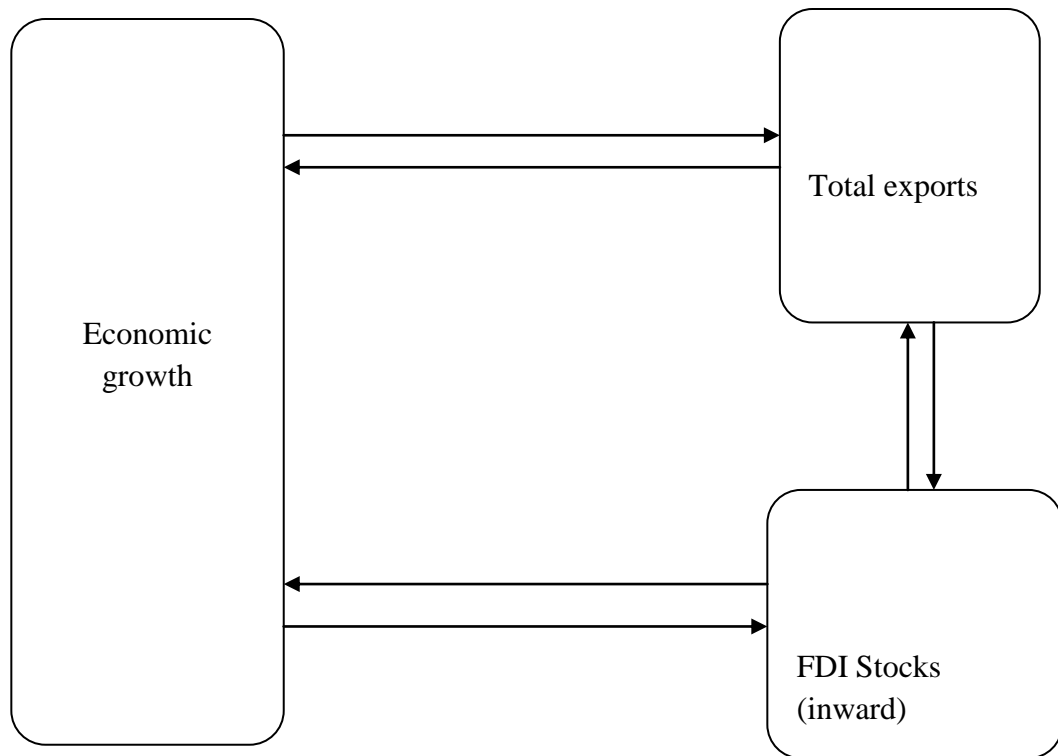
This section elaborates the relationships between variables under the study. Economic growth (GDP growth) is determined by substantial improvements in major macroeconomic variables in favour of the country. Such macroeconomic variables which are directly concerned are real GDP, total consumption, total investment, government spending and net export. Other macroeconomic variables are used more for regulatory purposes and creating favourable conditions for growth, they are inflation rate, exchange rate, unemployment rate, interest rate and capital market level.

Total investment comprises of public and private investment of which FDI is a crucial component. Investment in capital can increase productivity and provides employment therefore improve output and boost economic growth. Exports as well provides source of foreign currency for acquiring capital goods and expose the domestic products worldwide. There are cases where economic growth attract FDI and stimulates

manufactured exports. This study will focus on long run relationships between FDI, Exports and Economic growth and show the direction of causality emanating from those of long run relationships.

Figure 2.2 summarizes the overall concept underlying the prescribed relationships among the variables, that from the literature reviewed some showed that FDI can be the engine for growth by influencing economic growth and export performance, while some proposed that economic growth influenced FDI since a well performing economy ensures stable and secured market for products manufactured, produced or supplied by the foreign company. Similarly, exports was seen as an economic growth boost by providing for foreign currency which is used to purchase capital goods, integrates economies and provided for employment. Conversely, economic growth can promote exports growth through expansion of production and manufacturing, infrastructure development and improved human capital.

**Figure 2.2: Conceptual framework diagram**



Source: Adopted and modified from Melina .et al. (2004)

#### **2.4 Study Hypothesis:**

The study hypotheses are as follows, results of which are presented in chapter four.

H<sub>1</sub>: There is a long run relationship between FDI, export and economic growth in Tanzania

H<sub>2</sub>: There is a causal relationship between FDI, export and economic growth in Tanzania.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

In this chapter the research methodology used is presented. The chapter is divided into four sections, the first section presents source and nature of data, the second section involves relevant validity tests. Variables measurements and description are described in section three while research model and estimation technique is discussed in the fourth section.

#### **3.1 Source and Nature of Data**

This research involved secondary data concerning total exports, economic growth and foreign direct investment established in Tanzania for 30 years (1980-2010) to determine the presence and direction of the relationships among the variables.

Data and supporting figures were collected from secondary sources including publications, periodic journals and newsletters from TIC (Investment reports and periodic newsletters). And an external source which is UNCTAD (UNCTAD Stat - country economic data).

#### **3.2 Validity Tests**

This part presents necessary tests and validity issues concerned with multivariate time series modelling. Major tests include stationarity tests (Dickey Fuller test) which show whether or not there are unit roots associated with the time series variables. This helps to understand the next procedure to undertake. Cointegration test is done using the

Johansen trace test and lastly the relationship between variables is established by using the Granger causality test.

Other tests includes Breusch-Pagan test for heteroscedasticity and Variance Inflation Factor tests for multicollinearity. Model specification test (OV test) was done to see if the model is properly specified that is, it did not omit relevant variables (or include irrelevant variables).

### 3.2.1 Stationarity Test

In this study, the Augmented Dickey-Fuller (ADF) test was used to test the stationarity of the three time series FDI, Exports and GDP by testing for the presence of unit roots. According to Dickey and Fuller (1981) the ADF test involves both the level and first differenced observations by estimating the following three models:

No constant and no trend model:

$$\Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t \quad (3.1)$$

Constant and no trend model:

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t \quad (3.2)$$

Constant and trend model:

$$\Delta Y_t = \alpha_0 + \alpha_{2t} + \gamma Y_{t-1} + \sum_{i=1}^k \beta_i \Delta Y_{t-i} + \varepsilon_t \quad (3.3)$$

Where  $\Delta Y_t = Y_t - Y_{t-1}$  = the first difference of the series  $Y_t$ ;

$$Y_{t-1} = (Y_{t-1} - Y_{t-2}) = \text{the first difference of } Y_{t-1},$$

$\alpha_0$ ,  $\gamma$  and  $\beta_i$  are parameters to be estimated, and

$\varepsilon_t$  is a stochastic disturbance term. The number of lagged terms is chosen to ensure that the errors are uncorrelated. The difference among the three regressions (1)-(3) lies at the inclusion or exclusion of the deterministic elements  $\alpha_0$  and  $\alpha_{2t}$ .

### 3.2.2 Johansen Trace Test of Cointegration

This test is used to identify the number of cointegrating equations (vectors). It takes particular values arranged in ascending order (starting from  $r_0$ ) with their respective trace and critical value. Thus we begin by testing  $H_0$  that there are no cointegrating vectors. If the null hypothesis is rejected there are at least one cointegrating vectors and proceed with the tests until  $H_0$  is accepted (Johansen, 1995; Johansen and Juselius, 1990; Akaike, 1974). Section 4.5 in chapter four presents the results of the Johansen test.

### 3.2.3 Vector Autoregression Model (VAR)

After identifying the cointegrating vectors in the above (Johansen test) section, VAR (which is a set of autoregressive distributed lag) was run to identify the cointegrating equations and their estimated coefficients. Since the study has three variables, then there will be three equations indicating any variable can be explained by the others, the significant equation (s) will be obtained from the results of Vector Autoregression (Granger, 1969).

$$GDP_t = \alpha_t + \beta_1 GDP_{t-1} + \beta_2 Exports_t + \beta_3 Exports_{t-1} + \beta_4 FDI_t + \beta_5 FDI_{t-1} + \mu_t$$

$$FDI_t = \alpha_t + \beta_1 FDI_{t-1} + \beta_2 Exports_t + \beta_3 Exports_{t-1} + \beta_4 GDP_t + \beta_5 GDP_{t-1} + \mu_t$$

$$Export_t = \alpha_t + \beta_1 Exports_{t-1} + \beta_2 GDP_t + \beta_3 GDP_{t-1} + \beta_4 FDI_t + \beta_5 FDI_{t-1} + \mu_t$$

### 3.2.4 Granger Causality (Wald test)

The study applied Granger causality test to determine the direction of causality. The test hypothesis is  $H_0$ : variable X does not Granger cause variable Y. Failure to reject this null hypothesis means X does not Granger cause Y, therefore we have enough evidence to reject that x Granger cause Y (Granger, 1988).

### 3.3 Variables and Measurement

This section describes variables which are studied in the research. Economic growth is measured as the rate at which the real GDP of Tanzania has been changing (growing) over time. FDI is measured as the total monetary amount of inward FDI stocks in Tanzania in million US dollars, and total export is the monetary value of total exports that is recorded in a year in million US dollars.

**Table 3.1: Variables and Measurements**

Variable Name	Variable Description and Measurements
<b>Economic Growth</b>	GDP Growth rate in million USD per year
<b>FDI Stocks</b>	FDI Stocks (inward) recorded in a year in million USD
<b>Exports</b>	Total exports recorded in a year in million USD

### 3.4 Econometric Model and Estimation Technique:

The general national income accounting equation using the expenditure approach was used to describe the relationships between variables in this study. It attempts to equate the national output (GDP) to consumption C, investment I, government spending G and net exports (export minus import) X-M.



$$Y = C + I + G + (X - M) \quad (3.4)$$

Where;  $Y$  is the total output (GDP)

$C$  is consumption function including autonomous consumption,  $a$  and marginal propensity to consume i.e.  $C = a + bY_d$

$I$  is the total investment which has an autonomous component,  $d$ , and a marginal propensity to invest,  $e$ . i.e.  $I = d + Ey$

Note: In this study the assumption is that total investment constitutes domestic and foreign investment (FDI), for the interest of this study, domestic investment is exogenous and therefore total investment constitutes FDI only. i.e.  $I = FDI$

$G$  is government spending which is autonomous. i.e.  $G = G$ .

$X - M$  is net export whereby  $X$  is aggregate export and  $M$  is aggregate imports which has an autonomous component and a marginal propensity to import,  $m$ . i.e.  $X - (a + mY_d)$ .

The model estimated have the following nature:

$$GDP_t = \alpha + \beta_1 FDI_t + \beta_2 X_t + \mu_i \quad (3.5)$$

Where;  $FDI$  = foreign direct investment stocks

$GDP$  = Gross Domestic Product

$X$  = Total Export

$\alpha$  = constant (intercept term)

$\beta_n$  = slope of the explanatory variables

$\mu_i$  = error term

Most of the economic variables tend to have long run relationship, which is why this study tests for presence of such relationships and whether or not they are causal. Since the direction of the causality is not clear, there are three equations which describe the possible causal long run relationships between the variables. This is the main underlying assumption in Vector Autoregression models which is used for estimation. Therefore we have:

$$GDP_t = \alpha_t + \beta_1 GDP_{t-1} + \beta_2 FDI_t + \beta_3 FDI_{t-1} + \beta_4 X_t + \beta_5 X_{t-1} + \mu_t \quad (3.6)$$

$$FDI_t = \alpha_t + \beta_1 FDI_{t-1} + \beta_2 GDP_t + \beta_3 GDP_{t-1} + \beta_4 X_t + \beta_5 X_{t-1} + \mu_t \quad (3.7)$$

$$X_t = \alpha_t + \beta_1 X_{t-1} + \beta_2 FDI_t + \beta_3 FDI_{t-1} + \beta_4 GDP_t + \beta_5 GDP_{t-1} + \mu_t \quad (3.8)$$

## CHAPTER FOUR

### PRESENTATION OF THE FINDINGS

#### 4.0. Introduction

This chapter has seven sections in which results from tests and estimations are presented. Section one shows results for stationarity test, section two presents results for heteroscedasticity test. Section Three gives results for multicollinearity tests while Section Four provides for model specification test results. The Fifth Section describes results for Johansen test for cointegration. The last and most important section (sixth) gives the Vector Autoregression and Granger causality test results.

#### 4.1. Stationarity Test

Table 4.1 shows results of the unit root test. At 0 lags variables were not stationary. The test statistic have smaller values than the critical values which fails to reject the null hypothesis that there is a unit root, hence concluding that the series are not stationary (have unit roots). Stationarity was obtained after lagging both series once and therefore conclusion was drawn that series were integrated of order 1 (I (1)).

**Table 4.1: Unit root test for GDP growth rate, FDI stocks and Total Exports**

Dickey Fuller test for unit root				Number of obs = 30
----- Interpolated Dickey – Fuller -----				
Variable	Test Statistic (Zt)	1% Critical Value (Zt)	5% Critical Value (Zt)	10% Critical Value (Zt)
GDP growth rate	-4.503	-3.716	-3.580	-3.228
FDI stocks	-4.413	-4.334	-3.580	-3.228
Total Exports	-2.682	-2.652	-1.950	-1.602

## 4.2 Test for Heteroscedasticity

Heteroscedasticity refers to the dispersion of the variance, which is caused by statistical models that allows random variables to differ in variance. When the mean of the variable changes with time, variance also changes proportionally. This can be a result of poor data quality or presence of errors during data collection (Greene, 1993). However according to Verbeek (2004), heteroscedasticity problems are not common in time series variables because of seasonal adjustments which occur in variables with trendiness. Heteroscedasticity does not make OLS coefficients estimates biased, it rather leads into biased estimators of standard errors and if uncorrected, may lead into type II error.

Breusch – Pagan test was done to find that the data revealed a problem of heteroscedasticity. The results indicated that the null hypothesis that there is constant variance (homoscedasticity) can be rejected hence indicating the presence of heteroscedasticity (Table 4.3). To correct the situation regression command was used with robust which gave the corrected robust standard errors (Table 4.2). This is due to the seasonal adjustments of the time series variables which corrects errors (deviations) with time.

**Table 4.2: Test for heteroscedasticity**

---

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity	
Ho: Constant variance	
Variables: fitted values of gdpgrowthrate	
chi2(1)	= 7.97
Prob > chi <sup>2</sup>	= 0.0048

---

**Table 4.3: Correcting heteroscedasticity**

Linear regression				Number of obs = 31	
				F (2, 28) = 17.35	
				Prob > F = 0.0000	
				R-squared = 0.4844	
				Root MSE = 1.791	
gdpgrowthr~e	Coef.	Robust Std Err	t	P> t	[95% Conf. Interval]
totalexpor~d	-.0001204	.0002058	-0.58	0.563	-.000542 .0003013
lnfdistock~d	1.594814	.4271617	3.73	0.001	.7198124 2.469815
_cons	-6.360536	2.895792	-2.20	0.037	-12.2923 -.428775

### 4.3 Multicollinearity

Two or more independent variables can have a perfect or approximate linear relationship, this phenomenon is called multicollinearity. It is important to test for multicollinearity because this study involves multiple regression models and the presence of perfect multicollinearity could imply that the explanatory variables have a strong linear relationship (Gujarati, 1995). Formal detection tolerance (Variance Inflation Factor) tests were used to test for multicollinearity whereby results revealed that there is no serious problem of multicollinearity. This is shown by a mean VIF of 4.06 which is less than 5 (or tolerance of 0.25 which is bigger than 0.2) as it is seen in table 4.4.

**Table 4.4: Test for multicollinearity**

Variable	VIF	1/VIF
lnfdistock~d	4.06	0.246095
totalexpor~d	4.06	0.246095

---

<b>Mean VIF</b>	4.06	0.246095
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---

#### **4.4. Model Specification test**

This test checks on the relevance of the variables that are included in the model. The test shows whether or not irrelevant variables are included in the model (or if the relevant variables are omitted in the model) (Verbeek, 2004). Model specification test is important because it provides enough confidence in the proposed estimation model. The test (ovtest) results revealed that the model is properly specified. The P value is greater than 0.05 giving no evidence to reject the null hypothesis that there are no omitted variables in the model see Table 4.5.

**Table 4.5: Model Specification tests**

---

Ramsey RESET test using powers of the fitted values of gdpgrowthrate
Ho: model has no omitted variables
$F(3, 25) = 1.03$
Prob > F = 0.3964

---

The ovset above reveals that the model is properly specified because the p-value is far greater than 0.05 which provides greater evidence to accept the null hypothesis that there are no omitted variable in the model hence it is well specified. So we can carry out further estimation for the relating variables in this study.

#### **4.5 Cointegration Analysis: Johansen Cointegration test**

This test establishes the number of cointegrating equations which relates the variables in the study. Table 4.6 shows the results of analysis. The results show that there is at least one cointegrating vectors since the hypothesis of no cointegrating vectors is rejected. So

in our case we conclude that there is at least one significant cointegrating equation. Having determined the number of cointegrating vectors the next step is to identify the equations and test for causal relationship. This is done in section 4.6.

**Table 4.6 Johansen test for cointegration**

Trend: constant Sample: 1982 - 2010		Number of obs = 29 Lags = 2			
Maximum rank	parms	LL	eigenvalue	Trace statistic	5% critical value
0	12	-464.99318	.	31.7755	29.68
1	17	-452.59388	0.57477	6.9769*	15.41
2	20	-449.12263	0.21290	0.0344	3.76
3	21	-449.10543	0.00119		

#### 4.6 Vector Autoregression

One of the hypotheses was to test for granger causality between the three variables, the null hypothesis states that: There is no Granger causality (coefficients on the lags of X are not jointly equal to zero). Variables were subjected to basic Vector Autoregression (VAR) and results are presented in table 4.7. The significant cointegrating equations (vector) can be derived from these results.

**Table 4.7 Vector Autoregression Results**

Sample: 1981 - 2010		30		No. of obs	=
Log likelihood = -473.837		32.38913		AIC	=
FPE = 2.35e+10		32.56844		HQIC	=
Det(Sigma_ml) = 1.05e+10		32.94961		SBIC	=
Equation	Parms	RMSE	R-sq	chi2	P>chi2
gdpgrowthrate	4	1.6312	0.5970	44.43397	0.0000
fdistocksinwar~d	4	269.364	0.9870	2275.623	0.0000
totalexportsmi~d	4	290.15	0.9725	1062.346	0.0000
	Coef	Std. E	z	P> z	[95% Conf. Interval
<b>gdpgrowthr~e</b>					
gdpgrowthr~e L1	.435776	.156655	2.78	0.005	.1287369 .7428152
fdistocksi~d L1.	.0013354	.000548	2.44	0.015	.0002614 .002409
totalexpor~d L1.	2.259539	.0007441	-1.82	0.068	-.0028163 .0001004
cons	-.0013579	.6790302	3.33	0.001	.9286648 3.590414
<b>fdistocksi~d</b>					
gdpgrowthr~e L1.	15.82311	25.86883	0.61	0.541	-34.87885 66.52508
fdistocksi~d L1	1.07156	.0904847	11.84	0.000	.8942131 1.248907
totalexpor~d L1.	.002367	.1228735	0.02	0.985	-.2384607 .2431947
cons	17.08934	112.1296	0.15	0.879	-202.6806 236.8593
<b>totalexpor~d</b>					
gdpgrowthr~e L1.	-10.46579	27.86508	-0.38	0.707	-65.08034 44.14875
fdistocksi~d L1.	.3220667	.0974672	3.30	0.001	.1310345 .5130989
totalexpor~d L1.	.7116982	.1323555	5.38	0.000	.4522863 .971110
cons	77.46359	120.7824	0.64	0.521	-159.2656 314.1928



#### 4.7 Granger Causality Test

The Granger causality test results revealed that there are only unidirectional causalities between the study variables. There was a significant causality from FDI stocks and Total exports towards GDP growth rate at 5% and 10% respectively. However, FDI was seen to Granger cause total exports at 1% (Table 4.8).

**Table 4.8 Granger causality Wald test**

Equation	Excluded	chi2	df	Prob > chi2
gdpgrowthrate	fdistocksinward~d	5.9394	1	0.015
gdpgrowthrate	totalexportsmil~d	3.3305	1	0.068
gdpgrowthrate	ALL	7.9923	2	0.018
fdistocksinward~d	Gdpgrowthrate	.37414	1	0.541
fdistocksinward~d	totalexportsmil~d	.00037	1	0.985
fdistocksinward~d	ALL	.38344	2	0.826
totalexportsmil~d	Gdpgrowthrate	.14107	1	0.707
totalexportsmil~d	fdistocksinward~d	10.919	1	0.001
totalexportsmil~d	ALL	11.884	2	0.003

## **CHAPTER FIVE**

### **DISCUSSION OF THE FINDINGS**

#### **5.0 An Overview**

This chapter presents the discussion of the study findings presented in the previous chapter. The chapter is divided into three sections. Section one describes the validity test results, whereas section two discusses the long run relationships (cointegration) results. Cointegration equation and Causality relationships results are discussed in section three.

#### **5.1 Specification Tests**

All three variables were not stationary at 0 lags, after differenced once the variables became stationary. Stationarity test series helps to avoid the problem of spurious regression and provides the lead for the proceeding procedures.

Although heteroscedasticity is not a common problem in time series variables, a problem of heteroscedasticity was diagnosed using the Breusch- Pagan test (Table 4.2). This could be due to incorrect data collection techniques or general poor data quality, a problem associated with the secondary data (Greene, 1993). However this does not make coefficients' estimates biased, but rather gives biased standard errors' estimators if left uncorrected and may lead into type II error (Greene, 1993; Verbeek, 2004). However, remedial measures were taken by applying robust standard errors (Table 4.3).

Regarding multicollinearity, the data revealed no problem of multicollinearity (Table 4.4). This means the exogenous variables do not have a perfectly linear relationship and therefore less influence the linear relationship between the dependent and independent variables.

The model specification test (ovtest) results show that this study's model is properly specified. It did not omit important variables neither include irrelevant variables. This provides more confidence to proceed to further tests while be assured that we have a realistic and reliable model which will lead us into a correct conclusions.

Generally, this section gives the implication that data used are sufficiently valid and ready to be used in various statistical and econometrical analyses. Therefore, results obtained from those analyses are definite and reliable, and can be used to provide for steadfast policy implications.

## **5.2 Cointegration Results**

From the results of cointegration test (Table 4.6) in chapter four, there was at least one significant cointegrating vector. These results answer for the first hypothesis that there are long run relationships between the time series variables which are studied in this research. The non stationary time series variables which move together in the long run towards equilibrium (have a stationary linear relationship) are said to be cointegrated (Engel and Granger, 1987). Thus, the variables of this study revealed one significant cointegrating equation whose identification is done in section 5.3.

These findings compliment the theory that most economic variables tend to have long and short run relationships. This means that, in most cases they help to predict trends of other economic variables. For example, growing rates of inflation may predict trend of other macroeconomic variables like total consumption, savings, and therefore economic growth.

## **5.3 Cointegration Equation and Granger Causality Analysis**

Variables were subjected to Basic VAR model which provided the cointegrated equation as well as the coefficients of the variables with respect to that equation. The result

showed that, when all variables are related towards each other, their postulated equations had good explanatory powers (high R-square values) and were significant.

When the equation was set with GDP growth rate as a dependent variable, all coefficients of the equation were significant (at 1%, 5% and 10%). This means that this is among the cointegrating vectors (equations) and could yield the causality relationship for the study variables. Both FDI and total exports demonstrate significant impact to GDP growth rate.

These results are consistent to some previous literatures (Karbasi et al, 2002; and Melina et al, 2004) which postulate that FDI and Exports do affect GDP growth rate and therefore economic growth.

When FDI was the dependent variable, all coefficients were insignificant even at 10% except for its lagged variable. This situation notifies that this is not among the cointegrating vectors and thus does not hold for any causality relationship. No variable in this study exerts any significant impact on FDI.

The third equation was relating total exports as a dependent variable, to FDI and GDP growth rate as independent variables. There were significant coefficients for lagged exports and FDI and insignificant coefficient for GDP growth rate. This denotes that FDI exerts a significant impact on total exports.

Generally, results revealed that the first equation with GDP growth rate as a dependent variable is definitely the cointegrating equation.

A Granger causality test showed that there are three causality relationships. However, all of them are unidirectional. These findings provide answers to this study's second hypothesis that whether or not the existing relationship are causal. There was a

unidirectional causality with a direction from FDI and Total Exports to GDP growth rate, and also from FDI to total exports. With these results, it is logical to suggest that FDI exerts direct and indirect effects (through exports) causality to GDP growth rate.

This finding is interesting because FDI plays a dual role, promoting GDP growth and export growth of a country. In this vein, Tanzania can achieve the twin growth (GDP and Export) by putting more emphasis on attracting the inflow of FDI. The export –led growth is also supported by this study.

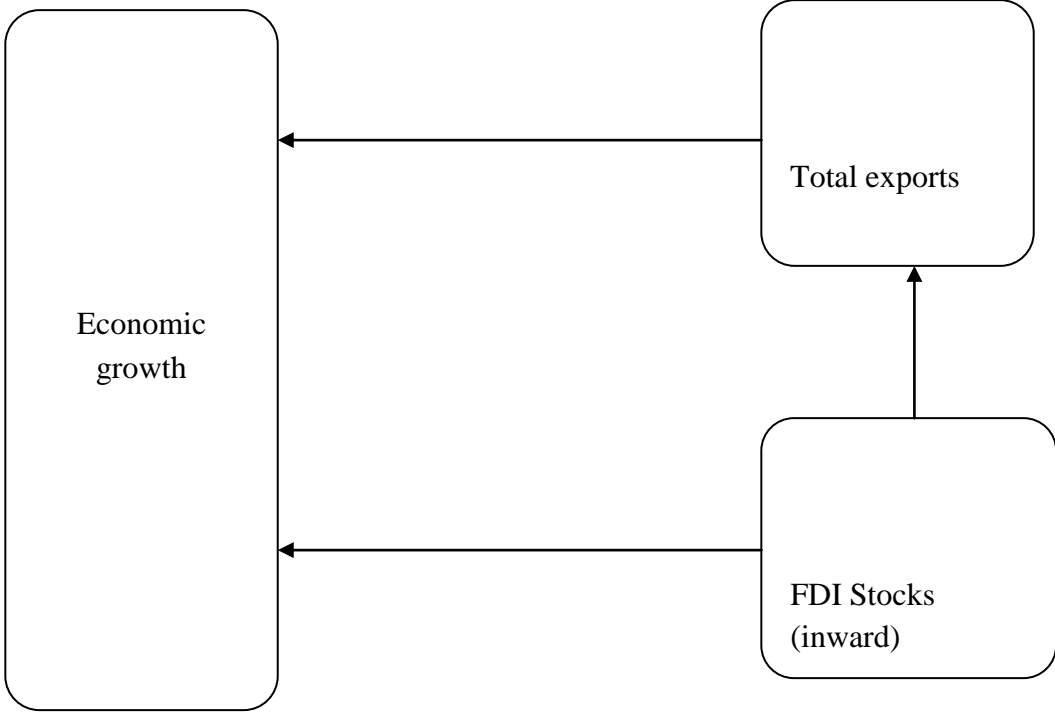
The Granger causality of export to GDP growth rate portrays a possibility of an export-led growth hypothesis for Tanzania. This is because of the opening the economy to international trade during (1990s) which is a very important precondition for export-led growth. This is also seen in previous literatures which compliment export-led growth (Sami et al., 2009, Stait 2005, Njikam 2003, Anwer and Sampath 1997).

Likewise, the Granger causality of FDI to economic growth illustrates the theory of FDI as an engine for growth, this is because most developing countries face deficit balance of payment and lack financial capital, so to finance the deficit and obtain capital, they attract foreign investment which in most cases comes in the form of FDI. Along with that, FDI provides technological spillovers, advanced managerial skill and human capital development. Also provides employment, all these exerts positive effects in the domestic economy. This also is consistent with other previous literatures ((Magnus and Fosu 2008, Carkovic and Levine 2002, Prassana 2010; Borensztein, De Gregorio and Lee, 1998).

Causality with the direction from FDI to export demonstrates that FDI is a key driver for country export promotion. FDI creates new trade flows between foreign investors (in the domestic country) and their home countries, and domestic export-oriented enterprises.

Furthermore, the findings of this study propose an advancement of the conceptual model used (section 2.3). The new proposed conceptual model is presented below (Figure 5.1).

**Figure 5.1: The Revised Conceptual Framework**



## **CHAPTER SIX**

### **CONCLUSION AND POLICY IMPLICATIONS**

#### **6.0 Introduction**

This chapter presents the conclusion and policy implications of the study findings, and have two sections. Section one presents the conclusion and section two provides the policy implications.

#### **6.1 Conclusion**

In most of developing economies capital investment is among the major challenges which affect productivity and therefore total output. So, to mitigate these challenges various initiatives are embarked and promoted. In Tanzania for instance, various initiatives are put forward to attract FDIs and promote exports. The main objective of this study was to test for the possible long run and therefore possible causality relationship between economic growth, FDI and exports.

Results showed that there was at most one cointegrating equation obtained by a linear combination involving GDP growth rate, FDI, and exports. This suggests that the three series will tend to move together towards the equilibrium in the long run. However, this co-movement is not necessarily causal. So the study tested whether the relationships can be interpreted in terms of causality. Upon using the Granger causality test, the study found and concluded that export and FDI granger cause GDP growth. GDP growth does neither granger cause Export nor FDI. Therefore, there were unidirectional causalities with direction from FDI and exports to GDP growth rate and FDI to exports. The conclusion of the study can be summarized in Table 6.1.

**Table 6.1 Summary of the Findings**

<b>Relationship and Direction</b>	<b>Conclusion</b>
Economic Growth => FDI	No
Economic Growth => Exports	No
FDI => Economic Growth	Yes
FDI => Exports	Yes
Exports => Economic Growth	Yes
Exports => FDI	No

Thus the study concluded that FDI and exports are favourable engines for growth; they regulate balance of payment, provide for foreign currency which is used to acquire capital goods, integrates economies and therefore reduce external shocks, and exposes the country to international standards, new innovations and technologies. They are also a good source of government revenue (income and value-added taxes, customs) and provide employment opportunities. All these should go with competitive and effective policy frameworks in order to achieve robust and sustainable growth and therefore development (Ngowi, 2002, 2001; Kabelwa, 2006; and Prassana, 2010).

## **6.2 Policy Implications**

- Basing on the findings of this study, FDIs should be carefully attracted, because they have shown to have bigger impacts (multiplier effect) on economic growth of Tanzania. The initiatives embarked so far have achieved what is seen today. However, macroeconomic policy frameworks have to be strengthened to realize the definite and sustainable growth potentials of FDI as well as exports.



- Likewise, incentives offered must be competitive and lucrative enough to benefit both sides (the government and the investors) with a priority being towards the government.

More research is needed to provide a broader and reliable source of information that will guide planners and policy makers towards better strategical plans and allocate resources more efficiently.

Also the area of domestic direct investments needs special attention and exploration. So far there are few literatures about domestic investment in Tanzania as opposed to FDI. Domestic investment is also a crucial area, studies can be undertaken to establish possible relationships between FDI and DDI.

Major Limitations to the study included financial resources and availability of consistent single source data. Another limitation was due to issues associated with the use of secondary data. Such issues can be a result of data collection errors and biasness of the data collector.

For further research, I recommend that different approaches should be employed in undertaking economic studies, for instance the use of disaggregated and sector specific data, modern and accurate techniques, both will help to obtain more applicable, current and robust findings that can address many issues and impact directly on the welfare of individuals and the country at large.

Institutions responsible to collect and manage data should ensure that proper and consistent data are available to users.

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## APPENDIX I

### Data Set Used in the Study

Period	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
owth rate	2.99	-0.5	0.59	-2.4	3.38	4.59	1.89	4.93	4.06	3.99	6.88	5.7	3.52	4.22	2.88	3.57	4.79	3.58	3.66	4.9	4.9	6.08	7.2	6.86	7.8	7.31	6.72	7.14	7.38	6.04	6.83
FDI (Inward) (Mill Usd)	342	361	379	380	372	386	379	378	382	388	388	388	400	420	470	620	681	760	1715	1989	2781	2867	2939	3590	3954	4439	4827	5950	6240	6655	7089
l Exports (Mill Usd)	748	798	527	490	504	434	437	393	504	532	538	505	576	765	938	1265	1372	1247	1191	1202	1361	1767	1900	2169	2615	2972	3446	4102	5578	5153	6370

