THE IMPACT OF FOREGIN CAPITAL INFLOW ON ECONOMIC GROWTH OF YEMEN: DOES INSTITUTIONAL FACTORS MATTER?

ABDUARHMAN SALIM ABDUALLAH BAHATTAB

(815004)

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By

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ABSTRACT

This study attempts to explain of foreign capital inflows (foreign direct investment (FDI), remittances and aid), corruption and political stability on economic growth of Yemen. However, FDI, Official Development Assistance (ODA) and Personal Remittances have been considered as component of FCI. Furthermore, the model for analysis was developed based on the Two Gaps economic growth model. However, Augmented Dickey-Fuller (ADF) test is used to check for stationarity and Ordinary Least Square (OLS) estimator has been applied for estimation purposes. The analysis of this relationship is based on annual time series data for the period of 2003-2013; while the data have been taken from the World Development Indicators (2015), World Governance Indicators (2015) and some other sources. Furthermore, the correlation between FDI inflows and other variables at the lowest level and the correlation among ODA, political stability and corruption is more than 80% during the study period. The results show that FDI and ODA have a positive and significant effect on economic growth of Yemen, but personal remittances have significant and negative effects on Yemen's economic growth. In addition, corruption and political stability that explain institution environment are insignificance for economic growth of Yemen. However, the insignificant of corruption and political stability could be due to the fact that correlation is higher than 85% and positive in Yemen during the period of the study. The findings, particularly on FDI, personal remittances, corruption and political stability have some policy relevance at the macro development perspective.

Key words: FDI, Official Development Assistance, Remittances, Corruption, Political stability, Yemen.

ABSTRAKT

Kajian ini bertujuan untuk menjelaskan aliran masuk modal asing seperti pelaburan asing (FDI), kiriman wang dan bantuan wang , rasuah dan kestabilan politik keatas pertumbuhan ekonomi di Yaman. Walaubagaimanapun, pelaburan asing (FDI), Bantuan Pembangunan Rasmi (ODA) dan kiriman wang peribadi dikenalpasti sebagai sebahagian dari FCI. Selain itu, model yang digunakan untuk tujuan analisis dibentuk berdasarkan model pertumbuhan ekonomi dua jurang (two gaps economic growth model). Ujian Augmented Dickey-Fuller (ADF) digunakan untuk menguji kepegunan dan Ordinary Least Square (OLS) digunakan untuk tujuan penganggaran. Bagi menganalisis hubungan ini, data siri tahunan bagi tahun 2003 hingga 2013 digunakan dan data ini diperolehi daripada World Development Indicators (2015), World Government Indicators (2015) dan sumber lain. Akan tetapi korelasi diantara aliran masuk pelaburan asing FDI dan pembolehubah yang lain berada di tahap yang paling rendah manakala korelasi diantara Bantuan Pembangunan Rasmi (ODA), kestabilan politik dan rasuah adalah lebih daripada 80% semasa kajian dijalankan. Hasil kajian menunjukkan pelaburan asing (FDI) dan Bantuan Pembangunan Rasmi (ODA) mempunyai hubungan positif dan kesan signifikan keatas pertumbuhan ekonomi di Yaman, tetapi kiriman wang peribadi adalah signifikan dan memberi kesan negatif keatas pertumbuhan ekonomi di Yaman. Selain itu, rasuah dan kestabilan politik menjelaskan institusi persekitaran adalah tidak signifikan keatas pertumbuhan ekonomi di Yaman. Walaubagaimanapun, ketidaksignifikan rasuah dan kestabilan politik boleh mempengaruhi korelasi lebih daripada 85% dan positif di Yaman semasa kajian dijalankan. Hasil kajian mendapati, terdapat perkaitan positif diantara pelaburan asing (FDI), kiriman wang peribadi, rasuah dan kestabilan politik dengan dasar perkaitan dari perspektif pembangunan makro.

Kata kunci: pelaburan asing (FDI), Bantuan Pembangunan Rasmi (ODA), kiriman wang, rasuah, kestabilan politik, Yaman.

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In the name of ALLAH, the most gracious, the most merciful. Praise be to ALLAH, the creator and custodian of the universe. Salawat and Salam to our Prophet Muhammad, peace and blessings of ALLAH be upon him and to his family members, companions and followers.

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Everlasting love.

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LIST OF ABBREVIATIONS

FDI	Foreign Direct Investment
FCI	Foreign Capital Inflow
OLS	Ordinary Least Square
GDP	Gross Domestic Product
RGDP	Real Gross Domestic Product
ODA	Official Development Assistance
PR	Personal Remittances
PS	Political stability
CPI	Corruption Perceptions Index
ADF	Augmented Dickey-Fuller

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The main challenge facing the policy makers and policy strategist is achieving higher economic growth for less developed countries. Undoubtedly, higher economic growth can improve the creation of jobs, standard of living and the welfares of the people. Therefore, they need to expedite their economic development process. However, the last two decades have noticed a renewed interest in the economic growth concept and focused on the factors that are in consonant with higher economic growth as capital is the main source of economic growth and the least developing countries face littleness in capital so they keep looking for multiple sources of capital, (Azam & Hassan, 2013).

Although, there are argument about the impact of Foreign Capital Inflows (FCI) on the economic growth in developing countries, many research scholars opined that the components related to FCI affect the domestic savings and economic growth negatively in less developed countries in where there is poor policies (Boone, 1994; Enos & Griffin, 1971; Khan, Hasan, Malik, & Knerr, 1992; Leff, 1969; Papanek, 1973). Additionally, FCI serves as one of the ways to support GDP just like the empirical assessment of importance of FCI to growth of economy in some host countries is obviously important (Balasubramanyam, Salisu, & Sapsford, 1996; Borensztein, De Gregorio, & Lee, 1998; Makki & Somwaru, 2004).

There is a widely shared view that FCI fosters host countries growth by first raising domestic savings and then transferring of technology from abroad. Thirdly, FCI have increase competition in the host country's domestic market; and lastly, increasing exports width due to increase and aiming foreign exchange to the economy at large (Cheng &Shen, 2003). According to Kim (2005) in a convention, the developing countries with FCI were welcomed to fill the space existing between domestic savings and investments; then to promote economic growth. However, some other studies have been criticized based on general view that Foreign Capital hinders mobilization of economic growth and that of domestic savings.

Virtually, all developing countries are poor; hence they have lower income of the people due to lower saving and investment. In another vein, the lower income leads to lower taxable capacity due to reduce government expenditure. Therefore, countries struggling to develop need to depend on FCI to turn-over deficit in investment-saving and balance of payment deficit. The developing countries need FCI for their development. The study of Driffield and Jones (2013), found Foreign Direct Investment (FDI) and Personal Remittances (PR) to be encouraging as they provide economic growth. The study found out that the official development assistance (ODA) has a negative effect growth of the economy. However, the level of assistance from foreign economy is at variance from one country to another. The size and conditions of the economy of a country are the main factors of the amount and structure of FCI in specific country, others have negative effect on other country (Orji, Uche, & Ilori, 2014).

Furthermore, Mauro (1995) found the negative relationship between corruption and investment due to negative impact on economic growth. The study stated that there are significant correlations between corruption and political stability. According to study of Catrinescu, Leon-Ledesma, Piracha, and Quillin (2009) institutional environment is expressed by political stability and corruption is discovered to affect the volume and effectiveness of investment. Hence, remittance can be done in a more efficient manner in the presence of good institutions and then getting a high result in return.Similarly, it is found out that there is association between lower growth rates of GDP per capita and higher degree of political instability.

The study of Aisen and Veiga (2013)find that higher degrees of political instability are associated with lower growth rates of GDP per capita. Also, Azam and Hassan (2013) found positive foreign direct investment and works remittances as FCI has positively affected economic growth for a set comprising five Southeast Asian countries. Furthermore, corruption in this same region has impacted economic growth negatively. In addition, Azam and Emirullah (2014) also found high corruption due to high cost of doing business and raise inequality which lead to decrease investment and at the end has negative impact on economic growth.

According to de Haan (2014)presently, there is a lot of challenges posing against great development in the future of Yemen economy. Instability in politics continuously affects all sectors in the government alongside challenges of security. In addition, there are a tough economic issues and challenges raising awareness over stability faced by Yemen. Furthermore, Political stability plays important role and positively

impacted the growth of economy in Yemen and FDI inflows to Yemen (Musibah, Shahzad, & Fadzil, 2015).

However, as shown in Figure1.1, the highest volume of FCI to Yemen is Personal remittances in whole period over study then followed by ODA and FDI respectively. Furthermore PR achieved highest amount, more than 3.3 billion USD in 2012 and after Arab Spring. Also, ODA reached around 1 billion USD in 2013 and the highest magnitude for FDI was in 2008 around1.50 billion USD. The most shocking aspect of the issue is FDI when started by negative value in period under study and also has continued the negativity since Arab spring in 2011. However, FCI in FDI forms is fluctuated over whole period under this study and with the lowest form even get negative values and was the best period for FDI to Yemen in period between 2006 and 2008. In other hand ODA is increased slowly and PR raise sharply from 2011.

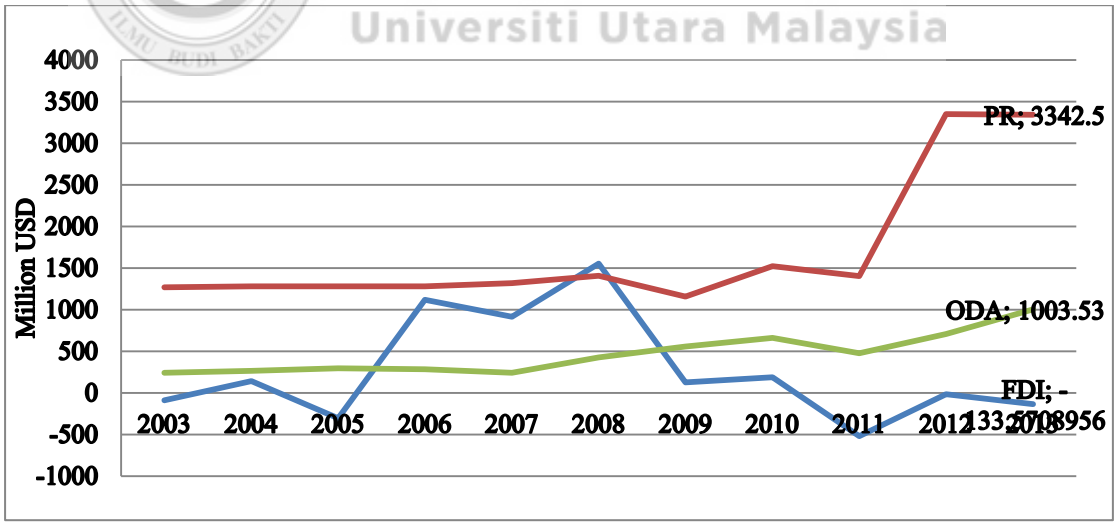

Figure 1.1: FCI to Yemen in form FDI, PR, AND ODA from 2003-2013.
Source: World Development Indicators. The World Bank Group (2015)

Furthermore, table 1.1 shown the highest economic growth occurred in period 1991 to 1995 after Yemen became union and known as Republic of Yemen after 22ed May 1990 and in the same period inflation was in higher reach to 49% in 1994. Since 1999 fail to 3% from and keep stable on this level until revolution in 2011 that fail to-15%. In addition, the net exports are negative overall period until 2006 and unfortunately there are not available data for net exports after 2006.

Table1.1:
Macroeconomic indicators of Yemen

Years	GDP (current US$)	GDP per capita (current US$)	GDP growth (annual %)	Net Exports	Inflation (%)
1991	5,930,370,370	478.85	6.29	-114,006,7340	36
1994	4,167,356,037	289.46	6.72	-695,071,207.4	49
1999	7,641,101,221	448.53	3.77	-177,672,442	8
2003	11,777,768,087	617.24	3.74	-177,208,635.2	10
2006	19,081,726,103	923.53	3.17	-177,208,635.2	10
2011	31,078,858,746	1,333.61	-15.08	Not Available	11
2013	35,954,502,304	1,473.09	4.15	Not Available	10

Source: World Development Indicators. The World Bank Group (2015)

1.2 Problem Statement

Yemen has lower income of the people due to lower savings and investments; the lower revenue of government is due to reduced government expenditure. Furthermore, Yemen has almost all what developing countries face: first gap is in investment-saving deficit and another is in balance of payment deficit. Therefore, does FCI to Yemen fill deficit in investment-saving and balance of payment deficit?

However, the total balance recorded a loss of US$828 million in 2013 and this represents 2.3% of GDP. The loss is connected to the increase in the current account deficit as a result of setback in government current transfers during 2013 given by the Arab peninsular to the Yemen; and also from the international groups, apart from the

fall in government oil and gas export shares. The high tendency of payments deficit skyrocketed due to the change in capital account as a result of the increase in direct investment outflows to deficit different from the downfall of many investment receipts in 2013. Hence, there were declinations in Central Bank gross foreign reserves (Central Bank of Yemen, 2013).

Additionally, Casper (2014) mentioned that the main issue which caused the present condition of poverty in terms of economy in Yemen is as a result of high level of corruption in the system of politics. Researchers have shown that Yemen as a country has continuously act to be politically corrupt on a large scale and multitude of levels. Scientific studies have also revealed that there is relationship between corruption and economic problems within the government. All these results support the position that corruption in Yemen is one of the major challenges that contribute to the terrible condition of the economy.

Similarly, the poorest country in Arab world is Yemen with US $35.95 billion GDP in 2013 and population of 26.18 million. Poverty was drastically increased during the latest crisis in Yemen politics and there was rise in 42% in 2009 to 54.5% in 2012 in the population of Yemen. Notably, in the world today, Yemen is one of the countries with highest growth rate in population. According to World Bank (2015), Yemen is a country with oil-based economy though there is high rate of unemployment, weak institutional structures and governance.

Almost of the earlier empirical studies are based on cross-country growth regressions, which are at least valuable in identifying those factors that generally constantly come

out to be great factors in the growth of economy. Furthermore, cross-country approach is determined through the fact that it is not usually informative for a particular country and difficult to derive specific country policy implications (Durlauf, 2002). This is a significant limitation seeing as policies or factors that are suitable in a particular country but might be unsuitable in different countries (Kenny & Williams, 2001).

1.3 Research Questions

This research will investigate the association existing between FCI and economic growth by focusing specifically on the following questions:

1. What are the FCI impacts on the growth of economy in Yemen?
2. What is the significant association that exists between personal remittances, FDI, ODA and growth of economy in Yemen?
3. What is the impact of political stability and corruption Yemen growth of economy?

1.4 Objectives of the Study

The aim of this study is to investigate the dynamic relationship in FCI, corruption and political stability on the long-run economic growth of Yemen on empirical series of data between the period 2003 and 2013. The objectives are listed as follow:

1. To test for the effect of foreign capital inflows on Yemen economic growth.
2. To investigate the corruption effect and political stability on economic growth and FCI in Yemen.

3. To suggest some policy recommendations based on empirical findings of the study.

1.5 Hypothesis of the Study

The relationships between these variables will be examined in terms of the following hypotheses:

1. There is significant increase in FDI and personal remittances due to economic growth in Yemen.
2. Official development assistance has impact negatively on Yemen economic growth.
3. Political stability in Yemen economic growth has positive impact.
4. There is significant increase in corruption due to decrease inFDI which is due to decrease in economic growth.

1.6 Scope of Study

This empirical study covers only the impact of FCI, on Yemen's economic growth for the period of 2002-2014. This study tries to investigate the relationship between three components of FCI (FDI, Official Development Assistance and personal remittances) and economic growth. Additionally, it investigates the impact of political stability and corruption on Yemen’s economic growth. However, the study provides some policy recommendations based on the results of analysis. There is short period of data collection for this study because limitation of Annual data available.

1.7 Significance of Study

The centre of attention is the illustration of the FCI impact and role importance in economic growth process of Yemen and how political stability and corruption affect Yemeni's economy. This point takes large area of discussion amongst economist and policy maker from our society as this has attracted high awareness in the last few years. Also, there is economic relevance from the question of the present issue as it connects with the centre of the development process in which the foreign capital plays in it. Similarly, it has an enduring policy, related as developing countries that are trying to unfold themselves to finance globalization process and to what degree and in what for if relevant.

According to Driffield and Jones (2013),they found out that the FDI and FR encourage economic growth. Also, they found ODA appeared having impact on economic growth negatively. However, the assistance structure from foreign economy is at variance, country by country. The size of the country and the conditions of the economy are the main factors in that country of the FDI structure. Furthermore, there is positive effect on economy growth of some forms in a specific country. The same country form may have negative effect in other country(Kenny & Williams, 2001; Orji et al., 2014)

Thus, there is need in investigating the connection existing between FCI and Yemen economic growth. Time period covered by this study is mainly during the period from 2002 to 2013. The components of FCI were FDI, ODA and remittances. The direction as well as the volume development assistance from developed nations changed significantly which is totally different from Yemen that is an unstable country

politically and has high level of corruption all that provoked the need of this study in investigating the effect of institutional factors on economic growth.

1.8 Limitations of the Study

This study has numerous limitations. First of all, growth still a complex area and the analysis depends on the reality and availability of data. Economic growth is a conclude of approximately everything that goes on in a country. Hence, it is never easy to compute all factor as a key because they differ from time to time. Another, determinants of economic growth such as international trade, technological advancement, government consumption expenditure, taxes, population growth, inflation, and institution variables which also difficult to collect or even compute. However, the time series approach cannot include all these factors; some are not available for a long time, some change very low over time, so it will be insignificant and poor at explaining the growth. Hence, this study focus only on a sub-set of factor; within the sensitive issues recently in Yemen even have very limited period and furthermore the large literature on growth determinants.

In this study due focus of explanatory variables for economic growth of Yemen which are FDI, ODA, personal remittances, corruption and political stability. In fact; there are other factors which has effect on economic growth. In addition the data limitation disallowed us from doing more exact econometric modeling. Although the OLS estimator used in this study is appropriate for the small sample size of data, however the results would be improved with a large sample size,

1.9 Organization of the Study

This study was divided into five major chapters. It starts with Chapter one, summarizing the different significant contents that are relevant to the topic of this study. The detailed contents are; the background of the study that gives explanation on statement of the problem, report questions and the study objectives, justified study significance, the study's scope that describes the structure of the whole study. Followed by Chapter two investigates the supporting literature and findings of past researches that are related to FCI determinants and institutions factors' impact on the growth of economy in general and specifically the Yemen case which was finished by summary of chapter. Chapter three provides the methodology of the study. Furthermore, theoretical framework, justification of variables, methods of collection and description of the data and method of analysis will be presented in these chapters. Before last chapter, analysis and results of the study were presented compared with previous studies. Finally, chapter five provides policy implications, recommendation, and limitation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter establishes the broad framework for study focused on the researches, literature review, and theories in request to conclude the conceptual and theoretical framework clearly and more logical for achieving research questions of what is the correlation of FCI, Institution factors, and Yemen economic growth. Furthermore, it reviews relevant literatures regarding the relationships and the role played by foreign capital inflows and institution factors in promoting GDP growth. The literature review comprises three sections. The first section illustrates the connection existing between FCI and economic growth; the connection between economic growth and institutional factors while the final section is the summary of the chapter and concluding comments are presented.

There are three main development and growth theories that can describe how economic growth can be. First, rate of economic growth immediately related to the saving and investment Harrod (1939). Domar (1946) indicated that the investment means more capital and more labour at the same time to be profitable and economic growth to occur concurrently. Secondly, in the Swan (1956) growth model, the growth rate becomes positive if there is increasing in saving transform into capital formation which means transformation of saving to investment. Furthermore, the theory of endogenous growth revealed that the effect of an increasing investment with saving on growth rate of economy is constant (Lucas, 1988; Romer, 1986). In

addition, the implication of endogenous growth model and the increasing productivity of exogenous variable (as knowledge) act as a decreasing productivity of physical capital. Although, previous growth models ensure capital accumulation as a source for growth in close economy, in open economy international capital inflows another source for growth has impact on economic growth rather than investment and domestic saving.

2.2 Foreign Capital Inflows and Economic growth

North (1956) stated that foreign capital plays a significant function of channelling the main resources into social overhead investment required in achieving a surplus importation of capital and consumer goods which help for the development in time. In another hand, it is found that FCI is wholly entertained in most developing countries to fill the space existing between domestic investment and savings which can accelerate economic growth,(Chenery & Strout, 1966). Furthermore, Leff (1969) stated that FCI can harmfully subsisting domestic savings through the growth of the economy.

In a study conducted by Borensztein et al. (1998) it is tested that the effect of FDI on economic growth as a main component of FCI in a cross-country framework of regression, using data of FDI flows from 69 developing countries to industrial countries over the last two decades. However, result suggested, the essential determinant for a transfer of technology is FDI as it contributes to growth more compared to domestic investment. It is only when the host country possesses a minimum threshold stock of human capital that higher productivity of FDI holds.

Catrinescu et al. (2009) in their study used analysis by Dynamic Panel Data that takes into account a mis-specified endogenous and dynamic challenges plaguing past studies, resulting in positive and important remittance estimators in majorly the specification considered. The fact is that the institutions play a significant role in the way remittances affect economic growth as pointed out by empirical analysis. It has been found out that a sound institutional environment affect the volume and investment efficiency. Hence, with proper institutions, remittance should be conveyed more efficiently by then it can lead to high outcomes. The findings from the study also showed that there are significant policy implications. This can eventually points out the actions of the governments to encourage remittances to be invested are not likely to have significant economic benefit. Also, ensuring higher proportion of remittances conveyed in a more efficient manner that will bring positive effect on growth, political stability and corruption.

In addition, Aizenman and Sushko (2011) applied a estimation of probity to examine the association between economic growth from 1950 to 2000 and portfolio inflows debt, equity of portfolio and FDI, taking control the country's stock in short-term of external debt with trade commodity terms. 23 per cent of higher take-off probability is related to average level of inflows of FDI relative to an inflow of FDI benchmark and this result is regarded in the South America to be higher sub-sample, with a rise in 65 take-off probability. A substantial negative effect is associated with higher stock of short term in external debt on the take-off probability, and the result of the short terms deficit is the highest for South American countries. Nevertheless, most of the take-off was connected with increase in inflows of debt portfolio. Invariably, 25 per cent of

higher probability of growth is associated with portfolio debt inflow. In other words, the standard deviation increases in equity inflows and outflows is related to 17 per cent decrease in the take-off probability. A 28 per cent in take-off probability is always associated with improvement in one standard deviation in terms of commodity.

Rao and Hassan (2011) examined the direct growth of remittance impact and the ways in which remittances affect the growth by making the former as part of the controlling variables. The study employed specification by convention and estimation method of panel data and also to modify specification and the GMM pattern of system that reduces the fragile instrumental issue. The main result reveals that remittances do not have significant effect on direct growth whether it is a conformed specification or modified one. Yet, the double methods in which remittances have effect of indirect growth has been identified, developed and invested to the sector of finance. In addition, this indirect growth effect may have additional channels.

Aizenman, Jinjarak, and Park (2011) examined the association of economic growth and various flows in international capital namely: the debt in short-term, portfolio investment, FDI and equity investment. Their study followed close to 100 countries over period of 1990 to 2010 when emerging sector turned more fulfilled into the system of international finance. And the study examined the association before and after the crisis globally. The connection between insufficient capital flows and growth depend on the flow types, structure of the economy and patterns of the global growth. The found out that there is significant relationship between equity flow and growth of the economy. The result also revealed that there is no association between debts in short-term and growth before the crisis while it is negative after the crisis.

Similarly, Nkoro and KelvinUko (2012)examined the causality nature between FCI components and GDP and the effect of FCI on Nigeria growth economy. The effective interaction between remittance, aid, external debt, FDI and growth of the Nigerian economy was investigated by employing the idea of co-integration, decomposition in variance and analysis of impulse response and tests of block exogeneity. The co-integration result showed that causal association exists between FCI and Nigeria economic growth. The result of variance decomposition supports that the analysis of co-integration causality revealed that causality operates from foreign aid, remittance, external debt and also FDI to real GDP. Furthermore, the exogeneity block test shows that the granger causality operates from remittance and external debt to real GDP. But together they all fit into the framework. Meanwhile, the outcome of the correction of the error model reveals that there is significant effect positively of FDI debt and foreign aid on real GDP. In another hand, there exists a significant impact negatively of remittance on real GDP

According to Selaya and Sunesen (2012) the complementary sources of foreign capital are aid and FDI. The connection between aid and FDI is indefinite theoretically as opined by the study. The aid causes the marginal productivity of the capital by using finance complementary inputs while Aid can crowd out private investments when dealing with pure physical shape of capital transfer. However, the outcome of the study showed that aid invested in physical capital crowded it out while the aid invested in complementary inputs draws in FDI.

In addition, Jin and Oh (2012) examined the impacts of ODA on the developing countries' economic development by using analysis of 117 countries through panel

data categorized as recipients of aid from 1980 till 2011 under the supervision of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD). A fixed impact framework with autocorrelation was employed among several models. This model reveals the factors that affect the relationship between ODA and economic development. The interaction between ODA and transparency of nation shows a revealing result that once the national transparency rises over a particular level in a nation of reception, ODA's impact on the economy of the national development reaches its upper limit. Furthermore, the study investigated economy of ODA efficiency according to the profit levels of the nations of reception. Taking for example, the middle-income countries, national transparency, education level and ODA were found to pose positive influence on national economic development. This study thereby classified aid recipient countries into four groups based on their levels of national transparency and income; also the opined ODA differentiated of approaches for each type.

Similarly Freckleton, Wright, and Craigwell (2012) studied the association between FDI, economic growth and corruption through 28 developed nations , 42 developing countries and analysed the data derived employing ordinary least square by dynamic panel. They found FDI to have a positive influence on economic growth in the short and long run for countries - both developed and developing. The study revealed that corruption from lower levels promotes the effect of FDI on economic growth. However, corruption was linked to the effect of FDI on economic growth from this study.

Freckleton et al. (2012) studied economic growth , FDI and corruption relationship through 28 developed countries and 42 developing countries and did the analysis employing OLS dynamic panel. They find a significant influence of FDI on economic growth in both the short and long run for both developed and developing countries. Corruption in lower levels enhances FDI impact on economic growth as found out by the study. However, the research study connects the effect of FDI to corruption on economic growth.

Also Okada and Samreth (2012) examined the impact of foreign aid on corruption employing a quartile analysis of regression. The study shows that foreign aid reduces the level of corruption and the effect of the reduction is higher in the less corrupt countries. Similarly, the multilateral aid has a decrement effect on corruption, bilateral aid from the donor countries that are leading; the exceptional cases are Japan but with the inclusion of France, the UK and USA with no significant impact while this impact is distinct and varied across different donor countries.

Furthermore, Siraj (2012) investigated the Ethiopia government expenditure roles in the economic growth and the significant role played by ODA in the expenditure of government finance. It is employed by the study both econometric and descriptive analyses. In the analysis of econometrics, Ram's model is used to check the effect of different composition of public spending on the growth of the economy. The result showed that a positive contribution in Ethiopia's growth during the last eight years in particular when the country received high rate of growth.

Lessmann and Markwardt (2012) examined in their study if the level of decentralization of fiscal in countries that are receiving aids matters in explaining the effectiveness of aid. However, based on the analysis of 60 countries panel data over the period 1996 to 2001 and found out that there is contribution of aid to the economic growth economies of centralized development while it is less harmful or effective in the decentralized countries. Examples of this are the cases of Philippine, Uganda and Indonesia support. This implies the countries donating must cautiously consider how the two instrument of development – decentralization and foreign aid – interact.

According to Gourinchas and Jeanne (2013) the opposite of neoclassical growth model is the allocation of capital flows across developing countries that suggests that countries with high rate growth of productivity need to invest and focus on foreign capital. Result showed that foreign capital inflow is lower in countries that invest and have more growth which is referred to as "Allocation Puzzle". The study using an analysis of wedge found that capital flow pattern is influenced by national saving; a saving puzzle is also used to describe allocation puzzle. In addition, capital flow disaggregation shows that the accumulation pattern is also associated with the allocation puzzle. Therefore, the nexus between growth, saving and accumulation of international reserve is seemed to be the solution to the "Allocation Puzzle".

Driffield and Jones (2013) investigated the comparative contributions of FDI, migrant remittances and official development assistance to developing countries' economic growth. The study used systemic methodology in accounting for the inherent endogeneities in their relationship. There is also as examination of institution importance not for direct growth only but for the interactive between institutions and

other growth sources. However, findings show that foreign capital sources generally have positive effect on growth when taking institution to account. The study constructed panel of unbalanced annual observations 1984-2007 and also unbalanced panel which contain 5-year average. Amusingly, the coefficient estimated for remittances in the equation of growth and FDI are comparable with 0.1101 and 0.1246 respectively. This shows that remittance is more or less important as FDI to encourage economic growth.

Azam and Hassan (2013) investigated the impacts of FCI and one of the institution variables: FDI, workers' remittances and corruption on the growth of economy in a lay down from five South Asian and South East Asian countries in 1985 to 2011 employing panel data and both random and fixed models. The study found out to be a strong evidence of the positive and significant impact statistically of FDI and remittance of workers on economic growth. The observed outcomes confirmed the statistical and negative effects of corruption on economic growth during the same time and in the same area covered by the study.

Also, Nsiah and Fayissa (2013) many control variables with remittances such as capital or labor ratio, openness of the economy and freedom of economy on African economic growth, with Asian and South American countries employing recently invented unit-root tests of panel, test of co-integration and fully modified panel OLS (PFMOLS). The study used panel data per annum from 1985 to 2007 for 29 countries from Africa, 21 from Latin America, 14 from Asia making 64 countries altogether. The result of estimating was that the capital labor ratio and economy openness have positive and significant impact on economic growth in all the group regions and in the

three stated variables of the study. Moreover, the index of the economic freedom has positive significant effect on growth in Latin America and Africa while their impacts on the Asia economic growth are mixed.

In another vein, Kolawole (2013) examined the impact exerted on real Nigeria growth by FDI and foreign assistance in official development form over the period of 1980 to 2011 by employing the Two-gap model and many techniques of econometric that comprise Augmented Dickey Fuller (ADF) test, test of Granger causality, Johansen co-integration test and error correction method (ECM). The empirical result shows that there is Granger non-causality between any pair of the variables. There is also negative relationship between real growth and FDI as established by the study because ODA exert no effect on real growth in the country.

Azam, Ibrahim, and Bakhtyar (2014) investigated the impact of various factors on inward (FDI) and economic growth. Furthermore, it makes a comparison among 7 ASIAN countries in terms of how FDI impact economic growth. The observed results of FDI model revealed that GDP per capita income, gross domestic investment and infrastructure are statistically significant and have positive impact on inward FDI during period of 1990 to 2012. In addition, the growth model shows that FDI, human capital and workers' remittances are statistically significant and have positive impacts on growth of economy. Furthermore, the result outcomes give an idea about that corruption having negative effects on economic growth directly in Malaysia, Vietnam, and Singapore and indirectly through FDI inflows – in Thailand. The study is of the opinion that proper attention needs to be given for insufficient infrastructure, economic and political stability in order to attract more FDI. And lastly, corruption

needs to be reduced to the barest level by taking serious and sincere efforts in true patriotism by each of the studied state.

According to report by AZAM (2014) using the ECM to recheck if foreign aid contributes to Pakistan economic growth during 1972 to 2012 period. However, the findings are in conformity with the existence of significant and negative relationship between economic growth and foreign aid. Also (Feeny, Iamsiraroj, & McGillivray, 2014)examined the effect of remittance on the growth of economy in Small Island Developing States (SIDS). The outcome of the study from variant of an empirical model proves that there is at best no relationship between economic growth in developing countries and remittances; there is a positive association existing between these variables in SIDS. The result holds in Sub-Saharan Africa for SIDS and the Pacific but not in those Latin America and the Caribbean. The reasons for these findings are offered by the relationship between household labor supply, economic volatility and remittance.

According to Orji et al. (2014) in their study, have used a method called Seemingly Unrelated Regression Estimation (SURE) to study the consequence of several FCI types, FDI, Foreign Private Investment (FPI) , ODA and remittances on economic growth in West Africa Monetary Zone (WAMZ) during 1981 to 2010. The finding showed there is variation in the impact of the growth of the different FCI forms in the countries under WAMZ. The finding suggests that more than one capital inflow form contributed immensely and positively to Nigeria economic growth. The study found out that positively, ODA impacts the economic growth more in Ghana and Sierra Leone. In another hand, economic growth is fostered by FDI in Gambia and Nigeria.

The highest contribution is from Remittance in Liberia and eventually none of the inflows has impacted Guinea's economic growth positively. No any form of FCI has the same contribution in different countries as revealed by the result.

Baldi and Miethe (2015) studied how direct investment contribute to an increase in economic growth. Although, it is empirically difficult to establish an independent causal direct investment effect on growth of economy, but the direct investment not only provides financing capital for capital investment but can also stimulate growth of economy indirectly from technology and knowledge management. Taking the overall results into consideration, the existing literatures indicate that direct investment primarily functions as a catalyst and that growth enhancing effects are higher where there is a high quality infrastructure or high level of education in the population.

By using a linear regression model based on panel data set and growth theory over the time-frame of 1993-2011 and application of models of Fixed Random Effects from Hausman test's basis, the model of fixed effects has been preferred to that of model of random effects. The model used validated model of Endogenous Growth to examine Human Capital impacts and economic growth through FDI in ten countries present in Commonwealth of Independent States (CIS). The results confirm that human capital is critical to development of economic growth. Likewise, FDI is said to have an effective role in enhancing the growth of the former Soviet Republics now containing independent economy of Central Asian despite the fact that there are specifically countries with differences across the CIS. The study opines that investment climate of the host countries must be duly enriched with practicable policies. Enhancement of the performance of Multinational Corporation can be achieved through domestic

conditions and that will allow host countries to reap benefits of FDI inflow in abundance. The result shows that health and education investment are important tools (Azam & Ahmed, 2015).

According to Azam (2015) in his study examined the impact of migrant worker's economy of Central remittances as a one of the common foreign capital inflows to four developing countries economic growth in Asia namely: Bangladesh, Pakistan, Sri Lanka, and India by employing series data of annual time during 1976 – 2012 and ordinary least squares as an analytical method for parameters estimation. The empirical results support the presence of positive and significant relationship between economic growth and migrant worker's remittances. The other control variables such as foreign direct investment, openness to trade and infrastructure are also found to be statistically significant with expected signs.

Tahir, Khan, and Shah (2015) studied an association between Pakistan economic growth and external determinants. The analyses are carried out empirically using time series of economic techniques of 1977 to 2013 data. However, there is illustration of the result showing that foreign remittances, foreign imports matters and foreign remittance from external determinants from a perspective of economy growth. FDI and foreign remittance have significant positive role in the process of growth in economy of Pakistan. The study found that foreign imports have negative effect on the Pakistan economic growth.

2.3 Foreign Capital Inflows and economic growth in Yemen

A study conducted by Tekin (2012) investigated the potential Granger causality in Least Developed Countries among the real GDP, inward FDI and real exports during 1970 – 2009 periods. The study examined SUR systems and Wald tests for countries with specific bootstrap critical values. The study directly shows that there is unidirectional causality and one-period-ahead from exports to GDP in Haiti, Sierra Leone and Haiti exporting to Zambia, Angola and Chad from the GDP. There is an apparent evidence of FDI Granger-causing GDP considering the FDI growth nexus both in Benin and Togo; also the GDP Granger-causing FDI in Gambia, Malawi and Madagascar. The study found that the causality existed from FDI to Yemen real exports. Furthermore, there is positive impact of FDI inflows on real economic growth in many cases. The study's finding is important because it proposes the fact that inward FDI does not have impact on national output considering the LDC case.

Hamdan (2013) examined the relationship between the political, exchange rate and inflation risk factors with the FDI in Yemen over the period of 1990 to 2010. The results showed that political risk and exchange rate risk have an inverse relationship with FDI, while inflation risk has a significant positive relationship. Further analysis using multiple regressions on the questionnaire data collected from 62 Multinational Enterprises (MNEs) operating in Yemen showed no significant relationship between the perceived political, exchange rate and inflation risk factors and Corporate Foreign Direct Investment. This implies that the MNEs' subsequent capital investments may not be affected by the country risk factors that were considered during the initial business plan.

Abdouli and Hammami (2015) investigated the inflows of FDI, quality of environment and economic growth of capital stock across 17 countries from North African to Middle East including Yemen by using the framework of panel between 1990 to 2012 by employing fixed and random effect, static OLS method and system-generalized method of moments panel data approaches . The study reveals that the increase in inflows of FDI and capital stock promote the process of economic growth in MENA countries. Particularly, FDI inflows to Yemen have insignificant impact on economic growth.

2.4 Institution Variables and Economic Growth

Mauro (1995) employed a recently gathered data consisting of subjective index in bureaucratic honesty and effectiveness to give empirical confirmation on the corruption impact on economic growth. The adverse relationship between investment and corruption as well as growth is important in economic and statistical aspects. Taking Bangladesh as an example, if the country were to promote the integrity and effectiveness of its bureaucracy to the point of that of Uruguay, there would be rise in the investment rate almost by five percentages and the annual GDP growth would increase by half a percentage point as result shown. Undoubtedly, bureaucratic efficiency leads to higher investment and growth. In addition, due to limitations in availability of data, some cautions are needed. This paper shows to what extent the relationship is buoyant to controlling of standard determinants in growth and investment. In fact, there is proof that efficiency in bureaucratic is as important as an investment and growth determinant as political stability.

Catrinescu et al. (2009) used data analysis of dynamic panel that takes into account mis-specified problems of dynamics and endogeneity that plagued into past researches. A sound institutional environment expressed by political stability and corruption is found to cause the efficiency and volume of investment; therefore, in the presence of good institutions, remittance could be more efficiently channeled and causing higher output.

In addition Okada and Samreth (2012) examined the impact of foreign aid on corruption employing a quartile regression analysis. The study revealed that generally foreign aid decreases corruption level and its level of reduction is higher in less corrupt countries. Similarly, while multilateral aid has a reduction impact on corruption, bilateral aid from the leading donor countries from the world except Japan but also France, USA and UK have no significant effect. This result is totally different from the donor countries.

According to Freckleton et al. (2012) studied the relationship between FDI, economic growth and corruption from 42 developing countries and 28 developed countries. The result gathered from the study were analysed by employing panel dynamic OLS. The study found that FDI has a significant impact on economic growth in short and the long run for both developing and developed countries. Similarly, corruption in lower level promotes the effect in which FDI has on economic growth. However, this study connects the effect of FDI on economic growth with corruption.

In other word, Kunieda, Okada, and Shibata (2014), investigated how government corruption adversely impacted economic growth in terms of empirical theories. From

the empirical evidence gathered from the panel data analysis of 109 countries is suitable and consistent with the study predictions of theory namely the interaction term of government corruption and financial openness with negative but significant effect on economic growth. However, it is shown by the model that highly corrupt nations impose larger form of tax rate than less corrupt countries, which then magnifies the negative impact of corruption in governance over economic growth in highly corrupt countries and to decrease the impact in mostly less corrupt countries if liberation of capital account is enacted.

Azam and Emirullah (2014) studied the impact of corruption as a main element of weak governance, with control variables such as inflation rate, openness to trade and dependency ration GDP per capita of nine countries which were selected in Asia and the Pacific. However, the result is based on an annual panel data during the period of 1985 to 2012, and a simple multiple regression for empirical investigation was used. Both fixed effects and random effects models were used as analytical techniques. The study reveals that both corruption and inflation rate are negatively related to GDP per capita and are statistically significant. From the results of the findings, the study suggested that corruption have to be under control and economies must be made open to achieve more benefits and economic growth and acceleration of development.

Huang (2015), used panel Granger causality approach across countries, to examine the effect of corruption on growth of economy on thirteen countries from Asia-Pacific region during the time frame of 1997 – 2013. However, results showed that significantly there is positive causality running from corruption to economic growth in South Korea; a significantly positive causality moving from economic growth to

corruption in China; but there are no significant causality between corruption and growth of economy for other remaining countries. According to the result, no valid relationship for common perception that stated that corruption is bad for economic growth to all the thirteen Asia-Pacific.

2.5 Institution Variables and Economic Growth of Yemen

Ghoneim and Ezzat (2014) studied the connection existing between corruption and economic growth from the context of 15 countries of the region of Arab including Yemen by altering the control variables that have effect on growth and concentrate more on corruption which hinders the impacts of growth on the economy. However, other variables under control considered are namely: political regime type, development degree, level of poverty that draws the association between economic growth and corruption. By using Qualitative analysis to the illustration in Arab countries, definitely there is negative relationship between high level of corruption and GDP per capita. Furthermore, the finding reveals the negative direct impact of corruption on growth from the sample selected in Arab countries. In addition, corruption having a determinant effect on growth is shown by good governance. The effects of corruption on growth always tend to be lower or most probably positive when the governance structure is very poor as well as in Yemen case. The estimated method applied is fixed effects of panel data model used to evacuate the impact of corruption on economic growth in 15 Arabian countries from the period of 1998 to 2009.

Finally, Musibah et al. (2015) investigated the function of political stability moderating the FDI inflows to Yemen during the last twenty years. The study checked for the data stationary by using Augmented Dickey Fuller (ADF). After the ADF test, the hierarchical and standard regression approaches were employed for the analysis. When the political stability acting as moderating variable is used in conjunction with other variables like inflation rate, exchange rate, gross national income and balance of payment, the outcome of hierarchical regression shows that all these variables are significant and factors of inflows of FDI into a country. Hence the study suggested that political stability is important for Yemen economic growth.

2.6 Summary and Concluding Remarks

In conclusion, from the above literature review, no agreement was reached for the empirical evidence on foreign capital inflows, corruption and political stability do really has really impact on economic growth. In many cases, the empirical evidence for FCI by various forms have different impact and different magnitude of impact on economic growth typical on country and other factors. As the literature review indicates, growth and development theories are integrated with examples of how FCI and savings particularly FDI play a critical part in promoting economic growth. Furthermore most previous studies about Yemen just study about one component of FCI that is FDI and they investigated how to promote FDI in Yemen and which variables have significant impact on FDI. However, all this has led to urgent need to investigate the impact of FCI component of FDI, ODA, and WR on economic growth. According to previous studies there is clear impact of corruption on economic growth

and political stability has effect negatively for corruption and positive if there is high political stability in country under study.

Overall, this project examines all the important variables, foreign capital inflows, corruption, and political stability and economic growth of Yemen.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The significant function of foreign capital inflows and political stability to acceleration of economic growth or diminishing economic growth by corruption were emphasized by Harrod-Domar model and the significant relationships among these variables were illustrated in the literature review of previous chapter. However, the relationship between growth and associated variables were formally formulated in this chapter. There are three main sections in this chapter, the first section provides the research design which shows the conceptual framework, and develop the model specification to illustrate the relationship among the variables were provided in first section. The second section provides definition of variables, sources of all data and unit of measurement of all data. Furthermore, the technique of estimation will be discussed in third section while the last section will conclude this chapter.

3.2 Research Design

3.2.1 Theoretical Framework

There are three main development and growth theories that can best describe how economic growth can be. First of all is the rate of economic growth immediately in relation to the saving and investment(Harrod, 1939). Domar (1946) indicated in his study that the investment needs more capital and more labour at the same time for profitability and economic growth to occur. Secondly, from the growth model, the

growth rate becomes positive if there is increasing in saving transform into capital formation which equally transform saving to investment (Swan, 1956). Furthermore, Furthermore, according to a theory of endogenous growth, the effect of an increase in investment and saving on growth rate of economy can be constant(Lucas, 1988; Romer, 1986), In addition, the implication of endogenous growth model, the increase in productivity of exogenous variable (as knowledge) and decrease in productivity of physical capital contribute to the growth theory. Although, previous growth models ensure capital accumulation as a source of growth in close economy, in open economy international capital inflows another source for growth has impact on economic growth rather than investment and domestic saving.

In this study is applied fundamental Solow (1956) model to describe the relationship among the variables:

$$Y = f\ (L, K) \qquad (1)$$

Where $\boldsymbol{Y}$is output, $\boldsymbol{L}$is Labour, and $\boldsymbol{K}$is Capital.

However, economic growth occurs through two channels: first, economic growth may occur through the amount of labour and capital as factors of production; secondly, it may occur from the rise in the efficiency of investment factors employed. By another way, the growth in economy is as a result of the rise in investment, capital accumulation, and the efficiency. In addition, closed economy in developed countries investment of equal saving, is an important factor and also in high income countries. Yemen as one of the poorest countries around the world, saving is lower as well as income. Hence, in this study domestic saving is ignored and depends more on FCI to promote economic growth.

3.2.2 Specification of Model

The importance of foreign capital inflows as a determinant of economic growth in least developing countries is an argumentative subject. However, the proposed conceptual framework of this study has shown group of economists during the 1950s to 2000s to discuss the point that FCI possess a favorable impact on economic growth rate. The effect was explained through Harrod-Domar model through the use of the two-gap model where inflows assist and accelerate growth by removing the foreign exchange gap and domestic saving-investment gap. However, in order to explain more clearly the argument of this study, Two-gap Model that is always applied in open economy is equally applied in this study.

The Two-gap Model: The conceptual framework responsible for the two-gap model method to development of economy is that both foreign exchange and savings gap are independently separated and limited to the achievement of an objective growth rate in developing countries. The two gaps have between them a character which is the investment-savings gap and the balance of payment gap followed by the temperament of the procedures in account that is frequent concept that if a country can invest more than it saves, a saving investment loss will consequently manifested. At the same time, an excessive importation over exportation involved will occur in balance of payment deficit, according to (Kolawole, 2013).

However, the two-gap theorem investment and development are confidential by levels of whichever the domestic savings or FCI. The relationship between capital and growth as in the two-gap model can be analyzed in the framework of endogenous

growth. Hence, based on the two-gap model illustrated previously, capital can be divided into domestic capital and foreign capital, and in this study , domestic saving is ignored and there is more focus on the foreign capital while the equation (i) can be re-written as:

$$Y = f\ (L, FK) \qquad (2)$$

Where $FK$is related to foreign capital and other symbols as written before, FDI, ODA and WR are considered FCI in this study. However, Y represents GDP in production function; equation (2) can therefore be written as:

$$GDP_t = \beta_0 + \beta_2 FDI_t + \beta_3 ODA_t + \beta_4 PR_t \qquad (3)$$

According to the model used by (Azam & Emirullah, 2014; Driffield & Jones, 2013) and after modification equation (3) after adding Corruption and political stability the model for this study can be written as :

$$RGD_t = \beta_0 + \beta_1 FDI_t + \beta_2 ODA_t + \beta_3 PR_t + \beta_4 CP_t + \beta_5 PS_t + \mu_t \qquad (4)$$

Where variables can be described as:

$RGDP_t$ = Real gross domestic product.

FDI_t = Foreign direct investment.

ODA_t = Net official development assistance and official aid received.

PR_t = Personal remittances received.

CP_t = Corruption perception Index.

PS_t = Political stability Index.

β_0 = A constant for the model.

And $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficient for the variables and μ_t is the error term.

3.3Justification of Variables

3.3.1 Foreign direct investment

Many studies examine the effect of FDI on economic growth – FDI is delivering more to economic growth than domestic investment relatively Borensztein, (1998). Furthermore, foreign direct investment has a large and robust relationship with economic growth as mentioned by Aizenman, et al (2011).

3.3.2 Personal Remittances

According to Catrinescue, et al (2009) there is important and positive relationship between Remittance and economic growth. Therefore, an economic growth has a positive impact on Remittances according to Diffield et al (2013).

3.3.3 Official development assistance

According to Lessman et al. (2012),ODA has an impactful role on economic growth in developing countries with centralization and less harmful or even effective in decentralized countries. Azam (2014) mentioned in his study, the presence of negative and significant relationship between economic growth and foreign aid.

3.3.4 Corruption

Azam et al. (2014) find corruption has negative relationship with economic growth and statistically significant. In addition, corruption effects negatively economic growth according to Kunieda, et al. (2014)

3.3.5 Political stability

Political Stability affects the effectiveness and the volume of investment according to Catrinescu, et al. (2009). In addition, Musibah et al. (2015) opined that Political stability is an important determinant of FDI inflows**.**

3.4Data Source

Annual time series data from the period 2003 – 2013 will used in this study. The data of Yemen will be collected from the different sources. Table3.1 shows the variables, definition and source of data.

Table3.1:
Variables, Definition, Measurement and Source

Variable	Definition	Source
RGDP	Real gross domestic product (2005 constant USD)	World development Indictors(WDI) data base of World Bank. (2015) http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
FDI	Net inflows Foreign Direct Investment to Yemen. Current USD	World Development Indicators (WDI) data base of World Bank. (2015) http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
ODA	Net Official Development Assistance and Official Aid Received. Current USD	World Development Indicators (WDI) data base of World Bank. (2015) http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
PR	Personal Remittances, Received. Current USD	World Development Indicators (WDI) data base of World Bank. (2015) http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
CP	Corruption Perceptions Index. level of public sector corruption on a scale of 0 (highly corrupt) to 10 (very clean).	Transparency International Organisation (2015) https://www.transparency.org/
PS	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance	The World Bank Group (2015) http://info.worldbank.org/governance/wgi/index.aspx#home.

3.5 Estimation Procedure

3.5.1. Augmented Dickey-Fuller Test

To start with, the stationarity of the time series have to be first tested to avoid spurious regression. The test of unit root used in ensuring the stationarity is supervised under ADF test to check and balance the order of integration of each of the variables. The integration order is the unit root number presented in the series or a non-stationary series that is different from the time before achieving stationary and it is presented as I (d). That is a series Y integrated of order zero is represented to show that these series are stationary void of difference while Y, -1 (I), explain the stationary of series taking the first differencing. In general, series of time is integrated in order one, I (I) that is the series then become stationary after taking first differencing. Thus the hypotheses of ADF test are as follows:

H_t:y_1 = 0 means that series are integrated of order one 1 (I) and a non-stationary variable.

H_1: y_t< 0 means that the series are integrated of order 1 (0) and a stationary variable.

If the null hypotheses are accepted, it can be safely concluded that there is a unit root; until rejection of the null hypothesis, higher order of integration should be tested.

3.5.2 Ordinary least squares (OLS) Test

This study is using Ordinary Least Squares (OLS) for parameters estimation. OLS is famous technique in regression model as it demonstrates strong theoretical properties known as the Gauss-Markov theorem. However, OLS has applied by (Azam et al., 2014; Baldi & Miethe, 2015; Orji et al., 2014). The OLS test produces the results for R^2 and the adjusted R^2. The function of each test is described below:

3.5.2.1 R^2 test

$R^2$is also known as the coefficient of determination. The function of R^2 test is to determine the goodness of fit of the regression line. It shows the amount of variations in dependent variable that can be explained by included explanatory variables. The R^2 value is between $0< r^2< 1$. The highest computed value of r^2 is 1 which means that all the variation in Y can be explained by the regression. On the other hand, an R^2 value nearest 0 means that there does not exist association between the independent variables X and the dependent variable Y.

3.5.2.2 Adjusted R^2 test

The aim of this test for Adjusted R^2 is to determine the goodness of fit after the adjustment for the total number of explanatory variables used in the model. The value for adjusted R^2 is quite high if it is near to 1. For example, a value of adjusted R^2equal to 0.85reveals the included explanatory variables that explain85 per cent of variation to be dependent variable.

CHAPTER FOUR

RESULTS AND DISCUSSION

In this chapter provides and argue the estimated empirical end result of OLS obtained from EViews in accordance to the various particular growth theories. However, before apply OLS study will fulfil assumptions such as ADF unit root test. After achieve the assumptions of OLS this will precede further towards ultimate goal. In the end of chapter will conclude at the end.

4.1 Descriptive Analysis

This section discusses the abstract statistics of the variables used in this study as described in (Table4.1). Consequently, Yemen has Noted achieved the highest RGDP during the study period almost 17584 USD in 2009 witch reach close to 20 billion USD and the lowest occurred in 2003. However, The highest level of FDI is achieved in 2008 while the lowest is recorded in 2011 witch effected by revolution in Yemen. The highest amount of Personal Remittances and ODA achieved in 2013 although the Corruption was in high level in that year. Furthermore the best Political situation was in 2006 and for lowest corruption level was in 2005.

Furthermore, from correlation matrix witch shown in table 4.2 the correlation between FDI and ODA and personal remittances is negative between 25 to 29% and positive correlation with political stability and corruption Indexes by almost the 25% and 31% respectively. In other side, ODA has higher positive correlation with personal remittances almost 80% and negative correlation nearly 80% with corruption and political stability more than 80% witch mean increasing in ODA due to increase

instability and increase of corruption level in Yemen. Personal remittances also has the same negative correlation effect with political stability and corruption but by almost 50% . In the end corruption and political stability have higher negative correlation more than 85%.

Table4.1
Summary Statistics, Using the Observations 2003-2013

Variables	Mean	Maximum	Minimum	Std. Dev
RGDP*	17583.9322	19989.0809	15260.3089	1406.4386
FDI*	273.0000	1554.6300	-518.0000	645.0000
PR*	1690.0000	3342.5000	1160.0000	823.0000
ODA*	471.0000	1003.5300	242.5600	823.0000
CPI	2.33	2.70	1.8	2.70
PS	-1.93	-1.30	-2.40	0.45

Note: * in Million USD.

Table 4.2
Correlation Matrix of Residual.

Variables	FDI	ODA	PR	CP	PS
FDI	1				
ODA	-0.29502	1			
PR	-0.25164	0.804685	1		
CP	0.248517	-0.85785	-0.53093	1	
PS	0.311823	-0.80132	-0.5067	0.851109	1

4.2. ADF Test for unit roots

The determination on the order of integration of series is a necessary procedure that precedes the analysis of long run relationship among variables. The Augmented Dickey Fuller (ADF) unit root test are performed, first at level and second at difference. The results of the unit root tests on the data are given in Table **4.2**.

However, at the level form ADF unit root test reject null hypothesis of non-stationary of unit root for FDI in 1% level and PS and CP in 5% level and 10% level respectively and fail to reject null hypothesis for other variables. However, ADF test rejects the null hypothesis of non-stationary for first difference for the all RGDP, ODA and CP, in 5% for both RGDP and ODA and in 1% level for CP. Furthermore, PS reject null hypothesis of nonstationay for second difference in 1% level. Actually in this study the stationary for variables will not considered because the limited number of observation only 11 and the study is not going to study the long run relationship among variables.

Table4.3

Results of ADF Unit Root Tests

Unit Root	Variable	t-statistic	Prob.
Levels	$RGDP_t$	-2.0084	0.2789
	FDI_t	-9.8878***	0.0004
	ODA_t	-1.0234	0.6997
	PR_t	-0.1912	0.9507
	CP_j	-3.6563*	0.0943
	PS_t	-4.2719**	0.0414
First Difference	RGDP	-2.8390**	0.0102
	ODA_t	-2.4261**	0.0228
	PR_t	0.45491	0.6643
	CP_j	-3.81844***	0.0017
Second Difference	PR_t	-10.0494***	0.0001

4.3Result of Ordinary Least Square Estimator (OLS)

The result by using OLS estimator as shown in table 4.4. Economic growth model where the impact of FDI, ODA, personal remittances, corruption and political stability on economic growth have been investigated. However summary of OLS estimates of Yemen growth model estimate coefficients found FDI,ODA and remittances are statistical significant. In addition, corruption and political stability are insignificant if we include the in one model with other variables and significant if they are separated. Overall, the result are satisfactory where the adj. R^2more than 70% variation explains.

Firstly, FDI is significant in 5% level and has positive impact on real GDP of Yemen during the period of study. However the positive impact of FDI refer to natural resource in Yemen, creating employment and improving the technology. This result supported by previous study that discussed in chapter two like Orji et al. (2014), Azam et al. (2014) and others. Where 1 USD net inflows of FDI due to increase 1.12 in real GDP of Yemen. Furthermore, the another significant in 5% level in model ODA and has positive impact on real GDP of Yemen since increase by 1 USD leads to raise real GDP by 9.73 USD. The positive effects of ODA on growth occurred from enhancement of infrastructure such as roads and power and developing human capital in shape of scholarship to their receipt country people. The last component for FCI in regressed model is personal remittances. It is significant and has negative impact on real GDP of Yemen witch mean recipients using remittances for consumption and for caring old parents and children who do not have any contribution in GDP. Because receipt families for remittances have higher income and Yemen depend more on imported goods witch due to consume more imported goods. Hence, Remittances has

Table 4.4

OLS Estimates impact of FCI an Institution Variables:

Explanatory Varables	1 Coeff.	2 Coeff.	3 Coeff.	4 Coeff.
FDI	1.126316 (0.0229)** [3.243656]	1.030958 (0.0350)** [2.60823]		
ODA	9.734601 (0.0209)** [3.324988]	8.076776 (0.0021)*** [4.750054]		
PR	-1.745861 (0.0192)** [-3.404127]	-1.555328 (0.0168)** [-3.119866]		
CP	3620000000 (1.368) [1.830063]		-2730000000 (0.0997)* [-1.834818]	
PS	-1590000000 (0.1552) [-1.673165]			-1870000000 (0.0000)*** [8.467617]
Intercept	4170000000 (1.268) [0.690015]	16100000000 (0.0000)*** [26.04821]	23900000000 (0.0001)*** [6.86892]	14000000000 (0.0000)*** [8.467617]
R^2	0.887664	0.790339	0.272231	0.356196
Adj. R^2	0.775328	0.700485	0.191368	0.284662
F- statistic	7.901878	8.795764	3.366554	4.979412
Prob. (F-statistic)	0.020278	0.008986	0.099729	0.0525

Note: ( ) and[ ] represent Prob. value and t-statistic value respectively.. And * , ** and *** represent significant level at 1%,5% and 10% respectively. (Appendix 2,3,4 and 5)

negative effects on real GDP of Yemen. However, this resulted supported by Orji et al. (2014) and others. receipt families for remittances have higher income and Yemen depend more on imported goods witch due to consume more imported goods. Hence, Remittances has negative effects on real GDP of Yemen. However, this resulted supported by Orji et al. (2014) and others.

According to the model result that shown in table 4.4 corruption is insignificant which means does not have effect on economic growth of Yemen and also the same result for political stability if they r included in one model with other variables. However , this may refer to the higher correlation among this two variables; (more than 85%). In another hand, when political stability only put as explanatory variables it will be significant and has negative impact on economic growth but R^2 less than 35% variation explains the RGDP by the political stability. And when only corruption regressed as explanatory variable will be significant in 10% and has positive impact on economic growth of Yemen and also R^2 is less than 30% .However political stability and corruption do not have significant effect on economic growth of Yemen according to this study analysis. In addition Political stability is significant for FDI which has significant effect on economic growth (Musibah et al., 2015). Hence, Political stability has indirect impact on economic growth in Yemen. However, Ghoneim et al. (2014) mentioned "greasing the wheels" hypothesis that corruption may boost growth in the existence of weak regulation. While at very high levels of regulation the decreasing in the level of corruption will have a positive impact on growth. In another hand, the correlation between corruption, political stability and ODA is so high that will lead to effect the result and findings. According to the R^2 and

Adj. R^2 for overall simple linear multiple regression model 1 and also F-statistic and Prob. (F-statistic) in model one show the result is satisfactory in overall model.

4.4 Summary

In this chapter, empirical analysis has been done on five variables may impact economic growth: FDI, ODA, persona remittances, corruption and political in Yemen during the period 2003-20 13.

The analyses have test the behavior of these explanatory variables in growth in Algeria. According to the result the most significant and the highest positive coefficient is ODA for economic growth in Yemen. Followed b FDI by the same direction as positive effect on economic growth. The findings support the applicability of economic growth models. Additionally, personal remittances has significant negative impact of economic growth. In another side, corruption and political stability has insignificant negative sign.

Furthermore, findings accept the first part of first hypothesis FDI due to economic growth and reject the second part for remittance has positive effect. The second hypothesis has been rejected too that ODA has negative effect on economic growth. In the end the third and fourth hypothesis has rejected too ; political stability and corruption has negative and positive effect respectively and not significant for economic growth in Yemen.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter starts by the limitation of the study followed by the conclusion of findings based on ADF unit root test and OLS estimator. Policy implication will be discussed in the third section. In the end of study will be the conclusion.

5.1 Conclusion

This study seek to explore the impact of Foreign Capital inflows on economic growth in Yemen and are there any effect of corruption and political stability during the time period 2003 – 2013. The Ordinary Least Square (OLS) utilized to analyzes the explanatory variables in this study. However, several pre-request steps have been taken before using OLS model. Yemen has Noted achieved the highest RGDP during the study period almost 17584 USD in 2009 witch reach close to 20 billion USD and the lowest occurred in 2003. However, The highest level of FDI is achieved in 2008 while the lowest is recorded in 2011 witch effected by revolution in Yemen. The highest amount of Personal Remittances and ODA achieved in 2013 although the Corruption was in high level in that year. Furthermore the best Political situation was in 2006 and for lowest corruption level was in 2005. Furthermore, from correlation matrix witch shown in table 4.2 the correlation between FDI and ODA and personal remittances is negative between 25 to 29% and positive correlation with political stability and corruption Indexes by almost the 25% and 31% respectively. In other side, ODA has higher positive correlation with personal remittances almost 80% and negative correlation nearly 80% with corruption and political stability more than 80%

witch mean increasing in ODA due to increase instability and increase of corruption level in Yemen. Personal remittances also has the same negative correlation effect with political stability and corruption but by almost 50% . In the end corruption and political stability have higher negative correlation more than 85%.

Furthermore, this study applied Augmented Dickey Fuller (ADF) unit root tests such. Among sex variables FDI and Political stability and corruption are stationary at level. However, RGDP and ODA are stationary at1st difference and personal remittances is stationary at 2nd Hence, all the variables are considered to be stationary at first difference. Hence the study have just 11 observation and is not going for long run relationship OLS can be used.

The analyses have test the behavior of these explanatory variables in growth in Algeria. According to the result the most significant and the highest positive coefficient is ODA for economic growth in Yemen. Followed b FDI by the same direction as positive effect on economic growth. The findings support the applicability of economic growth models. Additionally, personal remittances has significant negative impact of economic growth. In another side, corruption and political stability has insignificant negative sign.

Furthermore, findings accept the first part of first hypothesis FDI due to economic growth and reject the second part for remittance has positive effect. The second hypothesis has been rejected too that ODA has negative effect on economic growth. At the end, third and fourth hypothesis has rejected too ; political stability and corruption has negative and positive effect respectively and not significant for economic growth in Yemen.

In summary, This study attempts to explain of FCI (FDI, remittances and aid), corruption and political stability on economic growth of Yemen. However, FDI, ODA and Personal Remittances have been considered as component for FCI. Furthermore, the model for analysis was developed based on the Two Gaps economic growth model. However, ADF test is used to check stationary and Ordinary Least Square (OLS) estimator has been applied for estimation purposes. The analysis of this relationship is based on annual time series data for the period of 2003-2013; while the data have been taken from the World Development Indicators (2015), World Governance Indicators (2015) and some other sources. Whatever, the correlation between FDI inflows and other variables at the lowest level and the correlation among ODA, political stability and corruption is more than 80% during the study period. The results show that FDI and ODA have a positive and significant effect on economic growth of Yemen, but personal remittances have significant and negative effects Yemen's economic growth in. In addition corruption and political stability that explain institution environment are insignificant for economic growth of Yemen. However, the insignificant of corruption and political stability could be due to the fact that correlation is higher than 85% and positive in Yemen during the period of the study.

5.2 Policy Implication and Recommendations

This study be drown some policies implications and recommendations as below:

- The policy makers should establish better environment to attract more of FDI into the city Yemen. The FDI on the other hand can be utilized to enhancing domestic production, and improve export. It will help in increasing the use of

new technology and learning and also provide access to external market. The government should speed up the improvement infrastructure which is important attract foreign business.

- Government should ensure that, there is equitable distribution of foreign investment among states. The central government should give more freedom to states, so that they can attract FDI at their own level. The government should also provide additional incentives to foreign investors to invest in states hence the level of FDI inflows are quite low.
- Government should encourage local industries and reduce imported goods. However, consume local products may reduce the negative impact of personal remittances or may change it to positive in future if Yemen get positive balance trade.
- In addition, because the higher positive correlation between corruption and political stability government have to reduce the corruption level to get better political stability. In addition Political stability is significant for FDI which has significant effect on economic growth (Musibah et al., 2015). Hence, Political stability has indirect impact on economic growth in Yemen.

Indeed, Yemen needs a business environment which is conducive to the needs of businesses. As foreign investors doesn't look for fiscal concessions or special incentives but they are more of a mind in having access to a consolidated document that specified official procedures, rules and regulations, clearance, political stability and opportunities in Yemen. In fact, this can be achieved only if Yemen implements its new generation reforms in totality and in right direction.

Finally, this study is the latest study explain the effect of FCI on economic growth in Yemen. Furthermore, this is the first study combine three components of FCI to Yemen together. Although all previous studies discussed about FDI in Yemen only but there are not study about personal remittances and ODA as another components of FCI to Yemen. In another hand this first study also take in account the impact of two institutional factors (corruption and political stability) on economic growth in Yemen.

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