NURTURING SMES FOR EXPORT GROWTH: A CASE OF APPAREL AND TEXTILE INDUSTRY OF THAILAND

By

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I confirm that this independent study has been carried out under my supervision and it represents the original work of the candidate.

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ABSTRACT

By using regression analysis, this study revises the macroeconomic determinants of Small and Medium Enterprises export growth: a case of apparel and textile industry of Thailand over the period of eleven years from November 2005 to November 2016. The study has focused on SMEs in order to identify the success factors that developing countries need to learn from Thailand's export economy for export growth which will eventually lead to economic growth. The apparel and textile industry has been selected due to its employment capacity and SMEs oriented industry, hence easier to be adopted by developing countries as no huge capital investments are needed. Furthermore, the industry is considered to be more labor intensive even in developed countries; hence it is a way in solving unemployment crisis.

The results indicate that employment, foreign direct investment and interest rate have significant positive relationship; while exchange rate, inflation rate and world GDP have no significant relationship with world GDP having a negative insignificant impact on apparel and textile export of Thailand.

The findings from the study will not only be of benefit to the exporting SMEs in apparel and textile industry and the government of Thailand, but also to other developing countries relying on SMEs for growth. Also, this study will benefit the academicians for their future studies.

Keywords: Small and Medium Enterprises, Growth, Employment, Foreign Direct Investment, World GDP, Inflation Rate, Interest rate, Exchange rate, Apparel and Textile Exports.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

GENERALITIES OF THE STUDY

1.1 Background of the Study

The apparel and textile industry is a very crosscutting and diverse industries with the products being used by every individual in the world. The industry links with other industries such as the agriculture industry where the raw materials such as cotton have to be planted. The industry interlink with the chemical industry through the man-made raw materials such as polyester and nylon. The products from this industry are daily used in homes and businesses making the industry the very key sector in the economy.

Apart from the agriculture and chemical industry, other industries still cannot go without apparel and textile industry from packing materials to filters, conveyor belts, carpets and a lot more. Stengg (2001) show that apparel and textile industry is among the sectors which have been booming with the increase in technology since the industrial age employing millions of people. As a labor intensive industry as in most countries around the world, the industry is dominated by small and medium enterprises.

Rojsurakitti (2015) show that Apparel and textile industry is the second SMEs high growth sector in Thailand after food sector followed by Machinery industry, Rubber industry and products, Gems and jewelry industry, Plastics and packaging industry. The growth is measured by average annualized growth in number of employees or turnover above 20% over three years. According to the Board of Investment Thailand (BOI) the sector plays a significant role in Thailand's export oriented economy, ranked number 15 in the world in the year 2008.

According to Thai trade center and Factsheet Thailand, SMEs account to over 86% of the apparel and textile industry of Thailand. The industry is the second most important

sector for employment with a total of 824,500 employees by 2013 as described in Table 1.1.

Table 1.1: Thai Textile and Apparel Industry in 2013

Main Thai Export Items	**(%)**
Apparel	90.24
Brassieres	7.82
Form fitting: stockings, leggings. tights & socks	1.64
Cloth gloves	0.30
Number of Textile Industry Manufacturers by Size	
Small (fewer than 50 employees)	1,492
Medium (50-200 employees)	697
Large (more than 200 employees)	339
Total number of textile manufacturers	**2,528**
Total industry employment: 824,500 employees	

Source: Thai Trade Center, USA

We are living in a globalized economy where any country with strong initiative to triumph can succeed by learning from other successful countries across the globe Das (2014) show that for the past three decades, the world has experienced massive economic growth especially in Asia continent, majority being derived from exports. Studies show that these countries have large number of SMEs, something that developing countries can learn from and enjoy economic growth.

In the paper titled "Textile industries in Bangladesh and challenges for growth" Islam et al. (2013) found exchange rate, inflation, interest rate, world economy and lack of government subsidies to be the main hindrances to textile industry growth. The World Trade Organization named Bangladesh as the world's second exporter of apparel and textile after China, contributing to 80% of the country's total export. This is a good indication that a country can use the apparel and textile industry for economic growth.

As observed in the case of Thailand, the apparel and textile industry is dominated by SMEs. Cernat (2014) analyzed about the contribution of small and medium enterprises to export growth. The SMEs which can later develop to big corporations are the wheels of the economy as most exported goods come from this sector. Large firms outsource works to the SMEs clusters increasing specialization and efficiency in production; hence there is technology improvement.

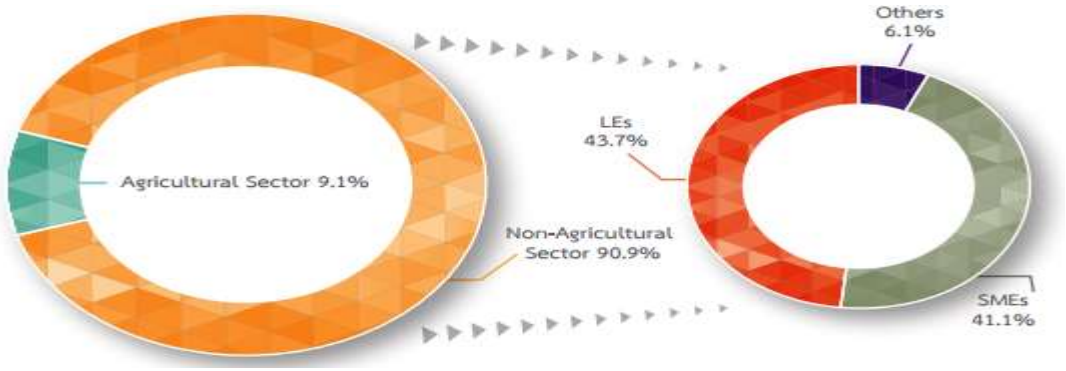
Yoganandan et al. (2013) conducted a review on literature conducted in China, India, Sri Lanka, Bangladesh and Pakistan for factors affecting textile industry exports and found that exchange rate, foreign direct investment, labor, inflation, interest rate, world economy, technology, tariff and non-tariff barriers to have a positive relationship with textile export.

OECD (1997) showed that since then, SMEs contributed to over 35% of the world direct manufactured output. Most countries in the world have seen how crucial SMEs are to the economy and have created policies which are adhered to, to make them prosper. The world has experienced massive growth during the globalization era where more innovations, technology advancement and production incubated in SMEs have taken place.

According to the Office of Small and Medium Enterprises Promotion of Thailand (OSMEP), in 2015, SMEs have contributed to 41.1% of Thailand's total GDP (Figure 1.1) with 5.7% growth rate compared to 2.6% growth of large firms. Exporting SMEs contributed to 27.40% of total exports with 2.98% growth from previous year.

SMEs play a greater role in economic development as they also provide employment Ayyagari et al. (2011). Countries with strong employment records are backed up with SMEs; make availability of goods and services in the country, increasing specialization and technology advancement and more for export, bringing more foreign currency which also has a positive impact on the balance of payment. The table below shows the absorbent capacity of SMEs whereby over 80% of the labor force is employed in SMEs.

Figure 1.1: Structure of Thailand GDP in 2015



Source: The Office of Small and Medium Enterprises Promotion of Thailand

Table 1.2: Thailand Employees data by Size of Enterprise for 2013 and 2014

Size of Enterprises	2013			2014		
	Number of Employees (Person)	Ratio to Total Number of Enterprises	Ratio to SMEs	Number of Enterprises (Person)	Ratio to Total Number of Enterprises	Ratio to SMEs
SMEs	10,235,239	80.08	-	10,501.166	80.30	-
SEs	9,273,480	72.56	90.60	9,525.101	72.83	90.71
MEs	961,759	7.53	9.40	976,065	7.46	9.29
LEs	2,544,412	19.91	-	2,575,949	19.70	-
Unknown	1,032	0.01	-	1,032	0.01	-
Total	**12,780,683**	**100.00**	**-**	**13,078,147**	**100.00**	**-**

Source: The Office of Small and Medium Enterprises Promotion of Thailand

This paper studies Thailand as an example of the growing economies of Asia where other developing nations can learn from. It is among the few countries in the world that have been through huge economic crisis and natural disasters, referencing the 1997 Asia tiger economy currency attack alternatively known as the Tom Yum Goong crisis, the humbugger crisis in 2007 and the 2011 floods.

The Office of Small and Medium Enterprises Promotion (OSMEP) of Thailand reported that 550,000 SMEs got affected by the floods, affecting 2.3 million jobs. Thailand has

attained economic improvement from developing nation to semi developed – industrialized nation despite all these economic shocks.
Thailand SMEs growths are attributed by the entrepreneurial culture in the region, healthy labor market and non-shivering government focus on SMEs vision, Swierczek and Ha (2003). The shift to industrialization from agriculture in the past years has helped Thailand to progress more. Most developing countries with agriculture base can use Thailand as a focal point due to background similarities.

Among many factors that have helped Thailand's SMEs performance are innovations in SMEs brought by quick technology adoption. United Nations statistical division shows how Thailand moves to high-Tech SMEs on patent application and has named Thailand among the innovation achievers with the credit on the innovation agency Wunsch-Vincent et al. (2015).

Another positive aspect that Thailand has is a healthy labor market which attracted Foreign Direct Investment (FDI) with the growth rate of 21% compared to global rate of 0.7% (Thailand Board of Investment-BOI). Tuan and Linda (2003) found that Internationalization and export growth has also been backed up by the FDI-SMEs linkage through FDI outsourcing.

The FDI's have also been attracted with sound investment policies and political stability. Jun et al. (1996) found that for better performing SMEs, the manufacturing sector needs to be highly incentivized to encourage new players and incentives, it is through which observable economic growth can come from. According to Supant Mongkolsuthree, Chairman of the Federation of Thai Industries, Thailand's longtime target is to have SMEs contribute to 50% of the GDP as it is very important for economic growth stability.

Wymenga et al. (2012) found that, most of the contributors to the economy with high productivity and high employment rate in developed countries come from SMEs where sense of ownership has a great impact on productivity, the stronger the SMEs the country has, the higher chances of its economic development. The 2016 presidential

campaigns in the United States of America clearly portrayed the importance of SMEs to the USA economy as explained by the candidates. They all insisted on making SMEs stronger.

SMEs internationalization is one of key objectives in the EU policies. According to Cernat et al. (2014), exporting SMEs in European Union plays a no negligible role in trade performance though there are still untapped potentials based on the bottlenecks facing the sector. Through participation in the global value chains (GVCs), SMEs can leverage their positions to successful exporters. The impact of SMEs is bigger than the picture portrayed as the work outsourced by big firms to SMEs are counted in large firms' exports.

Government involvement in healthy SMEs cannot be underestimated. Kasenda (2014) shows that South Korea is a good example of government involvement, he government monitors the quality of products produced for export and has a monthly export promotion meetings chaired by the president and attended by private investors and banks to name a few, this being one of the reasons for their fast growth.

The highly needed government support includes conducting capacity building programs for exporting SMEs with Multinational Corporations (MNCs), promote technology transfer and adaptation through promoting networking with technology incubators, as they increase knowledge, so will production and employment. Once the ground work is done, there is a need to simplify the export procedures and customs for faster export processes.

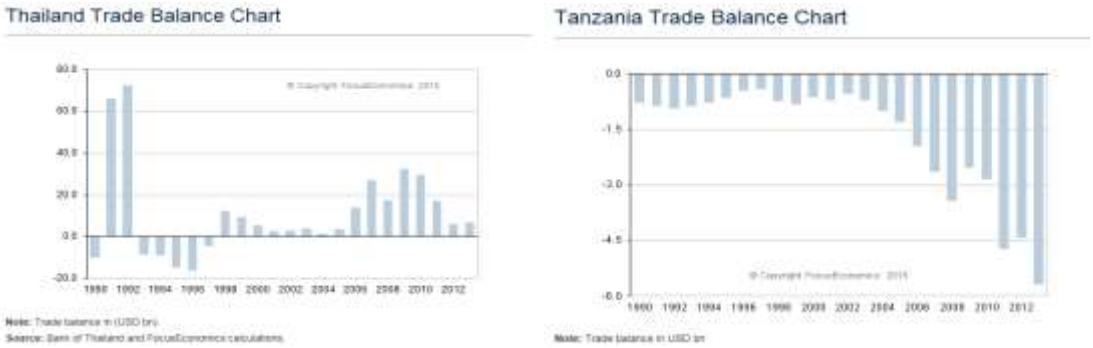
Good news is, developing countries can become industrialized through learning from other economies ahead, government intervention can lead to investment boom which can nourish the SMEs sector and boost export. The SMEs also act as the economy cushion in bad economic times as well as creating vast employment, Wiboonchutikula (2002).

The export performance of Thailand is the motivation for conducting this study adding contribution to the SME sector growth. The study has been narrowed down to apparel and textile industry due to SMEs data constraints. This paper comprises five chapters. Chapter 1 has the introduction to the study; chapter 2 is the literature review showing theories and past studies on the role of SMEs to export growth which later plays a huge role in economic growth. Chapter 3 comprises the methodology, economic models, and hypotheses to be tested. Chapter 4 shows data interpretation and chapter 5 contains conclusion and recommendations.

1.2 Statement of the Problem

Most developing countries are struggling with exports and poor performing SMEs Mashenene and Rumanyika (2014) whereas Thailand has enjoyed continuous trade surplus with SMEs contributing to over 27% of total export. It is in the interest of the researcher to make a contribution on how to nurture SMEs for export growth in developing countries. The figures below show the overall trade situation in Thailand and Tanzania (researcher's place of domicile).

Figure 1.2: Trade balance in Thailand and Tanzania for 22 years.



It is from this view that this study has been conducted, what the developing countries can learn from Thailand's SMEs export performance. The SMEs have been selected as it is easy to start small and grow gradually. The developing countries can start the industrialization process from the ground up. Well nurtured SMEs can grow to large

enterprises. In learning, a country can copy the good and let go of the setbacks for efficiency growth.

The selected industry, apparel and textile is Thailand's second SMEs high growth sector after food sector, hence a good reason to be selected with approved quality standards exporting to many countries around the world.

Due to globalization, any nation with a desire to succeed can succeed without reinventing the wheel. This is because globalization has made the world like one village and there is flow of information from one country to the other. There are developed countries with fewer resources than what the developing countries have, Singapore, being a good example, is importing over 90% of its food products. Development is the matter of the country being ready to take initiative and learn from others.

The world being like one village, gives other crawling countries a chance to learn from Thailand's SMEs success story and implement for export growth which can result to economic growth and improvement of life standards for its citizens. As Tanzania heads to industrialization, Tanzania Development Vision (TDV) 2025, Thailand is a case needed to look out given the economic differences existing between the two countries despite having more or less similar opportunities and similar agriculture background.

1.3 Research Objective

1. Learning the influence of macroeconomic factors on Thailand's SMEs export performance through apparel and textile industry.

2. Learning what other developing countries can learn from Thailand's SMEs export performance experience.

The research is more interested in exporting SMEs as they are the engines that a developing country needs to attain industrialization. Exporting SMEs produces more for local and foreign markets and take serious note on quality of products, exactly what

a country needs for economic development. The findings on influence of macroeconomic factors to apparel and textile industry export can be of benefit to Thailand government as the policy makers can hold on to the success factors moreover, academicians and other countries learning from Thailand will have a reference case.

1.4 Research Question

The study was conducted in finding out the macroeconomic determinants of apparel and textile export performance. The results will bring attention to key factors influencing growth in SMEs exports in apparel and textile industry. The questions that were answered by this study are as follows:

1. What are the factors that influence apparel and textile export growth in Thailand?
2. What can other developing countries learn from Thailand's apparel and textile industry export growth?

1.5 Scope of the Research

This study used quantitative research approach by taking time series analysis of the selected six macroeconomic factors: inflation rate, exchange rate, employment, interest rate, foreign direct investment and world GDP performance in respect to apparel and textile industry export in Thailand.

The topic is related to theories of International trade and theories of economic growth. The dependent variable for this study is apparel and textile industry export value. The independent variables are inflation rate, exchange rate, employment, interest rate, foreign direct investment and world GDP performance.

The apparel and textile export and other macroeconomic data were collected from the bank of Thailand monthly for 11 years from November 2005 to November 2016. The basis for the starting period being foreign direct investment data available starts in

November 2005. Other useful information on the SMEs sector performance has been collected from Office of Small and Medium Enterprises Promotion of Thailand (OSMEP).

The GDP equation show how crucial is export to economic growth. As the country's Gross Domestic Product increases, so does its economic growth where export plays a major role. A positive net export leads to a higher GDP. Export give a positive balance of trade to a country, expand economies and help move resources from places where are in abundance to a place of scarcity.

$$\mathbf{GDP = C + I + G + (X - M)}$$

Economic growth is an outcome of many factors including geographical nature of the country, population and technology, this study focus on SMEs export performance in the apparel and textile industry.

1.6 Limitations of the Research

One of the study limitations included past years data on SMEs not easily available, which limited selected variables for the study. Using Thailand as a case study has also been a bit challenging due to language barrier as most information in the Thailand websites is in Thai language, which limited the information obtained for the study. Most previous studies put emphasis on SMEs relationship to economic growth compared to those focusing on SMEs and export growth.

1.7 Significance of the Study

Thailand can use the pinpointed key success factors to achieve the SMEs contribution of 50% to the GDP and move from the middle income trap to high income country by reducing foreign heavy reliance on technology, management, and improve good governance.

This paper pins out SMEs in particular as it has been observed that Thailand's economic growth hinges on SMEs sector which account to over 86% of apparel and textile industry, being the major employer and economy cushion, Amornkitvikai and Charoenrat (2015). With proper nurturing, SMEs can stir up innovation and inventions which are crucial for economic growth. As small as they may seem, the small and medium enterprises play a big role in the GDP of the nation as when the drops are many forms an ocean.

It is notable that Tanzania, the researcher's place of domicile has been working on industrialization; hence this study is timely as it can add contribution as a learning field for her to walk in the footsteps of Thailand as well as learning from other economies so that Tanzania's economy can improve. Other countries in the world can also learn from this study and apply to move forward or learn not to stumble when the economy fluctuates. Academicians can also reference this study to broaden their knowledge and for further studies.

1.8 Definition of Terms

1.8.1 Apparel and Textile industry.

This is the industry that deals with treatment of raw materials, preparation, production of various textile fibers, finishing activities and transformation of fabrics into products intended to giving fabrics the visual, physical and aesthetic properties Stengg (2001).

1.8.2 Export

Exports, an act of international trade whereby goods produced in a country are sold in a foreign country and contribute to the country's gross products. (Madani, 1999).

1.8.3 Economic growth

Economic growth is the change in the Gross Domestic Product due to the change in the production potential in the economy whereby goods and services produced between periods have positively changed due to increase in aggregate supply and or aggregate demand, Abou-Stait (2005).

1.8.4 Employment

International Labor Organization (ILO) defines employment as comprise all persons above a specified age who during a specified brief period, either one week or one day, were in paid work or self-employment.

1.8.5 Foreign Direct Investment

Foreign Direct Investment (FDI) is the ownership control of a business in a country by an entity from another country, Tuan and Linda, (2003).

1.8.6 Inflation Rate

It is the general increase in price level of goods and services manufactured in the country, Li, (2006).

1.8.7 Exchange Rate

Exchange rate is a price of a national's currency in terms of another currency, Proti (2013).

1.8.8 World GDP

The global Gross Domestic Product is the accumulated value of finished goods and services produced in countries around the world measured annually, Mofrad (2012).

1.8.9 Interest Rates (MLR)

This is the loan minimum lending rate that banks use in lending. It is the amount charged on loan expressed on percentage, Baas (2006).

CHAPTER II

REVIEW OF RELATED LITERATURE AND STUDIES

The chapter presents theories related to international trade and theories related to economic growth from which export growth brings about. Previous research findings conducted on SMEs, apparel and textile export are discussed.

2.1 Theories related to international trade.

Trade theory alternatively known as mercantilism states that for a company to have strong economy, it needs to have trade surplus by maximizing exports through subsidies and minimizing imports through tariffs and quotas. The burning of imports has been challenged by other scholars as affecting the society by missing items not locally produced Bradley (1991).

The theory of absolute advantage by Adam Smith (1776) is another international trade theory that explains on the ability of a nation to produce a product more than the other countries using the same inputs. Contrary to the trade theory, the theory of relative advantage considers people's standard of living in measuring wealth of a nation and not accumulated wealth.

Another theory of international trade is the theory of comparative advantages as explained by David Ricardo which emphasizes on efficiency (Ricardo, 1815). It does not matter whether a nation can produce more of the product to export it, it can still import it as long as it is more efficient importing than locally producing it. He looks for the maximum positive sum gain. From this theory, we learn that factors of production should be taken into account for efficiency results.

The factor proportions theory by Heckscher (1919) and Olin (1933) insists on the country using more of the factors of production which are locally abundantly available in making export goods and imports more of goods which have less factors of production to be locally produced. The theory considers the factors of production labor

and capital; hence any country with a large number of laborers should export more labor intensive products and import more capital intensive products. The apparel and textile industry is considered to be the labor intensive industry.

Product lifecycle trade theory by R. Verron (1966) states that exported products in any economy undergo a lifecycle, more will be exported in the beginning but will be produced through foreign direct investment where more will be imported than exported. However, this theory has been observed to be of no use in the latest global economic conditions as FDIs have continued to produce in foreign economy and export to home countries due to low production costs in the former.

The new trade theory referees industries with high fixed costs, stating the importance of learning by doing where more costs will be saved when learning effects are high. As people specialize, more will be produced and economies of scale will increase. The presence of FDIs in developing countries brings more of learning spillover effects.

Porter's theory of national competitive advantages, based on research conducted states that competitive advantage for any country is contributed by the factors of production which can be useful in production of the products to be exported. The factors are divided in groups of basic factors and advanced factors. The basic factors include the natural resources, climate, geographical location and demographic nature of the country. The advanced factors are more man made efforts such as innovation technology education research and development and human capital development.

These are the factors, according Porter, giving a nation competitive advantage over the others. Good examples are the natural resources of gas and oil the OPEC countries have, making them wealthy nations. With better factors of production, both basic and advanced, a country has more competitive advantages with its rivals in the world market where each country competes for market. Thailand's geographical location, technology advancement, research and human capital development are the keys to good export performance.

To have more competitive advantage, a country needs to create more reliable customers who will be permanent consumers of its products. The more the products are demanded, the more they will be produced which increase efficiency and quality leading to more innovations. The country can also be sure of its market by creating capabilities at home for the majority to be able to afford the products; hence people will be buying more. All these can be achieved by having clear policies and missions supporting local producers, the SMEs and all other exporters.

Country similarity theory by Staffan Linder states that consumers in countries with same level of economic development tend to have similar products preferences. Through this theory, exporting country can expect what to sell to the neighboring countries.

2.2 Theories related to economic growth

In discussing the theories of economic growth we focus on the long term growth, not short-term where fixed factors cannot vary. We consider all aspects that can make a country better by its citizens having better standards of living Barakauskaite-Jakubauskiene (2011).

Economic growth can be achieved by efficiently utilizing the factors of production labor and capital with efficient use of technology; this is what has made a difference in different countries worldwide having different levels of economic growth. The three known theories of economic growth include classical economist theory, neo classical economist theory and the modern day economist theories. The theories of economic growth have been addressed from the past by the classical economists Adam Smith, Robert Malthus, and David Ricardo Kurz and Salvadori (2003)

The classical economists believe that any economic growth the country enjoys is not permanent. it is subject to change because when population increases, it tends to lower the GDP per person and the decrease in population increases the GDP per person; hence it is measuring a higher rate of economic growth Ricardo (1815).

Classical economists insist that economic growth is highly related with the law of capital accumulation and income distribution in the society. According to the corn model of economic growth, a country will experience economic growth when it produces in surplus. In relation to necessary factor input, the increase in productivity each year will bring about a positive rate economic growth.

David Ricardo's theory of economic growth puts it clearly that a firm can enjoy a positive rate of growth as long as it does not face competition. But as long as the supernormal profit exists, new entrants will enter the market, and the profit will decrease that can reach up to zero with a constant return per factor inputs. He emphasizes on the country's ability to increase more productivity; hence there is more profit through division of labor and specialization Ricardo (1815).

In Adam Smith's book titled "Wealth of Nations" (1776), discusses the theory of economic growth by mainly linking productivity and labor. He says that as long as you keep adding the variable factor of labor to the fixed factor capital, you will experience diminishing returns; less will be produced at high costs bringing about negative growth.

However, a firm can enjoy economic growth with the fixed factor capital to a point where returns are maximized and improve labor skills so that they produce more than employing more. To employ more variable factor of production, the fixed factor capital should also be changed.

Alfred Marshall and Gustav Cassel, the neoclassical growth theory economists have different assumption with the classical economists. Alfred Marshal, the economist behind the principles of economics book, believes that the economy is at stationary sate, population is constant, man's behavior change is almost zero, there is no scarcity of land and the business has small changes.

Cassel with 'Walras-Cassel model', the 1983 Nobel prize winner in economics believes in an economy where there is equal supply and demand for factors of production,

production cost and selling price of each produce, and there is equal demand and supply of goods and services.

Trevor Swan Robert Solow and James Meade are the neo classical economists of the early 1960s who differ with Gustav Cassel in a way that they assume one good economy. A capital and a consumer good at the same time which is land as well as a single factor of production labor or two for others, labor and land, they take on Keynesian saving function which assumes planned savings at all times equals planned investment.

However, not all countries with high savings habits citizens invest more. A good example is the current situation in Japan where few investments arise despite higher savings. The neo classical economists state that as long as capital factor of production increases while other factors remain constant, the economy will face a diminishing rate of growth. Solow clearly states that for the economy to experience economic growth, all factors of production should change and, there should be changes in all aspects.

However, the new growth economic theories challenge the neoclassical and classical economists that not necessarily capital increase and labor increase can lead to diminishing returns. The new growth economic theories state that it clearly depends on how those factors are utilized in production and highly believe in technology.

Another theory related to economic growth is the export led-growth paradigm and domestic demand led growth. A country can enjoy economic growth by exporting more products and increasing its local produced products demand internally. The export led growth has been a main factor for China's supernormal growth. The increase in export will have a positive balance of payment as the country will also have enough to pay for the imported goods. There is no country which is totally independent, without depending on other countries in the world.

The increase in demand in local produced products can lead to economic growth in a long sustainable way more than export led growth as there will be huge import

substitution. When growth is an outcome of staple theory of growth, and the country exports more of its staple product, which does not need too much processing, it can also be sustainable Sannassee et al.(2014).

Learning from Mexico, developing countries can see how export led-growth paradigm alone is not sufficient. The country started by implementing the Keynesian growth model which was more on import substitution through industrialization, but it did not bring the desired growth. They started the export led growth by attracting more foreign direct investments. For sustainability, domestic demand led growth is the best approach. Increase in demand locally will increase productivity while creating employment to the citizens who will then have power to consume as the marginal propensity to consume is high in the low income sector.

2.3 Review of related studies.

2.3.1 SMEs in Thailand

Countries all over the world have different definitions on SMEs based on capital and number of employees. The level of economic development within a country matters a lot in how SMEs are defined. **SMEs** (Small and Medium Enterprises) by Ministerial regulation issued in 2002, the Ministry of Industry defines SME as described in table 1.3 below (Nagai, 2008)

Table 2.1: Definition of SME in Thailand

Definition of SME in Thailand industry	Small Enterprise	Medium Enterprise
Manufacturing Industry Manufacturing Business including industrial production, mining, agriculture production particularly agricultural processing	Enterprise which corresponds to any of the following; with employees of up to 50 or with assets of up to 50 million baht.	Enterprise which corresponds to any of the following; with 51 − 200 employees or with assets of no less than 50 million baht and up to 200 million baht.
Wholesale Industry	Enterprise which corresponds to any of the following; with	Enterprise which corresponds to any of the following; with 26 − 200

Definition of SME in Thailand industry	Small Enterprise	Medium Enterprise
both import, and export	employees of up to 25or with assets of up to 50 million baht.	employees or with assets of no less than 50 million baht and up to 100 million baht.
Retailing Industry both import, and export	Enterprise which corresponds to any of the following; with employees of up to15 or with assets of up to 30 million baht.	Enterprise which corresponds to any of the following; with 16－150 employees or with assets of no less than 30 million baht and up to 60 million baht.
Service Industry Service Businesses: businesses supporting manufacturing, trading, Hotels and Tourist related industries, repair, transport and beauty salons, etc.	Enterprise which corresponds to any of the following; with employees of up to 50 or with assets of up to 50 million baht.	Enterprise which corresponds to any of the following; with 51－200 employees or with assets of no less than 50 million baht and up to 200 million baht.

Source: Thailand Ministry of Industry Ministerial regulation (2002)

2.3.2 SMEs in Tanzania

MSMEs (Micro, Small and Medium Enterprises) in Tanzania are defined as follows. Micro enterprises are those engaging up to 4 people, in most cases family members or employing capital amounting up to Tshs.5.0 million equivalents to 80,000 Baht. The majority of micro enterprises fall under the informal sector. Small enterprises are mostly formalized undertakings engaging between 5 and 49 employees or with capital investment from Tshs.5 million to Tshs.200 million (3 million baht). Medium enterprises employ between 50 and 99 people or use capital investment from Tshs.200 million to Tshs.800 million equivalents to 12 million baht.

Table 2.2: Definition of SME in Tanzania

CATEGORIES OF SMEs IN TANZANIA		
Category	Employees	Capital Investment in Machinery (Tshs.)
Micro Enterprises	1 - 4	Up to 5 mil
Small Enterprises	5 - 49	Above 5 mil to 200 mil
Medium Enterprises	50 - 99	Above 200 mil to 800 mil
Large Enterprises	100 +	Above 800 mil

Source: United Republic of Tanzania MSME policy (2003)

2.3.3 The dependent variable Apparel and Textile Export value

Export is a potential player in a country's economic development, and help to distribute products and services from places of high abundance to the places of scarcity. Good examples are the export of oil from OPEC countries to the rest of the world and the Philippines labor export in countries like Japan where the working age population is shrinking. This study was conducted to find out the relationship between apparel and textile export growth and the selected macroeconomic related variables in Thailand. The selected sector is also a key sector as clothing is a basic need and a commodity consumed no matter what the economic condition is all over the world. Other developing countries can guide SMEs to this sector with promising growth.

Cernat et al. (2014) talk on how SMEs are important to European Union exports with the regional average of 35%. The sector contributes to over one third of the region's export and calls for policy initiative to remove any impediments. In Asare's (2014) paper on the challenges faced by the SMEs sector in Ghana, the author has sighted on how the developed nation like Germany has huge number of SMEs of which Ghana can learn from and improve the sector for economic growth. Tambunan (2008) explains why the least developed countries need to accommodate SMEs and boost them as they are the run place for the poor. They boost the economy by the link they have with the large enterprises in the economy. Samitas and Kenourgios (2005) examined the importance of SMEs to economic growth to the extent that even the developed powerful European Union discusses on how to boost them in their land and creating ways to finance them.

Raju (2008) explains how SMEs transformed India's economy and is now the backbone of its manufacturing sector contributing over 90% of its industrial output. Other developing countries can learn from India's progress policies specifically designed to boost the sector. Madani (1999) shows how export is crucial to a country and explains that if there is a need to import raw material for production, then should be free from taxes and less red tapes. The paper explains how an economy can succeed with a successful export processing zone. The more human capital development is achieved, the more innovation and technology will be retransferred.

Chen et al (2001) investigated the rise of China as a super power and the enjoyed surplus balance of trade which highly reduces poverty in the country courtesy of export. A large number of SMEs grew to big corporations. China is currently the world largest exporter of locally made products by locals and foreign direct investment. The growth of China is an open book to the world showing how a country can experience massive economic growth through export by the use of all factors of its competitive advantage.

Abou-Stait (2005) has conducted a study to prove how export contributes to the economic growth of Egypt and found the same to have a significant positive relationship. Other countries can promote increase in SMEs performance for export growth to experience economic growth. Testing his hypothesis with mathematical derivations, he could not prove whether export leads to increase in investment in the country, but he did prove for economic growth. Jun et al. (1996) explains how export can bring more good days to the country. The authors' state that as a country exports more, more investors are attracted to produce in the same land as there is potential for sales. Locally and internationally, the more a country exports, the more it will attract foreign direct investment and produce more; hence there is more export.

From the theories studied above, a lot has been written on exports playing a great role in national development. By increasing export, balance of trade increases, leading to economic growth and improving people's standard of living in a nation. Where there is export growth, there is economic growth. It is true that the contribution of large enterprises to the export industry of a country cannot be understated; however, for developing countries, SMEs are the best starting point from which large enterprises can be born. Economic growth between countries is measured by the GDP and per capita income of citizens. It is indicated by the increase in production of goods and services in a country better than the preceding years. Exports are part of GDP, when more are produced for export, GDP increases. This is the increase of goods and services produced in an economy compared to the past season, which is measured by the market value of final goods and services produced in an economy excluding inflation, which is the real Gross Domestic Product.

The increase in the nation's production capacity in many cases is attributed by the increase in technology and innovations. Economic growth experienced by United States during the rise of the Internet era with high degree of innovation is a good example. Flourishing SMEs can incubate export growth contributing to the country's economic growth. Technology has made the world be like one village, a good experience of one country can be a learning field for the other. This paper can be a learning field for other developing economies to put more emphasis on SMEs, apparel and textile industry in particular.

2.3.4 The independent variables

The selected independent variables include inflation rate, exchange rate, employment, interest rate, foreign direct investment and world GDP performance. The macroeconomic factors help in showing the strength of the economy which the SMEs are thriving in and its relationship with export growth.

a) Inflation Rate

The increase in inflation leads to the increase in interest rates, lowering returns to investments and other assets. It also reduces investment motivation demoralizes production and funding availability to SMEs becomes more expensive and hard to get Ajagbe (2012). Inflation leads to the increase in prices of goods and services making exports expensive and reducing domestic consumption and profit Li, (2006). This variable has been selected based on its huge effect to production and export and can help showing the relationship of inflation and SMEs export growth in Thailand.

In nurturing healthy SMEs inflation needs to be controlled. However, in his study Ajagbe (2012) found a positive significant relationship between inflation rate and growth in SMEs in Ogbomoso area in Nigeria. Li (2006) found that it is important controlling moderate inflation in developing countries as there is an inverse relation between moderate inflation and growth. However, single-digit inflation is healthy for the economy as it stimulates growth.

b) Exchange Rate

Exchange rates volatility depresses international trade, lowering profits and reducing investments. Since exports deal with foreign currencies, it is logical linking the exchange rates to apparel and textile export and observing the role played by the variable. The fall in exchange rate will make exports cheaper but the imports of raw material will be expensive resulting to lower profits Proti (2013). This can also lower business volumes due to uncertainties and risks associated with volatility. When exchange rates are on the lower side, it is beneficial to an exporting country because more will be exported as buyers get more. Exchange rates volatility affects both export and import.

c) World GDP

The global GDP measures the value of goods and services produced all over the world in annual term Mofrad (2012). When the world economy is improving, people will have more purchasing power; hence the exporting countries can sell more. Mofrad (2012) found a positive significant relationship between GDP and export and it also lead to the increase in domestic investment. For a hearth economy with flourishing SMEs, GDP growth can act as a catalyst. Beck and Levine (2003) discuss on the role played by the small and medium enterprises in economic growth and has found a positive relationship between the SMEs and GDP per capita growth. However the paper could not find significant relationship between SMEs and poverty reduction.

d) Employment

Among the many indicators of a healthy economy is employment. Nordås (2004) explains on how the apparel and textile industry provides massive employment in European Union specifically in regions where an alternative employment is hard to find. The paper also talks on how the sector is dominated by SMEs. The contribution of SMEs on employment, apparel and textile industry in particular is substantial. Given the current unemployment rate of over 10% in Tanzania reported by the National Bureau of Statistics, (2015) versus 1% of Thailand (World Bank, 2014), this variable can help show how a country can use SMEs, particularly apparel and textile industry to solve unemployment and at the same time, growth in exports. Tambunan's (2008) paper discusses the impact of trade liberalization on Indonesia's SMEs. However, the author

insists on the government protecting the sector which provides over 90% of employment in the country and has long been known to be the important player in Indonesia's economic development. The author found positive relationship on economic growth, government spending and SMEs growth and insists that the industry has played a great role in Indonesia's economic growth. Ramakrishnan (2013) has discussed on how most SMEs use labor intensive in production because it is cheaper than capital intensive and at the same time it creates more employment and income distribution in the society. This can help any country with high population growth in relation to available employment.

e) Foreign Direct Investment

Foreign Direct Investment (FDI) has played a major role in China export growth. Many multinational corporations are relocated to China to enjoy economies of scale; hence they enrich the country Tuan and Linda (2003). Hu and Jefferson (2002) talk about the FDI contribution to the textile industry of China as there has been knowledge and technical knowhow spillover to the local firm. Due to competition most local firms have produced more. China has gained a lot since the open door policy. FDI in Thailand has a growth rate of 21% compared to global rate of 0.7% (Thailand Board of Investment-BOI). Internationalization expands economies by FDI-SMEs linkage through FDI outsourcing. By studying the FDI apparel and textile export, we can see the contribution of FDI to the industry export growth.

In the search for the competitive advantage China has, many American investors such as Apple Inc have been investing more in China and exporting to their home country. The foreign direct investors also enjoy sales in the local market where consumers are many. Mullor-Sebastian (1990) discusses that industrialized countries have more stable export business. Through the FDIs, the agglomerations of SMEs in China have developed to large companies. Amornkitvikai and Charoenrat (2015) have found a positive direct relationship with the tested variables: government assistance, FDI, labour skills and productivity, location, research and development, size and age of firm. Wymenga et al. (2012) found that the tiger economies of Asia have experience massive

economic growth by improving the small and medium enterprises. Over 90% of Japan's economy is made of SMEs, showing how crucial they are to development.

f) Interest Rates (MLR)

SMEs across the globe are crippled with the financing challenge of high lending rates which make it difficult for SMEs to grow other markets has high lending rates attributed by economic conditions and inflation Baas (2006). By studying this variable, we can see the part played by interest rates in apparel and textile export of Thailand. Due to limited public information on SMEs, the sector all over the world is faced with the problem of financing. Banks are reluctant to lend SMEs as they are not sure of loans safety making interest rates even higher to those who manage to acquire the funds. Relationship banking can be of help with the government backing up the sector Baas (2006).

2.3.4.1 Summaries of Findings

Table 2.3 summarises the findings of relationship between the dependent varible apparel and textile industry export and independent variables; inflation rate, exchange rate, world GDP, employment, foreign direct investment and interest rate based on reviewed literatures.

Table 2.3: Summary of Relationship between the Dependent Variable and Independent Variables

Independent Variables	Relationships with the Dependent Variable-Exports	
	Positive	**Negative**
Inflation Rate	• Ajagbe (2012) • Yoganandan et al. (2013) • Islam et al. (2013)	• Li, (2006) • Thobarry (2009). • Mashenene and Rumanyika (2014)
Exchange Rate	• Yoganandan et al. (2013)	• Proti (2013) • Chen et al (2001) • Chowdhury (1993)
World GDP	• Mofrad (2012) • Beck and Levine (2003) • Cernat et al. (2014) • Agosin et al. (2012)	

Independent Variables	Relationships with the Dependent Variable-Exports	
	Positive	**Negative**
	• Abou-Stait (2005) • OECD (1997) • Sannassee et al.(2014).	
Employment	• Nordås (2004) • Stengg (2001). • Raju (2008) • Agosin et al. (2012) • Madani (1999) • Ayyagari et al. (2011) • Tambunan (2008) • Ramakrishnan (2013)	
Foreign Direct Investment	• Tuan and Linda (2003) • Hu and Jefferson (2002) • Mullor-Sebastian (1990) • Amornkitvikai and Charoenrat (2015) • Wymenga et al. (2012) • Jun et al. (1996)	
Interest Rates (MLR)	• Yoganandan et al. (2013) • Islam et al. (2013)	• Baas (2006)

Source: Summarized by author

2.3.2.1 Expected Signs

From reviewed literatures, Table 2.4 describes the expectation of the relationship between apparel and textile export value and independent variables; inflation rate, exchange rate, world GDP, employment, foreign direct investment and interest rate.

Table 2.4: Expected Relationship between the Dependent Variable and Independent Variables

Independent Variables	Relationships with the Dependent Variable-Exports	
	Positive	**Negative**
Inflation Rate		✓
Exchange Rate		✓
World GDP	✓	
Employment	✓	
Foreign Direct Investment	✓	
Interest Rates (MLR)		✓

Source: Summarized by author.

CHAPTER III

RESEARCH METHODOLOGY

This chapter illustrates in details the process of data collection, methodology and hypothesis of the research.

3.1 Data collection

The study used time series monthly data, from the bank of Thailand and the World Bank for world GDP growth rate for 11 years from November 2005 to November 2016 making a total of 133 observations. FDI data available on the bank of Thailand website were from November 2005 to November 2016, this is the main reason for the data cut off point as other variables had longer periods of data. Other variables include apparel and textile export value, inflation rate, exchange rate, employment, and interest rate. Table 3.1 details the measurements of used data on each variable.

Table 3.1: Measurements of Variables

Symbols	Descriptions	Measurements
ATEXP	Apparel and textile export value	Total value of Thailand apparel and textile export measured in million US dollar.
IFR	Inflation Rate	Percentage data collected from the Bank of Thailand
EXC	Exchange Rate	Thai baht price using US dollar as the reference rate.
WGDP	World GDP	Percentage data collected from the World Bank.
EMP	Employment	Thailand total labor force in thousands of persons.
FDI	Foreign Direct Investments	Total foreign direct investments to Thailand from all over the world in millions of US dollars.
IMLR	Interest Rates	Minimum lending rates in percentages issued by banks

Source: Summarized by author

3.2 Hypothesis

This paper aimed to study export performance in the SMEs sector of Thailand particularly apparel and textile industry. Testable statements to accept the relationship between the dependent and independent variables known as hypothesis have been formed based on reviewed literature.

3.2.1 Relationship between inflation rate and apparel and textile export

Volatility in prices is not healthy for exports as it leads to a fall in the currency value of the country. This will affect the apparel and textile industry as Thailand imports most of the raw materials for the industry, inflation increase will make imports expensive. According to fiber2fasion.com, Thailand can produce only 2% of all the cotton it uses in production. Importers will also be uncertain of the merchandise value, and exporters are unsure of their margins as high inflation is not good for the economy so is deflation. Studies show that a healthy economy is one with moderate inflation, high inflation can lower economic growth up to 1.3% Gylfason and Herbertsson (2001). A significant negative relationship was expected.

Hypothesis 1

There is significant relationship between inflation rate and apparel and textile export.

3.2.2 Relationship between exchange rate and apparel and textile export

Instability in exchange rates will make risk adverse trade participants to shift demand to countries with less volatility in exchange rates. Chowdhury (1993) has conducted a study on the effect of exchange rate volatility to export volume in G-7 countries and found a significant negative relationship; hence a significant negative relationship was expected from this study.

Hypothesis 2

There is significant relationship between exchange rate and apparel and textile export.

3.2.3 Relationship between world GDP and apparel and textile export

When the world economy is improving, people will have more purchasing power; consequently, the exporting countries can sell more Agosin et al. (2012). It was expected that the increase in the world GDP to be positively related to apparel and textile export increase.

Hypothesis 3

There is significant relationship between world GDP and apparel and textile export.

3.2.4 Relationship between employment and apparel and textile export.

This hypothesis has been selected based on the unemployment pandemic in many developing countries. Stengg (2001) write on human capital development being the key factor in export growth. Employment in the SMEs sector will help solve unemployment problem in developing countries while increasing exports, a significant positive relationship was expected from this variable.

Hypothesis 4

There is significant relationship between employment and apparel and textile export.

3.2.5 Relationship between FDI and apparel and textile export

Foreign direct investments have not only moved China to the world's number one exporter but also created massive employment in the Chinese economy. Zhang (2005) emphasizes that the importance of FDI in export cannot be emphasized enough. A significant positive relationship was expected from this variable

Hypothesis 5

There is significant relationship between FDI and apparel and textile export.

3.2.6 Relationship between interest rates and apparel and textile export

Access to funds to invest in businesses has been a challenge to SMES across the globe as other markets have high interest rates attributed by economic conditions and

inflation. By studying this variable, it can show the part played by interest rates in apparel and textile export of Thailand. Baas (2006) found that the increase in interest rates has a negative impact to investors. A significant negative relationship was expected for this varible.

Hypothesis 6

There is significant relationship between interest rates and apparel and textile export.

3.3 Hypothesis Testing

3.3.1 Multiple Linear Regression Model

This study used multiple linear regression model based on the number of variables to be tested as it explains the relationship between single dependent variable and multiple independent variables. From the multiple liner equation, where apparel and textile export is the dependent variable, β_n are variable coefficients and ε is the error term for part of apparel and textile export growth not explained by the independent variables, the following linear equation is formed:

$$\boldsymbol{ATEXP = \alpha + \beta_1 IFR + \beta_2 EXC + \beta_3 WDGDP + \beta_4 EMP + \beta_5 FDI + \beta_6 IMLR + \varepsilon}$$

where:

ATEXP = Apparel and Textile Export
IFR = Inflation Rate
EXC = Exchange Rate
WDGDP = World GDP growth rate
EMP = Employment
FDI = Foreign Direct Investments
IMLR = Interest Rate

The P-value can be used to reject the null hypothesis if it is less than the chosen significant level. The lower P-value the better for it measures how compatible the data are with the null hypothesis of not supporting the relationship between variables. It explains how likely the data support the null hypothesis. Hypothesis testing is not 100% certain as it is based on probabilities. Type I and II error can happen. Type I error can happen if the true null hypothesis is rejected; however, this can be avoided by choosing lower alpha, level of significance. Type II error happens when a false null hypothesis

is accepted based on the power of the test. This can be reduced by having large sample size where it will be easy to reject the false null. T-Test is the test statistic which is used to show the relationship existing between dependent variable and the regressors, as the strong relationship increases, so are the T-values which lead to rejection of the null hypothesis which shows there is no effect between the variables.

3.3.2 Multicollinearity

Multicollinearity takes place when two or more independent variables display little variability or move closely with each other. This may lead to large variance outcome in estimated parameters increasing the chances of insignificant relationship between variables even though the goodness of fit and F-statistic may show significance. Data show no multicollinearity when the Pearson's r between each pair of independent variables does not exceed 0.80 Bryman and Cramer (2005).

It takes place when the independent variables are correlated influencing the results. This happens mainly when some variables are computed from other variables in the data set, inaccurate data and repetition of variables. In case of multicollinearity, different regression approaches such as Partial least squares regression can be applied. This can work if only BLUE condition apply, that the estimators are best linear unbiased. Another way that this can be avoided is by changing variables in the model.

3.3.3 Autocorrelation

Autocorrelation is among many problems that can occur during hypothesis testing in econometrics. The least squares estimators are no longer viable in the case of autocorrelation as the estimators will be biased. Durbin Watson statistic test will be conducted to test on Autocorrelation. The Durbin Watson statistic test results should be equal to 2 for no correlation, greater than 2 for negative correlation of variables and anything below 2 is a sign of correlation Bryman and Cramer (2005).

Time series data often face the autocorrelation problem due to persistence of data to follow a particular trend. This may lead to number of independent observation to be

fewer than the total number of data for observation N. This can be avoided by adjusting the sample size. Durbin–Watson statistic test can be used to detect autocorrelation.

3.3.4 Heteroskedasticity

For hypothesis testing to give correct results, Gauss–Markov theorem assumes homoskedasticity, where all observations of the dependent variable have the same variance and the errors are uncorrected with zero mean. The hypothesis can be tested by ordinary least squares (OLS) estimator which will give the best linear unbiased estimator (BLUE). When the opposite is true, then there is Heteroskedasticity problem.

This happens when different observations have different error variance for every independent variable. Test for heteroskedasticity is based on the OLS residuals. It is when the standard deviations of variable monitored are not constant over time, conditional when they cannot be predicted or identified and unconditional when they can be predicted or identified. Heteroskedasticity can be detected through statistical test or by observing the residual graphs. The graphs show increase in residuals as value of filtered Y increases with a curved line. It can be dealt with by rebuilding the model with new predictors or transforming the variables. To test heteroskedasticity, White test and the modified Breusch-Pagan test can be performed Bryman and Cramer (2005).

3.3.5 Stationary of Variables

Dickey - Fuller unit root test (Dickey and Fuller, 1979; Fuller, 1976) is used to test if the variables used are reliable as most studies show that most of the time, economic variables are unreliable. The test will help to clear regression results which can show high value of the coefficient of determination even when the variables are not related. The selected Dickey-Fuller test can be among the three, Restricted, General or augmented Dickey-Fuller test models. This study used augmented Dickey-Fuller test.

CHAPTER IV

PRESENTATION AND CRITICAL DISCUSSION OF RESULTS

This chapter presents the results of time series analysis based on the formed hypothesis. The unit root test has been done to check stationary of variables followed by the data descriptive statistics, the ordinary least square regression analysis and the test for autocorrelation, heteroskedasticity and multicollinearity.

4.1 Descriptive statistics

Table 4.1 shows the mean, median standard deviation Kurtosis and skewness of all variables in the model. The total observations are 103. The results show the variables with high mean value and high dispassion in the data. These include ATEXP, EMP and FDI with 606.2040 million baht exported, 37,684 thousand persons employed and 728.3468 million baht invested on average and 61.75304, 1212.462 and 936.8116 standard deviation respectively. EXC, IFR, IMLR and WDGDP have the average of 33.39508, 1.481429, 7.085414 and 2.628195 and dispassion of 2.515262, 0.676338, 0.482744 and 1.624036 respectively.

EMP, FDI, IMLR and WDGDP are negatively skewed or skewed to the left (Bryman, 2005). This is displayed by the negative sign of skewness indicating that most data are on the low level and the distribution left tail is longer than the right opposite with ATEXP, EXC and IFR with positive skewness. ATEXP, FDI, EXC and WDGDP are leptokurtic since distribution with kurtosis is more than 3 while it is lower than 3 for the case of EMP, IFR and IMLR.

Table 4.1: Descriptive statistics of all variables

	ATEXP	EMP	EXC	FDI	IFR	IMLR	WDGDP
Mean	606.2040	37694.18	33.39508	728.3468	1.481429	7.085414	2.628195
Median	605.7500	37870.59	33.03530	7649200	1.100000	7.130000	2.612000
Maximum	811.0500	39973.11	41.12400	3889.480	2.400000	8.000000	4.380000
Minimum	455.4200	34523.22	29.07650	-3094.570	0.300000	6.250000	-1.718000
Std.dev	61.75304	1212.462	2.515262	936.8118	0.676338	0.482744	1.624036
Skewness	0.380364	-0.535774	0.709726	-1.129815	0.043384	-0.179838	-1.426855
Kurtosis	3.404904	2.898923	3.291549	7.425893	1.767327	2.251705	5.053801
Jarque-Bera	4.115561	6.419652	11.63665	136.8484	8.462184	3.819940	68.50472
Probability	0.127737	0.040364	0.002973	0.0000	0.014537	0.148085	0.000000
Sum	80625.13	5011996	44441.546	96870.12	197.0300	942.3600	349.5500
Sum sq. dev	503373.8	1.94E+08	835.1035	1.16E+08	60.38123	30.76150	348.1489
obeservation	133	133	133	133	133	133	133

Source: Eviews descriptive statistics results.

4.2 Unit Root Test

Researchers have found out that time series data not have to be stationary (Johari, 2012). Augmented Dickey Fuller Test (ADF) is performed to find out variables which have stationary and non-stationary data. The test is performed automatically based on SIC, MAXLAG=12 since the data used are monthly data. The tests check for level and 1st difference of variables at intercept, trend and intercept and none for all variables. Since all variables are found to be stationary at 1st difference, no test has been done for 2nd difference.

Table 4.2.1: Augmented Dickey-Fuller test

	LEVEL			1ST DIFFERENCE		
α	INTERCEPT	TREND AND INTERCEPT	NONE	INTERCEPT	TREND AND INTERCEPT	NONE
1%	-3.480425	-4.029041	-2.5826	-3.480818	-4.029595	-2.58273
5%	-2.883408	-3.444222	-1.94327	-2.883579	-3.444487	-1.94329
10%	-2.578510	-3.146908	-1.61511	-2.578601	-3.147063	-1.6151
ATEXP	-5.93721	-5.906259	-0.54921	-19.26771	-19.2041	-19.3405
IMLR	-1.44510	-1.791498	-0.02134	-8.411489	-8.417727	-8.4445
EMP	-3.54678	-4.36464	0.07446	-12.94964	-12.9069	-12.9976
EXC	-3.31535	-2.205251	-1.35965	-7.625352	-8.115745	-7.60628
FDI	-8.96346	-8.944375	-6.32074	-16.70421	-16.64051	-16.7681
IFR	-2.60256	-2.734164	-1.20340	-11.35995	-11.31791	-11.4018
WDGDP	-2.43447	-2.425507	-1.43553	-11.36127	-11.32069	-11.4018

Table 4.2.1 has been summarized from the unit root tests performed on variables found in appendices. The ADF test results show that only apparel and textile export (ATEXP) and foreign direct investments (FDI) data are stationary at level and first difference in all critical values at 1% ,5% and 10% α as the ADF test results values are larger than those of α.

Employment (EMP) is stationary at level and 1st difference in all α except for none trend and intercept at level where the ADF test result for EMP is 0.07446 compared to the critical values of -2.5826, -1.94327, -1.61511 at 1%, 5% and 10% α respectively. Interest rate (IMLR) is completely not stationary at level in all none, intercept, trend and intercept at all critical values. It is only stationary at 1st difference in all critical values. Inflation rate (IFR) is only stationary at 10% α at level with intercept only with the ADF test critical value result of -2.60256 compared to -3.480425, -2.883408 and -2.578510 at 1%, 5% and 10% α respectively. The variable is stationary in all critical values at 1st difference none, intercept, trend and intercept. World GDP (WDGDP) is completely not stationary at level in all none, intercept, trend and intercept at all critical values. It is only stationary at 1st difference in all critical values. Exchange Rate (EXC)

is stationary at 5% and 10% α at level with intercept only with the ADF test critical value result of -3.31535 compared to -3.480425, -2.883408 and -2.578510 at 1%, 5% and 10% α respectively. The variable is stationary in all critical values at 1st difference none, intercept, trend and intercept.

Table: 4.2.2 ADF Test Result at Level, Trend and Intercept

VARIABLE	P-VALUE	NULL HYPOTHESIS	RESULTS
ATEXP	0.0000	Reject	Stationary
IMLR	0.7035	Accept	Non-Stationary
EMP	0.0035	Reject	Stationary
EXC	0.4824	Accept	Non-Stationary
FDI	0.0000	Reject	Stationary
IFR	0.2248	Accept	Non-Stationary
WDGDP	0.3648	Accept	Non-Stationary

The P-value for Apparel and Textile export (ATEXP), employment (EMP) and Foreign Direct Investment (FDI) are less than 0.05 (5 % the chosen significance level) hence we reject the null hypothesis and conclude that these variables are stationary at 5% significant level.

4.3 Regression Output (OLS)

The study used Ordinary Least Square (OLS) method to find the relationship between dependent and independent variable.

$$ATEXP = \alpha + \beta_1 IFR + \beta_2 EXC + \beta_3 WDGDP + \beta_4 EMP + \beta_5 FDI + \beta_6 IMLR + \varepsilon$$

From the above equation, regression analysis shows four variables EMP, EXC, IFR, WDGDP which are statistically significant at 1% and 5% significant levels with the independent variables explaining the dependent variable by 52% of R-squared. IMLR and FDI show not to be significant at 5% but FDI is positively influencing apparel and textile export with a positive coefficient 0.003129. IMLR and EXC has negative relationship to apparel and textile export from negative coefficients -0.184170 and -

0.545835 respectively. The regression output has been performed after transforming the data to treat negative numbers.

Table 4.3.1: Regression Output (OLS)

Dependent Variable: ATEXP
Method: Least Squares
Sample: 2005M11 2016M11
Included observations: 133

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.950214	3.192231	-0.610925	0.5423
EMP	0.993778	0.274490	3.620460	0.0004
EXC	-0.545835	0.115543	-4.724100	0.0000
FDI	0.003129	0.002846	1.099496	0.2736
IFR	0.087599	0.021444	4.084959	0.0001
IMLR	-0.184170	0.114596	-1.607127	0.1105
WDGDP	0.104599	0.017144	6.101119	0.0000

R-squared	0.518062	Mean dependent var	6.402115
Adjusted R-squared	0.495112	S.D. dependent var	0.101299
S.E. of regression	0.071978	Akaike info criterion	-2.373710
Sum squared resid	0.652789	Schwarz criterion	-2.221586
Log likelihood	164.8517	Hannan-Quinn criter.	-2.311892
F-statistic	22.57404	Durbin-Watson stat	1.787705
Prob(F-statistic)	0.000000		

However, to solve for non-stationary data, first difference is applied to the equation. Log is applied to the stationary data, apparel and textile export (ATEXP), Foreign Direct Investment (FDI) and employment (EMP) since the data for these variables is in thousands to reduce data variation with other variables. For the case of world GDP, interest rate (IMLR) and inflation (IFR), although non stationary 1st difference without log is applied for the data are already in percentage. The regression analysis uses DLOG for exchange rate (EXC) to make it stationary as it is also not in percentage.

$$Log\,(\mathrm{ATEXP}t) = \alpha + \beta_1\, D\,(IFRt) + \beta_2 Dlog\,(\mathrm{EXC}t) + \beta_3 D\,(\mathrm{WDGDP}\,t) + \beta_4 log\,(\mathrm{EMP}\,t) + \beta_5\, Log\,(\mathrm{FDI}t) + \beta_6\, D\,(\mathrm{IMLR}t) + \varepsilon$$

Table 4.3.2: Regression Output (OLS)

Dependent Variable: LOG(ATEXP)
Method: Least Squares
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.712764	0.951174	-3.903350	0.0002
LOG(EMP)	2.364881	0.403897	5.855163	0.0000
DLOG(EXC)	0.055208	0.321075	0.171947	0.8638
LOG(FDI)	0.000670	0.000331	2.020871	0.0454
D(IFR)	0.004578	0.007837	0.584113	0.5602
D(IMLR)	0.285765	0.076190	3.750682	0.0003
D(WDGDP)	-0.001733	0.007609	-0.227835	0.8201

R-squared	0.298023	Mean dependent var	1.856593
Adjusted R-squared	0.264328	S.D. dependent var	0.015848
S.E. of regression	0.013593	Akaike info criterion	-5.706963
Sum squared resid	0.023096	Schwarz criterion	-5.554087
Log likelihood	383.6595	Hannan-Quinn criter.	-5.644841
F-statistic	8.844733	Durbin-Watson stat	1.306953
Prob(F-statistic)	0.000000		

The Log results show the R-squared value of 0.298023 which is nearly 30%, being the percent to which independent variables explain the dependent variable. The previous notable insignificant variables FDI and IMLR now shows significant relationship with the dependent variable having p-value less than 0.05 significance level at 0.0454 and 0.0003 respectively, which means rejecting the null hypothesis. WDGDP EXC, IFR indicates insignificant relationship which is different from the expected sign leading to the acceptance of the null with the P-values of 0.8201, 0.8638 and 0.5602 respectively. EMP is positively statistical significant in all cases. After applying LOG, the Durbin Watson statistics resulted to 1.306953.

The test statistic for EMP, FDI and IMLR also indicates the significant relationship at 95% confidence level as test results are above critical value +-1.96 being at 5.855163, 2.020871 and 3.750682 respectively. WDGDP EXC and IFR are insignificant with t-statistic results of -0.227835, 0.171947, and 0.584113 respectively.

4.4 Heteroskedasticity and Autocorrelation

Table 4.4. Heteroskedasticity Test: White

F-statistic	1.632726	Prob. F(6,125)	0.1435
Obs*R-squared	9.593133	Prob. Chi-Square(6)	0.1429
Scaled explained SS	8.323623	Prob. Chi-Square(6)	0.2153

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 2005M12 2016M11
Included observations: 132

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.019438	0.008605	2.258991	0.0256
(LOG(EMP))^2	-0.003469	0.001551	-2.236492	0.0271
(DLOG(EXC))^2	-0.008356	0.940080	-0.008888	0.9929
(LOG(FDI))^2	-7.20E-07	8.05E-07	-0.894324	0.3729
(D(IFR))^2	-0.000370	0.000199	-1.864007	0.0647
(D(IMLR))^2	-0.006305	0.030942	-0.203758	0.8389
(D(WDGDP))^2	-8.47E-05	0.000109	-0.774949	0.4398

R-squared	0.072675	Mean dependent var	0.000175
Adjusted R-squared	0.028164	S.D. dependent var	0.000244
S.E. of regression	0.000241	Akaike info criterion	-13.77314
Sum squared resid	7.25E-06	Schwarz criterion	-13.62026
Log likelihood	916.0273	Hannan-Quinn criter.	-13.71102
F-statistic	1.632726	Durbin-Watson stat	2.154153
Prob(F-statistic)	0.143462		

White test is one of the tests used to test for heteroskedasticity Bryman, (2005). The null hypothesis is accepted that there is homoskedasticity. Since there is no heteroskedasticity, the p-value of the White's test statistic observed R-squared is higher than the chosen 0.05 significance level at 0.1429 hence insignificant.

Durbin Watson Statistics

When Durbin Watson statistics is equal to 2, it indicates no autocorrelation, any figure below and above shows positive and negative correlation respectively (Bryman, 2005). From the regression results in table 4.3.2, we see correlation in the variables with Durbin Watson statistics test results of 1. 303717. The Durbin-Watson statistics result of 1.303717. Bryman (2005) states that correlation below 1.5 is said to be more alarming.

4.5 Multicollinearity

Multicollinearity takes place when one variable can be written as a linear function of other variables. After running for multicollinearity test, the variables are checked whether they have values of the Pearson's r between each pair of independent variables not exceeding 0.8 or 80% (Bryman & Cramer, 2005). From the test results in table 4.5 below, it can be seen that all Pearson's r between each pair of independent variables are under 0.8 showing no multicollinearity. The values showing 1 are those of perfect multicollinearity of the variable tested against the same variable.

Table 4.5: Multicollinearity results

	EMP	EXC	FDI	IFR	IMLR	WDGDP
EMP	1.000000	-0.658221	-0.099410	-0.091297	-0.126867	-0.260341
EXC	-0.658221	1.000000	-0.042224	-0.088195	-0.018293	0.099604
FDI	-0.099410	-0.042224	1.000000	0.068335	0.051128	0.177083
IFR	-0.091297	-0.088195	0.068335	1.000000	0.663942	0.530647
IMLR	-0.126867	-0.018293	0.051128	0.663942	1.000000	0.311040
WDGDP	-0.260341	0.099604	0.177083	0.530647	0.311040	1.000000

4.6 Final Regression Output

From Table 4.3.2, the final results for macroeconomic factors affecting apparel and textile export of Thailand are as follows;

Dependent Variable: LOG(ATEXP)
Method: Least Squares
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.707192	0.951575	-3.895849	0.0002
LOG(EMP)	2.362508	0.404067	5.846822	0.0000
DLOG(EXC)	0.058330	0.321071	0.181675	0.8561
LOG(FDI)	0.000668	0.000331	2.015709	0.0460
D(IFR)	0.002639	0.005175	0.510010	0.6109
D(IMLR)	0.286536	0.076405	3.750234	0.0003
D(WDGDP)	-0.004619	0.008025	-0.575487	0.5660

R-squared	0.297568	Mean dependent var	1.856593
Adjusted R-squared	0.263851	S.D. dependent var	0.015848
S.E. of regression	0.013597	Akaike info criterion	-5.706316
Sum squared resid	0.023111	Schwarz criterion	-5.553440
Log likelihood	383.6168	Hannan-Quinn criter.	-5.644194
F-statistic	8.825536	Durbin-Watson stat	1.303717
Prob(F-statistic)	0.000000		

The F-statistic at 0.000000 figures indicates that independent variables are relevant to the study and the whole equation is significant at 5%, that the model clearly explains the dependent variable apparel and textile export of Thailand with positive significant relationship at 95% confidence level with EMP, FDI and IMLR. The R-squared shows the fraction of the variance in dependent variable explained by independent variable; it shows the degree to which the independent variable can explain the dependent variable. From the results above, the independent variables explain the dependent variables at 0.297568 nearly 30%. This can imply that other variables other than the selected EMP, FDI, IMLR EXC, IFR and world GDP have the remaining 70% effect to apparel and textile export of Thailand. These could be such as industry related factors, firm factors government involvement and research and development.

The P-value can be used to reject the null hypothesis if it is less than the chosen significant level. (Bryman, 2005) The lower P-value the better for it measures how compatible the data are with the null hypothesis of not supporting the relationship between variables. It explains how likely the data support the null hypothesis. This study uses 5% significant level. From the P-value results and coefficients signs, a lower p-value than 0.05 as noted with EMP, FDI and IMLR at 0.0000, 0.0460 and 0.0003 respectively reject the null and accept the alternative hypothesis that there is significant positive relationship between the variables and apparel and textile industry export of Thailand and insignificant relationship for the case of EXC, IFR and WDGDP which also has a negative coefficient.

T-Test is the test statistic which is used to show the relationship existing between the dependent variable and the independent variables, as the strong relationship increases, so are the T-values which lead to rejection of the null hypothesis which shows there is no effect between the variables. It can be seen that EXC, IFR and WDGDP show not to be significant from the P-value and T-statistic results being lower than +-1.96 critical value at 0.181675, 0.510010 and -0.575487 respectively. The S.E of regression at 0.013597 also shows that the model did fit well the independent variable as it is less than 10% mean of the dependent variable at 1.856593.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

After literature review, data collection, hypothesis formation and testing on export performance in apparel and textile industry of Thailand, the results obtained are summarized in this chapter, whereby summary of findings and discussion of result, implications and recommendations for future study are presented.

5.1 Summary of Findings and Discussion of Result

The study reviewed export in SMEs of Thailand: a case of apparel and textile industry using monthly data for the past 11 years from 2005 to 2016 in relation to macroeconomic variables of inflation rate, exchange rate, employment, interest rate, foreign direct investment and world GDP.

From Table 4.3.2, the researcher found out that the lower P-value of the regression results for employment, foreign direct investment and interest rate was less than the chosen 0.05 significance level showing a strong direct relationship with the dependent variable apparel and textile export. Insignificant relationship is observed with EXC, IFR and world GDP contrary to expectations. Inflation and exchange rate together with world GDP had showed insignificant relationship at the chosen 5% significance level even 10% significance level.

World GDP also shows negative relationship with the apparel and textile export. The negative coefficient can be a sign that as world GDP improves, buyers will have more market choices. The variables with insignificant relationship mean that they have no or little effect on Thailand's apparel and textile export. When world GDP is considered, it brings meaning as apparel and textile industry products are more or less basic goods which the demand does not highly depend on the increase in the income of consumers unlike superior goods such as motor vehicles.

As for inflation IFR and EXC exchange rates, negative coefficient signs were expected but the results were different. From the collected data Thailand has been observed to have moderate inflation for the period of study; hence it pays no effect to the export. Stability in exchange rate EXC is another factor that has been observed for the period under review this can be the reason for no or little significant effect on apparel and textile export different from expected signs.

5.2 Implications and Recommendations

Employment has shown a significant positive relationship with apparel and textile export, this could well be supported by the previous literature Stengg (2001) explaining the industry being labor intensive and supporting the low unemployment rate Thailand is enjoying. Using this variable, a country could enjoy three benefits at a go, solving unemployment problem, producing more in apparel and textile for export; hence the country could achieve economic growth. From the above equation, percentage increase in employment will result to 2.364881% increase in apparel and textile export.

FDI was expected to positively influence export growth Hu (2002) though the role played is not as big as employment from the coefficient figures; 0.000668 and 2.364881 respectively. It could be seen that the influence of FDI though positive but very minimal. Percentage increase in foreign direct investments will result to 0.000668% increase in apparel and textile export. This can also be supported by the fact that the industry is dominated by SMEs and most FDIs have large investments like in automotive sector.

Interest rates results, IMLR showed significant positive relationship contrary to expectation, the positive sign indicates that as interest rates increase, apparel and textile industry exports more. The positive interest rates coefficient can be supported by interest rates in Thailand favoring SMEs evidenced by the existence of SMEs Bank and attractive interest rates offered. This can also be considered as firms producing and exporting more to cover the increased costs as interest rates increases.

The government of Thailand and policy makers can give high consideration to employment and attracting more FDI to invest in apparel and textile industry to increase export. Other developing countries as well can create suitable environments with good policies in order to attract foreign direct investment to increase exports as well as creating more employments to the citizens.

Micro, Small and medium enterprises are crucial to innovation, export growth, adding value to the society, remedy to the pandemic unemployment and an engine to economic growth. A country with the flourishing SMEs sector has a high chance of growth, as has been notable in many developed countries like Japan and the European Union Wymenga et al. (2012). SMEs play an important role in economic development. To have a large industry, one starts with a small industry, most great businesses have started small in the backyard of the owner's home. Just like Facebook which started in a dormitory in Harvard University and is now a world brand, so does most businesses. For a positive balance of trade, a country can also use SMEs to produce import substitution goods.

Most SMEs start small and grow, although may be small at first, small and medium enterprises play a great role in export growth, referred as the economy stimulator. Small and medium enterprises play other major roles in creating employment to many and having entrepreneurial mindset for the youth. Precisely, the reason for selecting employment variable for the study is motivated by Thailand's unemployment rate of under 1% (World Bank, 2014).

The manufacturing sector needs to be uplifted for even if the raw materials are imported or locally available, production has to take place to have products to export. The manufactured goods need to be of added value, crucial for market sustainability. Production capacity and value added in produced products have relation to export value growth (Johari, 2012). It has also been noted that Thailand imports a lot of raw materials for the industry. Producing the raw material within the country will have a positive effect on the balance of trade.

Thailand is already way ahead of many developing countries on SMEs and export performance; however, increasing the variables which are significant like employment and foreign direct investment will take the country closer to the planed goal of 50% of SMEs contribution to GDP (Wiboonchutikula, 2002). A positive net export increase GDP of an exporting country showing the level of economic growth making export a very crucial component for economic growth.

It has been observed that it takes serious government commitment and involvement, long term productivity plans and favorable policies for SMEs, having a country vision that does not change despite the change of governments or political environment and ensuring macroeconomic stability for sound development to be achieved without forgetting human capital development Intrapairot and Srivihok, (2003). With this incite, it is very important for the developing countries to take all the measures hand in hand. Taking productive steps each and every day to become industrialized as strong SMEs will create a more sustainable export business.

Developing countries can find great lessons from Thailand's export growth experience researched through the study and apply same procedures on the good experience and circumvent some procedures for the experiences that hindered growth as well as implement further studies for export growth which will bring economic growth. Economic growth is attributed by many other factors including the capital the country has for investment in infrastructures and machinery, the labor force, the quality of the work force through human capital development and the level of technology with good institutional framework governing each aspect Johari (2012). All these should be well taken care off.

From the reviewed literature, theories and statistical analysis, the study has found that we cannot underestimate the importance of SMEs to the economy. Economic growth of any country is highly attributed by its human capital development that can then be the engine for growth. A well-educated society creates rapid economic growth, become more productive, more independent, and more innovative with fast growing SMEs. To fasten development, the government can work hand in hand with the citizens by

promoting SMEs, through which more are produced, creating more employment and increasing exports and people's standard of living Johari (2012). For any country fighting to industrialize, the SMEs should be well taken care off. As the great philosophers once said, it is the small things compounded that bring about big results.

5.3 Recommendations for Future Study

Although there are many studies on SMEs in different aspects, there is still room for more studies with different variables especially adding industry related variables to previous studies. For the case of this study, more value can be added by studying same market for a longer period of time, adding on the market touches by directly interviewing the players in the market.

There is also room for similar research to be conducted in other countries with less developed markets or more advanced markets like Tanzania and Japan respectively. Generally all other variables affecting SMEs, such as government expenditure, infrastructure, research and development, can be studied and tested their contribution to export growth.

Bibliography

Abou-Stait, F. (2005). -Are Exports the Engine of Economic Growth? An Application of Cointegration and Causality Analysis for Egypt . *Working Paper 76*, 1977-2003 (No. 211).

Agosin, M. R.-O. (2012). Determinants of export diversification around the world: 1962–2000. *The World Economy*, 35(3), 295-315.

Ajagbe, F. A. (2012). Inflation and small and medium enterprises growth in Ogbomoso Area, Oyo State, Nigeria. *Journal of Economics and Sustainable Development*, 3(8), 167-170.

Amornkitvikai, Y., & Charoenrat, T. (2015). Determinants of Export Participation: Evidence from Thai Manufacturing Small and Medium-Sized Enterprises. *Development Economic Review*, ,9(1), 9.

Asare, A. O. (2014). . Challenges Affecting SME's Growth in Ghana. *OIDA International Journal of Sustainable Development*, , 7(06), 23-28.

Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2011). Small vs. young firms across the world: contribution to employment, job creation, and growth. .*World Bank Policy Research Working Paper*, 5631.

Baas, T. (2006). Baas, TRelationship banking and SMEs: A theoretical analysis. . *Small Business Economics*, 27(2-3), 127-137.

Barakauskaite-Jakubauskiene, N. (2011). LOGISTIC CAPITAL MANAGEMENT THEORIES AND THEORETICAL ASPECTS OF ECONOMIC GROWTH CYCLE. *Economics & Sociology*, 4(1), 33-45,126. .

Beck, T., & Levine, R. (2003). Small and medium enterprises, growth, and poverty: Cross-country evidence. *World Bank Publications.*, (Vol. 3178).

Bryman, A. &. (2005). *Quantitative data analysis with SPSS 12 and 13: a guide for social scientists.* East Sussex: Psychology Press.

Cernat, L., Norman-López, A., & T-Figueras, D. (2014). SMEs are more important than you think! Challenges and opportunities for EU exporting SMEs. *Directorate General for Trade, European Commission.*, (No. 2014-3).

Chen, Shaohua, & Wang, Y. (2001). China's growth and poverty reduction: recent trends between 1990 and 1999. *World Bank Policy Research Working Paper,*, 2651.

Chowdhury, A. R. (1993). Does exchange rate volatility depress trade flows? Evidence from error-correction models. *Chowdhury, A. R. (1993). Does exchange rate volatilityThe Review of Economics and Statistics*, 700-706.

Das, D. K. (2014). *The Role of China in Asia's Evolution to Global Economic Prominence.* 1(1), 216-229.: Asia & the Pacific Policy Studies.

Gylfason, T. &. (2001). Gylfason, T., Does inflation matter for growth? *Japan and the world economy*, 13(4), 405-428.

Hu, A. G. (2002). FDI impact and spillover: evidence from China's electronic and textile industries. . *The World Economy*, 25(8), 1063-1076.

Intrapairot, A., & Srivihok, A. (2003). The e-commerce of SMEs in Thailand'.E-commerce and Cultural Values.(Ed, Thanasankit, T.). *Idea Group Publishing.*, Singapore, 199.

Islam, M. M. (2013). Textile industries in Bangladesh and challenges of growth. *Research Journal of Engineering Sciences*, ISSN, 2278, 9472.

Johari, H. (2012). The role of small and medium enterprises (SMEs) in the country's economic development. *Journal of basic and applied scientific research, Vol. 2 (10)*, 10279-10287.

Jun, Kwang, & Singh, H. (1996). The Determinants of Foreign Direct Investment in Developing Countries. *Transnational Corporation*, 5, 2 .

Kasenda, D. (2014). Can Asian Developing Countries Stuck In A "Middle-Income Trap" Learn From South Korea's Economic Development Experience?

Kurz, H. D., & Salvadori, N. (2003). Theories of economic growth: old and new. The Theory of Economic Growth:. *A 'Classical' Perspective*, Cheltenham, Edward Elgar, 1-22.

Li, M. (2006). Inflation and economic growth: Threshold effects and transmission mechanisms. *Department of Economics,University of Alberta*, 2(5), 8-14.

Madani, D. (1999). A review of the role and impact of export processing zones. *(Vol. 2238). World Bank Publications.*

Mashenene and Rumanyika. (2014). Business Constraints and Potential Growth of Small and Medium Enterprises in Tanzania:A Review. . *European Journal of Business and Management*, , 6(32), 72-79.

Mofrad, M. A. (2012). The Relationships Between Gdp, Export And Investment: Case Study Iran. . *Business Intelligence Journal*, 5(2), 401-405.

Mullor-Sebastian, A. (1990). Export Instability and Policy Implications for Developing Countries as Residual Suppliers.

Nagai. (2008). Small & Medium Enterprise Development Policies.

Nordås, H. K. (2004). The global textile and clothing industry post the agreement on textiles and clothing. *World Trade Organization*, 7(1,000).

OECD. (1997). Globalisation and Small and Medium Enterprises.

Proti, N. (2013). Exchange rate fluctuations-shock in Tanzania, An empirical analysis. . *St. Augustine University of Tanzania.*

Raju, D. K. (2008). Small and Medium Enterprises (SMEs) in India: Past, Present and Future.

Ramakrishnan, D. (2013). Making Our SMEs to Smile. . *In Presented by Dr Ramakrishnan Ramachandran at the 16th Thinkers and Writers forum (32nd SKOCH Summit 2013-An Agenda for 8% Growth On 7th June 2013 at Mumbai, India.*

Rojsurakitti, T. (2015). SMEs High-Growth in Thailand. *Archives of Business Research*, 3(1).

Samitas, A. G., & Kenourgios, D. F. (2005). Entrepreneurship, small and medium size business markets and European economic integration. *Journal of Policy Modeling*, 27(3), 363-374.

Sannassee, R. V., Seetanah, B., & Jugessur, J. (2014). EXPORT-LED GROWTH HYPOTHESIS: A META-ANALYSIS. *The Journal of Developing Areas*, 48(1), 361-385.

Stengg, W. (2001). The textile and clothing industry in the EU. *Enterprise papers*, 2(4).

Swierczek, F. W., & Ha, T. T. (2003). Entrepreneurial orientation, uncertainty avoidance and firm performance: an analysis of Thai and Vietnamese SMEs.The International Journal of Entrepreneurship and Innovation,. 4(1), 46-58.

Tambunan, T. (2008). SME Development in Indonesia: Do Economic Growth and Government Supports Matter? *Available at SSRN 1218922.*

Tambunan, T. (2008). Trade liberalization effects on the development of small and medium-sized enterprises in Indonesia: A case study. *Asia Pacific Development Journal*, 15(2), 35.

Tuan, C., & Linda, N. (2003). "FDI facilitated by agglomeration economies: evidence from manufacturing and services joint ventures in China. *Journal of Asian Economics 13.6*, 749-765.

Wiboonchutikula, P. (2002). Small and medium enterprises in Thailand: Recent trends. In Small Firm Dynamism in East Asia . (pp. 213-226). Springer US.

Wunsch-Vincent, S., Lanvin, B., & Dutta, S. (2015). The Global Innovation Index 2015: Effective Innovation Policies for Development. *eSocialSciences.*

Wymenga, P., Spanikova, V., Barker, A., Konings, J., & Canton, E. (2012). EU SMEs in 2012: at the crossroads. *Annual report on small and medium-sized enterprises in the EU, 2011/12.*, Retrieved from SME Performance Review: http://ec. europa. eu/enterprise/.

Yoganandan, G. J. (2013). Factors affecting the export performance of textile industry in developing countries—a review of literature. 2(4), 173-176.

Zhang, K. H. (2005). Zhang, K. H. (2005, June). How does FDI affect a host country's export performance? The case of China. *In International conference of WTO, China and the Asian Economies*, (pp. 25-26).

APPENDICES

UNIT ROOT TEST

Null Hypothesis: ATEXP has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.937207	0.0000
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP)
Method: Least Squares
Date: 02/12/17 Time: 15:06
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATEXP(-1)	-0.427664	0.072031	-5.937207	0.0000
C	259.3616	43.92107	5.905175	0.0000

R-squared	0.213315	Mean dependent var	-0.074848
Adjusted R-squared	0.207264	S.D. dependent var	57.21169
S.E. of regression	50.93885	Akaike info criterion	10.71416
Sum squared resid	337319.6	Schwarz criterion	10.75784
Log likelihood	-705.1348	Hannan-Quinn criter.	10.73191
F-statistic	35.25043	Durbin-Watson stat	2.379746
Prob(F-statistic)	0.000000		

Null Hypothesis: ATEXP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.906259	0.0000
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP)
Method: Least Squares
Date: 02/12/17 Time: 15:11
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATEXP(-1)	-0.427725	0.072419	-5.906259	0.0000
C	259.2790	44.41647	5.837453	0.0000
@TREND(2005M11)	0.001800	0.116983	0.015386	0.9877

R-squared	0.213317	Mean dependent var	-0.074848
Adjusted R-squared	0.201120	S.D. dependent var	57.21169
S.E. of regression	51.13586	Akaike info criterion	10.72931
Sum squared resid	337319.0	Schwarz criterion	10.79483
Log likelihood	-705.1347	Hannan-Quinn criter.	10.75594
F-statistic	17.48979	Durbin-Watson stat	2.379587
Prob(F-statistic)	0.000000		

Null Hypothesis: ATEXP has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.549209	0.4775
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP)
Method: Least Squares
Date: 02/12/17 Time: 15:13
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATEXP(-1)	-0.004480	0.008157	-0.549209	0.5838

R-squared	0.002296	Mean dependent var	-0.074848
Adjusted R-squared	0.002296	S.D. dependent var	57.21169
S.E. of regression	57.14598	Akaike info criterion	10.93664
Sum squared resid	427801.9	Schwarz criterion	10.95848
Log likelihood	-720.8184	Hannan-Quinn criter.	10.94552
Durbin-Watson stat	2.948813		

Null Hypothesis: D(ATEXP) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-19.26771	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP,2)
Method: Least Squares
Date: 02/12/17 Time: 15:17
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ATEXP(-1))	-1.481931	0.076913	-19.26771	0.0000
C	-0.583259	4.397407	-0.132637	0.8947

R-squared	0.742126	Mean dependent var	-0.202595
Adjusted R-squared	0.740127	S.D. dependent var	98.72961
S.E. of regression	50.33012	Akaike info criterion	10.69023
Sum squared resid	326772.6	Schwarz criterion	10.73413
Log likelihood	-698.2103	Hannan-Quinn criter.	10.70807
F-statistic	371.2445	Durbin-Watson stat	2.344707
Prob(F-statistic)	0.000000		

Null Hypothesis: D(ATEXP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-19.20410	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP,2)
Method: Least Squares
Date: 02/12/17 Time: 15:19
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ATEXP(-1))	-1.482747	0.077210	-19.20410	0.0000
C	2.171074	8.979504	0.241781	0.8093
@TREND(2005M11)	-0.041113	0.116735	-0.352189	0.7253

R-squared	0.742376	Mean dependent var	-0.202595
Adjusted R-squared	0.738350	S.D. dependent var	98.72961
S.E. of regression	50.50187	Akaike info criterion	10.70453
Sum squared resid	326456.2	Schwarz criterion	10.77038
Log likelihood	-698.1469	Hannan-Quinn criter.	10.73129
F-statistic	184.4238	Durbin-Watson stat	2.346039
Prob(F-statistic)	0.000000		

Null Hypothesis: D(ATEXP) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-19.34052	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ATEXP,2)
Method: Least Squares
Date: 02/12/17 Time: 15:20
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ATEXP(-1))	-1.481885	0.076621	-19.34052	0.0000

R-squared	0.742091	Mean dependent var	-0.202595
Adjusted R-squared	0.742091	S.D. dependent var	98.72961
S.E. of regression	50.13959	Akaike info criterion	10.67510
Sum squared resid	326817.1	Schwarz criterion	10.69705
Log likelihood	-698.2192	Hannan-Quinn criter.	10.68402
Durbin-Watson stat	2.344442		

Null Hypothesis: EMP has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.546775	0.0082
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP)
Method: Least Squares
Date: 02/12/17 Time: 15:24
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EMP(-1)	-0.170408	0.048046	-3.546775	0.0005
C	6432.889	1811.515	3.551110	0.0005

R-squared	0.088229	Mean dependent var	11.17568
Adjusted R-squared	0.081215	S.D. dependent var	698.2381
S.E. of regression	669.2840	Akaike info criterion	15.86533
Sum squared resid	58232340	Schwarz criterion	15.90901
Log likelihood	-1045.112	Hannan-Quinn criter.	15.88308
F-statistic	12.57962	Durbin-Watson stat	2.084572
Prob(F-statistic)	0.000543		

Null Hypothesis: EMP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.364640	0.0035
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP)
Method: Least Squares
Date: 02/12/17 Time: 15:28
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EMP(-1)	-0.264553	0.060613	-4.364640	0.0000
C	9663.883	2206.501	4.379731	0.0000
@TREND(2005M11)	4.764041	1.928684	2.470100	0.0148

R-squared	0.129406	Mean dependent var	11.17568
Adjusted R-squared	0.115908	S.D. dependent var	698.2381
S.E. of regression	656.5264	Akaike info criterion	15.83427
Sum squared resid	55602476	Schwarz criterion	15.89979
Log likelihood	-1042.062	Hannan-Quinn criter.	15.86089
F-statistic	9.587325	Durbin-Watson stat	1.986297
Prob(F-statistic)	0.000131		

Null Hypothesis: EMP has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.074461	0.7047
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP)
Method: Least Squares
Date: 02/12/17 Time: 15:30
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EMP(-1)	0.000120	0.001612	0.074461	0.9408

R-squared	-0.000216	Mean dependent var	11.17568
Adjusted R-squared	-0.000216	S.D. dependent var	698.2381
S.E. of regression	698.3134	Akaike info criterion	15.94276
Sum squared resid	63881049	Schwarz criterion	15.96460
Log likelihood	-1051.222	Hannan-Quinn criter.	15.95163
Durbin-Watson stat	2.255544		

Null Hypothesis: D(EMP) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.94964	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP,2)
Method: Least Squares
Date: 02/12/17 Time: 15:32
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EMP(-1))	-1.131483	0.087376	-12.94964	0.0000
C	9.416045	60.88630	0.154650	0.8773

R-squared	0.565207	Mean dependent var	1.188092
Adjusted R-squared	0.561837	S.D. dependent var	1052.722
S.E. of regression	696.8376	Akaike info criterion	15.94613
Sum squared resid	62640167	Schwarz criterion	15.99003
Log likelihood	-1042.472	Hannan-Quinn criter.	15.96397
F-statistic	167.6932	Durbin-Watson stat	1.984835
Prob(F-statistic)	0.000000		

Null Hypothesis: D(EMP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.90690	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP,2)
Method: Least Squares
Date: 02/12/17 Time: 19:38
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EMP(-1))	-1.132571	0.087749	-12.90690	0.0000
C	43.71677	124.3961	0.351432	0.7258
@TREND(2005M11)	-0.511833	1.616893	-0.316554	0.7521

R-squared	0.565548	Mean dependent var	1.188092
Adjusted R-squared	0.558759	S.D. dependent var	1052.722
S.E. of regression	699.2807	Akaike info criterion	15.96062
Sum squared resid	62591167	Schwarz criterion	16.02646
Log likelihood	-1042.420	Hannan-Quinn criter.	15.98737
F-statistic	83.31185	Durbin-Watson stat	1.984905
Prob(F-statistic)	0.000000		

Null Hypothesis: D(EMP) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.99762	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EMP,2)
Method: Least Squares
Date: 02/12/17 Time: 15:34
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EMP(-1))	-1.131342	0.087042	-12.99762	0.0000

R-squared	0.565127	Mean dependent var	1.188092
Adjusted R-squared	0.565127	S.D. dependent var	1052.722
S.E. of regression	694.2167	Akaike info criterion	15.93105
Sum squared resid	62651780	Schwarz criterion	15.95300
Log likelihood	-1042.484	Hannan-Quinn criter.	15.93997
Durbin-Watson stat	1.984664		

Null Hypothesis: IMLR has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.445095	0.5583
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR)
Method: Least Squares
Date: 02/12/17 Time: 15:49
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMLR(-1)	-0.029741	0.020580	-1.445095	0.1508
C	0.211592	0.146232	1.446963	0.1503

R-squared	0.015810	Mean dependent var	0.000758
Adjusted R-squared	0.008239	S.D. dependent var	0.114176
S.E. of regression	0.113704	Akaike info criterion	-1.495396
Sum squared resid	1.680725	Schwarz criterion	-1.451718
Log likelihood	100.6962	Hannan-Quinn criter.	-1.477647
F-statistic	2.088300	Durbin-Watson stat	1.323567
Prob(F-statistic)	0.150837		

Null Hypothesis: IMLR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.791498	0.7035
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR)
Method: Least Squares
Date: 02/12/17 Time: 15:50
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMLR(-1)	-0.037363	0.020856	-1.791498	0.0756
C	0.296773	0.152723	1.943213	0.0542
@TREND(2005M11)	-0.000468	0.000263	-1.779599	0.0775

R-squared	0.039393	Mean dependent var	0.000758
Adjusted R-squared	0.024500	S.D. dependent var	0.114176
S.E. of regression	0.112768	Akaike info criterion	-1.504499
Sum squared resid	1.640452	Schwarz criterion	-1.438980
Log likelihood	102.2969	Hannan-Quinn criter.	-1.477875
F-statistic	2.645042	Durbin-Watson stat	1.345526
Prob(F-statistic)	0.074852		

Null Hypothesis: IMLR has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.021339	0.6739
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR)
Method: Least Squares
Date: 02/12/17 Time: 15:51
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMLR(-1)	-2.98E-05	0.001399	-0.021339	0.9830

R-squared	-0.000041	Mean dependent var	0.000758
Adjusted R-squared	-0.000041	S.D. dependent var	0.114176
S.E. of regression	0.114178	Akaike info criterion	-1.494571
Sum squared resid	1.707794	Schwarz criterion	-1.472731
Log likelihood	99.64167	Hannan-Quinn criter.	-1.485696
Durbin-Watson stat	1.342685		

Null Hypothesis: D(IMLR) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.411489	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR,2)
Method: Least Squares
Date: 02/12/17 Time: 15:53
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IMLR(-1))	-0.689578	0.081981	-8.411489	0.0000
C	-0.001382	0.009360	-0.147644	0.8829

R-squared	0.354203	Mean dependent var	-0.001908
Adjusted R-squared	0.349197	S.D. dependent var	0.132799
S.E. of regression	0.107132	Akaike info criterion	-1.614359
Sum squared resid	1.480569	Schwarz criterion	-1.570463
Log likelihood	107.7405	Hannan-Quinn criter.	-1.596522
F-statistic	70.75315	Durbin-Watson stat	2.159678
Prob(F-statistic)	0.000000		

Null Hypothesis: D(IMLR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.417727	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR,2)
Method: Least Squares
Date: 02/12/17 Time: 15:54
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IMLR(-1))	-0.696962	0.082797	-8.417727	0.0000
C	0.010496	0.019203	0.546599	0.5856
@TREND(2005M11)	-0.000177	0.000250	-0.708854	0.4797

R-squared	0.356728	Mean dependent var	-0.001908
Adjusted R-squared	0.346677	S.D. dependent var	0.132799
S.E. of regression	0.107339	Akaike info criterion	-1.603010
Sum squared resid	1.474780	Schwarz criterion	-1.537166
Log likelihood	107.9972	Hannan-Quinn criter.	-1.576255
F-statistic	35.49137	Durbin-Watson stat	2.150050
Prob(F-statistic)	0.000000		

Null Hypothesis: D(IMLR) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.444495	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMLR,2)
Method: Least Squares
Date: 02/12/17 Time: 15:55
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IMLR(-1))	-0.689659	0.081670	-8.444495	0.0000

R-squared	0.354094	Mean dependent var	-0.001908
Adjusted R-squared	0.354094	S.D. dependent var	0.132799
S.E. of regression	0.106728	Akaike info criterion	-1.629458
Sum squared resid	1.480819	Schwarz criterion	-1.607509
Log likelihood	107.7295	Hannan-Quinn criter.	-1.620539
Durbin-Watson stat	2.159115		

Null Hypothesis: EXC has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.315351	0.0161
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC)
Method: Least Squares
Date: 02/12/17 Time: 15:58
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXC(-1)	-0.049918	0.015057	-3.315351	0.0012
C	1.622369	0.504014	3.218898	0.0016

R-squared	0.077959	Mean dependent var	-0.043911
Adjusted R-squared	0.070866	S.D. dependent var	0.450378
S.E. of regression	0.434126	Akaike info criterion	1.184072
Sum squared resid	24.50051	Schwarz criterion	1.227751
Log likelihood	-76.14876	Hannan-Quinn criter.	1.201821
F-statistic	10.99155	Durbin-Watson stat	1.286336
Prob(F-statistic)	0.001186		

Null Hypothesis: EXC has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.205251	0.4824
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC)
Method: Least Squares
Date: 02/12/17 Time: 15:59
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXC(-1)	-0.035469	0.016084	-2.205251	0.0292
C	0.977677	0.569276	1.717403	0.0883
@TREND(2005M11)	0.002442	0.001059	2.305333	0.0227

R-squared	0.114442	Mean dependent var	-0.043911
Adjusted R-squared	0.100713	S.D. dependent var	0.450378
S.E. of regression	0.427097	Akaike info criterion	1.158852
Sum squared resid	23.53107	Schwarz criterion	1.224370
Log likelihood	-73.48420	Hannan-Quinn criter.	1.185475
F-statistic	8.335455	Durbin-Watson stat	1.358220
Prob(F-statistic)	0.000394		

Null Hypothesis: EXC has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.359651	0.1608
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC)
Method: Least Squares
Date: 02/12/17 Time: 16:00
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXC(-1)	-0.001589	0.001168	-1.359651	0.1763

R-squared	0.004470	Mean dependent var	-0.043911
Adjusted R-squared	0.004470	S.D. dependent var	0.450378
S.E. of regression	0.449370	Akaike info criterion	1.245606
Sum squared resid	26.45326	Schwarz criterion	1.267445
Log likelihood	-81.21000	Hannan-Quinn criter.	1.254481
Durbin-Watson stat	1.249205		

Null Hypothesis: D(EXC) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.625352	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC,2)
Method: Least Squares
Date: 02/12/17 Time: 16:01
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXC(-1))	-0.623235	0.081732	-7.625352	0.0000
C	-0.026431	0.036937	-0.715563	0.4756

R-squared	0.310699	Mean dependent var	0.002418
Adjusted R-squared	0.305355	S.D. dependent var	0.504573
S.E. of regression	0.420538	Akaike info criterion	1.120585
Sum squared resid	22.81393	Schwarz criterion	1.164482
Log likelihood	-71.39835	Hannan-Quinn criter.	1.138422
F-statistic	58.14599	Durbin-Watson stat	1.828283
Prob(F-statistic)	0.000000		

Null Hypothesis: D(EXC) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.115745	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC,2)
Method: Least Squares
Date: 02/12/17 Time: 16:03
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXC(-1))	-0.678704	0.083628	-8.115745	0.0000
C	-0.187193	0.076805	-2.437258	0.0162
@TREND(2005M11)	0.002361	0.000994	2.374959	0.0190

R-squared	0.339791	Mean dependent var	0.002418
Adjusted R-squared	0.329475	S.D. dependent var	0.504573
S.E. of regression	0.413172	Akaike info criterion	1.092730
Sum squared resid	21.85105	Schwarz criterion	1.158574
Log likelihood	-68.57382	Hannan-Quinn criter.	1.119485
F-statistic	32.93903	Durbin-Watson stat	1.810128
Prob(F-statistic)	0.000000		

Null Hypothesis: D(EXC) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.606277	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXC,2)
Method: Least Squares
Date: 02/12/17 Time: 16:05
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXC(-1))	-0.617245	0.081149	-7.606277	0.0000

R-squared	0.307963	Mean dependent var	0.002418
Adjusted R-squared	0.307963	S.D. dependent var	0.504573
S.E. of regression	0.419748	Akaike info criterion	1.109280
Sum squared resid	22.90448	Schwarz criterion	1.131228
Log likelihood	-71.65782	Hannan-Quinn criter.	1.118198
Durbin-Watson stat	1.831725		

Null Hypothesis: FDI has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.963463	0.0000
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 02/12/17 Time: 16:06
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	-0.771355	0.086055	-8.963463	0.0000
C	564.8169	101.1193	5.585649	0.0000

R-squared	0.381964	Mean dependent var	10.64106
Adjusted R-squared	0.377210	S.D. dependent var	1164.919
S.E. of regression	919.3202	Akaike info criterion	16.50018
Sum squared resid	1.10E+08	Schwarz criterion	16.54386
Log likelihood	-1087.012	Hannan-Quinn criter.	16.51793
F-statistic	80.34367	Durbin-Watson stat	1.974937
Prob(F-statistic)	0.000000		

Null Hypothesis: FDI has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.944375	0.0000
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 02/12/17 Time: 16:08
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	-0.774093	0.086545	-8.944375	0.0000
C	628.8387	176.8706	3.555360	0.0005
@TREND(2005M11)	-0.933146	2.111903	-0.441851	0.6593

R-squared	0.382898	Mean dependent var	10.64106
Adjusted R-squared	0.373330	S.D. dependent var	1164.919
S.E. of regression	922.1790	Akaike info criterion	16.51382
Sum squared resid	1.10E+08	Schwarz criterion	16.57934
Log likelihood	-1086.912	Hannan-Quinn criter.	16.54044
F-statistic	40.02077	Durbin-Watson stat	1.972680
Prob(F-statistic)	0.000000		

Null Hypothesis: FDI has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.320743	0.0000
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 02/12/17 Time: 16:09
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	-0.477461	0.075539	-6.320743	0.0000

R-squared	0.233638	Mean dependent var	10.64106
Adjusted R-squared	0.233638	S.D. dependent var	1164.919
S.E. of regression	1019.795	Akaike info criterion	16.70014
Sum squared resid	1.36E+08	Schwarz criterion	16.72198
Log likelihood	-1101.209	Hannan-Quinn criter.	16.70901
Durbin-Watson stat	2.160486		

Null Hypothesis: D(FDI) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.70421	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 02/12/17 Time: 16:10
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-1.373842	0.082245	-16.70421	0.0000
C	10.16304	95.22256	0.106729	0.9152

R-squared	0.683847	Mean dependent var	10.93427
Adjusted R-squared	0.681396	S.D. dependent var	1930.857
S.E. of regression	1089.872	Akaike info criterion	16.84066
Sum squared resid	1.53E+08	Schwarz criterion	16.88455
Log likelihood	-1101.063	Hannan-Quinn criter.	16.85849
F-statistic	279.0306	Durbin-Watson stat	2.177006
Prob(F-statistic)	0.000000		

Null Hypothesis: D(FDI) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.64051	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 02/12/17 Time: 16:11
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-1.373804	0.082558	-16.64051	0.0000
C	-17.23495	194.4655	-0.088627	0.9295
@TREND(2005M11)	0.408925	2.527662	0.161780	0.8717

R-squared	0.683912	Mean dependent var	10.93427
Adjusted R-squared	0.678973	S.D. dependent var	1930.857
S.E. of regression	1094.009	Akaike info criterion	16.85572
Sum squared resid	1.53E+08	Schwarz criterion	16.92156
Log likelihood	-1101.050	Hannan-Quinn criter.	16.88248
F-statistic	138.4752	Durbin-Watson stat	2.177498
Prob(F-statistic)	0.000000		

Null Hypothesis: D(FDI) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.76814	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 02/12/17 Time: 16:12
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-1.373847	0.081932	-16.76814	0.0000

R-squared	0.683819	Mean dependent var	10.93427
Adjusted R-squared	0.683819	S.D. dependent var	1930.857
S.E. of regression	1085.720	Akaike info criterion	16.82548
Sum squared resid	1.53E+08	Schwarz criterion	16.84743
Log likelihood	-1101.069	Hannan-Quinn criter.	16.83440
Durbin-Watson stat	2.176808		

Null Hypothesis: IFR has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.602561	0.0950
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR)
Method: Least Squares
Date: 02/12/17 Time: 16:15
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IFR(-1)	-0.100464	0.038602	-2.602561	0.0103
C	0.144992	0.062962	2.302851	0.0229

R-squared	0.049522	Mean dependent var	-0.004167
Adjusted R-squared	0.042211	S.D. dependent var	0.306021
S.E. of regression	0.299493	Akaike info criterion	0.441583
Sum squared resid	11.66047	Schwarz criterion	0.485261
Log likelihood	-27.14445	Hannan-Quinn criter.	0.459332
F-statistic	6.773323	Durbin-Watson stat	1.903782
Prob(F-statistic)	0.010327		

Null Hypothesis: IFR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.734164	0.2248
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR)
Method: Least Squares
Date: 02/12/17 Time: 16:19
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IFR(-1)	-0.109377	0.040004	-2.734164	0.0071
C	0.198807	0.088773	2.239501	0.0268
@TREND(2005M11)	-0.000610	0.000709	-0.860789	0.3910

R-squared	0.054950	Mean dependent var	-0.004167
Adjusted R-squared	0.040299	S.D. dependent var	0.306021
S.E. of regression	0.299792	Akaike info criterion	0.451007
Sum squared resid	11.59388	Schwarz criterion	0.516525
Log likelihood	-26.76644	Hannan-Quinn criter.	0.477630
F-statistic	3.750392	Durbin-Watson stat	1.897829
Prob(F-statistic)	0.026111		

Null Hypothesis: IFR has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.203403	0.2088
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR)
Method: Least Squares
Date: 02/12/17 Time: 16:20
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IFR(-1)	-0.019546	0.016242	-1.203403	0.2310

R-squared	0.010749	Mean dependent var	-0.004167
Adjusted R-squared	0.010749	S.D. dependent var	0.306021
S.E. of regression	0.304372	Akaike info criterion	0.466414
Sum squared resid	12.13614	Schwarz criterion	0.488254
Log likelihood	-29.78334	Hannan-Quinn criter.	0.475289
Durbin-Watson stat	1.982971		

Null Hypothesis: D(IFR) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.35995	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR,2)
Method: Least Squares
Date: 02/12/17 Time: 16:22
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IFR(-1))	-1.000188	0.088045	-11.35995	0.0000
C	-0.004199	0.026946	-0.155839	0.8764

R-squared	0.500094	Mean dependent var	3.12E-18
Adjusted R-squared	0.496219	S.D. dependent var	0.434481
S.E. of regression	0.308384	Akaike info criterion	0.500208
Sum squared resid	12.26799	Schwarz criterion	0.544104
Log likelihood	-30.76360	Hannan-Quinn criter.	0.518045
F-statistic	129.0486	Durbin-Watson stat	1.960059
Prob(F-statistic)	0.000000		

Null Hypothesis: D(IFR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.31791	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR,2)
Method: Least Squares
Date: 02/12/17 Time: 16:24
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IFR(-1))	-1.000377	0.088389	-11.31791	0.0000
C	0.003145	0.055026	0.057164	0.9545
@TREND(2005M11)	-0.000110	0.000715	-0.153274	0.8784

R-squared	0.500186	Mean dependent var	3.12E-18
Adjusted R-squared	0.492376	S.D. dependent var	0.434481
S.E. of regression	0.309558	Akaike info criterion	0.515291
Sum squared resid	12.26574	Schwarz criterion	0.581135
Log likelihood	-30.75157	Hannan-Quinn criter.	0.542047
F-statistic	64.04759	Durbin-Watson stat	1.960029
Prob(F-statistic)	0.000000		

Null Hypothesis: D(IFR) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.40175	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IFR,2)
Method: Least Squares
Date: 02/12/17 Time: 16:25
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IFR(-1))	-1.000000	0.087706	-11.40175	0.0000

R-squared	0.500000	Mean dependent var	3.12E-18
Adjusted R-squared	0.500000	S.D. dependent var	0.434481
S.E. of regression	0.307225	Akaike info criterion	0.485129
Sum squared resid	12.27030	Schwarz criterion	0.507077
Log likelihood	-30.77593	Hannan-Quinn criter.	0.494047
Durbin-Watson stat	1.960066		

Null Hypothesis: WDGDP has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.434470	0.1343
Test critical values:	1% level	-3.480425	
	5% level	-2.883408	
	10% level	-2.578510	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP)
Method: Least Squares
Date: 02/12/17 Time: 16:27
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
WDGDP(-1)	-0.085257	0.035021	-2.434470	0.0163
C	0.212760	0.108265	1.965181	0.0515

R-squared	0.043602	Mean dependent var	-0.011523
Adjusted R-squared	0.036245	S.D. dependent var	0.665510
S.E. of regression	0.653338	Akaike info criterion	2.001592
Sum squared resid	55.49062	Schwarz criterion	2.045271
Log likelihood	-130.1051	Hannan-Quinn criter.	2.019341
F-statistic	5.926645	Durbin-Watson stat	1.921073
Prob(F-statistic)	0.016271		

Null Hypothesis: WDGDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.425507	0.3648
Test critical values:	1% level	-4.029041	
	5% level	-3.444222	
	10% level	-3.146908	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP)
Method: Least Squares
Date: 02/12/17 Time: 16:28
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
WDGDP(-1)	-0.086431	0.035634	-2.425507	0.0167
C	0.236124	0.159224	1.482972	0.1405
@TREND(2005M11)	-0.000305	0.001519	-0.200762	0.8412

R-squared	0.043901	Mean dependent var	-0.011523
Adjusted R-squared	0.029077	S.D. dependent var	0.665510
S.E. of regression	0.655763	Akaike info criterion	2.016431
Sum squared resid	55.47329	Schwarz criterion	2.081949
Log likelihood	-130.0845	Hannan-Quinn criter.	2.043055
F-statistic	2.961599	Durbin-Watson stat	1.919424
Prob(F-statistic)	0.055265		

Null Hypothesis: WDGDP has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.435530	0.1405
Test critical values:	1% level	-2.582599	
	5% level	-1.943266	
	10% level	-1.615111	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP)
Method: Least Squares
Date: 02/12/17 Time: 16:29
Sample (adjusted): 2005M12 2016M11
Included observations: 132 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
WDGDP(-1)	-0.026693	0.018594	-1.435530	0.1535

R-squared	0.015190	Mean dependent var	-0.011523
Adjusted R-squared	0.015190	S.D. dependent var	0.665510
S.E. of regression	0.660436	Akaike info criterion	2.015715
Sum squared resid	57.13909	Schwarz criterion	2.037555
Log likelihood	-132.0372	Hannan-Quinn criter.	2.024590
Durbin-Watson stat	1.977960		

Null Hypothesis: D(WDGDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.36127	0.0000
Test critical values:	1% level	-3.480818	
	5% level	-2.883579	
	10% level	-2.578601	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP,2)
Method: Least Squares
Date: 02/12/17 Time: 16:30
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(WDGDP(-1))	-1.000304	0.088045	-11.36127	0.0000
C	-0.011614	0.058604	-0.198182	0.8432

R-squared	0.500152	Mean dependent var	0.000000
Adjusted R-squared	0.496277	S.D. dependent var	0.944929
S.E. of regression	0.670649	Akaike info criterion	2.054007
Sum squared resid	58.02027	Schwarz criterion	2.097903
Log likelihood	-132.5374	Hannan-Quinn criter.	2.071844
F-statistic	129.0786	Durbin-Watson stat	1.994614
Prob(F-statistic)	0.000000		

Null Hypothesis: D(WDGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.32069	0.0000
Test critical values:	1% level	-4.029595	
	5% level	-3.444487	
	10% level	-3.147063	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP,2)
Method: Least Squares
Date: 02/12/17 Time: 16:33
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(WDGDP(-1))	-1.000609	0.088388	-11.32069	0.0000
C	-0.032466	0.119690	-0.271252	0.7866
@TREND(2005M11)	0.000311	0.001556	0.200042	0.8418

R-squared	0.500308	Mean dependent var	0.000000
Adjusted R-squared	0.492501	S.D. dependent var	0.944929
S.E. of regression	0.673158	Akaike info criterion	2.068961
Sum squared resid	58.00214	Schwarz criterion	2.134805
Log likelihood	-132.5170	Hannan-Quinn criter.	2.095717
F-statistic	64.07900	Durbin-Watson stat	1.994636
Prob(F-statistic)	0.000000		

Null Hypothesis: D(WDGDP) has a unit root
Exogenous: None
Lag Length: 0 (Fixed)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.40175	0.0000
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(WDGDP,2)
Method: Least Squares
Date: 02/12/17 Time: 16:34
Sample (adjusted): 2006M01 2016M11
Included observations: 131 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(WDGDP(-1))	-1.000000	0.087706	-11.40175	0.0000

R-squared	0.500000	Mean dependent var	0.000000
Adjusted R-squared	0.500000	S.D. dependent var	0.944929
S.E. of regression	0.668166	Akaike info criterion	2.039044
Sum squared resid	58.03794	Schwarz criterion	2.060992
Log likelihood	-132.5574	Hannan-Quinn criter.	2.047962
Durbin-Watson stat	1.994616		