UNIVERSITY OF NEW ENGLAND

FOREIGN DIRECT INVESTMENT AND EMERGING MARKETS: A STUDY OF DIRECT INVESTMENT IN THAILAND WITH A FOCUS ON AUSTRALIAN INVESTMENT

A thesis submitted by

Kesinee Tanomponkang

(BBA, Financial and Banking)

(MBA, Finance)

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FOREIGN DIRECT INVESTMENT AND EMERGING MARKETS: A STUDY OF DIRECT INVESTMENT IN THAILAND WITH A FOCUS ON AUSTRALIAN INVESTMENT

Abstract

Thailand has experienced significant economic improvement and has become one of the key economic centres of Southeast Asia. Foreign direct investment (FDI) is one of the most obvious contributors to this performance as it is generally agreed that it has contributed to Thailand's development significantly. The purpose of this study is to provide an introduction to and demonstrate the feasibility of FDI in Thailand. Early studies are discussed in an introduction leading to the motivation and research question of this study. The literature review related to Foreign Direct Investment provides the theoretical framework for the study. This plus the context of the study in Thailand as outlined lead to the methodology of this study, then consideration of the empirical results. And finally, to the implications of the research are highlighted.

This thesis focuses on the determinants of FDI in Thailand applying the Autoregressive Distributed Lag (ARDL) bounds test to analyse quarterly data over two and a half decades during the period 1991-2015, to consider the major problems relating to the current endeavour to study "the influences on investors to investment in Thailand with reference to the effective factors for decision-making and with suggestions for development of FDI."

In addition, the study also develops this finding to the top ten main countries, including Australia, that invest in Thailand.

The primary findings show cost, production efficiency seekers, and political instability, affect the investors' decisions in investing in Thailand. However, GDP and trade openness did not affect in this study. For Australia, as the country of interest, trade openness and cost affect the Australian investors' decisions in investing in Thailand. Importantly, Japan as the biggest investor to invest in Thailand had a similar result.

Candidate's Certification of Thesis

I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree or qualification.

Kesinee Tanomponkang

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List of Abbreviations

ANIE	Asian Newly Industrializing Economies
ARDL	Autoregressive Distributed Lag model
ASEAN	The Association of Southeast Asian Nations
BOI	The Thailand Board of Investment
CPI	Consumer price index
ERP	Effective Rate of Protection
DCS	Dummy Crisis
EDEBT	External debt
EX	Exchange rate
FDI	Foreign Direct Investment
GCON	Government consumption
GDP	Gross domestic production
GFCF	Gross Fixed Capital Formation
GNP	Gross National Product
INF	Inflation
LD	Lending rate
MNC	Multinational Company
MPD	Manufacturing production index
NEG	New Economic Geography
NIE	Newly Industrializing Economies
POL	Political Instability
POPD	Population density
OECD	Organization for Economic Cooperation and Development
OP	Trade openness
RODRAD	Road and rail density
ROH	The Regional Operating Headquarters
SEN	School enrolment
SME	Small and Medium Enterprises
TELD	Telephone density
UNCTC	The United Nations Center on Transnational Corporations

1. Introduction

1.1. Introduction

Foreign Direct Investment (FDI) is an important method for driving world business. There are advantages both in the host country (the recipient of investment) and in the investing country (the source of investment).

This study undertakes a review of the relevant literature and a thorough analysis of Foreign Direct Investment (FDI) in Thailand. The study shows that no one FDI theory is perfect. However, a multiplicity of theory models attempt to clarify FDI. There are many factors which affect both increase and decrease in the number of firms considering FDI, including inflation rate, exchange rate, manufacturing output, employment negatively, tourism positively, skills and knowledge, infrastructure, and the level of consumer income. Moreover, multinational firms and cost minimization have significant roles in increasing FDI.

This study aims to review the literature and the vital theories of FDI for the purpose of gaining knowledge from previous studies, in order to find the weaknesses in them and address those weaknesses. In addition, the research focus of this study is to discover the factors that affect the foreign investor when investing in Thailand.

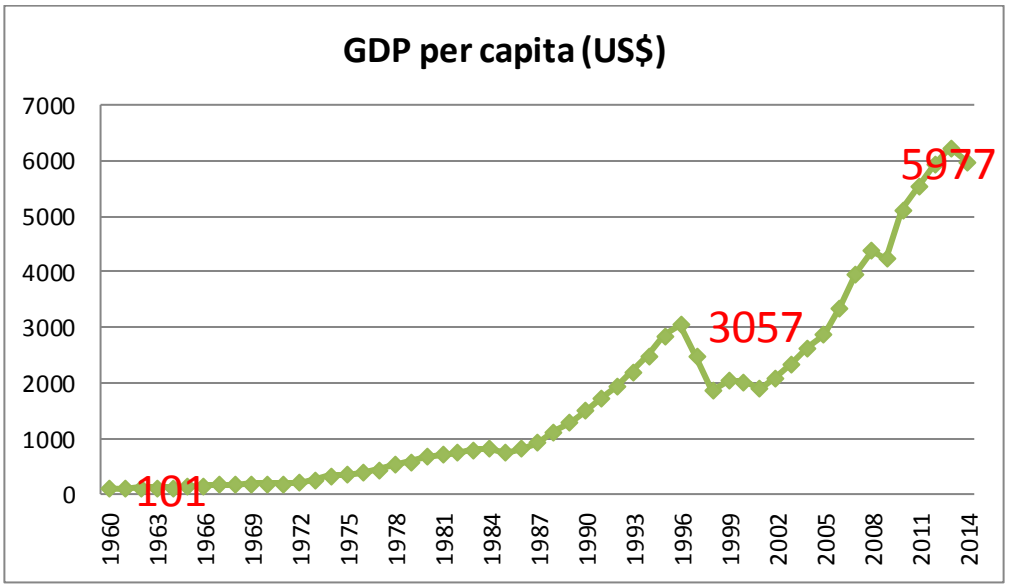
In this chapter, a research motivation is considered. Following that, there is discussion of the research question, followed by the structure and method of analysis of this study.

1.2. Research Motivation

Thailand is a developing country, so it needs more investment from overseas investors (Brooks, 2004). Basically, Thailand has been a low income country, with a per capita GDP - as presented in the Figure 1-1 data source from the World Development

Indicators Database of only US$ 101 in the year 1960 continuing at this level for the next fifteen years to 1975. Thereafter, it increased gradually until 1990 in which it slightly exceeded US$ 1,000, still a relatively small amount. By 1996 it had reached US$ 3,057, and nearly two decades later in 2014 US$ 5,977. Despite the great improvement it still remains relatively low to meet investment demands and Thailand still needs more development. However, the World Bank reports that Thailand became an upper-middle income economy in 2011.

Figure 1-1: GDP per capita in Thailand



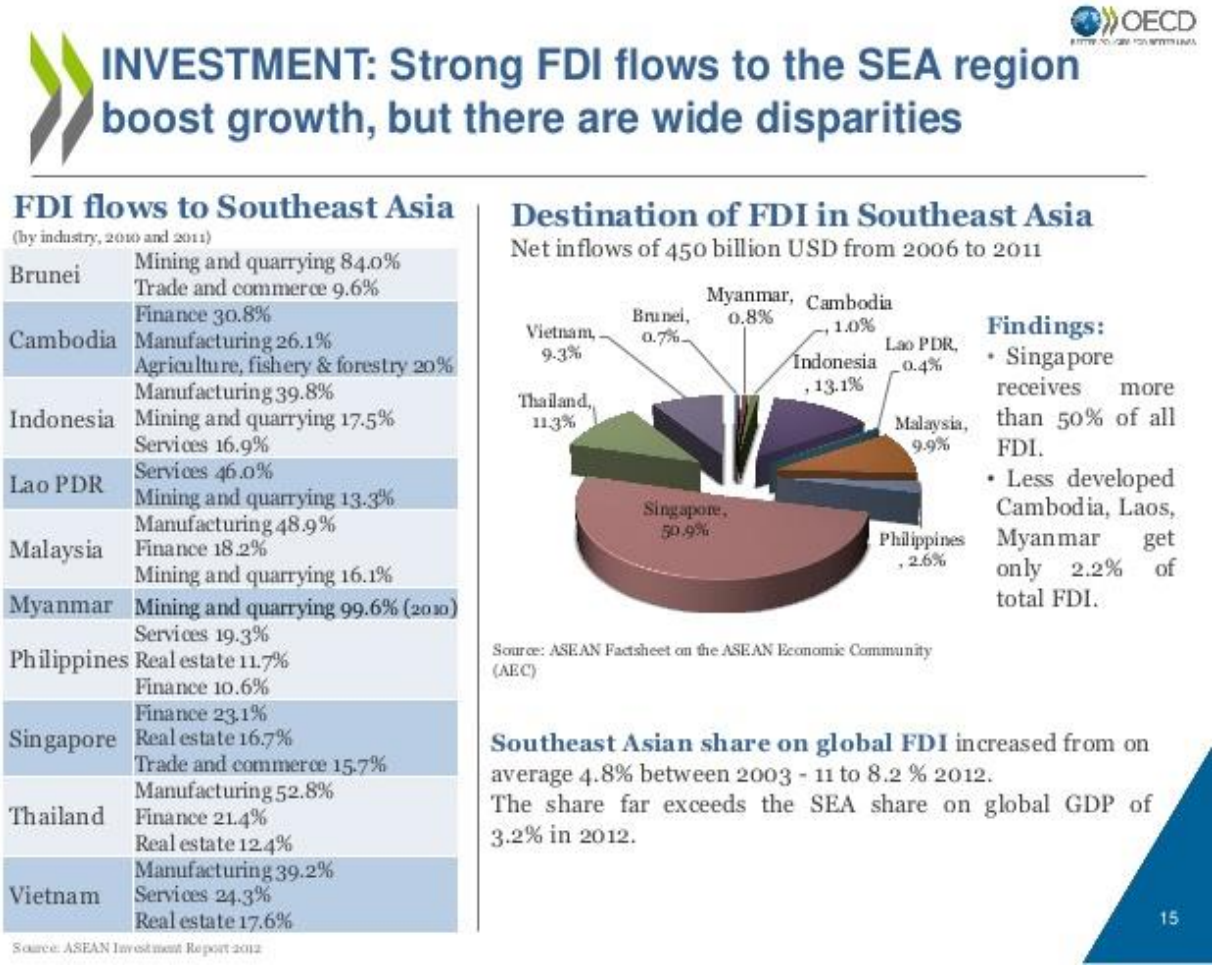
Source: World Development Indicators Database.

This investment demand in Thailand can be met by attracting FDI. Thailand tries to encourage companies from around the world to invest in the country. The Thailand Board of Investment (BOI) is the government organization which was established to support foreign investors. Thailand is a gateway to the heart of Asia and one of the members of ASEAN. The country offers foreign investors the opportunity to export many Thai manufactured products and services into their home markets. In addition to a plentiful skilled and cost-effective workforce and natural resources, foreign investors can rely on both modernized transportation facilities and upgraded communications, living conditions and networks which make current business activity secure. For foreign investments, the government focuses on liberalization and encourages free trade, as well as offering an extensive list of promoted activities. In terms of social organization, the country is a constitutional monarchy with a high level

of respect for the Thai Monarchy. His Majesty the King is the patron of all religions; although most Thai people are Buddhist, all religions are welcome. Apart from the well-accepted standards of education and healthcare, companies feel secure and at home in Thailand due to its gracious hospitality which has a high reputation throughout the world.

In term of FDI advantages, Thailand wishes it could be in the number one in attracting FDI in Asia. However, Thailand had the third largest share of FDI in Southeast Asia from 2006 to 2011 which was only 11.3%, as data of the OECD report shows in Figure 1-2.

Figure 1-2: FDI flows in Southeast Asia from 2006 to 2011



Source: OECD Report (OECD, 2012), page 15.

The data from the OECD report in Figure 1-2 above shows that the main FDI inflow to Thailand was distributed among manufacturing 52.8%, finance 21.4%, and real

estate 12.4%. The government of Thailand has focused on six sectors in particular for attracting development, namely alternative energy, electronics and ICT, agriculture and agro-industry, fashion, automotive industry, and value-added services including entertainment, healthcare and tourism (The Board of Investment of Thailand, 2011b). To strengthen these six sectors there is a need to encourage more the investor to invest in Thailand.

This study aims to review the literature and the vital theories of FDI for the purpose of gaining an increase in FDI, in order to find the aspects of the issue that have not been studied and to develop research questions. In addition, we wish to discover the factors that affect the foreign investor when investing in Thailand.

There are many previous studies of foreign direct investment in Thailand. For instance:

Schneider & Frey (1985) studied economic and political determinants of foreign direct investment and found that political instability, growth of GNP, inflation, balance of payments, wage costs, and a skilled labour force effected to both an increase and a decrease of foreign direct investment.

Yoshida (1990) studied foreign direct investment in Thailand and found that the determinants of both an increase and a decrease of foreign direct investment in Thailand were the economic situation (triple distress; specifically the trade deficit, fiscal deficit and accumulation of external debts), as well as the major infrastructure construction projects.

Talerngsri (2001) studied the determinants of FDI distribution across manufacturing activities in an Asian industrializing country in the case of Japanese FDI in Thailand and found that the factors to determine FDI in Thailand by Japanese companies were economies of scale and technological intensities. The current study, in contrast, examines the influence of locational-specific distinctiveness of host industries such as trade costs, feature endowment, and policy features. More characteristically, it observes the special effects of input-output connection between Japanese companies.

Milner, Reed, and Talerngsri (2004) studied foreign direct investment and vertical integration of production by Japanese multinationals in Thailand, and found that policy and endowment features, labour force of manufacture, the function of transport costs between the host and home economies, and market volume in the home

economy, were effect to both an increase and a decrease of foreign direct investment in Thai manufacturing activities.

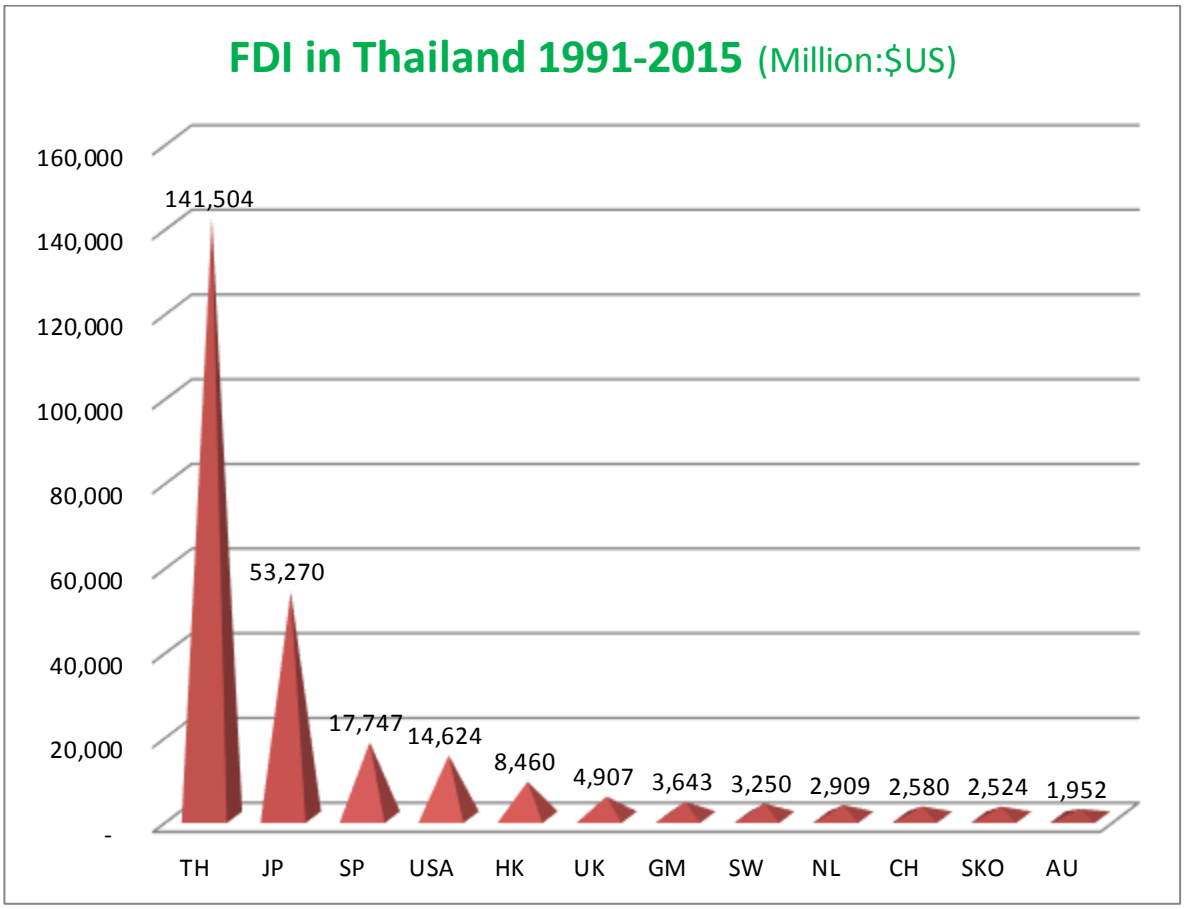
Rochananonda (2006) studied tax incentives and FDI in Thailand and found that (I) the present corporate tax rate is at 30% of net profits. On the other hand, the efficient tax rate on companies is at 17% owing to current adjustment in tax incentives on foreign investment (for example, the Regional Operating Headquarters (ROH) business tax rate is 10% and the tax decrease on SMEs corporation). (II) To attract money flows into the cross-border segment (only the monetary business), and the export-oriented business, the Thai government has applied tax incentives. Consequently, the main factor for the cross-border segment and the export-oriented segment is the tax incentives. (III) The research further categorizes the export-oriented segment into two groups which are the capital-intensive business and the labour-intensive business. (IV) The cross-border segment, monetary organizations indicate the effect of liberalization by the low effective tax rate (4%). By means of the effective tax rate (27%) on 37 infrastructures, this involves that telecommunications have been managed as a state-owned project. (V) Through considering the domestic-specific division, the tax incentive is insensible to investment result among 48% of whole FDI; the effective tax rate on trade firms (26%), for instance, points out that the tax incentive is not a main factor in investment decisions, but the home market or the exact location is.

Thailand has many advantages for investment, particularly for foreign investors, due to the lower exchange rate compared to Malaysia and Singapore, the low cost of labour and availability of a technically skilled and knowledgeable workforce which is supported by the Thai government. Thailand also has sufficient infrastructure to support FDI, such as airports, railways, road networks and water transportation.

Previous studies show that no one study focuses on the major countries that invest in Thailand. This will be one focus of the study. In addition, this study will contribute to the academic literature concerning the factors affecting all inwards FDI investor's decision to be involved in FDI in Thailand. The procedure of this study will be to review foreign direct investment empirically to discover the key factors involved. Then the factors affecting all inwards FDI will be considered in this study. Furthermore, whilst studies have been conducted in relation to Thailand, there has been no study with regard to these major countries' FDI in Thailand. This study will attempt to

provide the context for investors by considering the top ten countries which invested in Thailand the most which were Japan, Singapore, United States of America, Hong Kong, United Kingdom, Germany, Switzerland, Netherlands, China and South Korea, and including Australia. Figure 1-3 shows the total of FDI from the top 10 major countries, including Australia, during 1991 and 2015.

Figure 1-3: Shows the total of FDI from the top 10 major countries, including Australia during 1991 and 2015.



Source: Bank of Thailand (Bank of Thailand)

The data in Figure 1-3 shows FDI contribution in Thailand from 1991 to 2015 from the top 10 major countries including Australia (as Australia is the initial focus of this study). Major contributors were from Japan, Singapore and USA, although for many of the top 10 countries the amount of investment was still low. This data forms the basis of the study that will contribute to the academic literature concerning the factors affecting all inwards FDI investor's decision to be involved in FDI in Thailand.

Therefore, the understanding of determinants of FDI is important – it will be essential information for the Thai government policy development and provide and understanding of the influences that might encourage investors to invest in Thailand. The aim of this paper will be to focus on the determinants of FDI in the manufacturing sector. Plus the ability to compete in ASIA as follows from the FDI determinant theories, such as, institutional and legal factors - political instability and trade, and input costs, for example theaverage wage (Bevan & Estrin, 2004). Moreover, production efficiency and input costs are also considered determinants for Thailand. These are possibly going to differ compared to other emerging economies. Additionally, trade openness and political instability are factors different noticeably among different investing countries.

Further, the motivation of this study to focus on Australia, as mentioned above, is that this study is initially interested in Australian investment to Thailand. After downloading the data we discover that Australia has not been a major contributor of investment to Thailand, we reformed the analysis to include the major FDI constitutors, but still wanted to study the determinants of FDI from Australia.

1.3. Research Question

The aim of this study is to consider the major problems relating to the current endeavour to study "the influences on investors to investment in Thailand with reference to the effective factors for decision-making and with suggestions for development of FDI."

In addition, the study will develop this finding in terms of the top ten contributing countries, including Australia, that invest in Thailand.

The theoretical base of determinants of FDI in emerging countries are generally considered in the literature to be when ascertaining the determinants of FDI variables, for instance, GDP, geographical distance, input costs, and institutional and legal factors, such as, political instability and trade (Jun & Singh, 1996). Klaus E Meyer (1998) and Brenton et al. (1999) recommend many supplementary variables to obtain an account of special institutional characteristics, such as, the state of the legal

framework, the form of privatization, and capital market development (Bevan & Estrin, 2004).

Formally, the main working hypothesis of this study can be stated as follows the theoretical as mention is:

> *Do the GDP, trade openness, cost, production efficiency seekers, and political instability, affect the investors' decisions in investing in Thailand?*

In order to test the hypothesis this study will first address the following research question:

1. *What are the factors that affect the decisions of investors to undertake foreign investment in Thailand?*

In addition, this study will develop this finding in terms of the top ten contributing countries, including Australia, that invest in Thailand, with the same hypothesis. However, there is a further aspect to the research question which is:

2. *Do the determinants of foreign direct investment differ across other countries?*

1.4. Structure and Method of Analysis

The structure of this study is organized into 6 chapters as follows: Chapter 1 presents an overview of the motivation of this study. From the motivation of the study, the research then develops to the research question which has been presented.

In Chapter 2, an introduction to Foreign Direct Investment is considered. Following that, there is a discussion of literature relating to Thailand, and there are three subsequent sections, firstly describing some details relating to the literature review of foreign direct investment in Thailand, then posing the question of the focus of this study, including research questions and hypotheses, followed by a conclusion.

Chapter 3 will address an Introduction to Foreign Direct Investment in Thailand. Following that, there is discussion of The Theoretical Models of Foreign Direct Investment, and there are four subsequent sections describing some details relating to

FDI, including The Approach of the Multinational Company, The Motivations for FDI, and Literature Relating to Thailand, followed by a conclusion.

The following Chapter 4 will show the details of the data using the methodology employed in this research. Then, the empirical results of the study are given in Chapter 5. The conclusions of the study and the implications of the research are set out in chapter 6.

2. Literature Review: Foreign Direct Investment

2.1. Introduction

This study presents and integrates a review of the relevant literature regarding the general perspective on Foreign Direct Investment (FDI). Early studies are discussed in the opening section on Introduction to Foreign Direct Investment, and then theories are considered in The Theoretical Models of Foreign Direct Investment, based on the era of each theory. Also considered are the methods used by multinational companies in Approach of Multinational Companies. The Motivations for FDI are shown, and a literature review is included in Literature Relating to Thailand. The significant determinants of FDI are set out at the beginning of each section. Previous empirical studies indicate the importance of FDI for global business. This study shows that FDI has used a variety of theoretical models to achieve its goals. Inflation rate, exchange rate, manufacturing output, employment negatively, tourism positively, skills and knowledge, infrastructure, and the level of consumer income are the factors that affect both the increase and decrease in the number of firms considering employing FDI. On the whole, Thailand is attractive for FDI because of the lower exchange rate compared to other ASEAN countries, the lower cost of labour, the higher skills and knowledge of employees, and the high standard of transportation systems for connecting neighbouring and overseas countries.

2.2. Introduction to Foreign Direct Investment

This section will examine literature pertaining to the definition of Foreign Direct Investment (FDI), and then explain the role of FDI in the economic world since 1970. In addition, this section will include the amount of FDI in the early era and add more detail regarding why FDI has taken on an essential role in the economic world.

Foreign Direct Investment plays an extremely vital role in increasing the gross national product (GNP) of a country. Foreign direct investment such as in mines, factories and

the land, is an efficient estimate of the assets of a foreign country, and serves as a measure of economic globalization. Foreign Direct Investment basically refers to a long-term sharing or contribution by country A to country B (Moosa, 2002).

Between 1970 and 1980, most measures recommended that the responsibility of multinationals in the global economy had largely stabilized. In particular, U.S. firms in Europe were no longer growing faster than the European economy as a whole, while many Third World countries were finding bank lending had become available as an alternative source of finance tightening restrictions on investment by multinationals. Despite a gradually increasing share of foreign ownership in the U.S. economy, there was little indication of a broad trend toward further globalization of firms' activities. Around 1985, however, firms began a new wave of foreign direct investment (FD1), that is, foreign investment aimed not simply at securing future income but also at establishing control (Agiomirgianakis, Asteriou, & Papathoma, 2004).

The United Nations Center on Transnational Corporations (UNCTC), using International Monetary Fund data, has estimated that during the five years 1985-89, world FDI flows totalled over $630 billion on a balance-of-payments basis. FDI on a balance-of-payments basis is a measure of changes in owners' equity in business organizations or real assets that these owners control. The $630 billion figure cited above is thus far short of the total value of assets that came under foreign control as a result of FDI. If the ratio of owners' equity to total asset value of all FDI worldwide is equal to this ratio for FDI in the United States, then upwards of $3,580 billion of business assets came under foreign control during the FDI boom of the 1980s. During the period 1983-89, world FDI flows (expressed in U.S. dollars at current prices) grew at annual complex growth rates of 28.9 %; world revenue grew at approximately one-fourth this rate (7.8 %) and global trade at less than one-third (9.4 %) (Bouchet & Islam, 1992).

FDI came to play a key role in financing international current account imbalances: in 1989, nearly half of the U.S. current account deficit was financed by inflows of direct investment rather than by more conventional short-term and portfolio investment, whereas Japan used more than two-thirds of its current account surplus for direct investment. In effect, the U.S. raised the money to pay for its imports by selling foreigners companies rather than bonds. Similarly, Japan used much of the revenue

from its exports to acquire overseas subsidiaries instead of passive assets (Graham & Krugman, 1993). Beyond its immediate financial role, foreign direct investment implies a rising share of foreign ownership in those economies that have been its main recipients. To the extent that foreign-owned firms behave differently from those with domestic owners, this may have important long-term economic implications. Equally important, concern over how foreign firms might behave has inevitably become an important political issue.

Finally, the surge in direct investment is an indicator of other changes now taking place in the world economy. To the extent that we can understand this investment, it may provide valuable clues to other economic trends as well (Graham & Krugman, 1993).

Therefore, this study provides some background information on FDI, reviews the relevant literature and gives a conceptual structure for the emergence of FDI in world economics since 1970. The growth of direct investment became higher during the five years 1985-89, and since 1989 FDI has had an important role in international finance, particularly for both the U.S. and Japan, who used FDI to solve their deficit problems. The intention of this study is to stimulate discussion that can be used to guide subsequent study.

2.3. The Theoretical Models of Foreign Direct Investment

In considering the literature related to FDI we initially consider some of the basic theory behind FDI. There are many theories accordingly about the effects of the FDI factors, such as characteristics and market size, ownership advantages, risk and protection factors, transport costs, and policy variables, which might have an effect on FDI theories. The study commences with the neoclassical trade theory followed by the sequence of the concerned theories up to current theory.

The initial theoretical effort to describe the FDI was founded on the Heckscher–Ohlin model, which was first considered by Bertil Ohlin and Eli Heckscher (1919), Swedish economists, (Jones, 1956) of the neoclassical trade theory which was derived from a 2×2×2 common balance structure including two countries which were overseas and

the home country, and two production factors which are labour and capital, and two goods. Then Kindleberger (1969) argued that FDI could not be explained via the statement of the perfect competition in neoclassic theory because the overseas company needed the ownership advantages, for example managerial expertise, product differentiation, new technology, external economies of scale, more uncertainty, higher risk, differences in culture and physical distance, and business ethics, so as to compete with local companies (Faeth, 2009). However there were two sides of the theory. One approach was to view FDI as connected to privilege advantages and the other approach was to test the impact of combined variables including trade barriers, market growth and market size. As a result, market growth, trade barriers and market size could be significant determinants of FDI (Davidson, 1980). Moreover, Dunning (1988) showed that the ownership, local and internalization (OLI) advantages differed relying on the countries which were small or large scale, developing or developed countries, non-industrialized or industrialized, follower or leader, low technology or high technology.

Vernon (1979) built on the technological advantage theories, analysing the strategic market implications of the product life cycle in 1966, and then in 1979 he re-evaluated his own theory via indicating that the multinational firms were more geographically diffuse than the product cycle would warrant and the cycle had shortened considerations.

In 1982, Caves (2007) developed the rationale for horizontal integration (specialized intangible assets with low marginal cost of expansion) and vertical integration (reduction of uncertainty and building for barriers to entry). However, Casson (1995) suggested that the theory of FDI was a logical intersection of three distinct theories including the theory of the firm, another of the international capital market and the other of trade. Ozawa (2007) had two most important ideas which were reviewed, including an expanded flying geese theory of industrial development and a theory of pro-trade FDI. Within Kojima's expanded flying-geese theory of industrial development the succession of imports-domestic production-exports additional developed to the subsequent stage of exports-outward FDI-imports, thus finishing a complete circle from imports to imports. Kojima's pro-trade FDI theory led to an amazing finding that David Ricardo did not show that the policy related as regularly to FDI flows as to trade flows. The modern trend of production division was as well made on the mechanism of pro-trade FDI. Its policy implications and theoretical basis

were argued against the conditions of the rapid catch-up of neighbouring countries of Japan benefitting from primarily on inward FDI and consequently on outward FDI as a power of growth.

Although each theory provided some insight about the complexity of FDI flow, an integrated theory that combined these elements in an analytically persuasive way has not been developed. However, one of the most comprehensive theories of foreign direct investment (FDI) was the eclectic theory of international production.

So as to find the impacts of country characteristics on FDI, Eaton and Tamura (1995) used a gravity model applying measures of the country factors and endowment ones, for example land–labour ratio (density), population, average level of education and per capita income, in order to study the bilateral trade flows of US and Japanese inward and outward FDI positions. As a result, Japanese outward FDI was rising in all remaining factors but falling in density, while US outward FDI and US and Japanese inward FDI were rising in all those factors.

FDI can be classified from the perspective of the investor (the source country) and from that of the host country. From the perspective of the investor, there were three purposes including horizontal FDI, vertical FDI and conglomerate FDI, and horizontal FDI is assumed for the purpose of horizontal expansion to create the same types of goods overseas in the host country as in the home country. Therefore, product differentiation is a significant component of market structure for horizontal FDI. On the other hand, vertical FDI is undertaken for reasons of exploiting raw materials or to be nearer to the consumers through the acquisition of distribution outlets. The third type of FDI is conglomerate FDI, involving both horizontal and vertical FDI (Moosa, 2002).

In 2004 Markusen found that the horizontal FDI models were more general than vertical FDI models and the vertical FDI model had small explanatory power and could not explain aggregate world FDI, while the knowledge-capital model and the horizontal FDI model were descriptive, but nearly the same in the data. This result did not diminish the theory for which the vertical model was significant for various host countries or several industries (Markusen, 2004).

2.4. FDI and multinational firms

Gastanaga, Nugent, and Pashamova (1998) found that 1) there was insufficient difference in the accessible assets of corruption; eventually a repetition in the corruption index had an effect on FDI inflows and corruption had a harmful effect on FDI; 2) the effect of capital controls on inward FDI was by no means limited to the controls on inward FDI flows themselves; consequently, cosmetic types of capital account liberalization might be unsatisfactory to apply strong influences over FDI; 3) corporation tax rates applied a significantly negative and linear effect on FDI flows; 4) the estimation of the effects of tax rates on FDI was especially sensitive to the estimation method and specification; and 5) several of the different measures of organizational characteristics appropriate to FDI flows, such as contract enforcement, bureaucratic and nationalization risk, were shown to have significant effects on FDI.

However, there were some risks of FDI, for example the effect of the exchange rate. Cushman (1985) presented data that showed instability increased US bilateral FDI to France, Canada, the UK, Japan and Germany and, as well, Goldberg, Klein, and Research (1997) found equivalent outcomes for US FDI to the UK, Japan and Canada. On the other hand, Görg and Wakelin (2002) showed insignificant exchange rate instability effects in a sample of US FDI to 12 OECD countries, while Chakrabarti and Scholnick (2002) showed exchange rate volatility and a negative correlation between the US outward FDI to 20 of the Convention on the Organization for Economic Co-operation and Development countries (OECD). Moreover, the country size induced the direction of the effect on FDI exchange rate volatility (Ricci, 1998).

2.5. Cost minimization

Blonigen, Ellis and Fausten (2000) studied the industrial grouping and strategic FDI in Japan and they found two most important mechanisms which were probabilities for ownership structures material to entry of FDI. First, there were indirect incentive impacts working through the role of initial access in creating information valuable in decreasing subsequent access costs. Second, there were direct incentive impacts working through the sharing of the profits generated and the interactions of firms on

input and output markets. As a result, they suggested that indirect incentive impact was more significant than direct incentive impact which was induced by overlapping ownership structures due to the main effect which was through the incentives to share and create information related to the costs of undertaking FDI.

The early experimental researches were mainly carried out in the structure of field study with simply restricted theoretical foundation. The theories of FDI were created separately, and derived from the trade theories point of view. Expressive study had dominated since 1919. In the previous studies, there were many theories about the FDI determinants; consequently, FDI should not be clarified by one theory other than, more generally, by an arrangement of agglomeration economics or ownership advantages, characteristics and market size, transport costs, policy variables, risk factors and protection factors. In terms of multinational firms and cost minimization, there were significant roles to increase FDI.

2.6. Approach of Multinational Companies

FDI is one of numerous approaches which company enterprise is able to apply to come into overseas markets. Direct investment, greenfield investment, cross-border mergers and acquisitions and joint ventures, are a regular series which firms use to expand overseas markets for their increased yield. Other forms include cooperation, chain, and franchise. This part of the essay will consider the details of these methods.

- Direct Investment (establishing the businesses locally): the principal way of technological progress especially is using this framework. Additionally, the firms supposed that the subsistence of a catch-up result in technological progress reflects the fact that for some time it was cheaper to duplicate products already in existence than to form new ones at the frontier of innovation (Borensztein, De Gregorio, & Lee, 1998). FDI is generally regarded as an incorporation of management, capital, marketing and technology. The important question which policy makers are concerned with is what factors are able to attract FDI as much as possible (Cheng & Kwan, 2000). We could

assume that direct investment is the method of the investor doing business by running everything in the business.

- Greenfield investment: establishing new production, distribution or other facilities in the host country (Gilroy & Lukas, 2006; Moosa, 2002).

- Cross-border mergers and acquisitions: bolstering their competitive positions in the world market by firms engaging in this activity does not produce better results in terms of share prices and profitability than for those firms that do not indulge in this activity (Moosa, 2002). However, Hopkins (1999) found that the extent of failure depends crucially on the success criteria, which means that the failure rate may be high or low, depending on these criteria.

- Joint ventures: FDI can also take the form of joint ventures, either with another business that is foreign to the host country, as well as with a government organization or a host country business (Moosa, 2002). There are nine distinct factors including pace of technological change, market size, cultural distance, interest rates, missing patent rights, protection of independence, economies of scale, technological uncertainty and economies of scope (Casson, 2000)

  Other forms include cooperation, chain, and franchise.

- Cooperation (partnering with a local business): the method of the investor doing business by sharing the management or financial capital with the investor in the host country, such as top-management, financial capital or producing some part of the product (Axelrod & Hamilton, 1981).

- Chain (approving a local owner's use of the international company's name): the way to invest by using the same name of the business and the same way to service the customer. This method is normally used with hotels (Stewart, 1997).

- Franchise (providing a local owner with ongoing use of business name, material and structures): the method of doing business where the investor needs to use all the material from the owner, use the same structures of management to maintain their business and decorate the business the same as the owner, for example, KFC, McDonalds and Pizza Hut (Rubin, 1978).

Therefore, the businesses which wanted to become international firms were able to approach FDI by direct investment, greenfield investment, cross-border mergers and acquisitions, joint ventures, cooperation, chain and franchise. The suitable options rely on the follow factors: opportunity of market expansion, profitability, level of economies and manufacture cost level.

2.7. The motivations for FDI

The strategic purposes drive the assessment to international investment and development into multinational enterprises. These motives could be summed up under the following categories: raw material seekers, market seekers, cost minimization, political safety seekers, production efficiency seekers and knowledge seekers (Eiteman, Stonehill, & Moffett, 2007).

Raw material seekers pursue the resources wherever they can be found at the best price or most suitable quality, whether for further processing or for export and sale of the products in the countries in which they were found. The primary firms in this category are the firms in mining, forest industries and plantations (Eiteman et al., 2007). However, as we move to a globalized economy, this is expanding to many sectors that source raw products.

Raw material seekers are the initial multinationals which were known as the villains of international business. They were the firms – the Union Miniere Haut-Katanga, the British and French East India Companies, the Dutch, and the Hudson's Bay Trading Company – which first grew under the protecting cloak of French, Dutch, Belgian and British colonial empires. Their goal was to take advantage of the raw materials that were able to be found in a foreign country. The current counterpart of these firms, such as the multinational mining and oil firms, were the first to construct a number of foreign investments and began to do so in the first phase of the 20th century. For this reason, great oil firms such as Standard Oil and British Petroleum, going to the areas in which the dinosaurs died, were in the middle of the first accurately called multinationals. Hard-mineral companies like Kennecott, International Nickel, and Anaconda Copper were also near the beginning as investors in a foreign country (Nakamura & Oyama, 1998).

Market seekers pursue overseas markets to produce and sell in foreign markets, for example, the U.S. automobile company which is industrialized in Europe for home expenditure (Majkgård & Sharma, 1998). Even though overseas markets may be attractive themselves, MNCs possess certain firm-specific advantages, including specific knowledge and skills, unique products, technologies, processes, specific rights and patents. MNCs find that the advantages that were successfully applied in domestic markets can also be profitably used in overseas markets. Firms such as Wal-Mart, Toys 'R' Us, and Price/Costco take advantage of unique process technologies and largely in the form of superior information, organizational, distribution and gathering skills to sell abroad. Moreover, the exploitation of additional foreign markets may be possible at considerably lower costs. For example, after successfully developing a drug, pharmaceutical companies enter several markets, obtain relevant patents and permissions, and begin marketing the product in several countries within a short period of time. Marketing of the product in multiple countries enables the pharmaceutical company to extract revenues from multiple markets and, therefore, cover the high costs of drug development in a shorter period of time as compared to marketing within a single country (Shapiro, 2008). In some industries, foreign market entry may be essential for obtaining economies of scale, or the unit cost decreases that are achieved through volume production. Characterized by high fixed costs relative to variable costs, firms in industries have to connect with amount selling just to break even. These large volumes may be forthcoming only if the firms expand overseas. For example, companies manufacturing products such as computers that require huge R&D expenditures often need a larger customer base than that provided by even a market as large as the United States in order to recapture their investment in knowledge. Similarly, firms in capital-intensive industries with enormous production economies of scale may also be forced to sell overseas in order to spread their overheads over a larger quantity of sale (Shapiro, 2008). Some companies, such as Coca-Cola, MacDonald's, Nestle, and Procter & Gamble, take advantage of enormous advertising expenditures and highly developed marketing skills to differentiate their products and keep out potential competitors that are wary of the high marketing costs of new-product introduction. Expansion into emerging markets enables these firms to enjoy the benefits of economies of scale as well as exploit the premium associated with their strong brand names. According to the chief executive officer of L'Oréal, the French firm that is the world's largest cosmetics company, 'The increase in emerging-market

sales has a turbo effect on the global growth of the company' (Henry, 2000). Similarly, companies such as Nestle and Procter & Gamble expect their sales of brand-name consumer goods to soar as disposable incomes rise in the developing countries, in contrast to the mature markets of Europe and the United States. The costs and risks of taking advantage of these profitable growth opportunities are also lower today now that their more free-market-oriented governments have reduced trade barriers and cut regulations (Pilotte, 1992). In response, foreign direct investment in emerging markets by multinationals has soared over the past decade.

Cost minimization is a practically current type of firms that do business internationally. To maintain the cost competitiveness of domestic and international production, these firms find and invest in the lower production cost in a foreign country, for instance, Hong Kong, Taiwan, and Ireland (Burgess, 1974). To increase profitability they seek out the country that is able to reduce cost (Rogerson, 1992). Due to cost of production as the main factor for doing business, so this is the main reason that the firms consider seeking the most suitable location for saving on cost (Burgess, 1974).

Political stability seekers obtain or construct new operations in a country which is considered not likely to impede activity or confiscate assets with the use of personal enterprise (Habib & Zurawicki, 2002). For instance, Hong Kong firms invested greatly in the United States, the United Kingdom, Canada, and Australia in expectancy of the consequences of China's 1997 achievement of the British settlement (Kirkpatrick, Parker, & Zhang, 2006). This protects the property or profit from being commandeered by the government and provides safety to the owner.

Production efficiency seekers produce in countries in which one or more of the production factors are underpriced relative to their productivity. A noticeable example of this incentive is labour-intensive manufacture of electronic mechanisms in Mexico, Taiwan, and Malaysia (Nakamura & Oyama, 1998). These production efficiency seekers seek out countries where the government supports training people to become specialized in some skills so that production is more effective (Ibourk, Maillard, Perelman, & Sneessens, 2004).

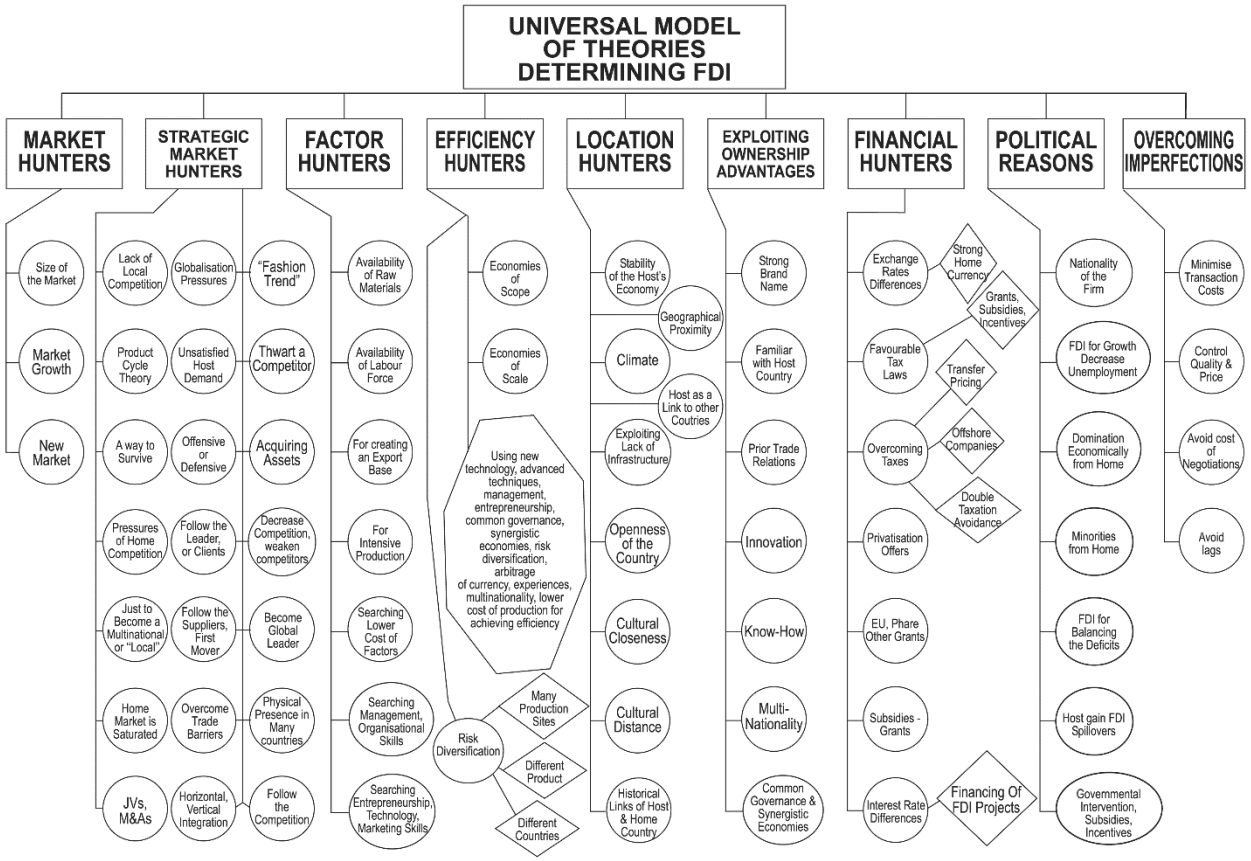
Knowledge seekers function in foreign countries so as to achieve entrance to managerial knowledge or technology (Nakamura & Oyama, 1998). Some firms enter foreign markets in order to increase information and know-how which is expected to prove valuable somewhere else. Beecham, an English firm (now part of GlaxoSmithKline), deliberately set out to learn from its U.S. operations how to be more competitive, first in the area of consumer products and later in pharmaceuticals. This knowledge proved highly valuable in competing with American and other firms in its European markets (Levin & Cross, 2004). The flow of ideas is not all one way, however. As Americans have demanded better-built, better-handling and more fuel-efficient small cars, Ford of Europe has become an important source of design and engineering ideas and management talent for its U.S. parent, notably with the hugely successful Taurus (Hau & Evangelista, 2007).

In industries characterized by rapid product innovation and technical break through by foreign competitors, it is imperative to track overseas developments constantly. Japanese firms excel here, systematically and effectively collecting information on foreign innovation and disseminating it within their own research and development, marketing, and production groups. The analysis of new foreign products as soon as they reach the market is an especially long-lived Japanese technique. One of the jobs of Japanese researchers is to break down a new foreign product and analyze how it works as a base on which to develop a product of their own that will differ from the original. In something of a switch, Data General's Japanese operation is giving the company a close look at Japanese technology, enabling it to quickly pick up and transfer back to the United States new information on Japanese innovations in the areas of computer design and manufacturing (Shapiro, 2008).

Figure 2-1 shows the Bitzenis (2003) universal model of theories determining FDI. All operations had one major reason and that was revenue. Although the income might be long-term or short-term, indirect or direct, and could be accomplished throughout numerous channels, it remains the top object on the side of the actions of all companies. Derived from this idea, all theories analyzing the reason why companies accept FDI, or under what conditions they ought to accept FDI, had a profound consideration for earnings. These models join all the FDI theories beneath the consideration of the method according to which they obtain certain revenue for the companies. The universal model was not applied as a complete one, but it persuaded

the use of all the branches of the routes of returns which enhanced fitted the priorities and profile of each individual company. It was focused to modify as some theories became out-dated and as new parameters enter the perpetual equation of the world economy.

Figure 2-1: The Universal model of theories determining FDI



Source: Bitzenis (2003)

The most important advantage of this model was that it made obtainable an extensive representation of the effect that a prospective FDI mission might have on a firm and of the prospective gain a company would obtain from it. The essential assumptions of econometrics which some variables did not affect, or where the model remained stable, were not essential in a qualitative analysis of a situation, since an

entire view of the market provided both companies and theories with a deeper positive reception of the circumstances (Bitzenis, 2003).

To sum up, raw material seeking, market seeking, cost minimization, political safety seeking, production efficiency seeking, and knowledge seeking were the motives of the firms using FDI for becoming international businesses. In addition, the universal model of theories determining FDI showed the link of the strategic purposes driving the assessment for international investment and developing into multinational enterprises.

2.8. The Literature Relating to Thailand

This section considers the literature on FDI which is related to Thailand. In addition, it studies the literature on the relationship between the countries which are in the same environment (closer to Thailand), such as in ASEAN. The aim is to discover the important effects of employing FDI in Thailand.

Ho and Rashid (2011) investigated significant relations between potential macroeconomic and country-specific determinants of FDI in ASEAN countries, including the Philippines, Singapore, Thailand, Indonesia, and Malaysia, between 1975 and 2009. The findings reveal two key macroeconomic determinants: rate of economic growth and degree of openness significantly affect FDI flows in most of the countries. Inflation rate played a significant role in FDI flows for Thailand. The Malaysian exchange rate drives FDI in the country, while manufacturing output drives FDI in the Philippines. The model for country-specific factors indicated that different factors were more important for counties in differing stages of development. Employment negatively affected investments in Indonesia and the Philippines, while tourism positively affected FDI in the Philippines and Malaysia. Other significant country-specific factors include skills and knowledge, infrastructure and the level of consumer income.

As well, Pradhan (2010) explored the interdependence of FDI between India and ASEAN-5 countries, that is the Philippines, Singapore, Thailand, Indonesia, and Malaysia, by the individual and cluster level. The findings suggested the

interdependence of firms of FDI between India and ASEAN-5 countries and the policy implication was that, with the increasing interest of economic integration around the globe, especially with the India-ASEAN Regional Trade and Investment Area (RTIA), the existence of interdependence of FDI between member countries was an important feature for maintaining growth sustainability in the Asian economy. In addition, Tosompark and Daly (2010) found that Thailand was the least affected amongst Asian countries to experience falling levels of FDI inflow over the recent global financial crisis. In terms of accounting for Thailand's FDI experience since the Asian 1997 financial crisis, they showed that the determinants in their model performed satisfactorily overall with the diagnostic tests generally indicating a lack of misspecification. The individual results for the variables indicate that growing market size and Thailand's increasing average real wage had positive effects on FDI inflow. However, the relationship between the trade variables and FDI inflow, although insignificant, was generally correctly signed. At the national level, FDI had positive relationship with exports. The strengthening exchange rate appeared to be negatively related with FDI but was not highly significant. As regards cost of capital, the increasing local spread did indicate a concern with increasing perceived risk, but, as discussed, the significance of this variable's influence on decisions to invest in Thailand can only be revealed on a case-by-case study. Moreover, there was strong support of bidirectional causality between FDI and GDP in two countries in South East Asia, including Thailand and Malaysia (Chowdhury & Mavrotas, 2006)

Siripaisalpipat and Hoshino (2000) examined access method option on presentation of their international subsidiary and the influences of multinational firms' firm-specific advantages. An attractive end result was the downside effect that international management experience and the size of parent MNEs had on the joint venture presentation since the experienced and large firms theoretically and generally did not have the wants for global joint venture arrangements.

The positive impacts of FDI on economic growth or the economic success of the four "little tigers" - the highly developed economies of Taiwan, South Korea, Hong Kong, and Singapore - could be attributed to the export-oriented manufacturing strategy under the government, the sense of responsibility of Confucian culture, high rates of investment and savings and a fairly economical quality workforce derived from the level of education (Heo & Hahm, 2007; Kohama, 2003; Urata, 2009). In contrast,

Hahm and Heo (2008) argue that the government's role in the economic growth of three countries, Indonesia, Malaysia and Thailand (East Asian NICs), was rather marginal during the period of high growth. They showed that the economic growth in the four "little tigers" was helped by FDI from Japan and the US, but this was not the case in Thailand, Malaysia and Indonesia.

The finding of this literature survey relating to Thailand shows that the other countries in ASEAN - the Philippines, Singapore, Indonesia and Malaysia - have a mostly similar environment to that of Thailand. However, there are some different factors determining for Foreign Direct Investment (FDI) to invest in any country, including inflation rate, exchange rate, manufacturing output, employment negatively, tourism positively, skills and knowledge, infrastructure and the level of consumer income. In the case of Thailand, there were some significant factors affecting consideration of investors to invest in Thailand: inflation rate, exchange rate and economic growth rate. Moreover, external factors, such as the Asian financial crisis in 1997, had a minor effect on FDI in Thailand. On the other hand, the significant effects on FDI in Thailand might be internal factors, for instance, government policy.

2.9. Conclusion

In this study we have briefly reviewed the relevant literature regarding the general perspective on FDI. At the outset, studies were discussed as an introduction to FDI, then the theoretical models of FDI were outlined based on the era of each theory. Also considered were the methods used by multinational companies in approaching the issue of FDI. The motivations for FDI were presented, and a brief review was given of the literature relating to Thailand. The study indicated the importance for global business of using FDI because resource production and the cost of goods sold are different in every country.

According to Ang (2009), people in every country need to consume goods which are high in quality and low in cost. Moreover, companies want to expand their businesses to other countries and seek low cost raw materials. In addition, companies want to be market leaders, so they are keen to do business in other countries, or to be allowed to

export raw material from other countries so they can manufacture those products "at home". Foreign direct investment (FDI) plays a significant role in global business, and provides companies with opportunities for many different ways of operating in other countries. Both the host country and the foreign firms which invest in the country are able to provide a source of new technologies, products, organizational structure and management skills to stimulate economic development (Chandprapalert, 2000a). This study demonstrates FDI needs to use a variety of the theoretical models to achieve its goals. The factors that affect both increase and decrease in the number of firms considering employing FDI include inflation rate, exchange rate, manufacturing output, employment negatively, tourism positively, skills and knowledge, infrastructure, and the level of consumer income. FDI is obviously successful in many countries and there are many advantages of using FDI.

Thailand has many advantages for investment, particularly for foreign investors, due to the lower exchange rate compared to Malaysia and Singapore, the low cost of labour and availability of a technically skilled and knowledgeable workforce which is support by the Thai government. Thailand also has sufficient infrastructure to support FDI, such as airports, railways, road networks and water transportation.

3. Context of the Study: Thailand

3.1. Introduction

This study analyses the general feasibility of Foreign Direct Investment (FDI) in Thailand. Thailand is a developing country, so it needs external funds to develop the economy. As a result, even though Thailand faces political problems, various governments support investors who want to contribute to the country, through the organization known as the Thailand Board of Investment. In addition, Thailand is a gateway into the heart of Asia and one of the members of ASEAN.

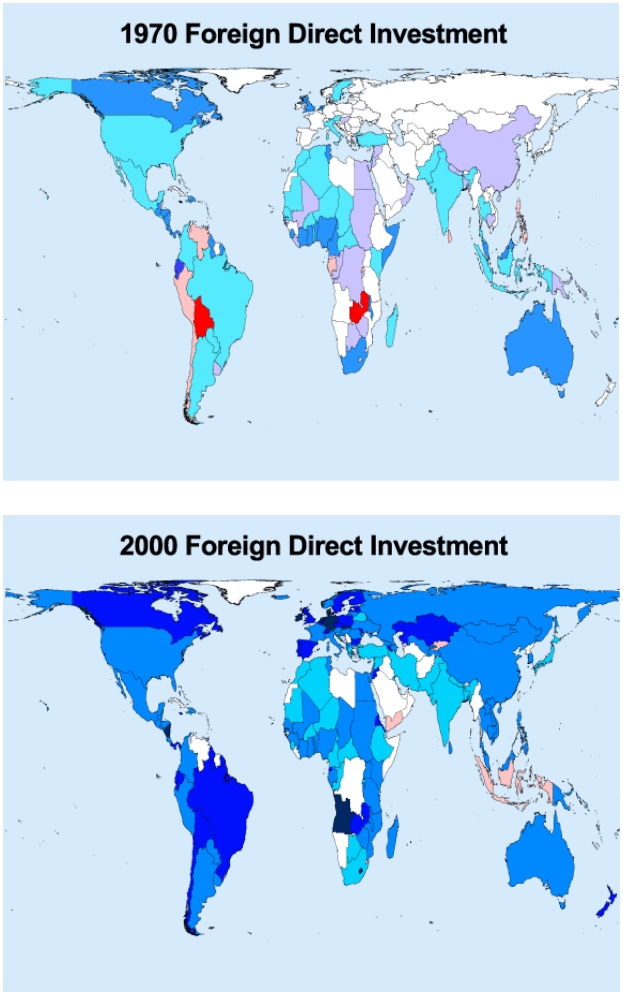
The purpose of this study is to give an overview of previous studies concerned with foreign direct investment in Thailand, to understand the movement of FDI into Thailand in the past. The study also aims to present the feasibility of investment in Thailand. In the opening section, an introduction to foreign direct investment is considered. A profile of FDI in Thailand follows, including four sections which describe some of the details, looking at the impact of FDI in Thailand, considering its feasibility, and suggesting why Thailand may be more attractive than other countries. The material is summarized in a conclusion to the study.

3.2. Introduction to Foreign Direct Investment

FDI is an abbreviation for Foreign Direct Investment, which refers to a long-term sharing between country A and country B or contribution by country A to country B. This long-term sharing involves a participation in technology transfer, management and joint ventures. Basically, FDI has two types. One is inward and the other outward. FDI results in a net flow of foreign investments into a country and plays an extremely vital role in increasing the gross national product of a country. A study of FDI implies an evaluation of foreign ownership of resources, such as land, factories and mines. FDI growth must be able to use and evaluate economic globalization growth. Some of the largest foreign investments come from countries like Japan, Western Europe and North America. These flows assist underdeveloped countries in growth and prosperity. An

FDI depositor can be a public company, a government body, an incorporated entity, an individual or a group of individuals. The United States of America is one of the biggest investors of FDI in the world (Moosa, 2002).

Figure 3-1 Foreign Direct Investment in the world between the 1970s and the 2000s



Source: World Bank (Group, 2005)

Net inflows of FDI are shown in Figure 3-1 as a percentage of gross domestic product (GDP) between the 1970s and the 2000s. The main amounts of foreign investment occur in developed regions of the world, including Japan, North West Europe and North America. However, flows to developing countries are increasing. In 1970 and

1980, large parts of Asia, Africa and Latin America had small or zero inflows of foreign investment; however, by 1999 large parts of Asia, Latin America, Africa, Europe and North America had foreign direct investment inflows greater than 1% of GDP.

3.3. Profile of FDI in Thailand

FDI began to play a role in Thailand's economy in 1980. FDI flows in Thailand were considerably small and fluctuated comparatively as a result of instability in the domestic and world economy. Flows in Thailand expanded at an excellent rate after 1987 in accord with the increase in the appreciation of the currencies of the Asian Newly Industrializing Economies (ANIE) and Japan and employment costs. This resulted in these countries relocating their manufacturing bases to other developing countries and to Thailand. Over this period, Thailand's share of FDI from Japan rose sharply from 33% in 1986 to 48% in 1988. Then, at the beginning of the 1990's, FDI flows began a downturn as a result of the cost of the manufacturing foundation modification by the NIE's and Japan and inadequate infrastructure and human resources. The business round in Japan impacted on the trend of FDI inflows. FDI from Japan was pointed at only 8% as a result of the undecided economic circumstances in 1992. During 1990-1996, FDI inflows from Japan were roughly 16% (approximately US$ 6.5 billion a year). Since the financial crisis erupted in 1997 and the baht was floated, FDI inflows to Thailand have risen by a large amount, mainly accredited to a surge of the Complication Company in search of occupation partners. The depreciation of the baht by 38% led to growth in the volume of purchasing power of foreign investors and support acquirement. Actually, Thailand's exports slowdown was eventually a significant factor in the reversal of expectations in mid-1997 which launched the crisis. However, the slowdown was relatively short and only affected specific merchandise (e.g., semiconductors), rather than signalling an imminent crisis (Radelet & Sachs, 2000).

In 1997, the flow of FDI into Thailand was controlled by Taiwan, the EU, Hong Kong, Singapore, the U.S. and Japan and accounted for 5%, 12%, 12%, 18%, 18% and 22% respectively. During this period, FDI inflows from the U.S. decreased relative to the

economic growth of China. FDI inflows came mainly to the manufacturing sector which accounted for approximately 50% of the total annual FDI, comprising several metal and non-metallic products, electrical appliances, and a lot of machinery and transport equipment, with approximately 25% a year of the total FDI for the trade sector. Then, in accordance with the economic recovery from 2002 until the present, flows of FDI increased consistently to approximately US$ 7.5 billion per year. Most interesting is that Singapore became the dominant country for the main investment in Thailand. In 2004, the Singapore investment portion was 41% of total FDI, along with 20% from Japan, followed by the EU 13%, and 9% from the U.S. Obviously, the trade and industry's one brought most FDI into the country. Although the manufacturing sector's inflow of FDI in electrical appliances had been decreasing, the inflows from other countries that related to the manufacturing sector were constant. The increasing trend of FDI inflows in 2006, was predictable, in order to maintain the stable equilibrium of expense and certify the government mega-projects. FDI in Thailand started in and developed from 1987, due to the increase in production costs, particularly labour costs, and the improvement of the exchange rate of Japan and the ANIE led to the moving of the production base to Thailand and other developing countries. At first, FDI in Thailand was predominantly in the industrial sector, accounting for 50% of total net FDI in 1987 – 1988. Thereafter, the proportion of Thai FDI in the industrial sector decreased sharply from 1988, from approximately 47% to 32% in 1989 to 1992 (Pupphavesa & Pussarungsri, 1994).

3.4. The Impact of FDI in Thailand

FDI leads to development in the economy, technology and capital flow. However, it has also had a particularly significant impact both positive and negative in the host country. In this section, the impact of FDI on Thailand's economy is considered, as well as the effects of FDI on the economic environment and on the exports of Thailand.

3.4.1. The Impact of FDI on Thailand's Economy

In 1986, the promoted foreign-owned and foreign joint venture firms contributed approximately 25% of the total manufactured exports of Thailand (Sibunruang & Brimble, 1988). Moreover, in 1985, they found the effects of FDI on manufacturing employment, where the data contained 600 manufacturing firms and these firms accounted for 0.7% of the total labour force and 0.8% of manufacturing employment, due to the fact that the foreign investment firms had a higher capital-to-labour ratio (Khanthachai, 1987).

In terms of technology, the subcontract arrangement was a form of arm's length market relationship, including a spot market transaction and a contractual supplier-buyer relationship. A subcontract arrangement between buyers and suppliers sometimes has legal obligations for both parties regarding specification of products, quantity of transactions and time of delivery. It was believed that subcontract arrangements might create a diffusion of technology, as buyers might introduce their suppliers to new knowledge. This type of technology transfer was an indirect transfer which included learning facilitation, inducement and spillover transfer (Wong, 1992). Moreover, Pupphavesa and Pussarungsri (1994) suggested that FDI firms were more likely to offer subcontract agreements than the Thai firms, and that the Thai buyers had fewer activities related to technology transfer than FDI firms.

In addition, Ang (2009) studied the effects of FDI on the Thai economy analysing the financial growth and end results which, when the output expansion and financial development were positively correlated, projected that FDI in Thailand in the long term would exert a downward effect on productivity. It was emphasized that when FDI had no direct upbeat impact on productivity, it would have no direct impact in motivating economic growth in Thailand during the financial division growth. Consequently, the significant suggestion from the study was that the efficiency and extent of the financial sector of Thailand was an essential prerequisite, in order to bring about positive impacts of FDI in Thailand.

The effect on the Thai economy of FDI growth seems to have been dramatically improved by the country's trade policy. Moreover, the average value of the export–output ratio in manufacturing throughout three decades, and the input of

FDI affected the downside in the Thai economy's growth performance. Between 1970 and 1999 the average yearly growth downside amounted to about 2.9% (Kohpaiboon, 2003).

3.4.2. The Impact of FDI on Thailand's Environment

In terms of the environmental impact of FDI, as stated earlier, the contribution of FDI to expansion of the manufacturing sector caused the intensification of many pollution problems. Thailand has become the seventh biggest producer of CO2 in Asia and has discharge per capita higher than China and India. Thailand imports approximately 813,457 barrels of oil/day, with approximately 40% for the transportation sector, followed by the industrial sector (35%), the commercial and residential sectors (22%) and the agricultural sector. As a result, Thailand is experiencing the widespread global impacts associated with climate change.

3.4.3. The Impact of FDI on Thailand's Exports

Some researchers assume that the success of the pre-crisis export industry of Thailand could be attributed to the significant flow of inward FDI. However, it was surely true that there was a pre-crisis export-FDI relationship Thailand. As Dapice and Flatters (1991) have correctly pointed out, however, what this assumption implies is that the boom in investment did not lead to the accelerated growth of exports. In 1985, some studies found the first signals of an export breakthrough, while investments took off only in 1987. Consequently, in 1988, there was an FDI substantial inflow and hence before 1988 the approaching exports boom did not commence at time usually reported.

Pupphavesa and Grewe (1994) used Granger causality tests to examine the causal links between Thai exports (according to destination and total) and FDI in Thailand (FDI distinguished according to sources and total FDI). Unexpectedly, they could not establish that exports were affected by FDI. Neither Japanese FDI, nor FDI from the US, seemed to generate new exports. Conversely, it seemed that FDI was induced by exports. Moreover, some researchers agreed that the performance of the

Thailand Board of Investment (BOI) was probably sub-optimal. In accordance with Warr (1993), the most important analysis was that there was a lack of permanence in BOI's strategy and that the exercising of its optional power resulted in the yielding of benefits and the amount of the benefits. The benefits proposed varied among companies within the same industry.

Tosompark and Daly studied the determinants of FDI inflows to Thailand and reported that Thailand's exports had a positive impact on FDI inflow. However, Thailand's imports appeared to affect FDI inflow negatively. The participation of overseas firms in the industrialized sector was dominantly in import-substituting industries such as chemicals, textiles and automobiles, until the late 1970s (Akira, 1989). Thereafter, it focused on more export-oriented activities. In the beginning, export-oriented overseas firms entered the light manufacturing industry, for example toys, clothing, and footwear. Recently, the major attraction for foreign investors was the electrical goods industry and labour-intensive assembly activities in electronics (Kohpaiboon, 2003).

In 1975, the range of the ERP (Effective Rate of Protection) in the manufacturing sector of Thai industry was 36-350% (Akrasanee & Ajanant, 1986). Some industries, for example leather products, textiles, furniture, tyres, and automobiles, had a very high ERP. The degree of variation in ERP across industries was also very high. Until the late 1980s, the tariff frame remained almost unchanged, although the government proclaimed a change in the improvement plan to an EP rule in 1974.

3.5. Feasibility of FDI in Thailand

Thailand encourages foreign investment because it benefits in a number of ways from increased FDI. First of all, there will be an increase in money in the financial system, so the economy grows; secondly, there is some employment in Thailand, which raises the standard of living of the people. In fact, according to Brooks (2004), Thailand is economically the best country in Southeast Asia. There are four reasons for this: Thailand's growing economy, its infrastructure, its human resources and its agricultural industries.

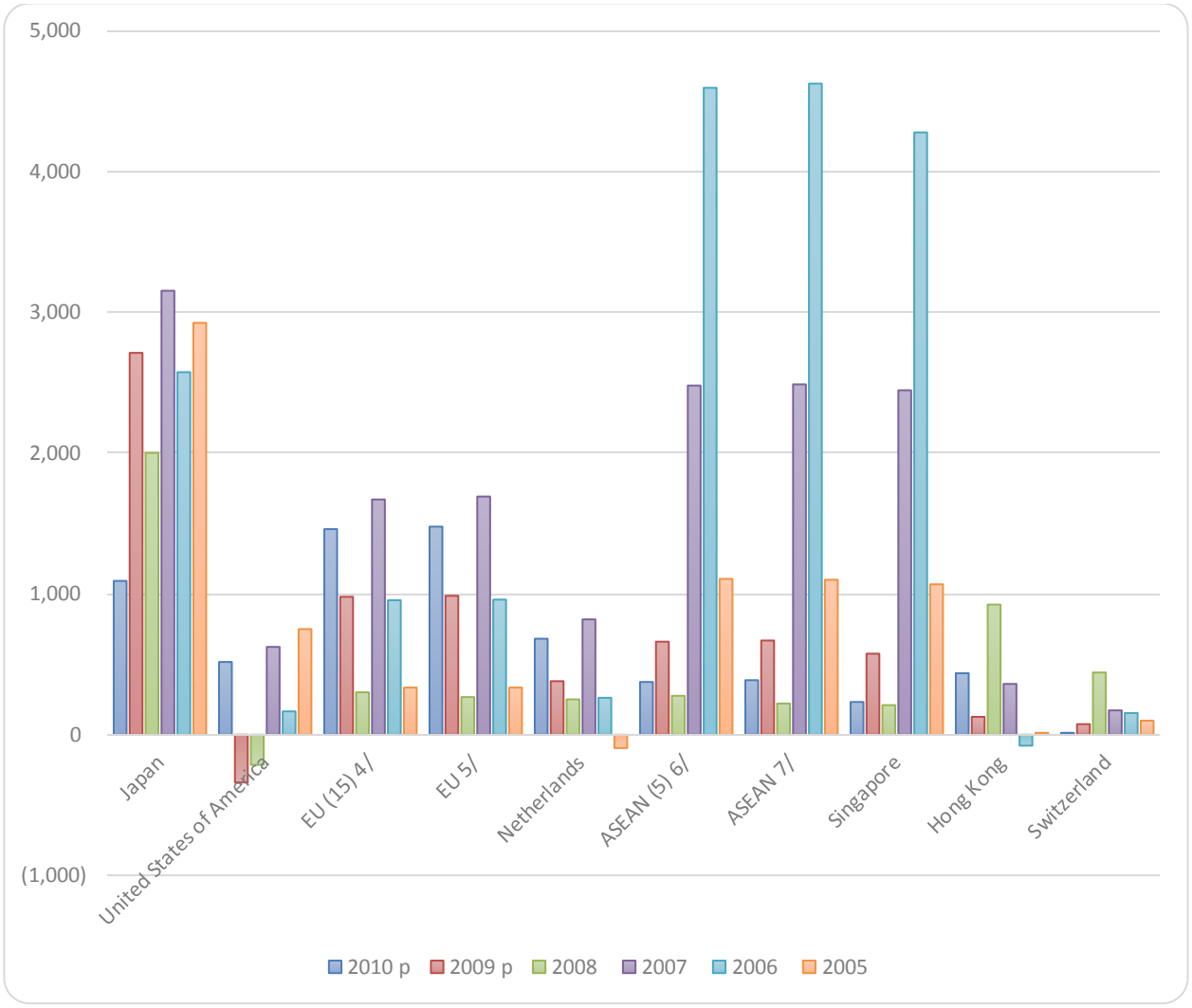
3.5.1. Growing Economy

In 1988, the highest historical level was reached with a growth rate of GDP (Gross Domestic Product) of 13.2%. Thereafter, population increases reached a crisis point. Between 1991 and 1995 Thailand still maintained average growth level of approximately 8.5% (D. J. Green & Vokes, 1997; Warr, 1993). In early 1996, the growth rate of Thailand started to slow down, initially largely because the growth rate of exports declined, and because of political unsteadiness and stretched monetary policy, later aggravated by financial instability. In 1997, growth predictions were consequently consistently changing (Kaosa-ard, 1998).

Thailand has a history of solid economic growth over many decades in the 20th century and it continues to grow. The Thailand Board of Investment has shown that the country, with its 67 million people, has had a vibrant domestic consumer market, strong exports and steady growth. An effectively skilled workforce and a diversity of natural resources attract overseas investors and support them to succeed as business developers in Thailand (The Board of Investment of Thailand, 2011b).

In addition, Figure 3-2 shows the amount of foreign direct investment in Thailand between 2005 and 2010, classified by country. Throughout this period, the three countries investing the most in Thailand were Japan, ASEAN (5), and ASEAN (7) respectively, except in 2006, in which ASEAN (7) took the lead.

Figure 3-2: The amount of foreign direct investment in Thailand between 2005 and 2010 classified by country (Unit: Millions of US dollars)



Data source: Bank of Thailand (2011)

Please note: *1. **EU (15)4/**; prior to May 2004, the EU comprised fifteen countries: Sweden, Austria, Netherlands, Finland, Denmark, Portugal, Spain, Belgium, France, Luxembourg, Greece, Ireland, Italy, United Kingdom, and Germany.*

*2. **EU5/** ; from May 2004, EU comprised twenty-five countries, including as well Slovenia, Cyprus, Poland, Estonia, Malta, Hungary, Latvia, Slovakia, Lithuania, and Czech Republic. Since January 2007, EU comprises twenty-seven countries, including as well Romania, and Bulgaria.*

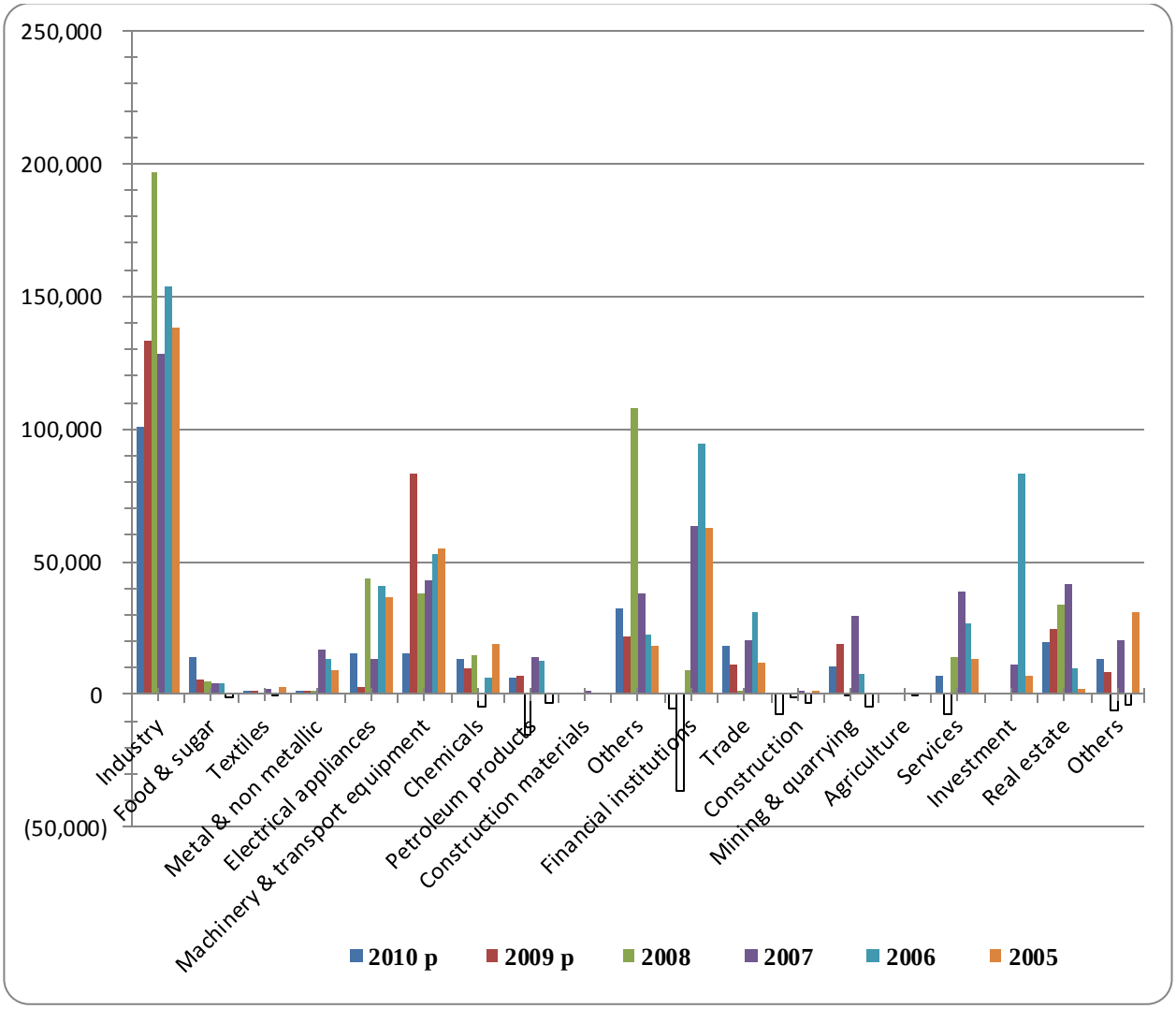
*3. **ASEAN (5)6/**; prior to 1999, ASEAN comprised five countries: Philippines, Brunei, Singapore, Indonesia, and Malaysia*

*4. **ASEAN7/**; from 1999, ASEAN comprised nine countries, as well as Vietnam, Laos, Cambodia, and Myanmar*

Figure 3-2 above shows the amount of foreign direct investment in Thailand between 2005 and 2010 classified by country. During this period, the two biggest individual investing countries were Japan and Singapore, with their investments in Thailand accounting for US$14,467 million, and US$8,814 million respectively, followed by other ASEAN countries, as indicated by ASEAN (5), which accounted for US$9,498 million, and ASEAN (7), accounting for US$9,495 million. On the other hand, only in 2006 was the amount of foreign direct investment in Thailand from ASEAN(7) the most and accounted for US$4,627 million, followed by ASEAN (5) which accounted for US$4,597 million, approximately double the Japanese contribution (Bank of Thailand, 2011). This demonstrates tremendous economic development for a developing country. China is also investing in Thailand, but data is not available.

In addition, Figure 3-3 shows the amount of foreign direct investment in Thailand between 2005 and 2010 classified by sector. Throughout this period the top three sectors which had the highest amount of investment in Thailand were industry, machinery and transport equipment, and financial institutions. However, as a consequence of the Asian Financial Crisis (AFC) for 2007 and part of 2008, almost all instances of FDI investment declined significantly.

Figure 3-3: The amount of foreign direct investment in Thailand between 2005 and 2010 classified by sector. (Unit: Millions of Baht)



Data source: Bank of Thailand (2011)

Please note: *Other is not defined in the descriptions provided.*

Figure 3-3 above shows the amount of foreign direct investment in Thailand between 2005 and 2010 classified by sector. It can be seen that in almost all instances FDI investment for 2007 and part of 2008 declined dramatically. This is obviously due to the Asian Financial Crisis (AFC). During this period, the amount of FDI in Thailand in industry had the highest amount which accounted for 851,131 million baht

(US$27,482 million)[1], followed by machinery and transport equipment at 287,926 million baht (US$9,297 million), and financial institutions at 188,465 million baht (US$6,085 million). Surprisingly, investment in agriculture was not high. According to Sriwatanapongse, Iamsupasit, Attathom, Napasintuwong, & Traxler (2007) who argue that Thailand's strengths lie in its agricultural industries, Thailand should move towards further development of agriculture, which will increase the competitiveness of the country. The amount of investment in agriculture accounted for only 1,307 million baht (US$42 million), the second lowest amount. Thus, it can be inferred that during this period (and before) Thailand transferred from an agricultural age to an industrial age.

Batten and Vo (2009) explain that there is a relationship between foreign direct investment and economic growth. Additionally, Tosompark and Daly report that GDP per capita of the Thai economy had a positive impact on FDI inflow.

In 2010, there was some evidence of Thai economic growth, including GDP which was US$317 billion; annual GDP growth rate was 7.8%, and per capita income was US$4,716. There was growth in natural resources, such as rubber, tin, tungsten, natural gas, tantalum, timber, fish, lead, gypsum, fluorite and lignite. The agriculture sector accounted for 12% of GDP, including rice, rubber, tapioca, sugarcane, corn, soybeans and coconuts. Moreover, the value of merchandise exports was US$188.8 billion, including automatic data-processing machines and parts, refined fuels, electronic integrated circuits, rubber, polymers of propylene and ethylene, rice, precious stones and jewellery, automobiles and parts, chemical products and steel and iron. The main markets of Thailand were the EU, ASEAN, US, China, Hong Kong and Japan. Merchandise imports accounted for US$175.5 billion including machinery and parts, crude oil, chemicals, steel and iron, electrical circuits panels, jewellery, including gold, silver, metal waste scrap and other metal ores, electrical machinery and parts, computers and parts, boats, ships and floating structures (U.S. Department of State, 2011).

[1] Exchange rate on 2 December 2011, US$1 = 30.97 baht, AU$1 = 31.8232 baht (Bank of Thailand, 2011)

3.6. Infrastructure

Thailand also has sufficient infrastructure to support FDI, including airports, railways and road networks, and water transportation (Poon & Sajarattanochote, 2010). To begin with air transport, Thailand has constructed air transport systems that cover 28 business airports, with Suvarnabhumi International Airport as the main gateway into the country, such that Thailand's regions and neighbours, are able to connect without major difficulty. Suvarnabhumi International Airport has the ability to service 76 flights per hour, 45 million passengers a year, and 3 million tons of cargo. By 2013, a new domestic passenger terminal will be completed and will increase Suvarnabhumi airport's capability to 65 million passengers a year. Don Mueang Airport in Bangkok, a domestic air terminal, maintains international standard facilities. It can service 12,490 tons of domestic cargo a year, 60 flights per hour and 11.5 million domestic passengers per year. By 2018, Phuket Airport will be prepared to increase its ability to 12.5 million passengers, on top of the presently completed second terminal, which increased its capability to 6.5 million passengers per year. In December 2009, the government authorized a 5.8 billion-baht (US$ 187 million) development. Chiang Mai Airport has completed a 2-billion-baht expansion and has an infrastructure that can handle 8 million passengers a year. Other international airports include Ko Samui, Chiang Rai, and Hat Yai (The Board of Investment of Thailand, 2011b).

In addition, the road transportation network of Thailand covers over 390,026 kilometres, including especially 51,776 kilometres which form a national highway network connecting each region in the country. Further, on 26 April, 2004 Thailand signed the Asian Highway Agreement to support Thailand's link with 32 countries in Europe and Asia and connecting Thailand to the rest of the world for land-based trade and transportation (The Board of Investment of Thailand, 2011c). Moreover, the railway system is ready to serve in transportation, connecting the regions around Thailand from north to south. In addition, there are many projects that are in the process of construction, including the main railway connecting Thailand to neighbouring countries, such as China, Singapore, Laos Cambodia, Malaysia, Indonesia, and Myanmar (The Board of Investment of Thailand, 2011a, 2011b, 2011f). The significance of these interconnections will be extensive, as Thailand's FTAs with India, ASEAN and the Republic of China will establish Thailand as the hub for

international trade and production when they are implemented (The Global Road Safety Partnership, 2011).

Finally, water transportation systems, both seaport and river ports, have a long history as an important part of Thailand's trade and industry. Thailand has a seaboard of 3,219 kilometres and more than 4,000 kilometres of waterways. Thai ports include Laem Chabang, Map Ta Phut, Si Racha, Ranong, Phuket, Sattahip, Bangkok, and Songkhla. The most important commercial ports at present include Sriracha Harbour Deep Seaport which will be able to provide accommodation for vessels capable of 100,000 DET. The position of Sriracha Harbour ensures that it is available and fully functional for 95% of the year. Bangkok or Klong Toey Port is the biggest port in Thailand and is able to deal with roughly 1.34 million TEU per year, while Laem Chabang is able to deal with roughly 6.9 million TEU per year. In addition, each port is able to connect with transport linking the whole of Thailand, which is more convenient for transporting goods cargo. Moreover, the most important river, the Chao Praya River, connects with other massive rivers through domestic canals, and there are many ports on the Chao Praya bank which allow cultural interchange, trade and international commerce. The system features eight international deep sea ports composed of port services such as cargo handling, distribution and handling controlled by the Customs Department and the Port Authority of Thailand (The Board of Investment of Thailand, 2011d). Exports and imports are able to be cleared in a day.

3.7. Human resources

The Board of Investment of Thailand argues that Thailand has a strong management structure and effective capacity in human resources. Commercially, Thailand has the foundations of a strong employee base. With support from the Board of Investment of Thailand, companies can get assistance with, for instance, legal implications of labour management, employee records, tips on recruiting and developing staff, recruiting technically-skilled employees, minimum wages, work hours and holidays, sick leave, severance pay, termination of employment, workers' compensation and social security.

The particular benefits to overseas investors are the low cost of labour (low wages) and availability of a technically-skilled workforce. Firstly, wages in Thailand are extremely low. They vary by location of workplace, from a minimum of 159 baht (US$5.13) per day to a high of 221 baht (US$7.14) per day. The minimum 159 baht (US$5.13) is paid in places like Payao, while workers in Phuket get the maximum of 221 baht (US$7.14) (Ministry of Labour, 2011). Of course, this means that the investor can reduce the cost of goods sold. For example, the wages per day in Thailand are approximately AUD7 while the minimum wage rate per hour in Australia is AUD10 (18.29 in 2017). This makes Thailand a more attractive place than Australia to do business for international companies.

Secondly, for companies with continuing recruitment needs, setting up a system of links can be especially valuable. Recruiting technically-skilled workers in Thailand is easy, as companies can build an association with educational institutes to identify prospective candidates and classify them as early as possible (The Board of Investment of Thailand, 2011c).

Moreover, high-quality and low-cost labour in Thailand has attracted overseas investors, particularly from East Asian countries, to use the country as their export base, since the late 1980s. However, conclusions drawn from the estimated coefficient have to be interpreted with care, as the proxy used was to some extent estimated. This evidence was commonly cited by previous studies (Ramstetter, 1997; Tambunlertchai & Ramstetter, 1991).

3.8. Agriculture

In recent times, FDI has focused on industry, machinery and transport equipment, and on financial institutions. However, it should be noted that agriculture continues to afford opportunities, as Thailand has strengths in agriculture. Sriwatanapongse, Iamsupasit, Attathom, Napasintuwong, and Traxler (2007) claim that Thailand should move towards further development of agriculture, which will increase the competitiveness of the country. Obviously, Thailand is well-known as the land of agriculture despite a few natural disasters, so it is suitable for companies that

produce food products for both human and animal consumption. Moreover, the weather is fairly consistent, so the businesses can predict their earnings with a level of confidence. Thailand's strengths lie in its agricultural industries, including fisheries and farms.

According to the Asia-Pacific Trade and Investment Review, the agricultural sector has played an essential role in developing the Thai economy and the Thai Government has opened up the agricultural sector to global contest. As an important agricultural exporting country, located between other Asian countries, Thailand is suitable for opening its markets in order to obtain benefits from the liberalization of the agriculture sector (Trade, 2007).

In 2000, a team of Japanese researchers who studied the sector flows in Thailand found that the agricultural industry was one of the major recipients of the International Joint Venture (IJV) formations in Thailand via Japanese firms. In addition, the strongest growth of IJV formation and FDI in Thailand via Japanese businesses happened in the period between 1986 and 1990 (Julian, 2001).

In some provinces in Thailand powerbrokers within a region may have misappropriated investment in that region. Often this was politically motivated depending on who was in power. Feder and Onchan (1987) indicated that squatters in the three provinces covered by their study face relatively small eviction risks, but their borrowing from cheap institutional sources is significantly lower than that of farmers with secured land ownership, and possession of land title implies greater capital formation and higher capital or land ratios in two of the provinces. In the third province, ownership security does not significantly affect capital/land ratios; titled farmers apparently utilize their expanded access to cheap institutional credit to acquire more land rather than to increase their capital/land ratios. The informal credit market is well-developed in this province. Zhang and Hock (1996) argued that China has comparative difficulties in agricultural resource intensive goods compared to Thailand, Malaysia, Indonesia and Philippines.

3.9. Feasibility of Investing in Thailand

Thailand is a developing country, which needs more investment from overseas investors (Brooks, 2004). The country encourages companies from around the world to invest in Thailand. The Thailand Board of Investment is the government organization which was established to support foreign investors.

Thailand is a gateway into the heart of Asia and one of the members of ASEAN. The country offers investors a good opportunity to export many Thai manufactured products and services into their home markets. In addition to a plentiful, skilled and cost-effective workforce and natural resources, foreign investors can rely on both modernized transportation facilities and upgraded communications, living conditions and networks which make current business secure. For foreign investments, the government focuses on liberalization and encourages free trade, as well as offering an extensive list of promoted activities. In terms of social organization, the country is a constitutional monarchy with a high level of respect for the Thai Monarchy. His Majesty the King is the patron of all religions; although most Thai people are Buddhist, all religions are welcomed. Apart from the well-accepted standards of education and healthcare, companies feel secure and at home in Thailand due to its gracious hospitality which has a high reputation throughout the world.

The government of Thailand has focused on six sectors in particular for attracting development, namely alternative energy, electronics and ICT, agriculture and agro-industry, fashion, automotive industry, and value-added services including entertainment, healthcare and tourism (The Board of Investment of Thailand, 2011b).

3.10. Conclusion

In this study we have discussed the general viability of the Foreign Direct Investment perspective in Thailand. The early studies of FDI were considered in the section on Introduction to FDI, as well as the profile of FDI in Thailand in the past. We also provided information on The Impact of FDI in Thailand in the areas of the economy, the environment and Thailand's exports. Thereafter we considered the Feasibility of FDI in Thailand, and concluded by showing why Thailand is a suitable place that

encourages investment in the country. The findings reported in this study have shown that FDI can be carried out effectively in Thailand. Companies --- can gain a substantial market share, and thus yield significant profits. Thailand can provide the right conditions for companies to achieve these goals. It has the benefit of a growing economy, good infrastructure and human resources, and excellent opportunities for investment in agriculture. Moreover, Thailand has a number of ambitious master plans to develop infrastructure to support transportation, not only to connect the country internally, but also to connect it with neighbouring countries, and also to develop programs to train skilled workers. For these reasons, many countries, especially Japan, Singapore and other ASEAN countries, have invested in Thailand, resulting in a huge net inflow.

4. Methodology

4.1. Introduction

Financial research typically needs to demonstrate that the empirical evidence that proves the work done is based on a methodology. The most common statistical financial methodologies are the ordinary least squares (OLS), multiple regression, panel data, fixed effect, pooled data, two stage least squares (2SLS), endogenous regressors and event study.

On careful consideration of the various models, as listed below, that could be applied to the study, we propose using Autoregressive Distributed Lag model (ARDL) to analyze the factors that determine the flow of foreign direct investment (FDI) into Thailand. The reason for this is that the ARDL model is standard least squares regression containing lags of the dependent and independent variables as regressors, and they are the method of examining long-run and cointegration relationship between variables (H. Pesaran & Shin, 1999). ARDL is the method used to test the relationship between two or more independent (predictor) variables with one dependent (or criterion) variable. The aim of this research is to examine the relationship between FDI and all factors that determine the flow of foreign direct investment (FDI) into Thailand.

4.2. A Review of the Relevant Literature

The methodology can be used to explain and to estimate as well as to guide technical activity. From the viewpoint of discipline, real-life discipline is able to be used to explain and to demonstrate, including evaluating competing methodological positions (Schmidt, 1982). This study analyzes the reciprocal relationship of the methodology in financial economics. In terms of financial statistical methodology, many methods are used, the most common being for instance, the ordinary least squares (OLS) or

multiple regressions. Analysis could be conducted by applying panel data, fixed effect, pooled data, two stage least squares (2SLS), endogenous regressors and event studies. The ordinary least squares (OLS) is a statistical technique which uses sample information to estimate the accurate population relationship between two variables. Ordinary least squares (OLS), was the methodology used by Fry (1978), McDonald and Morris (1984), Ajinkya, Atiase and Gift (1991), Goetzmann (1993), Beatty, Chamberlain and Magliolo (1995), Refenes, Bentz, Bunn, Burgess and Zapranis (1997), Barnhart and Rosenstein (1998), Gourieroux and Jasiak (2001), and Van Gestel et al. (2001) in their papers. It is indeed a very frequently applied approach in many disciplines.

Multiple regression is an analytical method that determines the relationship between one dependent (or criterion) variable and one or more independent (predictor) variables. Multiple regression methodology is commonly used. For example, Altman (1968), Edmister (1972), Dimson (1979), Eskew and Faley (1988), Raffournier (1995), Cheung and Ng (1996), Tom (1997), Berger, Cummins and Weiss (1997), Cummings (2000), C. S. Park and Han (2002), and Chiang and Chia (2005) used multiple regression methodology in their studies.

Panel data is the observation of a cross-sectional sample which is observed at least two times. For instance, Nickell (1981), Arellano and Bond (1991), Simar (1992), Himmelberg and Petersen (1994), Blundell and Bond (1998), Bond, Elston, Mairesse and Mulkay (2003), Christopoulos and Tsionas (2004), MacKay and Phillips (2005), Apergis, Filippidis and Economidou (2007) and Petersen (2009) used panel data in their work.

Fixed effects models assume that the independent variable is fixed in relation to the individual effects of the variables being analyzed. Fixed effects is used, for example, in papers by Rajan and Zingales (1996), Peek and Rosengren (1997), Berger and Humphrey (1997), Cleary (1999), Bailliu and Canada (2000), King and Lenox (2001), Gelos and Werner (2002), Friedman and Levinsohn (2002), Christopoulos and Tsionas (2004) and MacKay and Phillips (2005).

Analysis of pooled data is characterized by sundry issues and controversies about the choice of analytical techniques. One major issue that is central in the discussions surrounding the choice is the handling of heterogeneity or the degree of variability among studies contributing data for synthesis. For instance, Dielman (1983), Wu

(1996), Bowen and Wiersema (1999), Loayza, Ranciere and CESifo (2002), Calderón and Liu (2003), Nakao, Amano, Matsumura, Genba and Nakano (2007) and Islam and Mozumdar (2007) used pooled data for analysis in their papers.

Two stage least squares (2SLS) is an instrumentality variables (IV) evaluation technique. It spreads the four ideas to a condition where one has more devices than independent variables in the model. There are many researchers who have used two stage least squares in their papers, for instance Khan (1974), Peterson and Benesh (1983), Newey and West (1987), Bairam (1988), O'Brien and Bhushan (1990), Murphy and Zimmerman (1993), Cho (1998), Irwin and Tervio (2000), Easterly, Levine and Roodman (2003) and Carter, Simkins and Simpson (2003).

The use of endogenous regressors. Tuckman and Chang (1991) used endogenous regressors (Apergis et al., 2007), serial correlation of the error term, and potential omitted variable bias to estimate strategy used in this analysis to overcome serious statistical issues. Pafka and Kondor (2001) used Risk Metrics - a broadly used methodology for measuring market risk. Adelberg (1979) has reviewed the literature of finance, and Haried (1973) demonstrated "that techniques developed in other disciplines for analysing meanings associated with symbols used in communication can be refined and adapted to the semantic problems in accounting" (Haried 1973, p. 377).

Event study methodology is a frequent instrument applied in finance research. The objective of an event study is to evaluate whether there are any irregular or excess returns earned by the security holder accompanying specific events (Peterson, 1989). For example, J. J. Binder (1985), Henderson Jr (1990), Rhoades (1994), Agrawal and Kamakura (1995), Campbell, Lo and MacKinlay (1997), Tufte and Weise Moeller (1997), Binder (1998), Ruf, Muralidhar, Brown, Janney and Paul (2001), Garg, Curtis and Halper (2003) and Lepetit, Patry and Rous (2004) used event study in their research.

4.2.1. Methodology Applied in Similar Studies

This section will discuss the methodology that may apply to the proposed study. In the case of the effect of foreign investor use on the decision to make direct investment abroad, Djankov and Hoekman (2000), Liu and Wang (2003), Carkovic and Levine

(2005) and Mercereau (2005) used the ordinary least squares (OLS) method in their papers. As regards panel data, Liu, Siler, Wang and Wei (2000), Bosco (2001), Damijan, Knell, Majcen and Rojec (2003) and Egger and Winner (2006) used panel data method in their research to estimate the relationship in foreign direct investment. Another method used in foreign direct investment research is fixed effects model. Many researchers have used this method in their papers, for instance, Nair-Reichert and Weinhold (2001), Bengoa and Sanchez-Robles (2003) and Helpman, Melitz and Yeaple (2003). Moreover, pooled data method has been used in foreign direct investment studies, for example, by Agarwal, Gubitz and Nunnenkamp (1991), Anand and Kogut (1997), Liu, Song, Wei and Romilly (1997) and Xu and Wang (2000). Hermes and Lensink (2003) used regression analysis for the cross-sections of 67 countries to find the relation of foreign direct investment, financial development and economic growth.

In addition, multiple regression has been used in foreign direct investment study, for example, by Green and Cunningham (1975), Hodgson (1978), Schneider and Frey (1985), Tallman (1988), Loree and Guisinger (1995), Blomstrom, Lipsey and Zejan (1996), Chunlai (1997), Thomas and Grosse (2001), Deichmann, Eshghi, Haughton, Sayek and Teebagy (2003) and Meyer and Sinani (2009).

Multiple regression hypothesis testing has a key feature in that it also generates parameter estimates - the predictor variable's predictable coefficients - thus providing a unified multi-estimator regression stage for testing, forecasting and estimation (Amihud, Hurvich, & Wang, 2009).

In addition, Autoregressive Distributed Lag (ARDL) models, ARDL, is standard least squares regression that includes both lagged of the predict and predictor variable, and they are the method of examining long-run and cointegration relationship between variables (H. Pesaran & Shin, 1999).

4.3. Model, methodology and data

4.3.1. Data sources and description of variables

Based on the literature review as mentioned in the previous section, we use the Autoregressive Distributed Lag (ARDL) models to determine what effects on the FDI of Thailand. The quarterly time series data from the Bank of Thailand on FDI provided in quarter 1, 1991 to quarter 4, 2015 period, in US dollars, have been used in this study. The data have been obtained from different sources, including the Bank of Thailand, Oxford Economics, Federal Reserve United States, Office of the National Economic and Social Development Board, Thailand (NESDB), World Economic Survey (WES), International Financial Statistics (IMF), OIE (Office of Industrial Economics, Ministry of Industry of Thailand), National Statistical Office, World Bank WDI, and The Revenue Department of Thailand.

As the MNEs in network perspective, the benefits of doing FDI include government intensive, infrastructure, cost, opportunity, and human resources. In this section we discuss the variables applied to this study as follows.

The human resource factor in various papers is measured by either (1) the number of students enrolled in the university as a percentage of population (Yung-Ming, 2006) or (2) the percentage of population fifteen years or older that is illiterate or semi-illiterate for the illiteracy rate (Trade, 2007). In this study we will use the number of students enrolled in tertiary education as a percentage, because there is a record of this number in Thailand and will therefore give accurate information. For human resources, the Thai government continues to develop the education policy and education system to match the high competition in the world market. The Thai government also learns from and develops the education systems of many countries so as to be equivalent to other countries, especially the developed countries. Due to the concentrated effort that the Thai government puts into its education policy, the standard of labour in Thailand is improving compared with the last decade. Although the Thai Government has increased the minimum labour wage and minimum salary (to 300 Baht per day for workers and 15,000 Baht monthly for new bachelor graduates) prior to the beginning of 2012, these rates are considered low as compared with many countries in Asia

because Thai labourers tend to be of higher quality and educational background compared with previous years.

Infrastructure is utilised at times in the literature, though it proved difficult to apply reliably in this study, so was discarded. It is estimated by the number of post offices per capital, and the number of telephone lines per capital (Egger & Pfaffermayr, 2004). Telephone density (TELD) is calculated from data on fixed telephone subscriptions divided by population. Moreover, infrastructure could also be measured with government consumption (GCON) and gross fixed capital formation (GFCF), because both are present in expenditure of the government which is included in the infrastructure, but this was not the approach used.

Transportation opportunity, is measured in various papers by (1) a total of the length of three different types of infrastructure (roads, highways, railways and navigable waterways), divided by Thailand's area (Xing & Wan, 2006); (2) Highways is the sum of length of pavement road divided by area (Larch, 2007); (3) Road space (transportation routes) is calculated per square kilometre. In this study we will use a density of total of the length of two different types of transportation (road and railway), divided by Thailand's area. This measure can demonstrate the ratio between the whole area and the shipping routes, which considers how efficient it is to distribute the goods in both domestic and foreign countries. Transportation opportunity in Thailand comes from the location of Thailand itself. Thailand is located at the central point of the Malayan Peninsula which is the central point of Southeast Asian countries, and Thailand is also located close to East Asia, and Oceania countries including China, Japan, and Australia. Thailand also facilitates transport by its International Airports in many important regions, its deep seaports, and its basic transportation, such as railroad network and road network, which cover all areas in Thailand and also connect with neighbouring countries.

Trade openness (OP), is measured by either (1) GNP per capital (Francois & Wooton, 2010); (2) circulating fund turnover ratio (Ismail & Yussof, 2003); (3) Consumer price index (CPI); (4) population density (POP); and/or (5) calculate from the sum of imports and exports divided by GDP. For trade openness, as mentioned, Thailand has high potential to be an industrial hub in the Asia-Pacific region because its location and facilities facilitate market expansion. The Asia Pacific region is the region that has

high demand for consumer products and also industrial products; therefore, the opportunity for market expansion in this region will be high as a consequence. In terms of trade openness, we calculate from the sum of imports and exports divided by GDP.

Government incentives for FDI can be measured by the tax discounts available to foreign investors in the establishment period as a percentage when compared with the domestic investment (Poon & Sajarattanochote, 2010). The Thai Government always promotes and encourages foreign investors to invest in Thailand by introducing many incentives, such as tax incentives, which reduce the import and export tax, non-tax incentives which include, for example, permission for foreign investors to own land or permission to take out or remit money abroad in a foreign currency. The Thai government also gives foreign investors some guarantee and protection to assist them while they are running a business or investing in Thailand. Thailand continues to pay a lot of attention to foreign investment through establishing organizations that specialize in facilitating and promoting foreign investment, called the BOI (Board of Investment). The BOI enhances competitiveness, facilitates investment, and also provides business support services. These incentives might affect FDI of Thailand by increasing the chance that foreign investors may come to invest in Thailand.

4.3.2. Financial resources and policy lending.

Policy lending is a possibility as, in some instances, the government may instruct the banks or lenders to provide loans for particular regions or industries. Park, Brandt and Giles (2003) argue that in well-organized systems, the financial mediator must not be excessively unfair by policy variables, must be better where projects are more beneficial and require better financing - classically in more rapidly growing, industrial areas and richer ones - and ought to direct money to the most promising projects in spite of from where deposits initiate. For instance, this is relevant between 1991 and 1997 for all state banks in Chinese provincial areas for rural credit cooperatives, the Agricultural Bank of China, and other financial institutions. In the mid-1990s China implemented a sequence of broadly exposed financial reforms with the intention to develop bank performance. On the other hand, evaluation results and descriptive advice that the significance of state bank policy lending (to support agricultural finance

procurement and SOEs) had risen during the current time, and when lending does not respond to economic essentials. Only a smaller group of less-regulated financial institutions, appear commercially oriented.

In Thailand (Kashyap & Stein, 1994), it was measured by interest rate of loans in each area in order to know whether the rates are comparable or not. In the face of reforms, important barriers to the efficient inter-regional financial mediator remain. Kashyap and Stein (1994) point out that in this three asset world, financial policy is able to work both through its effect on the bond market rate of interest, and through its independent effect on the supply of mediator loans. On the other hand, declines in capital can still have significant actual costs, if they lead banks to reduce on loan supplies: the cost of loans of qualifying bonds will increase, and those firms that depend on bank lending will lead to a decrease in investment. Put in a different way, financial policy is able to have important real impact on the cost of open market interest rates. In this study we will apply the lending rate (LD) to investigate this notion.

Financial resource availability is periodically applied in the literature, but the data proved to be unreliable. It is measured by both the number of financial institutions that provide loans for foreign investment projects (Larch, 2007), and the interest rate (Imbs & Fratzscher, 2009). Shapiro (2008) suggests that the use of domestic capital to fund projects is a measure used to help reduce some of the financial and political risks associated with FDI. Nowadays, there are many financial institution loans to foreign investment in Thailand. Moreover, these financial institutions offer the same rate for both foreign and domestic borrowings – it is dependent on such aspects as the ability to maintain the loan, asset quality, asset guarantees and project feasibility, however this was not the approach used.

Political instability is measured by both the frequency of change in the economicpolicy (Kobrin, 2011), and the continuity of policy implementation (Erb, Harvey, & Viskanta, 1996). Although Thailand's political difficulties have surfaced frequently in the last five years, in fact the Thai government's major policies regarding foreign investment have been continuously promoted leading to relatively stable foreign investment policy over the last decades in Thailand. The most recent political controversy in

Thailand appears to have passed and now a new government has been established and the confidence of foreign investors is improving. However, the perception of political instability concerns might be the most important factor that may directly affect foreign investment and could be a primary focus of foreign investors, which makes it directly related to the levels of Thailand's FDI.

Exchange rate. The exchange rate is measured by the relative price level with FDI in Thailand during the period of study (Xing & Wan, 2006). The exchange rate of Thailand is obviously low comparing with many countries in this region such as China, Singapore, Malaysia, or Indonesia. This could be an advantage and might attract the foreign investors' attention. Because of the lower exchange rate, the cost to investors for establishing their business in Thailand will be considerably less than other jurisdictions and also the costs associated in operating a business in Thailand (Qin, 2000) is substantially reduced. In this paper we have taken the exchange rate of the Thai Baht against the USD dollar.

Costs associated with business operations in various papers is measured by (1) labour cost 1.1 the average wage level of workers (Ismail & Yussof, 2003), 1.2 nominal wages divided by average productivity (Ismail & Yussof, 2003); (2) Operation cost: rental cost measured by the average rental rate fee of business space per square metre (Mollick, Cabral, & Faria, 2010; Viboonchart, 2011), and product of the manufacturing. In this study we will use both labour and operation cost. In the part of labour cost we will use the monthly average wage (WAGE) because we want to show how cheap the labour cost is when compared to other countries and there is the wage price information provided for every area in Thailand. Another part is operation cost. We will use manufacturing production index (MPD). Cost in this research includes all costs of doing business in Thailand. Cost factor is related to the Exchange rate and Government Incentive factors and inflation rate (INF). Cost of production (Material and Labour) and operation cost in Thailand are quite low due to the resources and government factors previously mentioned. This is a huge advantage for foreign investors because they might gain higher profit margins if they choose to invest in Thailand. Moreover, lower cost of production would facilitate price strategy settings.

GDP in various papers is measured by either (1) the average rate of return to capital in the sector (Institute of Southeast Asian Studies, 2010; Lejour, Rojas-Romagosa, &

Verweij, 2008), or (2) the share of manufacturing output to GDP (Chowdhury & Mavrotas, 2006; Farid, 2008). In this study we will use the real GDP. After the sub-prime crisis in 2008, the GDP of Thailand went down dramatically and turned to minus in 2009. This reflected the severe economic downturn that resulted from the sub-prime crisis that emerged in the US, but this downturn did not last long. Thailand's GDP went up from the minus area dramatically in 2010 and has remained in the plus area until now. This represents the recovery and economic growth of Thailand after the world economic crisis in 2008. The Thai government also stimulates economic growth directly by putting a large amount of money into the economic system to facilitate economic growth and by encouraging investment in Thailand both from domestic investors and foreign investors.

After reviewing the literature there were many possible variables that we consider could be applied to the study and that we gathered data for. However, the initial analysis showed that a number of these did not provide meaningful results. We began with all FDI theories that we reviewed in both Chapters 2 and 3, to investigate the possible determinants of FDI flows into Thailand.

Initially, to make the study as comprehensive as possible, data was gathered based on the FDI determinant theories, such as, institutional and legal factors - political instability and trade, and input costs, e.g. average wage including the production efficiency and input cost, trade openness and political instability (Bevan & Estrin, 2004). Thus fulfilling our first research question which is: "What are the factors that affect the decisions of investors to undertake foreign investment in Thailand?"

The time series applying yearly data provided a greater period than quarterly data. We applied it with multiple regression models, but as the number of observations was relatively low, as expected the results were poor. When we then applied quarterly data to improve the number of observations, however the result were still not convincing. Because of this we then changed our model from multiple regression to panel data and incorporated additional countries, as we considered that this would enhance the results of the study of FDI in Thailand to apply the countries with a high level of FDI investment and a fixed and random effects model. However, the results were still not convincing.

Finally, we applied a more robust model – the Autoregressive Distributed Lag (ARDL) model – as it was deemed the most likely approach for the study, because the ARDL has many advantages for time series data. With the ARDL model we can both study with the ARDL bounds test cointegration. The ARDL model also provides the study with the long run relationship.

In applying with the ARDL model the results are greatly improved over the previous study. This leads to the selection of the final variables applied in the study which are as follows: average wage rate (WAGE), GDP, TARIFF, exchange rate (EX), manufacturing production index (MPD), trade openness (OP), political instability (POL), and school enrolment (SEN). Presented in Table 4-1 below are the variables, the possible effect, the expected sign and the data source.

Table 4-1: The variable's effect, the variables, the expected sign and the data source.

Effect	Variable	Expected Sign	Source
Trade openness	OP	+	Oxford Economics
Market opportunity	GDP	+	
Cost	TARIFF	-	The Revenue Department, Thailand
	WAGE	-	National Statistical Office, Thailand
	EX	+/-	Federal Reserve United States
Production efficiency seekers	MPD	+	Office of Industrial Economics, Ministry of Industry of Thailand (OIE)
Political instability	POL	-	WES - World Economic Survey, IFO
Human resource	SEN	+	World Bank WDI

4.4. Empirical Models and Methodology

This section outlines the application of the instrument, the ARDL model, and the various tests applied – the unit root test, the bounds test and finally the ARDL long run estimate can then be applied.

4.4.1. Unit root test

The ARDL model is based on the assumption that the variables are I(0) or I(1). Therefore, before applying this test, we determine the order of integration of all variables using the unit root tests. The objective is to ensure that the variables are not I(2), to avoid spurious results. In the presence of variables integrated of order two, we cannot interpret the values of F statistics provided by Pesaran et al. (2001). For this purpose, in this study, Augmented Dickey-Fuller (ADF) tests are used to assess the order of integration of the variable.

This research will apply the Autoregressive Distributed Lag (ARDL) bounds test to analyze quarterly data over two and a half decades during the period 1991-2015. We follow the ARDL Bounds Testing methodology of Pesaran and Shin (1999), and Pesaran *et al.* (2001), among others. This approach has many benefits over traditional long-run and cointegration testing. Firstly, ARDL can apply a mixture of I(0) and I(1) data. Secondly, we can achieve dynamic unrestricted error correction models (UECM) by applying simple linear transformation to the specified ARDL model (Baek, 2016; Sbia, Shahbaz, & Hamdi, 2014), As a result UECH has the benefit of combining short-run dynamics with long-run equilibrium without losing any significant information. Also, the ARDL model contains a single-equation set-up, making it simple to implement and interpret. Thirdly, ARDL exhibits superior small sample property over conventional cointegration tests (Smyth & Narayan, 2015). In addition, different variables can be assigned different lag-lengths as they enter the model, and the correctly specified lag structure both controls for and minimizes potential endogeneity in the model (M. H. Pesaran & Shin, 1998) and serial correlation.

The model may be written as:

$$\Delta \ln FDITH_i = \chi_1 \ln FDITH_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDITHt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (1)$$

where Δ denotes the first-difference operator and ε_t the *i.i.d.* error term.

As the ARDL model has many advantages over time series modelling, ARDL can be applied with a mixture of I(0) and I(1) data. We need to check that there are no variables that include I(2), as such data will invalidate the methodology. Unit root tests are applied in this case.

Augmented Dickey-Fuller (ADF) tests are used to assess the order of integration of the variable by testing with including intercept, trend and intercept. Lag length, automatic selection by (Schwarz Info Criterion) with 14 maximum lags, unit root test is presented in Table 4-2 below.

Table 4-2: Unit root test

Test type: Augment Dickey-Fuller (ADF)
Include in test equation: Intercept, Trend and intercept
Lag length: Automatic selection (Schwarz Info Criterion)
Maximum lags: 14

	Intercept, Test statistics		Trend and intercept, Test statistics	
	Level	First difference	Level	First difference
FDITH	-7.799512***	-6.913138***	-9.104945***	-6.922797***
FDIAU	-9.777164***	-10.62808***	-9.064815***	-10.80155***
FDICH	-1.725011	-2.763314*	-10.89255***	-2.603625
FDIGM	-9.237852***	-7.541242***	-9.520555***	-7.493579***
FDIHK	-7.732871***	-8.494415***	-8.856890***	-8.448013***
FDIJP	-12.78082**	-8.744707***	-12.72018***	-8.690817***
FDINL	-9.179849***	-8.430708***	-9.164519***	-8.385373***
FDISKO	-11.30064***	-9.272984***	-6.989780***	-9.256375***
FDISP	-3.721468**	-10.08433***	-3.684584**	-10.04542***
FDISW	-8.558544***	-6.935692***	-8.610208***	-6.889830***
FDIUK	-4.873454**	-5.291666***	-10.12777***	-5.373262**
FDIUSA	-9.333288***	-12.22474**	-9.365651***	-12.18144***
EX	-2.091366	-10.85631***	-1.942746	-3.340014*
GDP	-0.104366	-8.738711***	-1.451550	-8.725238***
LD	-2.023981	-5.616749***	-2.438436	-5.628488***
MPD	-0.530966	-14.36372**	-2.370521	-14.29877***
POL	-3.027912**	-9.799833***	-2.962857	-9.787730***
SEN	-1.784051	-1.934334	-1.594923	-2.233832
TARIFF	0.277388	-9.975024***	-0.936647	-10.20759***
OP	-1.687194	-12.90836**	-1.493223	-12.97938***
WAGE	-0.007966	-8.981102***	-1.152217	-9.222335***

*Note: The asterisks ***, **, * denote the significance at 1%, 5% and 10% levels, respectively.*

The results of the stationarity tests show that the variables are mixed stationary between the level and first difference. Except that the variable the school enrolment (SEN) is stationary at I(2), therefore we need to remove this variable.

We then performed the diagnostic tests for serial correlation, function form, normality and heteroscedasticity to ensure correct specification. To test this stability diagnostics

we apply the "CUSUM" and "CUSUM of Squares test" to check that all our model is associated with lie strictly inside the unit circle.

4.5. The Bounds test

In essence the bounds test involves testing the hypothesis of no cointegrated relationship in equation (1) (H_0: $\chi_1 = \chi_2 = \chi_3 = \chi_4 = \chi_5 = \chi_6 = \chi_7 = \chi_8 = 0$) against the alternative that H_0 is not true. A rejection of H_0 implies that our model has a long-run relationship. In the bounds test, Pesaran et al. (2001) provide the critical values for the asymptotic distribution of the F-test in various situations which include the lower bound is based on the assumption that all of the variables are I(0), and the upper bound is based on the assumption that all the variables are I(1). In the case of the computed F-test falling below the lower bound we would conclude that the variables are I(0), therefore it means no cointegration is possible, by definition. On the other hand, in the case of the F-statistic exceeding the upper bound, we conclude that we have cointegration. For the last one, in the case of the F-statistic falls between the lower and upper bounds, the test is inconclusive.

Following the completion of these tests the ARDL long run estimate can be applied. Thus we are then ready to run the primary ARDL model as per the following chapter.

4.6. Conclusion

This chapter has addressed the descriptive data that we applied with the Autoregressive Distributed Lag model (ARDL). In addition, we provided the method to apply the ARDL model to our study to investigate the relationship with the factors that are determinants of Foreign Direct Investment in Thailand to analyse the long-run relationship and apply the bounds testing (ARDL) approach to cointegration relationship of the model.

In the next chapter we will apply this method with the factors that are determinants of Foreign Direct Investment in Thailand. In conclusion, we will apply the robust model to the top ten FDI investing countries, including Australia, that undertake investment in Thailand.

5. Empirical Results

5.1. Introduction

In the previous section we investigated the empirical study of the Autoregressive Distributed Lag models (ARDL) to analyse the long-run of the factors and the bounds testing (ARDL) approach to cointegration to provide the steps in order to apply the model.

This section will be conducted in three parts: in the first section we will apply the Autoregressive Distributed Lag models (ARDL) method which determines Foreign Direct Investment in Thailand. In addition, in the second part we will apply the model to the top ten FDI investing countries. The countries include Australia and the top ten highest investment countries in Thailand during the period of study. The top ten countries are found to be: Japan, Singapore, United States of America, Hong Kong, United Kingdom, Germany, Switzerland, Netherlands, China, and South Korea. Then the empirical results will be provided in the last section of this chapter.

5.2. The Determinants of Foreign Direct Investment in Thailand

Table 5-1 below shows the results from ARDL bounds test and long-run estimates. The first part of the table (Panel I) shows the bounds testing to the cointegration, which includes the optimal lag structure of the model by applying the Akaike Information Criterion (AIC) in this study. Moreover the results from the F-statistic also have been addressed in this part.
This is followed by the second part (Panel II) which shows the four diagnostic tests. These include the J-B Normality test, which is the test for the non-normality of the equation. In addition, there is the Breusch-Godfrey LM test, which tests for the "serial independence" of the equation. Also, the ARCH test was applied to test the heteroscedasticity of the model. Then, we applied the CUSUM test and the CUSUMSQ (CUSUM of Squares) tests to our model to confirm that our structure is "dynamically stable". The final part of this table (Panel III) shows the ARDL long run estimates.

Table 5-1: ARDL bounds test and long-run estimates

Functional form	F (FDITH | WAGE GDP TARIFF EX MPD OP POL)	
Panel I: Bounds testing to cointegration		
Optimal lag structure[a]	2, 0, 0, 1, 0, 3, 0, 3	
F-statistics[b]	7.851***	
	Critical values	
Significance level	Lower bounds	Upper bounds
10% level	1.92	2.89
5% level	2.17	3.21
1% level	2.73	3.9
Panel II: Diagnostic tests		
J-B Normality test	56.72***	
Breusch-Godfrey LM test	[1] 1.223; [2] 2.950	
ARCH	[1] 0.008; [2] 0.008	
CUSUM	Stable	
CUSUMSQ	Stable	
Panel III ARDL long run estimates		
WAGE	-1.377(0.300)***	
GDP	0.081(0.105)	
TARIFF	-0.042(0.010)**	
EX	-0.034(0.009)**	
MPD	0.010(0.002)***	
OP	-0.002(0.001)	
POL	-0.036(0.013)**	
Error-correction	-1.184(0.129)***	

*Note: The asterisks ***, ** and * denote the significance at 1%, 5% and 10 % levels, respectively. [a]The optimal lag structures of ARDL model are determined by AIC. [b]The F-statistics is compare to the critical bounds computed by Pesaran et al. (2001) for restricted intercept and no trend. The brackets [ ] is the order of the diagnostic tests. Standard error of ARDL estimates are reported in parentheses. For the results from EViews see Appendix 2.*

5.3. Baseline model (Model selection)

Table 5-5 presents the summary results of our study of the determinants of FDI with all these variables consisting of, average monthly wage rate (WAGE), gross domestic production (GDP), tariff rate (TARIFF), exchange rate (EX), manufacturing production index (MPD), trade openness (OP), and political instability (POL) based on our ARDL model in equation (1) which has been expressed as:

$$\Delta \ln FDITH_i = \chi_1 \ln FDITH_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDITHt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (1)$$

5.3.1. Panel I: Bounds testing to cointegration.

From the results shown in Table **5-1**: ARDL bounds test and long-run estimates, we can conclude that 3 is a maximum lag order for the conditional of ARDL model by using the Akaike Information Criteria (AIC). The optimal lag structure is (2, 0, 0, 1, 0, 3, 0, 3).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDITH (FDITH | WAGE GDP TARIFF EX MPD OP POL) was 7.851. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

5.3.2. Panel II diagnostic tests.

The results from the diagnostic tests in this equation show that the regression for the underlying ARDL equation fits very well and the model is globally significant at 1% level (as a result of

the error correction -1.184***). The equation also passes all the diagnostic tests, except the normality test.

We applied the Breusch-Godfrey LM for testing the equation against serial correlation. The result of the equation passed in both orders of the diagnostic tests at 5% significance.

In terms of testing the heteroscedasticity of the equation, the ARCH was applied, with the equation passing this test also.

With the normality of errors testing applied by the Jarque-Bera test the equation did not pass this test.

The dynamically stable result from the cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) tests are applied to assess the parameter stability (M. H. Pesaran, 1997). The results indicate an absence of any instability of the coefficients because the plot of the CUSUM and CUSUMSQ statistic fall inside the critical bands of the 5% confidence interval of parameter stability.

5.3.3. Panel III ARDL long run estimates.

The theory has been mentioned in the previous section which is: since our conclusion of the bounds test is cointegration, we can meaningfully estimate the long run equilibrium.

In this study, the results of the ARDL long run estimates, the error-correction coefficient is negative (-1.184), as required, and it is dramatically significant at 1%. In addition, the long run coefficients from the cointegration equation are reported with their standard errors, t-statistic and p-value. From the results of the long run relationship equation we can conclude that there are long run relationships between FDI in Thailand and WAGE at 1% significance, TARIFF at 5% significance, EX at 5% significance, MPD at 1% significance, POL at 5% significance. However, from the results of this ARDL equation, there are no long run relationships between FDI in Thailand and GDP, and OP.

5.4. Summary results

From the model selection process; F (FDITH | WAGE GDP TARIFF EX MPD OP POL), there is evidence to show that the equation is well fitted from the study model due to this equation passing three diagnostic tests. Moreover, there is also the cointegration relationship between the explained variable and the explanatory variable. In addition, the long run relationship is dramatically significant at 1%. The summary of the long run relationship is provided in Table 5-2 below.

Table 5-2: The ARDL long run relationship

Effect	Variable	Expected Sign	Result
Trade openness	OP	+	-0.002
Market opportunity	GDP	+	0.081
Cost	TARIFF	-	-0.042**
	WAGE	-	-1.377***
	EX	-	-0.034**
Production efficiency seekers	MPD	+	-0.010***
Political instability	POL	-	-0.036**

*Note: The asterisks ***, **, * denote the significance at 1%, 5% and 10% levels, respectively*

We can conclude that the cost of production, production efficiency seekers, and political instability affect the investor decision to be involved in FDI in Thailand.

We can observe from this result that all the factors that can be concerned with the cost of production including average wage rate, exchange rate, and tariff rate significantly affect the investor making a decision to invest in Thailand, especially average monthly wage rate which directly affects the cost of investment at 1% significance. This is due to the low cost of labour and availability of a technically skilled and knowledgeable workforce which is supported by the Thai government (The Board of Investment of Thailand, 2011e).

In addition, both exchange rate and tariff are significant at 5% level. We can conclude that cost is the main factor that affects the investor's decision to be involved in FDI in Thailand.

Moreover, the manufacturing production index which is the representing of the production efficiency seekers also dramatically attracts to the decision of investor investment in Thailand at the 1% significance.

In addition, political instability also affects the investor decision to invest in Thailand with accounting to the significance at 5%.

Surprisingly, the results show that both GDP and trade openness are not factors that impact on the investor decision or attract investment in Thailand.

According to Bevan and Estrin (2004) these results of GDP and trade openness are dissimilar, due to both these variables were the significant factor on their empirical result. In contrast, the average wage rate was show the similar result.

5.5. The empirical findings

The summary, in Table 5-2: The ARDL long run relationship, shows the results from this study and can enable us to explore our first research question based on our hypothesis which was addressed in Chapter 1, namely:

> *Do the market opportunity, cost, production efficiency seekers, and political instability, affect to the investors' decisions in investing in Thailand?*

The summary results which have been presented in the previous section from this study lead to the answer from our first research question which is:

3. *What are the factors that affect the decisions of investors to undertake foreign investment in Thailand?*

Therefore, in this research question we can conclude, based on the findings of this study, that cost, production efficiency seekers, and political instability are the factors that affect the decision of investors to undertake foreign investment in Thailand. In contrast, market opportunity is not the key factor that affects the decisions of investors to undertake foreign investment in Thailand.

The conclusions regarding the key findings are as follows.

Market opportunity

Surprisingly, the Thailand market opportunity did not attract investors to undertake foreign investment in Thailand in the last two and a half decades (from 1991 to 2015). As a result both GDP and trade opportunity are not significant.

Cost

We found that the cost of production is an important factor that encourages the investor to invest in Thailand, as the results show that all factors that affect the cost of production are significant.

Wages, especially the wage rate, was negatively significant at 1% level. From the result we can state that the increase of 1% in the wage rate will affect to the decreasing of FDI in Thailand 1.377%.

Tariff rate. This is the one factor that investors are concerned with regarding investment in Thailand. The result from this study showed a negative significance, a 1% increasing in tariff rate effect of 0.042% decrease in FDI in Thailand.

Exchange rate. In this study we found the exchange rate has a negative impact on FDI in Thailand at the 5% significance level. As our study concerned the exchange rate as the cost of doing business, a 1% increasing in exchange rate will lead to the increasing in FDI 0.034%.

Production efficiency seekers

Manufacturing production index. In terms of the production efficiency with representing with manufacturing production index, we found that it has a dramatically positive effect, at 1% significance level, for the investor investment in Thailand. In this study we found that 1% increasing in manufacturing production index leads to increasing 0.01% of FDI in Thailand.

Political instability

Political instability is also a very important factor that affects FDI in Thailand with a negative significance. The 1% increasing in political instability leads to 0.036% of decreasing in FDI in Thailand at 1% level of significance.

The conclusion regarding the key findings is, the cost of production, production efficiency seekers, and political instability, yield the results we found similar to expectation: all them have an effect regarding FDI investment in Thailand. In contrast is market opportunity; the result for market opportunity was not as we assumed and expected. However, some previous scholarship relating to Thailand also found a result similar to the result we found as mentioned above. Therefore, from these results we will develop this finding to the top ten main countries, including Australia, which invest in Thailand, and the hypothesis is the same. However, we have a different research question,

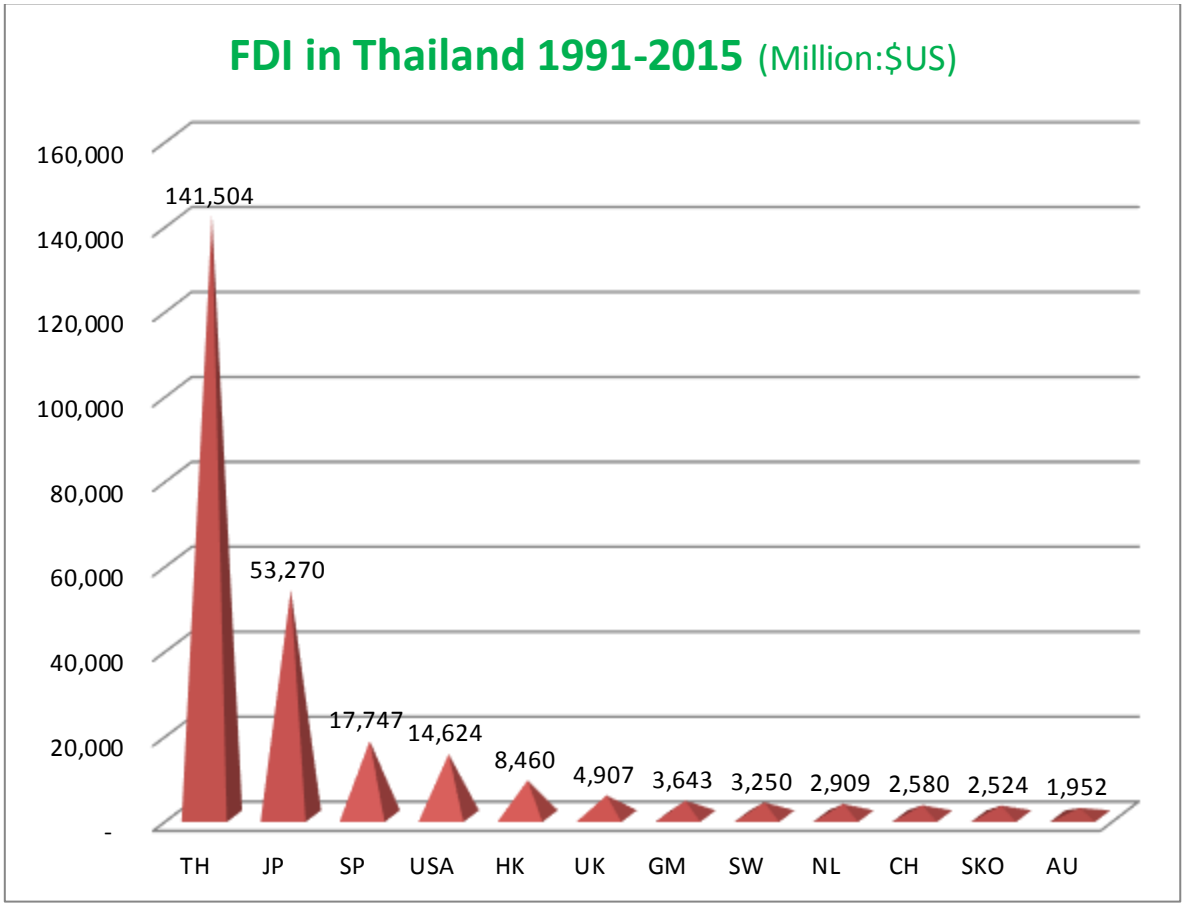
4. *Do the determinants of foreign direct investment differ across other countries?*

with regard to developing the result to the entrepreneur in relation to FDI in Thailand.

5.6. The impact of FDI with regard the countries studied.

In this section we will develop the equation of the Autoregressive Distributed Lag models (ARDL) to analyze the long-run of the factors and the bounds testing (ARDL) approach to cointegration relationship between the dependent and independent variable that we have been conducting in the determinants of foreign direct investment in Thailand with all the interested countries. The countries that were studied consisted of Australia (FDIAU), and the top ten biggest investment countries investment in Thailand from the period of study. The top ten countries consist of Japan (FDIJP), Singapore (FDISP), United States of America (FDIUSA), Hong Kong (FDIHK), United Kingdom (FDIUK), Germany (FDIGM), Switzerland (FDISW), Netherlands (FDINL), China (FDICH), and South Korea (FDISKO). Figure 5-1 that we have addressed in chapter 1 presented the total of FDI from the top 10 major countries, including Australia, from the period 1991 to 2015 in quarterly data.

Figure 5-1: Shows the total of FDI from the top 10 major countries, including Australia during 1991 and 2015.



Source: Data downloaded from the Bank of Thailand for this study

5.7. Empirical results

We applied the ARDL model equation (1) from the previous section to all study countries, Australia (FDIAU), Japan (FDIJP), Singapore (FDISP), United States of America (FDIUSA), Hong Kong (FDIHK), United Kingdom (FDIUK), Germany (FDIGM), Switzerland (FDISW), Netherlands (FDINL), China (FDICH), and South Korea (FDISKO). The equation is:

$$\Delta \ln FDITH_i = \chi_1 \ln FDITH_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDITHt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (1)$$

Following this ARDL model therefore we can address the equation for all countries covered in the study as follows.

Foreign direct investment in Thailand from Australia (FDIAU):

$$\Delta \ln FDIAU_i = \chi_1 \ln FDIAU_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIAUt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (2)$$

Foreign direct investment in Thailand from China (FDICH):

$$\Delta \ln FDICH_i = \chi_1 \ln FDICH_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDICHt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (3)$$

Foreign direct investment in Thailand from Germany (FDIGM):

$$\Delta \ln FDIGM_i = \chi_1 \ln FDIGM_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIGMt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (4)$$

Foreign direct investment in Thailand from Hong Kong (FDIHK):

$$\Delta \ln FDIHK_i = \chi_1 \ln FDIHK_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIHKt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (5)$$

Foreign direct investment in Thailand from Japan (FDIJP):

$$\Delta \ln FDIJP_i = \chi_1 \ln FDIJP_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIJPt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (6)$$

Foreign direct investment in Thailand from Netherland (FDINL):

$$\Delta \ln FDINL_i = \chi_1 \ln FDINL_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDINLt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (7)$$

Foreign direct investment in Thailand from South Korea (FDISKO):

$$\Delta \ln FDISKO_i = \chi_1 \ln FDISKO_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDISKOt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (8)$$

Foreign direct investment in Thailand from Singapore (FDISP):

$$\Delta \ln FDISP_i = \chi_1 \ln FDISP_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDISPt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (9)$$

Foreign direct investment in Thailand from Switzerland (FDISW):

$$\Delta \ln FDISW_i = \chi_1 \ln FDISW_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDISWt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (10)$$

Foreign direct investment in Thailand from the United Kingdom (FDIUK):

$$\Delta \ln FDIUK_i = \chi_1 \ln FDIUK_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIUKt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (11)$$

Foreign direct investment in Thailand from the United States of America (FDIUSA):

$$\Delta \ln FDIUSA_i = \chi_1 \ln FDIUSA_{t-1} + \chi_2 \ln WAGE_{t-1} + \chi_3 \ln GDP_{t-1} + \chi_4 TARIFF_{t-1} + \chi_5 EX_{t-1} + \chi_6 MPD_{t-1} + \chi_7 OP_{t-1} + \chi_8 POL_{t-1} + \sum_{i=0}^{p} \emptyset i \Delta lnFDIUSAt - i + \sum_{j=0}^{q} \emptyset j \Delta lnWAGEt - j + \sum_{k=0}^{r} \emptyset k \Delta lnGDPt - k + \sum_{l=0}^{s} \emptyset l \Delta TARIFFt - l + \sum_{m=0}^{t} \emptyset m \Delta EXt - m + \sum_{n=0}^{u} \emptyset n \Delta MPDt - n \sum_{o=0}^{v} \emptyset o \Delta OPt - o \sum_{p=0}^{n} \emptyset p \Delta POLt - p + \varepsilon_t \quad (12)$$

We then also test the four diagnostics with all equation studies. Finally we run this model with the ARDL model. The results in table 5-3 show the summary of the ARDL bounds test for integration in the first two steps which are panel I bounds testing to cointegration and panel II diagnostic test. In addition, Table 5-5 and Table 5-6 below show the summary of the ARDL long run estimates.

Table 5-3: **ARDL bounds test for cointegration (The summary for all countries)**											
Panel III Bounds testing to cointegration											
Functional form	FDIAU	FDICH	FDIGM	FDIHK	FDIJP	FDINL	FDISKO	FDISP	FDISW	FDIUK	FDIUSA
	F(FDI_J^c | WAGE GDP TARIFF EX MPD OP POL)										
Critical values											
Optimal lag structure[a]	4, 0, 2, 2, 0, 3, 1, 0	2, 0, 0, 3, 1, 4, 3, 1	1, 2, 2, 4, 0, 0, 1, 5	1, 4, 3, 0, 4, 4, 3, 3	3, 1, 0, 1, 2, 4, 0, 4	1, 0, 0, 3, 0, 3, 0, 3	1, 0, 0, 2, 0, 2, 0, 0	1, 0, 0, 1, 0, 4, 0, 1	4, 1, 1, 4, 1, 4, 3, 0	1, 1, 4, 1, 4, 0, 3, 0	1, 0, 0, 0, 0, 0, 0, 0
F-statistics [b]	8.31***	18.87***	15.72***	8.08***	11.60***	20.48***	10.63***	10.12***	9.10***	19.54***	10.26***
Panel II Diagnostic tests											
J-B Normality test	768.60 ***	218.65 ***	7.52 **	78.26 ***	116.14 ***	280.68 ***	1071.21 ***	25.31 **	50.47 ***	6.45 **	854.77 ***
Breusch-Godfrey LM test	[1]0.13 [2]0.33	[1]3.30 [2]8.07**	[1]2.15 [2]5.50*	[1]0.78 [2]2.29	[1]0.93 [2]2.47	[1]1.70 [2]4.10	[1]0.71 [2]1.64	[1]0.30 [2]0.71	[1]5.26 [2]12.85	[1]1.08 [2]2.80	[1]0.14 [2]0.32
ARCH	[1]0.12 [2]0.20	[1]5.37 ** [2]5.18**	[1]8.62** [2]8.06**	[1] 0.11 [2]0.11	[1] 0.25 [2]0.25	[1]1.83 [2]1.83	[1]0.002 [2]0.002	[1]4.12** [2]4.02**	[1]0.29 [2]0.30	[1]0.06 [2]0.07	[1]0.002 [2]0.002
CUSUM	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
CUSUMSQ	Instability	Instability	Instability	Instability	Instability	Stable	Stable	Instability	Stable	Stable	Stable

Note: The asterisks ***, ** and * denote the significance at 1%, 5% and 10 % levels, respectively. [a] The optimal lag structure of ARDL models are determined by AIC. [b] The F-statistics is compared to the critical bounds computed by Pesaran et al. (2001)for restricted intercept and no trend. [c]The j in the function is representing for the FDI from each country. The brackets [ ] is the order of the diagnostic tests. For the result from EViews see Appendix 3.

Table 5-4: **ARDL long run estimates (The summary for all countries)**

Panel III ARDL long run estimates

Functional form	FDIAU	FDICH	FDIGM	FDIHK	FDIJP	FDINL	FDISKO	FDISP	FDISW	FDIUK	FDIUSA
	F (FDI_j^c| WAGE GDP TARIFF EX MPD OP POL)										
WAGE	-0.003 (0.01)	-0.029 (0.016)*	0.034 (0.022)	0.119 (0.071)	-0.941 (0.146)***	0.265 (0.079)**	-0.011 (0.009)	-0.257 (0.115)**	-0.009 (0.008)	-0.058 (0.020)**	-0.160 (0.077)**
GDP	0.003 (0.003)	0.0133 (0.006)**	0.009 (0.009)	-0.025 (0.023)	0.048 (0.044)	-0.016 (0.030)	0.002 (0.004)	0.040 (0.046)	-0.002 (0.003)	-0.300 (0.010)**	0.011 (0.034)
TARIFF	-0.001 (0.0002)*	-0.001 (0.001)	0.001 (0.001)	0.005 (0.002)*	-0.035 (0.005)***	0.011 (0.003)**	-0.001 (0.0003)**	-0.003 (0.004)	0.0002 (0.0003)	-0.002 (0.001)**	-0.006 (0.003)**
EX	0.0001 (0.0002)	-0.00 (0.00)	0.002 (0.001)**	0.003 (0.002)	-0.026 (0.004)***	0.007 (0.002)**	-0.0002 (0.0003)	-0.004 (0.004)	-0.0003 (0.0002)	-0.003 0.001***	-0.004 (0.002)*
MPD	0.000067 (0.00)	0.0003 (0.0001)**	-0.001 (0.00)	-0.0004 (0.0005)	0.005 (0.001)***	-0.001 0.006**	0.0002 (0.0001)*	0.002 (0.001)**	0.0002 (0.0001)**	0.0003 (0.0002)**	0.001 (0.001)
OP	-0.000119 (0.00004)**	-0.0004 (0.0001)**	-0.0002 (0.0001)*	-0.00008 (0.0004)	-0.0001 (0.0005)	0.0003 (0.0004)	-0.0001 (0.0001)*	-0.001 (0.001)**	-0.00001 (0.0001)	0.001 (0.0001)***	-0.0003 (0.0005)
POL	-0.000061 (0.0003)	-0.001 (0.001)	0.002 (0.001)	0.005 (0.003)*	-0.015 (0.006)**	0.002 (0.004)	0.0002 (0.0004)	-0.005 (0.004)	0.001 (0.0003)*	-0.0001 (0.001)	-0.002 (0.004)
Error-correction	-2.294 (0.257)***	-1.665 (0.122)***	-1.670 (0.092)***	-0.821 (0.089)***	-1.576 (0.146)***	-1.315 (0.094)***	-1.233 (0.124)***	-1.075 (0.111)***	-2.149 (0.219)***	-1.307 (0.094)***	-0.987 (0.119)***

Note: The asterisks ***, ** and * denote the significance at 1%, 5% and 10 % levels, respectively. [c] The j in the function is from represents FDI from each country. Standard errors of ARDL estimates are reported in parentheses. For the result from EViews see Appendix 3.

5.8. EMPIRICAL RESULTS

The results from Table 5-3 show the Bounds testing to cointegration panel III, and panel II Diagnostic tests, and Table 5-4 shows the result of panel III ARDL long run estimates. With this result we will address the summary followed by the equation order from equations 2 to 12.

5.9. Panel I: Bounds testing to cointegration.

We conduct the maximum lag order for the conditional of ARDL model by using the Akaike Information Criteria (AIC).

5.9.1. Australia

The maximum lag order is 4; optimal lag structure is (4, 0, 2, 2, 0, 3, 1, 0).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDIAU (FDIAU | WAGE GDP TARIFF EX MPD OP POL) was 8.31. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-2.294), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIAU and WAGE at 1% significance, GDP at 5% significance, TARIFF at 5% significance, EX at 5% significance, MPD at 1% significance, OP at 5% significance, and POL at 5% significance. However, from the results of this ARDL equation, there are no long run relationships with WAGE, GDP, TARIFF, EX, MPD, OP, and POL.

5.9.2. China

The maximum lag order is 4; optimal lag structure is (2, 0, 0, 3, 1, 4, 3, 1).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDICH (FDICH | WAGE GDP TARIFF EX MPD OP POL) was 18.87. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed only in order one of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; did not pass this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-1.665), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDICH and WAGE at 10% significance, GDP at 5% significance, MPD at 5% significance, and OP at 5%

significance. However, from the results of this ARDL equation, there are no long run relationships with TARIFF, EX, and POL.

5.9.3. Germany

The maximum lag order is 5; optimal lag structure is (1, 2, 2, 4, 0, 0, 1, 5).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDIGM (FDIGM | WAGE GDP TARIFF EX MPD OP POL) was 15.72. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in order 1 of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; did not pass this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-1.670), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIGM and EX at 5% significance, and OP at 10% significance. However, from the results of this ARDL equation, there are no long run relationships with WAGE, GDP, TARIFF, MPD, and POL.

5.9.4. Hong Kong

The maximum lag order is 4; optimal lag structure is (1, 4, 3, 0, 4, 4, 3, 3).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDIHK (FDIHK | WAGE GDP TARIFF EX MPD OP POL) was 8.08. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-0.821), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIHK and TARIFF at 10% significance, and POL at 10% significance. However, from the results of this ARDL equation, there are no long run relationships with WAGE, GDP, EX, MPD, and OP.

5.9.5. Japan

The maximum lag order is 4; optimal lag structure is (3, 1, 0, 1, 2, 4, 0, 4).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDIJP (FDIJP | WAGE GDP TARIFF EX MPD OP POL) was

11.60. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-1.576), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIJP and WAGE at 1% significance, TARIFF at 1% significance, EX at 1% significance, MPD at 1% significance, and POL at 5% significance. However, from the results of this ARDL equation, there are no long run relationships with GDP, and OP.

5.9.6. Netherlands

The maximum lag order is 3; optimal lag structure is (1, 0, 0, 3, 0, 3, 0, 3).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDINL (FDINL | WAGE GDP TARIFF EX MPD OP POL) was 20.48. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) stable.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-1.315), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDINL and WAGE at 5% significance, TARIFF at 5% significance, EX at 5% significance, MPD at 5% significance. However, from the results of this ARDL equation, there are no long run relationships with GDP, OP, and POL.

5.9.7. South Korea

The maximum lag order is 2; optimal lag structure is (1, 0, 0, 2, 0, 2, 0, 0).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDISKO (FDISKO | WAGE GDP TARIFF EX MPD OP POL) was 10.63. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) stable.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-2.294), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDISKO and TARIFF at 5% significance, MPD at 10% significance, and OP at 10% significance. However, from the results of this ARDL equation, there are no long run relationships with WAGE, GDP, EX, and POL.

5.9.8. Singapore

The maximum lag order is 4; optimal lag structure is (1, 0, 0, 1, 0, 4, 0, 1).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDISP (FDISP | WAGE GDP TARIFF EX MPD OP POL) was 10.12. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; did not pass this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) instability.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-1.075), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDISP and

WAGE at 5% significance, MPD at 5% significance, and OP at 5% significance. However, from the results of this ARDL equation, there are no long run relationships with GDP, TARIFF, EX, and POL.

5.9.9. Switzerland

The maximum lag order is 4; optimal lag structure is (4, 1, 1, 4, 1, 4, 3, 0).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDISW (FDISW | WAGE GDP TARIFF EX MPD OP POL) was 9.10. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) stable.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-2.149), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDISW and MPD at 5% significance, and POL at 10% significance. However, from the results of this ARDL equation, however, there are no long run relationships with WAGE, GDP, TARIFF, EX, and OP.

5.9.10. United Kingdom

The maximum lag order is 4; optimal lag structure is (1, 1, 4, 1, 4, 0, 3, 0).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics of the functional from equation, FDIUK (FDIUK | WAGE GDP TARIFF EX MPD OP POL) was 19.54. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) stable.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-2.294), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIUK and WAGE at 5% significance, GDP at 5% significance, TARIFF at 5% significance, EX at 1% significance, MPD at 5% significance, and OP at 1% significance. However, from the results of this ARDL equation, there are no long run relationships POL.

5.9.11. United States of America

The maximum lag order is 1 optimal lag structure is (1, 0, 0, 0, 0, 0, 0, 0).

The critical value of the bounds test was present with the F-statistics test when each variable was considered as a dependent variable in the ARDL regressions. The value for the F-statistics

of the functional from equation, FDIUSA (FDIUSA | WAGE GDP TARIFF EX MPD OP POL) was 10.26. As the value of the F-statistic exceeds the upper bound critical value (3.9) at the 1% significant level, this implies that the null hypothesis of no cointegration among the variables in the equation is rejected. Therefore, we can conclude that there is evidence of cointegration relationship between the explained variable and the explanatory variable.

Panel II diagnostic tests.

Breusch-Godfrey LM: for testing the equation against serial correlation; passed in both orders of the diagnostic tests.

ARCH: testing the heteroscedasticity of the equation; passed this test in both orders.

Jarque-Bera test: Test the normality of errors testing; did not pass this test.

Test the dynamically stable result from (CUSUM) stable and (CUSUMSQ) stable.

Panel III ARDL long run estimates.

The error-correction coefficient is negative (-0.987), as required, and it is dramatically significant at 1%. We can conclude that there are long run relationships between FDIUSA and WAGE at 5% significance, TARIFF at 5% significance, EX at 10% significance. However, from the results of this ARDL equation, there are no long run relationships GDP, MPD, OP, and POL.

5.10. Summary of results

From the results we have presented in the above section we can conclude that there is evidence to show that all the equations are well fitted from the study model due to all of them can pass the diagnostic tests - Breusch-Godfrey LM which is the test for the equation against serial correlation that is the test that we are concerned with the most.

Moreover, there is also the cointegration relationship between the explained variable and the explanatory variable. In addition, the long run relationship is dramatically significant at 1% every country.

The conclusions regarding the key findings are as follows.

Australia:

The results show both tariff rate and trade openness effect negative significance at 5% level. All the remaining variables are not significant. In addition, at 1% increase in tariff rate FDI from Australia will decrease 0.001%, and at 1% increase trade openness FDI from Australia will decrease 0.0002%.

China:

We found that wage and trade openness effect negative significance with FDI from China at 10% and 5% respectively; at 1% increase in wage will decrease 0.029% of FDI from China and at 1% increase trade openness will decrease 0.0004% of FDI from China. Moreover, there are the positive effects in GDP and MPD at 5% significance level, at 1% increase in GDP will increase 0.0133% of FDI from China and at 1% increase MPD will increase 0.0003% of FDI from China.

Germany:

Exchange rate is positive significance at 5% level, with an increase at 1% increase will lead to a increase at 0.002% of FDI from Germany, while trade openness is negative significance at 10% level, at 1% increase trade openness will decrease 0.0002% of FDI from Germany.

Hong Kong:

Both tariff rate and political instability are positive significance at 10% level. Increasing at 1% in both will effect in FDI from Hong Kong at 0.005%, at the same amount.

Japan:

Wage, tariff rate, exchange rate, political instability are negative significance, while MPD is positive significance. In addition at 1% increase in wage will decrease 0.941% of FDI from

Japan at 1% significance level, 1% increase in tariff will decrease 0.035% of FDI from Japan at 1% significance level, 1% increase in exchange rate will decrease 0.026% of FDI from Japan at 1% significance level, 1% increase in political instability will decrease 0.015% of FDI from Japan at 5% significance level. Moreover, MPD is a positive significance at 1% level; 1% increase in MPD will increase 0.015% of FDI from Japan.

Netherlands:

Wage, tariff rate, and exchange rate are positive significance at 5% level, while exchange is a negative significance at 5% level. In addition 1% increase in wage, tariff rate, and exchange rate will increase FDI from Netherlands 0.265%, 0.011% and 0.007% respectively. However, MPD is a negative significance at 5% level, at 1% increase in MPD will decrease 0.001% FDI from Netherland.

South Korea:

Tariff rate and trade openness are negative significance at 5% and 1% respectively, while MPD is a positive significance at 10% level. Increasing in tariff rate at 1% will decrease 0.001% FDI from South Korea, and at 1% increase in trade openness will decrease 0.0001% FDI from South Korea. At 1% increase in MPD will increase 0.0002% FDI from South Korea.

Singapore:

Wage and trade openness are negative significance at 5%. Increasing in wage and trade openness at 1% will decrease 0.257% and 0.001%, respectively FDI from Singapore, while MPD is a positive significance at 10% level. Increasing in MPD at 1% will decrease 0.002% FDI from Singapore.

Switzerland:

MPD rate is political instability positive significance at 5% and 10% respectively. Increasing in MPD and political instability at 1% will increase 0.0002% and 0.001% FDI from Switzerland, respectively.

United Kingdom:

Wage is negative significance at 5%, increasing in wage 1% will decrease 0.058% of FDI from UK. GDP is negative significance at 5%, increasing in GDP 1% will decrease 0.3% of FDI from UK. Tariff is negative significance at 5%, increasing in tariff 1% will decrease 0.02% of FDI from UK. Exchange rate is negative significance at 5%, increasing in exchange rate 1% will decrease 0.003% of FDI from UK. MPD is negative significance at 5%; increasing in MPD 1% will decrease 0.0003% of FDI from UK. Trade openness is positive significance at 5%; increasing in OP 1% will increase 0.001% of FDI from UK.

United States of America:

Wage is negative significance at 5%; increasing in wage 1% will decrease 0.16% of FDI from USA. Tariff is negative significance at 5%, increasing in Tariff 1% will decrease 0.006% of FDI from USA. Exchange rate is negative significance at 10%, increasing in exchange rate 1% will decrease 0.006% of FDI from USA.

These results are set out in Table 5-5 shown below.

Table 5-5: The summary result from ARDL long run estimates

Variable	FDIAU	FDICH	FDIGM	FDIHK	FDIJP	FDINL	FDISKO	FDISP	FDISW	FDIUK	FDIUSA
WAGE	NS	-0.029*	NS	NS	-0.941***	0.265**	NS	-0.257**	NS	-0.058**	-0.160**
GDP	NS	0.0133**	NS	NS	NS	NS	NS	NS	NS	-0.300**	NS
TARIFF	-0.001**	NS	NS	0.005*	-0.035***	0.011**	-0.001**	NS	NS	-0.002**	-0.006**
EX	NS	NS	0.002**	NS	-0.026***	0.007**	NS	NS	NS	-0.003***	-0.004*
MPD	NS	0.0003**	NS	NS	0.005***	-0.001**	0.0002*	0.002**	0.0002**	-0.0003**	NS
OP	-0.00012**	-0.0004**	-0.0002*	NS	NS	NS	-0.0001*	-0.001**	NS	0.001***	NS
POL	NS	NS	NS	0.005*	-0.015**	NS	NS	NS	0.001*	NS	NS

*Note: The asterisks ***, ** and * denote the significance at 1%, 5% and 10 % levels, respectively. NS = Not significant.*

In summary, we can observe from this result that:

All these variables affect the UK investor who is planning investment in Thailand the most. As can be observed 6 variables of the 7 have impact on the UK investor. Tariff rate and MPD are the most important effects that are concerned with investor investment in Thailand with 7 countries significance.

These are followed by wage and trade openness as the effects that are concerned with investor investment in Thailand with 6 countries significance.

Exchange rate comes next with effect that is concerned with investor investment in Thailand with 5 countries significance.

Political instability comes next with 4 countries significance.

Finally the GDP is the last important effect that is concerned with investor investment in Thailand with only 2 countries significance.

5.11. The empirical finding

The summary in Table 5-6 shows the results from this study and can enable us to explore our second research question based on our hypothesis which was addressed in Chapter 1, namely:

> *Do the market opportunity, cost, production efficiency seekers, and political instability, affect the investors' decisions in investing in Thailand?*

The summary results which have been presented in the previous section from this study lead to the answer from our first research question which is:

> *2. Do the determinants of foreign direct investment differ across other countries?*

Therefore, in this research question we can definitely conclude that the determinants of foreign direct investment differ across other countries and differ across

all the countries, as we conclude again in the summary of the long run relationship as provided in Table 5-6 below.

Table 5-6: Summary results from the ARDL long run estimator

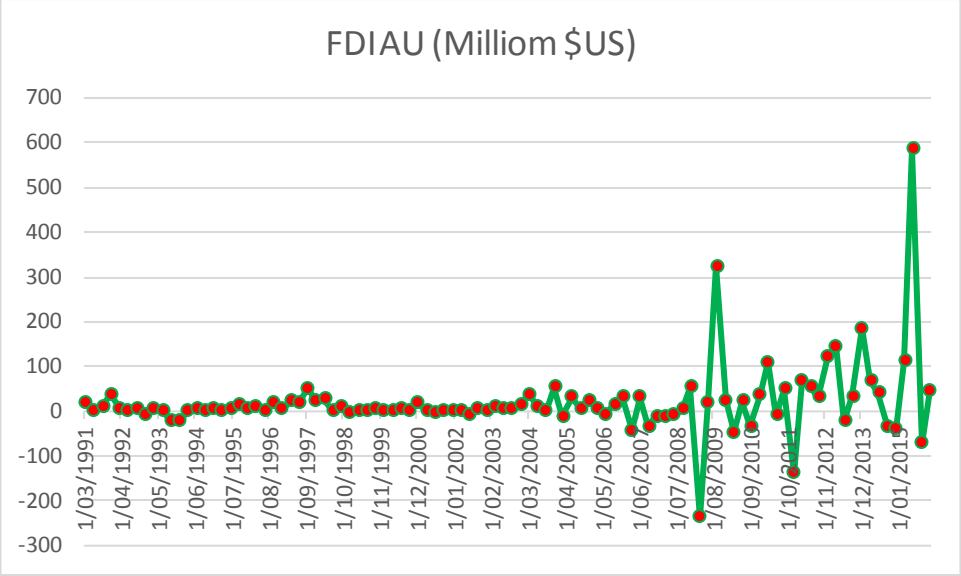
Effect	Variable	Expected Sign	Number of the country significance
Trade openness	OP	+	6
Market opportunity	GDP	+	2
Cost	TARIFF	-	7
	WAGE	-	6
	EX	+/-	5
Production efficiency seekers	MPD	+	7
Political instability	POL	-	3

The conclusions regarding the key findings are as follows.

5.11.1. Australia

In terms of Australia, the original country of interest of this study, firstly, these results show that only tariff rate and trade openness effect in investor from Australia decision to investment/invest in Thailand. And the amount of Australian FDI to Thailand only becomes greater in the last five years of the period of the study, as Figure 5-2 shows for FDI from Australia to Thailand from 1991 to 2015.

Figure 5-2: FDI from Australia to Thailand from 1991 to 2015



Surprisingly, the results show that the factor that effects Japan investment into Thailand is similar to the overall findings of the study of Thailand. From this result we can confirm that our first result from part one is reliable due to Japan being not only in the top ten counties, but Japan is also the number one country for investment in Thailand, as per that which is presented in Figure 5-1. An entrepreneur can develop this result to develop investor investment in Thailand. We will discuss the implications more fully in the next chapter.

5.12. Conclusion

This chapter applied the Autoregressive Distributed Lag models (ARDL) to analyze the long-run relationship among the factors and the bounds testing (ARDL) approach to investigate the cointegration among them. Focusing on the main purpose, which is determining factors influencing FDI in Thailand, the factors that had been used with Thailand were then applied to other countries of study including Australia, Japan, Singapore, United States of America, Hong Kong, United Kingdom, Germany, Switzerland, Netherlands, China, and South Korea.

Surprisingly, in part one of the study of FDI in Thailand we did not find the market opportunity to be significant.

In terms of the study of the top ten countries we might conclude that tariff and trade openness are the most important factors in this study because they are significant with 8 countries, which is most countries. However, GDP seems to be the less important because it effects in only 2 countries.

We also found Japan, which is the number one country for investment in Thailand, has a significance the same as the main study including all FDI into Thailand. Therefore we could confirm our result of very strong significance. We will discuss the implications and conclusions in the next chapter.

6. Conclusions and Implications

6.1. Introduction

This chapter will address the summary and empirical findings of this study. It begins with the summary of the empirical findings of the study.

Then, we will provide the policy implications of the findings in this study. Then follows the contribution to the literature review.

Additionally, we present the limitations of the study, and conclude with some suggestions for future study.

This study uses the Autoregressive Distributed Lag model (ARDL) to analyse the factors that determine the flow of foreign direct investment (FDI) into Thailand from the period 1991 to 2015 in quarterly data which are concerned with two parts, including the factors that affect FDI in Thailand and then developing to the second part which is to study the top ten powerful countries.

Chapter 1 provided the introduction and the research motivation, followed by the research questions and the structure of this study.

Both Chapter 2 and 3 provided a literature review, in Chapter 2 a literature review of the FDI theory, and a literature review relating to Thailand, as well as some contextual insights, was presented in Chapter 3.

Chapter 4 presented the development of the literature review to our data and gave the methodology applied in the study, that is using the Autoregressive Distributed Lag model (ARDL).We then presented in Chapter 5 the empirical results for both parts of our study, the factors effecting FDI in Thailand, and, in the second part, a study the top ten powerful countries. The conclusions and implications are now presented in this section, chapter 6.

6.2. Summary and empirical findings

In the last two and half decades which are the focus of this study, from 1991 to 2015, we can conclude that Thailand has had a sustained, continuously significant increasing in foreign direct investment. In addition, the report from the OECD that we have addressed in Chapter 1, also presented that Thailand shared the number two ranking of the foreign direct investment flow into Southeast Asia during 2006 to 2011 with 11.3%. Moreover, Thailand also has sustained a dramatic increase in economic growth as shown in the data from World Development Indicators Database presenting GDP per capita of Thailand from 1960 to 2014, as indicated in Chapter 1 of the study. The GDP per capita in Thailand jumped to a high from US$101 in 1960 to US$5977 in 2014, nearly 60 times in 4 decades. Although this in itself is not sufficient evidence to claim that this GDP growth is due to FDI in Thailand, all the same we might conclude that FDI may have been an important factor contributing to Thai economic growth. Therefore, the knowledge of determinacies of foreign investment in Thailand is the key to success to implement attracting investors making the decision to invest in Thailand.

Addressing this issue leads to the purpose of this study which is to investigate the determinants of FDI in Thailand in the last two and half decades from 1991 to 2015, to find out what are the factors that affect the investment decision to invest in Thailand. Then we develop this result to investigate with the most top ten powerful countries, including Australia.

From the literature review, there are many FDI theories to address the determinants of FDI that we had mentioned in Chapters 2 and 3. Then this leads to our conclusion to develop the data to study this aspect with both the literature review and the data provided. The conception is to set out the effect of the determinance of FDI in Thailand, and this aspect we then have to develop to four main effects which are market opportunity, cost, production efficiency seekers, and political instability. To address these four effects we present the GDP and trade openness to explain the market opportunity. In addition, we provide the average wage rate, TARIFF rate, and exchange rate to explain the cost effect. Moreover, we give the manufacturing production index to explain the production efficiency seekers. Finally the effect of political instability was addressed.

6.3. The Empirical Findings

From the results that we found in terms of the "*the factors that affect the decisions of investors to undertake foreign investment in Thailand"* we can definitely conclude that cost, production efficiency seekers, and political instability are the factors that affect the decision of investors to undertake foreign investment in Thailand. In contrast, market opportunity is not one of the factors that affect the decisions of investors to undertake foreign investment in Thailand.

The conclusions regarding the key findings are as follows.

Surprisingly, during the period of study, the last two and a half decades (from 1991 to 2015), and the Thailand GDP and trade openness did not attract investors to undertake foreign investment in Thailand. As a result both GDP and trade openness are not significant.

GDP: The result from this factor was unlike those obtained by previous scholars in regard to Thailand, which found the significance of GDP (Tosompark & Daly, 2010).

It could be conjectured that this result might be because in the period of this study the top three countries which invested in Thailand most were Japan, Singapore, and the USA. Further, there has been a lot of investment in Thailand and this might possibly lead to them to not being able to increase the number of consumers in Thailand. In addition, they might be looking for new markets.

For trade openness, however, this result is similar to the previous study relating to Thailand, Pupphavesa et.al., who also found trade openness is not significant (1994). Opposed to this, Tosompark et al. found trade has a significant effect on FDI in Thailand (2010). In terms of this result it might be the effect from the increase in Thailand making free trade agreements with other countries. Therefore, instead of coming to invest in Thailand the investor might be concerned with importing and exporting.

Costs

We can address whether the cost of production is an important factor that encourages the investor to invest in Thailand. As a result, all factors that affect cost of production are significant.

Wages: This result is similar to the previous studies related to Thailand which also found the positive significance of low wage rate effecting to FDI in Thailand (Ramstetter, 1997; Tambunlertchai & Ramstetter, 1991).

Tariff rate: This is the one factor that investors are concerned with regarding investment in Thailand. Gastanaga et. al (1998) studied the relation to Thailand, and found the negative significance of tariff rate with FDI in Thailand.

Exchange rate: The exchange rate is one of the factors that are included in many research studies concerned with FDI showing both a positive (Cushman, 1985), (Goldberg et al., 1997), and a negative (Görg & Wakelin, 2002), (Chakrabarti & Scholnick, 2002) significance on FDI in Thailand.

Production efficiency seekers

Manufacturing production index: In terms of the production efficiency with representing with manufacturing production index, we found that it has a dramatically positive effect for the investor investment in Thailand. This is similar to Ismail and Yussof (2003) who also found the positive effect of production efficiency on increasing in FDI.

Political instability

Political instability: Political instability is also a very important factor that affects FDI in Thailand with the negative result similar to results of the previous scholarship relating in Thailand. Khanthachai (1987) and Chadprapalert (2000b) also found the effect of political instability on FDI in Thailand.

The conclusion regarding the key findings is, the cost of production, production efficiency seekers, and political instability, yield the result we found similar to expectation: all of them have an effect regarding FDI investment in Thailand. In contrast, the result for GDP and trade openness were not as we assumed and expected. However, some previous scholarship relating to Thailand also found a result similar to the result we found as mentioned above.
Therefore, from these results we will develop this finding for the top ten main countries, including Australia.

The result from investigation found the different effect in each country as mentioned in chapter 5.

We can observe from the results that, firstly, all the factors that we studied effect the UK the greatest. As a result there are 6 factors, which are: average monthly wage rate, tariff rate, exchange rate, manufacturing production index, GDP, and trade openness that effect in FDI for UK investment into Thailand. Only political instability does not impact on UK investors when making the decision to invest in Thailand.

Second, the factors that affect most the decision of the investor to invest into Thailand are tariff rate, and manufacturing production index; both are the factors which affect 7 countries from all 11 study countries. These are followed by the average monthly wage rate that affects 6 countries from all 11 study countries. Finally, the exchange rate and trade openness are two factors which affect 5 countries from all 11 study countries.

Third, going by the number of countries impacted, the least significant factor that affects the decision of the investor investment into Thailand is the last one, GDP, that affects only 2 countries from all 11 study countries, and the second last is political instability that affects 4 countries from all 11 study countries.

From the results of the study of the countries in this study, including Australia, we can conclude that the two main factors that affect the investor investment in Thailand the most are cost of production and production efficiency. Therefore, Thailand should develop these aspects to secure increased FDI flow into Thailand.

In terms of Australia, the country of interest in the study, only the tariff rate and trade openness effect in Australian investor decision making investment in Thailand and the amount of FDI into Thailand has increased in the last 7 years from 2009 to 2015 of the period of this study, as can be seen from the Figure 5-2 presented in chapter 5. This result might be because with Thailand, the Thailand-Australia Free Trade Agreement (TAFTA) validated on the first of January, 2005, determines economic relations between Thailand and Australia not only for their free trade, merchandise, services and investment, but as well for their co-operation in solving some obstacles to trade without tax, such as the strong measures of Australian health, the measures of resort against market dumping and those of any branches to offer commercial convenience, commerce, electronics, intellectual property, state purchase and employment and competition policy, etc. So it is said that this agreement causes Thailand and Australia to enlarge their trade in both merchandise and services, to increase investment together, and especially to strengthen their relations. Therefore, tariff rate and trade openness are the least factors that

effect in Australian investor decision making investment in Thailand.

Moreover, the study shows the same result for the first part of the study with a focus on FDI in Thailand, and for the second part concerning the powerful countries, that Japan has the similar result of effect as Thailand, due to Japan being not only in the top ten countries but also being the number one country that invests in Thailand the most for the period of study. This result shows the significant relationship between the variables that we studied and the effect to the decision. From this we can develop our result to the policy implications and contribution to the literature review. The summary from this result is shown in Table 6-1 below.

Table 6-1: The summary result from ARDL long run estimates

Variable	FDIAU	FDICH	FDIGM	FDIHK	FDIJP	FDINL	FDISKO	FDISP	FDISW	FDIUK	FDIUSA
WAGE	NS	-0.029*	NS	NS	-0.941***	0.265**	NS	-0.257**	NS	-0.058**	-0.160**
GDP	NS	0.0133**	NS	NS	NS	NS	NS	NS	NS	-0.300**	NS
TARIFF	-0.001**	NS	NS	0.005*	-0.035***	0.011**	-0.001**	NS	NS	-0.002**	-0.006**
EX	NS	NS	0.002**	NS	-0.026***	0.007**	NS	NS	NS	-0.003***	-0.004*
MPD	NS	0.0003**	NS	NS	0.005***	-0.001**	0.0002*	0.002**	0.0002**	-0.0003**	NS
OP	-0.00012**	-0.0004**	-0.0002*	NS	NS	NS	-0.0001*	-0.001**	NS	0.001***	NS
POL	NS	NS	NS	0.005*	-0.015**	NS	NS	NS	0.001*	NS	NS

*Note: The asterisks ***, ** and * denote the significance at 1%, 5% and 10 % levels, respectively. NS = Not significant.*

6.4. Policy implications of the study findings

The results from the study may have policy implications for the Thai government in terms of attracting the investor to investment in Thailand. This study found that GDP and trade openness as affecting the market opportunity are not the factors that affect the decision concerning investor investment in Thailand. As a result this might lead to an increase in the number of countries which Thailand makes free trade agreements with. The investors might think that they gain more advantages by importing and exporting instead of making direct investment.

In addition, given the huge growth in GDP per capita that has been noted, investors might be concerned that they cannot gain more consumers from Thailand because it might have already come to the maturity point of consumers. For example, Japan is the largest investor in Thailand and has had the biggest share of the automobile industry in Thailand for many decades. However, in the last few years, Thailand has been buying cars from European countries for the high income group, and buying cars from the new market with its neighbours such as Korea and Indonesia in the case of the lower price for the lower income group. This might lead to the result that Japan looks forward to finding new markets such as Laos and Vietnam.

Moreover, with reference to the political situation, Thailand has always faced the problem of instability in politics due to there being many coups d'état during the period of study. This may have affected the investor decision concerning investment in Thailand.

To improve the amount of investment in Thailand, given that the FDI is the most important factor to develop the economy of Thailand, the government should be concerned about the policy implications regarding the level of investment in Thailand, since Thailand is a developing country and still needs more money for investment and for infrastructure in Thailand. As there are many megaprojects from government that need the money to finance them, and the main revenue of the government comes from the taxation, therefore if the government can address this problem it might lead to the increasing in the amount of FDI in Thailand.

To deal with these problems the government might decide on the tariff rate to promote the investor to investment in Thailand. In addition it could have more incentives to attract the investors such as reducing the cost of establishing the business, or have the first year of new investment in Thailand tax free. Moreover, concerning the sustainability in the political instability in Thailand, this might improve the market opportunity of Thailand.

6.5. Contribution to the literature

The previous studies on FDI in Thailand focusing on the factors of FDI, such as Pupphavesa and Grewe (1994), were concerned with using Granger causality tests to examine the causality between the Thai exports. In addition, Tosompark and Daly studied the determinants of FDI inflows from Thailand and they reported that Thailand's exports had a positive impact on the FDI inflow. However, to investigate more factors such this study does, which are Market opportunity, Cost, Production efficiency seekers, and Political instability, and which are ignored, leads to the purpose of this study which is to investigate the determinants of FDI in Thailand, in order to understand the origin of the factors that concern an increasing in the amount of FDI flow into Thailand.

Moreover, there are research studies which focus on the sector of FDI in Thailand but not one focuses on the powerful countries. This study is designed to address this issue.

In addition, in the models used in the studies to investigate the relationship between the determinants of FDI in Thailand none applied the Autoregressive Distributed Lag (ARDL) models as was done with this study.

This study examines the many factors that effect in FDI in Thailand and examines the powerful countries and Australia. This may be helpful with understanding and explaining of a transaction link between countries.

The results of this study show the Cost of investment, the Production efficiency seekers, and Political instability to be the factors that promote FDI in Thailand.

However, the Market opportunity does not. We provide the implications of this study, that it might yield an explanation to increase the level of FDI in Thailand.

6.6. Limitations of the study

In this study our main problem related to access to the data, due to the continuality and the range of the data. For example, regarding the infrastructure that is concerned with the number of the density in road, rail, motorway, these data are provided only in the present year.

6.7. Suggestions for future study

In this study our purpose is to investigate the determinants of FDI in Thailand, and focus on the powerful countries that invest in Thailand.

This study is not concerned with which sectors affect the powerful countries; therefore, to examine the sectors more deeply will lead to greater understanding of how to promote an increase in FDI. Therefore, future study should focus on the detail in the sectors of FDI in Thailand. This may be useful to improve the policy to promote specific sectors of the economy and to improve to the level of FDI in Thailand.

Moreover, this study was not concerned with the New Economic Geography (NEG) of FDI in Thailand. Deeply investigating the detail in the New Economic Geography of FDI in Thailand will help to understand more those areas that are the most attractive to the investor decision making in investing in Thailand. This might help the policy to promote the regions regarding the amount of FDI in that area.

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Appendix 1

Appendix 1.1 Thailand

Dependent Variable: LNFDITH
Method: ARDL
Date: 06/19/16 Time: 01:44
Sample (adjusted): 1991Q4 2015Q4
Included observations: 97 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL
Fixed regressors: C
Number of models evaluated: 312500
Selected Model: ARDL(2, 0, 0, 1, 0, 3, 0, 3)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDITH(-1)	0.282075	0.127257	2.216579	0.0295
LNFDITH(-2)	-0.418161	0.091280	-4.581092	0.0000
LNWAGE	-1.564060	0.326611	-4.788759	0.0000
LNGDP	0.092489	0.118669	0.779389	0.4380
TARIFF	-0.008413	0.023847	-0.352803	0.7252
TARIFF(-1)	-0.039452	0.025046	-1.575173	0.1192
EX	-0.038931	0.009760	-3.989037	0.0001
MPD	0.016764	0.002719	6.165184	0.0000
MPD(-1)	-0.022426	0.003702	-6.057245	0.0000
MPD(-2)	0.022309	0.003774	5.910565	0.0000
MPD(-3)	-0.005555	0.002850	-1.949257	0.0548
OP	-0.001758	0.001407	-1.249312	0.2152
POL	0.020750	0.016222	1.279062	0.2046
POL(-1)	-0.084176	0.022017	-3.823122	0.0003
POL(-2)	0.049538	0.023603	2.098778	0.0390
POL(-3)	-0.026680	0.018414	-1.448845	0.1513
C	15.09539	2.356196	6.406679	0.0000

R-squared	0.683700	Mean dependent var	4.727962
Adjusted R-squared	0.620440	S.D. dependent var	0.171185
S.E. of regression	0.105464	Akaike info criterion	-1.503055
Sum squared resid	0.889819	Schwarz criterion	-1.051817
Log likelihood	89.89818	Hannan-Quinn criter.	-1.320597

F-statistic	10.80780	Durbin-Watson stat	2.121411
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDITH

Selected Model: ARDL(2, 0, 0, 1, 0, 3, 0, 3)

Date: 06/19/16 Time: 01:45

Sample: 1991Q1 2015Q4

Included observations: 97

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDITH(-1))	0.421795	0.084125	5.013901	0.0000
D(LNWAGE)	-1.204100	0.433245	-2.779256	0.0068
D(LNGDP)	0.059922	0.301325	0.198860	0.8429
D(TARIFF)	-0.003325	0.020267	-0.164074	0.8701
D(EX)	-0.030271	0.011397	-2.656072	0.0095
D(MPD)	0.016388	0.003293	4.976590	0.0000
D(MPD(-1))	-0.017216	0.003047	-5.650757	0.0000
D(MPD(-2))	0.005379	0.002475	2.173640	0.0327
D(OP)	-0.001648	0.001942	-0.848708	0.3986
D(POL)	0.018703	0.014893	1.255837	0.2128
D(POL(-1))	-0.020786	0.015746	-1.320123	0.1906
D(POL(-2))	0.027197	0.016174	1.681462	0.0966
CointEq(-1)	-1.183517	0.128862	-9.184386	0.0000

Cointeq = LNFDITH - (-1.3767*LNWAGE + 0.0814*LNGDP -0.0421*TARIFF -0.0343*EX + 0.0098*MPD -0.0015*OP -0.0357*POL + 13.2872)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-1.376708	0.300386	-4.583130	0.0000
LNGDP	0.081410	0.104561	0.778589	0.4385
TARIFF	-0.042132	0.010545	-3.995404	0.0001
EX	-0.034268	0.008943	-3.831931	0.0003
MPD	0.009763	0.002093	4.665571	0.0000
OP	-0.001547	0.001238	-1.250004	0.2149
POL	-0.035708	0.013186	-2.708016	0.0083
C	13.287176	1.987970	6.683792	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 01:45

Sample: 1991Q4 2015Q4

Included observations: 97

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	7.850882	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDITH)

Method: Least Squares

Date: 06/19/16 Time: 01:45

Sample: 1991Q4 2015Q4

Included observations: 97

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDITH(-1))	0.411472	0.095496	4.308796	0.0000
D(TARIFF)	-0.006247	0.024935	-0.250554	0.8028
D(MPD)	0.014699	0.002773	5.300833	0.0000
D(MPD(-1))	-0.015526	0.003410	-4.552633	0.0000
D(MPD(-2))	0.007166	0.002917	2.456770	0.0162
D(POL)	0.010591	0.017230	0.614682	0.5405
D(POL(-1))	-0.027231	0.019395	-1.403995	0.1642
D(POL(-2))	0.029232	0.019616	1.490186	0.1401
C	13.35299	2.461441	5.424867	0.0000
LNWAGE(-1)	-1.263138	0.335610	-3.763707	0.0003
LNGDP(-1)	0.063775	0.116063	0.549486	0.5842
TARIFF(-1)	-0.039331	0.011566	-3.400699	0.0011
EX(-1)	-0.029365	0.010001	-2.936199	0.0043
MPD(-1)	0.009335	0.002488	3.751399	0.0003
OP(-1)	-0.001704	0.001498	-1.137388	0.2588
POL(-1)	-0.040834	0.015275	-2.673343	0.0091
LNFDITH(-1)	-1.144832	0.148571	-7.705609	0.0000

R-squared	0.812884	Mean dependent var	-0.000462
Adjusted R-squared	0.775460	S.D. dependent var	0.233626
S.E. of regression	0.110705	Akaike info criterion	-1.406061
Sum squared resid	0.980451	Schwarz criterion	-0.954823
Log likelihood	85.19397	Hannan-Quinn criter.	-1.223603
F-statistic	21.72134	Durbin-Watson stat	1.969712
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.223376	Prob. F(2,78)	0.2998
Obs*R-squared	2.950212	Prob. Chi-Square(2)	0.2288

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 01:46

Sample: 1991Q4 2015Q4

Included observations: 97

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDITH(-1)	0.162724	0.182061	0.893784	0.3742
LNFDITH(-2)	0.055090	0.121070	0.455025	0.6504
LNWAGE	0.258736	0.365307	0.708270	0.4809
LNGDP	0.052022	0.122980	0.423008	0.6735
TARIFF	0.001582	0.023810	0.066452	0.9472
TARIFF(-1)	0.007456	0.025435	0.293146	0.7702
EX	0.007690	0.010906	0.705141	0.4828
MPD	-0.001672	0.002915	-0.573612	0.5679
MPD(-1)	-0.002596	0.004123	-0.629572	0.5308
MPD(-2)	0.001902	0.004486	0.424018	0.6727
MPD(-3)	-0.000601	0.003190	-0.188457	0.8510
OP	0.000134	0.001408	0.095053	0.9245
POL	-0.002530	0.016457	-0.153743	0.8782
POL(-1)	-0.001881	0.022112	-0.085077	0.9324
POL(-2)	0.013761	0.025832	0.532719	0.5957
POL(-3)	-0.002833	0.019635	-0.144269	0.8857
C	-3.335657	3.173513	-1.051093	0.2965
RESID(-1)	-0.259464	0.203309	-1.276205	0.2057
RESID(-2)	-0.226550	0.185180	-1.223406	0.2249

R-squared	0.030415	Mean dependent var	1.34E-15
Adjusted R-squared	-0.193336	S.D. dependent var	0.096275
S.E. of regression	0.105171	Akaike info criterion	-1.492705
Sum squared resid	0.862756	Schwarz criterion	-0.988380
Log likelihood	91.39619	Hannan-Quinn criter.	-1.288781
F-statistic	0.135931	Durbin-Watson stat	1.990986
Prob(F-statistic)	0.999989		

Heteroskedasticity Test: ARCH

F-statistic	0.007585	Prob. F(1,94)	0.9308
Obs*R-squared	0.007746	Prob. Chi-Square(1)	0.9299

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 01:46

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.009176	0.002460	3.730168	0.0003
RESID^2(-1)	0.008982	0.103131	0.087095	0.9308

R-squared	0.000081	Mean dependent var	0.009259
Adjusted R-squared	-0.010557	S.D. dependent var	0.022097
S.E. of regression	0.022213	Akaike info criterion	-4.755637
Sum squared resid	0.046383	Schwarz criterion	-4.702213
Log likelihood	230.2706	Hannan-Quinn criter.	-4.734042
F-statistic	0.007585	Durbin-Watson stat	2.002650
Prob(F-statistic)	0.930782		

Appendix 1.2 Australia

Dependent Variable: LNFDIAU

Method: ARDL

Date: 06/19/16 Time: 01:50

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(4, 0, 2, 2, 0, 3, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIAU(-1)	-0.267813	0.097272	-2.753237	0.0074
LNFDIAU(-2)	-0.461820	0.097562	-4.733625	0.0000
LNFDIAU(-3)	-0.229526	0.128842	-1.781452	0.0788
LNFDIAU(-4)	-0.326075	0.127360	-2.560268	0.0124
LNWAGE	-0.007139	0.016017	-0.445726	0.6571
LNGDP	0.009747	0.018776	0.519109	0.6052
LNGDP(-1)	-0.029161	0.024897	-1.171256	0.2452
LNGDP(-2)	0.026065	0.014458	1.802777	0.0754
TARIFF	-0.003755	0.001152	-3.260250	0.0017
TARIFF(-1)	0.007241	0.001600	4.524850	0.0000
TARIFF(-2)	-0.005164	0.001060	-4.873066	0.0000
EX	0.000294	0.000508	0.578994	0.5643
MPD	0.000141	0.000202	0.696730	0.4881
MPD(-1)	0.000848	0.000244	3.479754	0.0008
MPD(-2)	-0.001058	0.000200	-5.284360	0.0000
MPD(-3)	0.000221	0.000164	1.352800	0.1801
OP	0.000212	0.000118	1.786115	0.0781
OP(-1)	-0.000461	0.000131	-3.527245	0.0007
POL	-0.000140	0.000659	-0.212570	0.8322
C	10.55025	1.361932	7.746536	0.0000

R-squared	0.590560	Mean dependent var	4.607095
Adjusted R-squared	0.488200	S.D. dependent var	0.008054
S.E. of regression	0.005762	Akaike info criterion	-7.291952
Sum squared resid	0.002523	Schwarz criterion	-6.757713
Log likelihood	370.0137	Hannan-Quinn criter.	-7.076004
F-statistic	5.769434	Durbin-Watson stat	2.005165
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form
Dependent Variable: LNFDIAU
Selected Model: ARDL(4, 0, 2, 2, 0, 3, 1, 0)
Date: 06/19/16 Time: 01:51
Sample: 1991Q1 2015Q4
Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDIAU(-1))	1.023052	0.212832	4.806851	0.0000
D(LNFDIAU(-2))	0.566019	0.166436	3.400810	0.0011
D(LNFDIAU(-3))	0.327033	0.114538	2.855227	0.0055
D(LNWAGE)	-0.002183	0.023613	-0.092458	0.9266
D(LNGDP)	0.004051	0.017096	0.236979	0.8133
D(LNGDP(-1))	-0.027154	0.012557	-2.162507	0.0337
D(TARIFF)	-0.003734	0.000966	-3.863563	0.0002
D(TARIFF(-1))	0.005216	0.000991	5.261194	0.0000
D(EX)	0.000229	0.000628	0.364569	0.7164
D(MPD)	0.000168	0.000175	0.961978	0.3391
D(MPD(-1))	0.000842	0.000165	5.102722	0.0000
D(MPD(-2))	-0.000219	0.000140	-1.570379	0.1205
D(OP)	0.000196	0.000106	1.848544	0.0684
D(POL)	-0.000126	0.000815	-0.154532	0.8776
CointEq(-1)	-2.293524	0.256876	-8.928530	0.0000

Cointeq = LNFDIAU - (-0.0031*LNWAGE + 0.0029*LNGDP -0.0007*TARIFF + 0.0001*EX + 0.0001*MPD -0.0001*OP -0.0001*POL + 4.6167)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.003124	0.007024	-0.444746	0.6578
LNGDP	0.002910	0.003019	0.963862	0.3382
TARIFF	-0.000734	0.000239	-3.071400	0.0030
EX	0.000129	0.000221	0.581670	0.5625
MPD	0.000066	0.000060	1.097007	0.2761
OP	-0.000109	0.000042	-2.579603	0.0118
POL	-0.000061	0.000287	-0.213716	0.8313
C	4.616705	0.048601	94.992606	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 01:51

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	8.305047	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIAU)

Method: Least Squares

Date: 06/19/16 Time: 01:51

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDIAU(-1))	1.010897	0.249021	4.059490	0.0001
D(LNFDIAU(-2))	0.566174	0.199812	2.833534	0.0059
D(LNFDIAU(-3))	0.324783	0.128368	2.530097	0.0135
D(LNGDP)	-0.005463	0.017529	-0.311671	0.7561
D(LNGDP(-1))	-0.028267	0.014355	-1.969166	0.0526
D(TARIFF)	-0.003616	0.001145	-3.158260	0.0023
D(TARIFF(-1))	0.005294	0.001064	4.974334	0.0000
D(MPD)	0.000226	0.000199	1.133111	0.2607
D(MPD(-1))	0.000849	0.000189	4.485181	0.0000
D(MPD(-2))	-0.000224	0.000161	-1.394877	0.1671
D(OP)	0.000178	0.000118	1.499705	0.1378
C	10.52501	1.380460	7.624279	0.0000
LNWAGE(-1)	-0.006478	0.017071	-0.379455	0.7054
LNGDP(-1)	0.005500	0.006788	0.810307	0.4203
TARIFF(-1)	-0.001664	0.000620	-2.685496	0.0089
EX(-1)	0.000229	0.000508	0.450200	0.6538

MPD(-1)	0.000147	0.000136	1.085449	0.2812
OP(-1)	-0.000225	8.99E-05	-2.502637	0.0145
POL(-1)	-3.83E-05	0.000668	-0.057265	0.9545
LNFDIAU(-1)	-2.277994	0.294757	-7.728387	0.0000

R-squared	0.793645	Mean dependent var	6.94E-06
Adjusted R-squared	0.742057	S.D. dependent var	0.011357
S.E. of regression	0.005768	Akaike info criterion	-7.289881
Sum squared resid	0.002529	Schwarz criterion	-6.755642
Log likelihood	369.9143	Hannan-Quinn criter.	-7.073933
F-statistic	15.38410	Durbin-Watson stat	2.012041
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.128928	Prob. F(2,74)	0.8792
Obs*R-squared	0.333353	Prob. Chi-Square(2)	0.8465

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 01:52

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIAU(-1)	0.049502	0.169603	0.291867	0.7712
LNFDIAU(-2)	-0.036937	0.139088	-0.265566	0.7913
LNFDIAU(-3)	0.007303	0.131922	0.055360	0.9560
LNFDIAU(-4)	-0.003955	0.130879	-0.030220	0.9760
LNWAGE	-0.000691	0.016355	-0.042270	0.9664
LNGDP	-0.000882	0.019113	-0.046154	0.9633
LNGDP(-1)	0.001459	0.025511	0.057189	0.9545
LNGDP(-2)	-0.000813	0.015090	-0.053871	0.9572
TARIFF	0.000122	0.001190	0.102886	0.9183
TARIFF(-1)	-0.000156	0.001649	-0.094691	0.9248
TARIFF(-2)	1.85E-05	0.001074	0.017276	0.9863
EX	-3.37E-05	0.000521	-0.064669	0.9486
MPD	-8.71E-06	0.000209	-0.041679	0.9669
MPD(-1)	-8.50E-06	0.000255	-0.033377	0.9735
MPD(-2)	1.36E-05	0.000204	0.066531	0.9471

MPD(-3)	8.11E-06	0.000182	0.044469	0.9647
OP	-7.04E-06	0.000121	-0.058367	0.9536
OP(-1)	1.26E-05	0.000135	0.092879	0.9263
POL	3.61E-06	0.000678	0.005327	0.9958
C	-0.066346	1.661098	-0.039941	0.9682
RESID(-1)	-0.070821	0.222543	-0.318238	0.7512
RESID(-2)	0.090873	0.199158	0.456284	0.6495

R-squared	0.003472	Mean dependent var	-1.67E-15
Adjusted R-squared	-0.279326	S.D. dependent var	0.005154
S.E. of regression	0.005829	Akaike info criterion	-7.253764
Sum squared resid	0.002515	Schwarz criterion	-6.666101
Log likelihood	370.1807	Hannan-Quinn criter.	-7.016221
F-statistic	0.012279	Durbin-Watson stat	1.967668
Prob(F-statistic)	1.000000		

Heteroskedasticity Test: ARCH

F-statistic	0.117319	Prob. F(1,93)	0.7327
Obs*R-squared	0.119691	Prob. Chi-Square(1)	0.7294

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 01:52

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.55E-05	1.10E-05	2.317667	0.0227
RESID^2(-1)	0.035498	0.103638	0.342519	0.7327

R-squared	0.001260	Mean dependent var	2.65E-05
Adjusted R-squared	-0.009479	S.D. dependent var	0.000104
S.E. of regression	0.000104	Akaike info criterion	-15.48101
Sum squared resid	1.01E-06	Schwarz criterion	-15.42724
Log likelihood	737.3478	Hannan-Quinn criter.	-15.45928
F-statistic	0.117319	Durbin-Watson stat	2.016147
Prob(F-statistic)	0.732733		

Appendix 1.3 China

Dependent Variable: LNFDICH

Method: ARDL

Date: 06/19/16 Time: 01:54

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(2, 0, 0, 3, 1, 4, 3, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDICH(-1)	-0.208445	0.089392	-2.331804	0.0224
LNFDICH(-2)	-0.464908	0.087406	-5.318947	0.0000
LNWAGE	-0.049360	0.026219	-1.882615	0.0637
LNGDP	0.022289	0.010401	2.142926	0.0354
TARIFF	-0.003158	0.001715	-1.842050	0.0695
TARIFF(-1)	-0.000906	0.002431	-0.372717	0.7104
TARIFF(-2)	-0.005780	0.002456	-2.353437	0.0213
TARIFF(-3)	0.008688	0.001625	5.348051	0.0000
EX	-0.000904	0.000798	-1.133090	0.2608
EX(-1)	0.000805	0.000429	1.875061	0.0647
MPD	-0.000202	0.000226	-0.894120	0.3742
MPD(-1)	9.09E-05	0.000288	0.315967	0.7529
MPD(-2)	0.000294	0.000322	0.911249	0.3651
MPD(-3)	0.000984	0.000302	3.261303	0.0017
MPD(-4)	-0.000636	0.000207	-3.071541	0.0030
OP	-2.40E-05	0.000162	-0.148328	0.8825
OP(-1)	-0.000181	0.000215	-0.843042	0.4019
OP(-2)	-0.000207	0.000223	-0.928880	0.3560
OP(-3)	-0.000217	0.000165	-1.315145	0.1925
POL	0.001312	0.001265	1.037143	0.3030
POL(-1)	-0.002755	0.001358	-2.028568	0.0461
C	7.809884	0.625008	12.49566	0.0000

R-squared	0.576426	Mean dependent var	4.607793
Adjusted R-squared	0.456223	S.D. dependent var	0.010944
S.E. of regression	0.008070	Akaike info criterion	-6.603288
Sum squared resid	0.004819	Schwarz criterion	-6.015625
Log likelihood	338.9578	Hannan-Quinn criter.	-6.365745

F-statistic	4.795425	Durbin-Watson stat	2.204616
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDICH

Selected Model: ARDL(2, 0, 0, 3, 1, 4, 3, 1)

Date: 06/19/16 Time: 01:54

Sample: 1991Q1 2015Q4

Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDICH(-1))	0.456303	0.082744	5.514632	0.0000
D(LNWAGE)	-0.058932	0.035052	-1.681291	0.0969
D(LNGDP)	0.041655	0.022805	1.826542	0.0718
D(TARIFF)	-0.003186	0.001383	-2.303599	0.0241
D(TARIFF(-1))	-0.003079	0.001483	-2.076071	0.0414
D(TARIFF(-2))	-0.008658	0.001479	-5.854300	0.0000
D(EX)	-0.000943	0.000924	-1.019731	0.3112
D(MPD)	-0.000325	0.000237	-1.368376	0.1753
D(MPD(-1))	-0.000678	0.000229	-2.955879	0.0042
D(MPD(-2))	-0.000358	0.000231	-1.549364	0.1256
D(MPD(-3))	0.000623	0.000185	3.370581	0.0012
D(OP)	0.000051	0.000170	0.299629	0.7653
D(OP(-1))	0.000414	0.000125	3.306994	0.0015
D(OP(-2))	0.000209	0.000159	1.312862	0.1933
D(POL)	0.001314	0.001141	1.151568	0.2532
CointEq(-1)	-1.664886	0.121705	-13.679633	0.0000

Cointeq = LNFDICH - (-0.0295*LNWAGE + 0.0133*LNGDP -0.0007*TARIFF -0.0001*EX + 0.0003*MPD -0.0004*OP -0.0009*POL + 4.6672)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.029497	0.015713	-1.877315	0.0644
LNGDP	0.013320	0.006245	2.132831	0.0363
TARIFF	-0.000691	0.000513	-1.346237	0.1823
EX	-0.000059	0.000458	-0.129001	0.8977
MPD	0.000317	0.000126	2.509371	0.0143
OP	-0.000376	0.000103	-3.649829	0.0005

POL	-0.000862	0.000578	-1.492536	0.1398
C	4.667208	0.101736	45.875574	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 01:55

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	18.86594	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDICH)

Method: Least Squares

Date: 06/19/16 Time: 01:55

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDICH(-1))	0.478701	0.089800	5.330759	0.0000
D(TARIFF)	-0.002477	0.001712	-1.446716	0.1522
D(TARIFF(-1))	-0.002530	0.001660	-1.524537	0.1316
D(TARIFF(-2))	-0.008714	0.001664	-5.238372	0.0000
D(EX)	0.000117	0.000426	0.275862	0.7834
D(MPD)	-3.98E-05	0.000215	-0.185028	0.8537
D(MPD(-1))	-0.000531	0.000295	-1.799041	0.0761
D(MPD(-2))	-0.000296	0.000285	-1.039017	0.3022
D(MPD(-3))	0.000661	0.000217	3.042328	0.0032
D(OP)	-0.000113	0.000169	-0.669128	0.5055
D(OP(-1))	0.000353	0.000171	2.063989	0.0425
D(OP(-2))	0.000236	0.000176	1.341896	0.1837
D(POL)	0.001145	0.001282	0.892997	0.3748
C	7.782794	0.650742	11.95989	0.0000

LNWAGE(-1)	-0.028632	0.026562	-1.077919	0.2846
LNGDP(-1)	0.015097	0.010014	1.507643	0.1359
TARIFF(-1)	-0.000578	0.000883	-0.655183	0.5144
EX(-1)	0.000316	0.000777	0.406155	0.6858
MPD(-1)	0.000505	0.000213	2.374365	0.0202
OP(-1)	-0.000597	0.000179	-3.330833	0.0014
POL(-1)	-0.000943	0.000940	-1.003759	0.3188
LNFDICH(-1)	-1.682537	0.133559	-12.59767	0.0000

R-squared	0.762293	Mean dependent var	5.02E-05
Adjusted R-squared	0.694836	S.D. dependent var	0.014914
S.E. of regression	0.008239	Akaike info criterion	-6.561861
Sum squared resid	0.005023	Schwarz criterion	-5.974198
Log likelihood	336.9693	Hannan-Quinn criter.	-6.324318
F-statistic	11.30039	Durbin-Watson stat	2.220331
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.303837	Prob. F(2,72)	0.0424
Obs*R-squared	8.069653	Prob. Chi-Square(2)	0.0177

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 01:55

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDICH(-1)	0.240316	0.138384	1.736583	0.0867
LNFDICH(-2)	-0.183969	0.127662	-1.441060	0.1539
LNWAGE	-0.004216	0.026867	-0.156929	0.8757
LNGDP	-0.002569	0.010152	-0.253065	0.8009
TARIFF	-0.000148	0.001718	-0.086111	0.9316
TARIFF(-1)	6.95E-05	0.002366	0.029377	0.9766
TARIFF(-2)	0.001134	0.002474	0.458282	0.6481
TARIFF(-3)	-0.001264	0.001715	-0.737043	0.4635
EX	-5.52E-05	0.000814	-0.067842	0.9461
EX(-1)	-0.000203	0.000424	-0.479757	0.6329
MPD	2.26E-05	0.000220	0.102628	0.9185
MPD(-1)	0.000101	0.000282	0.359361	0.7204

MPD(-2)	-3.14E-05	0.000314	-0.100020	0.9206
MPD(-3)	-0.000212	0.000317	-0.668009	0.5063
MPD(-4)	0.000167	0.000211	0.791059	0.4315
OP	-4.40E-05	0.000159	-0.275703	0.7836
OP(-1)	1.38E-05	0.000211	0.065163	0.9482
OP(-2)	5.19E-05	0.000218	0.237532	0.8129
OP(-3)	4.59E-06	0.000161	0.028569	0.9773
POL	0.000181	0.001305	0.138818	0.8900
POL(-1)	0.000136	0.001364	0.099508	0.9210
C	-0.201490	0.858531	-0.234691	0.8151
RESID(-1)	-0.311341	0.183456	-1.697091	0.0940
RESID(-2)	0.390781	0.193709	2.017354	0.0474

R-squared	0.084059	Mean dependent var	3.89E-16
Adjusted R-squared	-0.208533	S.D. dependent var	0.007122
S.E. of regression	0.007830	Akaike info criterion	-6.649425
Sum squared resid	0.004414	Schwarz criterion	-6.008338
Log likelihood	343.1724	Hannan-Quinn criter.	-6.390287
F-statistic	0.287290	Durbin-Watson stat	2.034939
Prob(F-statistic)	0.999296		

Heteroskedasticity Test: ARCH

F-statistic	5.368433	Prob. F(1,93)	0.0227
Obs*R-squared	5.184601	Prob. Chi-Square(1)	0.0228

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 04:49

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.91E-05	1.61E-05	2.421005	0.0174
RESID^2(-1)	0.233527	0.100789	2.316988	0.0227

R-squared	0.054575	Mean dependent var	5.07E-05
Adjusted R-squared	0.044409	S.D. dependent var	0.000153
S.E. of regression	0.000149	Akaike info criterion	-14.75837
Sum squared resid	2.08E-06	Schwarz criterion	-14.70461
Log likelihood	703.0228	Hannan-Quinn criter.	-14.73665
F-statistic	5.368433	Durbin-Watson stat	2.010534
Prob(F-statistic)	0.022700		

Appendix 1.4 Germany

Dependent Variable: LNFDIGM

Method: ARDL

Date: 06/19/16 Time: 02:09

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (5 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 279936

Selected Model: ARDL(1, 2, 2, 4, 0, 0, 1, 5)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIGM(-1)	-0.169038	0.103713	-1.629868	0.1075
LNWAGE	0.039915	0.030248	1.319600	0.1911
LNWAGE(-1)	-0.030557	0.019497	-1.567280	0.1214
LNWAGE(-2)	0.030666	0.016715	1.834668	0.0707
LNGDP	0.066374	0.025487	2.604222	0.0112
LNGDP(-1)	-0.009642	0.029457	-0.327327	0.7444
LNGDP(-2)	-0.046135	0.021432	-2.152671	0.0347
TARIFF	-0.000163	0.001252	-0.130272	0.8967
TARIFF(-1)	0.001539	0.001704	0.903505	0.3693
TARIFF(-2)	-0.003749	0.001669	-2.246081	0.0278
TARIFF(-3)	0.001098	0.001643	0.668705	0.5058
TARIFF(-4)	0.002472	0.001229	2.011743	0.0480
EX	0.002026	0.000795	2.547817	0.0130
MPD	-0.000186	0.000170	-1.095564	0.2769
OP	0.000598	0.000179	3.340814	0.0013
OP(-1)	-0.000875	0.000152	-5.747934	0.0000
POL	0.001575	0.001309	1.203560	0.2327
POL(-1)	-0.003422	0.001693	-2.020924	0.0470
POL(-2)	0.000616	0.001772	0.347572	0.7292
POL(-3)	0.000900	0.001721	0.523001	0.6026
POL(-4)	-0.001380	0.001720	-0.802372	0.4250
POL(-5)	0.003550	0.001398	2.539204	0.0133
C	4.989316	0.504543	9.888780	0.0000

R-squared	0.488538	Mean dependent var	4.608909
Adjusted R-squared	0.332257	S.D. dependent var	0.009826
S.E. of regression	0.008030	Akaike info criterion	-6.604335
Sum squared resid	0.004642	Schwarz criterion	-5.986028

Log likelihood	336.7059	Hannan-Quinn criter.	-6.354492
F-statistic	3.126037	Durbin-Watson stat	1.753293
Prob(F-statistic)	0.000142		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDIGM

Selected Model: ARDL(1, 2, 2, 4, 0, 0, 1, 5)

Date: 06/19/16 Time: 02:10

Sample: 1991Q1 2015Q4

Included observations: 95

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.021918	0.033926	0.646051	0.5203
D(LNWAGE(-1))	-0.030807	0.014996	-2.054291	0.0436
D(LNGDP)	0.072895	0.024248	3.006241	0.0036
D(LNGDP(-1))	0.043492	0.017946	2.423442	0.0179
D(TARIFF)	-0.000532	0.001259	-0.422451	0.6740
D(TARIFF(-1))	0.000067	0.001125	0.059474	0.9527
D(TARIFF(-2))	-0.003633	0.001119	-3.247594	0.0018
D(TARIFF(-3))	-0.002497	0.001096	-2.278698	0.0257
D(EX)	0.001542	0.000899	1.714762	0.0907
D(MPD)	-0.000296	0.000251	-1.178026	0.2427
D(OP)	0.000660	0.000159	4.163081	0.0001
D(POL)	0.001648	0.001134	1.453518	0.1504
D(POL(-1))	-0.003948	0.001195	-3.304874	0.0015
D(POL(-2))	-0.003188	0.001219	-2.614539	0.0109
D(POL(-3))	-0.002193	0.001158	-1.894102	0.0622
D(POL(-4))	-0.003606	0.001194	-3.020581	0.0035
CointEq(-1)	-1.169337	0.092367	-12.659739	0.0000

Cointeq = LNFDIGM - (0.0342*LNWAGE + 0.0091*LNGDP + 0.0010*TARIFF
+ 0.0017*EX -0.0002*MPD -0.0002*OP + 0.0016*POL + 4.2679)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	0.034237	0.022393	1.528916	0.1307
LNGDP	0.009065	0.009211	0.984070	0.3284
TARIFF	0.001025	0.000804	1.274418	0.2066
EX	0.001733	0.000698	2.485031	0.0153
MPD	-0.000159	0.000145	-1.095991	0.2767
OP	-0.000237	0.000128	-1.842799	0.0695
POL	0.001573	0.001221	1.288397	0.2017
C	4.267883	0.138472	30.821216	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:10

Sample: 1992Q2 2015Q4

Included observations: 95

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	15.72197	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIGM)

Method: Least Squares

Date: 06/19/16 Time: 02:10

Sample: 1992Q2 2015Q4

Included observations: 95

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	-0.024476	0.018406	-1.329821	0.1878
D(LNWAGE(-1))	-0.028901	0.016961	-1.703988	0.0927
D(LNGDP)	0.050982	0.022467	2.269227	0.0263
D(LNGDP(-1))	0.039116	0.022120	1.768400	0.0812
D(TARIFF)	-0.000112	0.001346	-0.083037	0.9341
D(TARIFF(-1))	-6.75E-05	0.001309	-0.051561	0.9590
D(TARIFF(-2))	-0.003215	0.001271	-2.529833	0.0136
D(TARIFF(-3))	-0.002326	0.001243	-1.871694	0.0653
D(OP)	0.000616	0.000158	3.895935	0.0002
D(POL)	0.002018	0.001311	1.539422	0.1281
D(POL(-1))	-0.003916	0.001685	-2.323561	0.0230
D(POL(-2))	-0.003226	0.001550	-2.080651	0.0410
D(POL(-3))	-0.002165	0.001415	-1.529567	0.1305
D(POL(-4))	-0.003343	0.001410	-2.370805	0.0204

C	4.964257	0.527194	9.416378	0.0000
LNWAGE(-1)	0.036589	0.028471	1.285132	0.2029
LNGDP(-1)	0.006365	0.010610	0.599918	0.5504
TARIFF(-1)	0.001087	0.001002	1.085348	0.2814
EX(-1)	0.001784	0.000836	2.133243	0.0363
MPD(-1)	-7.35E-05	0.000178	-0.411870	0.6817
OP(-1)	-0.000267	0.000148	-1.796497	0.0766
POL(-1)	0.002019	0.001445	1.397007	0.1667
LNFDIGM(-1)	-1.149206	0.105403	-10.90300	0.0000

R-squared	0.720207	Mean dependent var	0.000326
Adjusted R-squared	0.634715	S.D. dependent var	0.013479
S.E. of regression	0.008147	Akaike info criterion	-6.575384
Sum squared resid	0.004779	Schwarz criterion	-5.957076
Log likelihood	335.3307	Hannan-Quinn criter.	-6.325541
F-statistic	8.424234	Durbin-Watson stat	1.779893
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.151051	Prob. F(2,70)	0.1240
Obs*R-squared	5.500513	Prob. Chi-Square(2)	0.0639

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:11

Sample: 1992Q2 2015Q4

Included observations: 95

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIGM(-1)	-0.089670	0.167224	-0.536225	0.5935
LNWAGE	0.002011	0.029805	0.067477	0.9464
LNWAGE(-1)	0.000386	0.019240	0.020065	0.9840
LNWAGE(-2)	-0.002350	0.016504	-0.142380	0.8872
LNGDP	-0.000604	0.025210	-0.023958	0.9810
LNGDP(-1)	0.003109	0.029148	0.106657	0.9154
LNGDP(-2)	-0.001677	0.021115	-0.079417	0.9369
TARIFF	0.000267	0.001243	0.214688	0.8306
TARIFF(-1)	-0.000146	0.001686	-0.086726	0.9311
TARIFF(-2)	2.57E-05	0.001643	0.015612	0.9876
TARIFF(-3)	-0.000231	0.001639	-0.141007	0.8883
TARIFF(-4)	6.87E-05	0.001220	0.056325	0.9552

EX	8.52E-05	0.000788	0.108109	0.9142
MPD	3.01E-05	0.000168	0.179017	0.8584
OP	-3.61E-05	0.000185	-0.195475	0.8456
OP(-1)	-1.51E-05	0.000151	-0.099835	0.9208
POL	-0.000466	0.001313	-0.354924	0.7237
POL(-1)	0.000712	0.001715	0.414875	0.6795
POL(-2)	-0.000466	0.001886	-0.247329	0.8054
POL(-3)	0.000121	0.001748	0.069003	0.9452
POL(-4)	0.000122	0.001694	0.072239	0.9426
POL(-5)	0.000133	0.001378	0.096734	0.9232
C	0.404794	0.795861	0.508625	0.6126
RESID(-1)	0.156793	0.206687	0.758602	0.4506
RESID(-2)	0.234946	0.133996	1.753385	0.0839

R-squared	0.057900	Mean dependent var	-1.03E-16
Adjusted R-squared	-0.265106	S.D. dependent var	0.007028
S.E. of regression	0.007904	Akaike info criterion	-6.621873
Sum squared resid	0.004374	Schwarz criterion	-5.949801
Log likelihood	339.5390	Hannan-Quinn criter.	-6.350306
F-statistic	0.179254	Durbin-Watson stat	1.893381
Prob(F-statistic)	0.999991		

Heteroskedasticity Test: ARCH

F-statistic	8.624328	Prob. F(1,92)	0.0042
Obs*R-squared	8.056569	Prob. Chi-Square(1)	0.0045

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:11

Sample (adjusted): 1992Q3 2015Q4

Included observations: 94 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.44E-05	1.01E-05	3.423125	0.0009
RESID^2(-1)	0.334873	0.114030	2.936721	0.0042

R-squared	0.085708	Mean dependent var	4.93E-05
Adjusted R-squared	0.075770	S.D. dependent var	8.76E-05
S.E. of regression	8.42E-05	Akaike info criterion	-15.90460
Sum squared resid	6.53E-07	Schwarz criterion	-15.85048
Log likelihood	749.5160	Hannan-Quinn criter.	-15.88274
F-statistic	8.624328	Durbin-Watson stat	1.767857
Prob(F-statistic)	0.004191		

Appendix 1.5 Hong Kong

Dependent Variable: LNFDIHK

Method: ARDL

Date: 06/19/16 Time: 02:05

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (5 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 279936

Selected Model: ARDL(1, 4, 3, 0, 4, 4, 3, 3)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIHK(-1)	0.170746	0.109811	1.554910	0.1248
LNWAGE	0.200316	0.080666	2.483266	0.0156
LNWAGE(-1)	0.086677	0.091863	0.943547	0.3488
LNWAGE(-2)	-0.058559	0.089271	-0.655975	0.5141
LNWAGE(-3)	0.121162	0.088180	1.374033	0.1741
LNWAGE(-4)	-0.250637	0.087524	-2.863631	0.0056
LNGDP	-0.138144	0.062389	-2.214232	0.0303
LNGDP(-1)	0.137251	0.090014	1.524776	0.1321
LNGDP(-2)	-0.258516	0.083880	-3.081982	0.0030
LNGDP(-3)	0.239068	0.062213	3.842708	0.0003
TARIFF	0.003818	0.001846	2.068592	0.0425
EX	0.003204	0.002130	1.504380	0.1373
EX(-1)	0.002673	0.002490	1.073473	0.2870
EX(-2)	-0.001919	0.002504	-0.766430	0.4462
EX(-3)	0.003874	0.002360	1.641659	0.1054
EX(-4)	-0.005697	0.002049	-2.780677	0.0071
MPD	9.87E-05	0.000508	0.194394	0.8465
MPD(-1)	-0.001704	0.000583	-2.922211	0.0048
MPD(-2)	0.003342	0.000601	5.563739	0.0000
MPD(-3)	-0.001165	0.000553	-2.107175	0.0389
MPD(-4)	-0.000889	0.000352	-2.526879	0.0139
OP	-0.000630	0.000378	-1.666385	0.1004
OP(-1)	0.000835	0.000486	1.717481	0.0906
OP(-2)	-0.001477	0.000505	-2.924745	0.0047
OP(-3)	0.001204	0.000380	3.167637	0.0023
POL	0.001106	0.002319	0.476708	0.6351
POL(-1)	-0.005304	0.003024	-1.753792	0.0841

POL(-2)	0.003718	0.003221	1.154292	0.2525
POL(-3)	0.004596	0.002452	1.874006	0.0654
C	3.342893	0.662388	5.046728	0.0000

R-squared	0.473212	Mean dependent var	4.613225
Adjusted R-squared	0.241745	S.D. dependent var	0.015496
S.E. of regression	0.013494	Akaike info criterion	-5.522870
Sum squared resid	0.012017	Schwarz criterion	-4.721511
Log likelihood	295.0978	Hannan-Quinn criter.	-5.198947
F-statistic	2.044401	Durbin-Watson stat	1.842573
Prob(F-statistic)	0.008567		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form
Dependent Variable: LNFDIHK
Selected Model: ARDL(1, 4, 3, 0, 4, 4, 3, 3)
Date: 06/19/16 Time: 02:06
Sample: 1991Q1 2015Q4
Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.209435	0.060163	3.481097	0.0009
D(LNWAGE(-1))	0.196265	0.064123	3.060737	0.0032
D(LNWAGE(-2))	0.135201	0.064862	2.084427	0.0410
D(LNWAGE(-3))	0.257514	0.061903	4.159983	0.0001
D(LNGDP)	-0.140871	0.049581	-2.841229	0.0060
D(LNGDP(-1))	0.017110	0.054856	0.311902	0.7561
D(LNGDP(-2))	-0.235692	0.046367	-5.083218	0.0000
D(TARIFF)	0.005491	0.002426	2.263332	0.0269
D(EX)	0.003438	0.001597	2.152334	0.0350
D(EX(-1))	0.003960	0.001888	2.097403	0.0398
D(EX(-2))	0.001984	0.001747	1.135628	0.2602
D(EX(-3))	0.005876	0.001525	3.853083	0.0003
D(MPD)	0.000212	0.000470	0.452319	0.6525
D(MPD(-1))	-0.001340	0.000434	-3.085397	0.0030
D(MPD(-2))	0.002023	0.000403	5.021985	0.0000
D(MPD(-3))	0.000859	0.000309	2.775299	0.0072
D(OP)	-0.000644	0.000321	-2.006968	0.0489

D(OP(-1))	0.000226	0.000292	0.772390	0.4426
D(OP(-2))	-0.001159	0.000328	-3.537640	0.0007
D(POL)	0.001135	0.001921	0.591159	0.5564
D(POL(-1))	-0.008033	0.002045	-3.928189	0.0002
D(POL(-2))	-0.004273	0.002157	-1.980824	0.0518
CointEq(-1)	-0.821292	0.089215	-9.205751	0.0000

Cointeq = LNFDIHK - (0.1193*LNWAGE -0.0245*LNGDP + 0.0046*TARIFF + 0.0026*EX -0.0004*MPD -0.0001*OP + 0.0050*POL + 4.0312)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	0.119335	0.071720	1.663895	0.1009
LNGDP	-0.024530	0.023469	-1.045226	0.2997
TARIFF	0.004605	0.002421	1.902152	0.0615
EX	0.002575	0.002053	1.254199	0.2142
MPD	-0.000383	0.000453	-0.845126	0.4011
OP	-0.000081	0.000405	-0.201102	0.8412
POL	0.004962	0.002834	1.750813	0.0846
C	4.031204	0.429585	9.383954	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:06

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	8.082239	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIHK)

Method: Least Squares

Date: 06/19/16 Time: 02:06

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.154910	0.077872	1.989282	0.0508
D(LNWAGE(-1))	0.173506	0.090355	1.920279	0.0591
D(LNWAGE(-2))	0.098933	0.095165	1.039591	0.3023
D(LNWAGE(-3))	0.215350	0.087017	2.474823	0.0159
D(LNGDP)	-0.112640	0.062343	-1.806783	0.0754
D(LNGDP(-1))	0.040558	0.065389	0.620258	0.5372
D(LNGDP(-2))	-0.222537	0.063332	-3.513795	0.0008
D(EX)	0.002355	0.002117	1.112490	0.2700
D(EX(-1))	0.003667	0.002600	1.410429	0.1631
D(EX(-2))	0.001361	0.002490	0.546547	0.5865
D(EX(-3))	0.005006	0.002052	2.439060	0.0174
D(MPD)	-0.000163	0.000500	-0.325986	0.7455
D(MPD(-1))	-0.001494	0.000567	-2.635761	0.0105
D(MPD(-2))	0.001760	0.000583	3.021098	0.0036

D(MPD(-3))	0.000821	0.000362	2.268879	0.0266
D(OP)	-0.000534	0.000383	-1.395133	0.1677
D(OP(-1))	0.000458	0.000343	1.336186	0.1861
D(OP(-2))	-0.001143	0.000393	-2.906084	0.0050
D(POL)	0.001126	0.002385	0.472148	0.6384
D(POL(-1))	-0.007444	0.002767	-2.690250	0.0090
D(POL(-2))	-0.004172	0.002584	-1.614747	0.1111
C	3.781683	0.637092	5.935846	0.0000
LNWAGE(-1)	0.048014	0.053503	0.897405	0.3728
LNGDP(-1)	-0.014079	0.019647	-0.716632	0.4761
TARIFF(-1)	0.002018	0.001769	1.141126	0.2579
EX(-1)	0.000842	0.001640	0.513332	0.6094
MPD(-1)	-0.000127	0.000360	-0.352068	0.7259
OP(-1)	-7.95E-05	0.000346	-0.230002	0.8188
POL(-1)	0.002743	0.002169	1.264675	0.2104
LNFDIHK(-1)	-0.860026	0.110694	-7.769392	0.0000

R-squared	0.711417	Mean dependent var	-0.000140
Adjusted R-squared	0.584616	S.D. dependent var	0.021395
S.E. of regression	0.013789	Akaike info criterion	-5.479588
Sum squared resid	0.012549	Schwarz criterion	-4.678229
Log likelihood	293.0202	Hannan-Quinn criter.	-5.155666
F-statistic	5.610483	Durbin-Watson stat	1.849048
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.782296	Prob. F(2,64)	0.4617
Obs*R-squared	2.290885	Prob. Chi-Square(2)	0.3181

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:07

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIHK(-1)	-0.199428	0.214151	-0.931245	0.3552
LNWAGE	-0.026425	0.085005	-0.310867	0.7569
LNWAGE(-1)	0.021022	0.093893	0.223899	0.8235
LNWAGE(-2)	-0.003715	0.089770	-0.041389	0.9671
LNWAGE(-3)	-0.023545	0.090812	-0.259272	0.7963
LNWAGE(-4)	0.020468	0.089727	0.228109	0.8203
LNGDP	0.010049	0.066084	0.152059	0.8796
LNGDP(-1)	-0.015705	0.091780	-0.171115	0.8647
LNGDP(-2)	0.022870	0.086518	0.264338	0.7924
LNGDP(-3)	-0.017881	0.065602	-0.272562	0.7861
TARIFF	-0.000504	0.001959	-0.257075	0.7979
EX	-0.000677	0.002206	-0.306999	0.7598
EX(-1)	0.000473	0.002527	0.187348	0.8520
EX(-2)	5.05E-05	0.002513	0.020077	0.9840
EX(-3)	-0.000667	0.002448	-0.272672	0.7860
EX(-4)	0.000393	0.002083	0.188856	0.8508
MPD	1.87E-05	0.000534	0.035017	0.9722
MPD(-1)	-8.97E-06	0.000587	-0.015295	0.9878
MPD(-2)	-0.000335	0.000669	-0.501065	0.6180
MPD(-3)	0.000363	0.000653	0.555348	0.5806
MPD(-4)	1.85E-05	0.000357	0.051730	0.9589
OP	5.77E-05	0.000387	0.149145	0.8819
OP(-1)	-3.48E-05	0.000489	-0.071287	0.9434
OP(-2)	0.000107	0.000514	0.209074	0.8351
OP(-3)	-8.17E-05	0.000388	-0.210432	0.8340
POL	-1.59E-05	0.002339	-0.006798	0.9946
POL(-1)	0.000487	0.003077	0.158258	0.8748

POL(-2)	-0.001659	0.003501	-0.473905	0.6372
POL(-3)	0.000673	0.002520	0.267253	0.7901
C	1.014589	1.155457	0.878085	0.3832
RESID(-1)	0.280416	0.244283	1.147918	0.2553
RESID(-2)	-0.036003	0.142183	-0.253216	0.8009

R-squared	0.023863	Mean dependent var	3.61E-16
Adjusted R-squared	-0.448953	S.D. dependent var	0.011247
S.E. of regression	0.013539	Akaike info criterion	-5.505356
Sum squared resid	0.011731	Schwarz criterion	-4.650573
Log likelihood	296.2571	Hannan-Quinn criter.	-5.159839
F-statistic	0.050471	Durbin-Watson stat	2.068422
Prob(F-statistic)	1.000000		

Heteroskedasticity Test: ARCH

F-statistic	0.111632	Prob. F(1,93)	0.7390
Obs*R-squared	0.113896	Prob. Chi-Square(1)	0.7358

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/19/16 Time: 02:07
Sample (adjusted): 1992Q2 2015Q4
Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000131	3.55E-05	3.688775	0.0004
RESID^2(-1)	-0.034619	0.103615	-0.334114	0.7390

R-squared	0.001199	Mean dependent var	0.000126
Adjusted R-squared	-0.009541	S.D. dependent var	0.000320
S.E. of regression	0.000321	Akaike info criterion	-13.22697
Sum squared resid	9.61E-06	Schwarz criterion	-13.17320
Log likelihood	630.2811	Hannan-Quinn criter.	-13.20524
F-statistic	0.111632	Durbin-Watson stat	2.004943
Prob(F-statistic)	0.739046		

Appendix 1.6 Japan

Dependent Variable: LNFDIJP

Method: ARDL

Date: 06/19/16 Time: 02:18

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(3, 1, 0, 1, 2, 4, 0, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIJP(-1)	-0.242506	0.131815	-1.839743	0.0699
LNFDIJP(-2)	-0.129920	0.090992	-1.427815	0.1576
LNFDIJP(-3)	-0.177274	0.090475	-1.959374	0.0539
LNWAGE	-0.823107	0.248654	-3.310258	0.0015
LNWAGE(-1)	-0.635971	0.270417	-2.351816	0.0214
LNGDP	0.074050	0.066969	1.105735	0.2725
TARIFF	0.010728	0.012116	0.885483	0.3788
TARIFF(-1)	-0.064647	0.013996	-4.618956	0.0000
EX	-0.022172	0.006946	-3.191850	0.0021
EX(-1)	-0.014047	0.007016	-2.001980	0.0490
EX(-2)	-0.004071	0.002474	-1.645790	0.1041
MPD	0.005011	0.001445	3.467808	0.0009
MPD(-1)	-0.007345	0.001776	-4.136126	0.0001
MPD(-2)	0.004638	0.001772	2.617271	0.0108
MPD(-3)	0.003537	0.001750	2.021156	0.0469
MPD(-4)	0.002622	0.001418	1.849191	0.0685
OP	-0.000130	0.000737	-0.176282	0.8606
POL	0.005292	0.008638	0.612620	0.5420
POL(-1)	-0.017030	0.011408	-1.492839	0.1398
POL(-2)	0.002663	0.011807	0.225561	0.8222
POL(-3)	0.002798	0.011651	0.240139	0.8109
POL(-4)	-0.017508	0.009160	-1.911428	0.0599
C	16.75018	1.725592	9.706920	0.0000

R-squared	0.674131	Mean dependent var	4.655328
Adjusted R-squared	0.575923	S.D. dependent var	0.081485
S.E. of regression	0.053064	Akaike info criterion	-2.829363
Sum squared resid	0.205551	Schwarz criterion	-2.214988

Log likelihood	158.8094	Hannan-Quinn criter.	-2.581023
F-statistic	6.864370	Durbin-Watson stat	2.103395
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDIJP

Selected Model: ARDL(3, 1, 0, 1, 2, 4, 0, 4)

Date: 06/19/16 Time: 02:19

Sample: 1991Q1 2015Q4

Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDIJP(-1))	0.333346	0.093488	3.565646	0.0006
D(LNFDIJP(-2))	0.187384	0.080812	2.318777	0.0232
D(LNWAGE)	-0.887355	0.225864	-3.928720	0.0002
D(LNGDP)	0.231416	0.161298	1.434714	0.1556
D(TARIFF)	0.009220	0.010263	0.898413	0.3719
D(EX)	-0.022371	0.005903	-3.789943	0.0003
D(EX(-1))	0.004735	0.002296	2.062277	0.0427
D(MPD)	0.003818	0.001725	2.213403	0.0300
D(MPD(-1))	-0.011285	0.001547	-7.296600	0.0000
D(MPD(-2))	-0.006450	0.001581	-4.081007	0.0001
D(MPD(-3))	-0.002907	0.001299	-2.237530	0.0283
D(OP)	0.000714	0.001034	0.689898	0.4924
D(POL)	0.005487	0.007492	0.732350	0.4663
D(POL(-1))	0.010913	0.008098	1.347629	0.1819
D(POL(-2))	0.014059	0.007898	1.780115	0.0792
D(POL(-3))	0.016907	0.007821	2.161629	0.0339
CointEq(-1)	-1.575611	0.145946	-10.795846	0.0000

Cointeq = LNFDIJP - (-0.9415*LNWAGE + 0.0478*LNGDP -0.0348*TARIFF
-0.0260*EX + 0.0055*MPD -0.0001*OP -0.0153*POL + 10.8087)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.941523	0.145685	-6.462747	0.0000
LNGDP	0.047784	0.043504	1.098377	0.2756
TARIFF	-0.034793	0.004855	-7.166312	0.0000
EX	-0.025999	0.004293	-6.055541	0.0000
MPD	0.005461	0.000888	6.146913	0.0000

OP	-0.000084	0.000475	-0.176532	0.8604
POL	-0.015348	0.005677	-2.703745	0.0085
C	10.808658	0.923048	11.709747	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:20

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	11.62260	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIJP)

Method: Least Squares

Date: 06/19/16 Time: 02:20

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDIJP(-1))	0.307037	0.111316	2.758258	0.0073
D(LNFDIJP(-2))	0.177224	0.091200	1.943237	0.0558
D(LNWAGE)	-0.836538	0.245132	-3.412600	0.0011
D(TARIFF)	0.010511	0.012195	0.861904	0.3916
D(EX)	-0.023314	0.006499	-3.587328	0.0006
D(EX(-1))	0.004001	0.002501	1.599558	0.1140
D(MPD)	0.005385	0.001371	3.929094	0.0002
D(MPD(-1))	-0.010773	0.001707	-6.309971	0.0000
D(MPD(-2))	-0.006224	0.001768	-3.520171	0.0007
D(MPD(-3))	-0.002623	0.001428	-1.837331	0.0702
D(POL)	0.005396	0.008685	0.621244	0.5364
D(POL(-1))	0.010025	0.010181	0.984708	0.3280
D(POL(-2))	0.013319	0.009553	1.394171	0.1675
D(POL(-3))	0.016661	0.009189	1.813186	0.0739

C	16.68751	1.744262	9.567091	0.0000
LNWAGE(-1)	-1.404262	0.198437	-7.076612	0.0000
LNGDP(-1)	0.041481	0.060133	0.689814	0.4925
TARIFF(-1)	-0.052364	0.006846	-7.648542	0.0000
EX(-1)	-0.039145	0.006078	-6.440198	0.0000
MPD(-1)	0.008778	0.001433	6.124083	0.0000
OP(-1)	-0.000179	0.000822	-0.217674	0.8283
POL(-1)	-0.021908	0.008164	-2.683276	0.0090
LNFDIJP(-1)	-1.547807	0.177425	-8.723736	0.0000

R-squared	0.802070	Mean dependent var	0.000356
Adjusted R-squared	0.742420	S.D. dependent var	0.105070
S.E. of regression	0.053326	Akaike info criterion	-2.819525
Sum squared resid	0.207584	Schwarz criterion	-2.205150
Log likelihood	158.3372	Hannan-Quinn criter.	-2.571185
F-statistic	13.44626	Durbin-Watson stat	2.091415
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.939372	Prob. F(2,71)	0.3957
Obs*R-squared	2.474789	Prob. Chi-Square(2)	0.2901

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:20

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIJP(-1)	0.331186	0.276583	1.197421	0.2351
LNFDIJP(-2)	-0.191619	0.181614	-1.055086	0.2950
LNFDIJP(-3)	0.102782	0.118222	0.869402	0.3876
LNWAGE	0.002400	0.249096	0.009634	0.9923
LNWAGE(-1)	0.182564	0.310460	0.588043	0.5584
LNGDP	-0.009907	0.067556	-0.146655	0.8838
TARIFF	-0.004770	0.012674	-0.376374	0.7078
TARIFF(-1)	0.011673	0.016515	0.706796	0.4820
EX	1.63E-05	0.006965	0.002341	0.9981
EX(-1)	0.004658	0.007996	0.582575	0.5620
EX(-2)	0.000333	0.002491	0.133611	0.8941
MPD	0.000495	0.001526	0.324485	0.7465

MPD(-1)	-0.001457	0.002075	-0.702016	0.4850
MPD(-2)	0.002440	0.002517	0.969258	0.3357
MPD(-3)	-0.002287	0.002442	-0.936631	0.3521
MPD(-4)	-0.000309	0.001497	-0.206169	0.8372
OP	2.85E-05	0.000749	0.038003	0.9698
POL	-0.001913	0.008848	-0.216161	0.8295
POL(-1)	0.002155	0.011628	0.185327	0.8535
POL(-2)	0.003655	0.012171	0.300320	0.7648
POL(-3)	-0.004719	0.012235	-0.385699	0.7009
POL(-4)	0.002948	0.009449	0.311941	0.7560
C	-2.325734	2.636588	-0.882100	0.3807
RESID(-1)	-0.330059	0.258836	-1.275166	0.2064
RESID(-2)	0.248235	0.240912	1.030397	0.3063

R-squared	0.025779	Mean dependent var	-1.78E-15
Adjusted R-squared	-0.303535	S.D. dependent var	0.046516
S.E. of regression	0.053108	Akaike info criterion	-2.813814
Sum squared resid	0.200253	Schwarz criterion	-2.146015
Log likelihood	160.0631	Hannan-Quinn criter.	-2.543878
F-statistic	0.078281	Durbin-Watson stat	2.024040
Prob(F-statistic)	1.000000		

Heteroskedasticity Test: ARCH

F-statistic	0.250195	Prob. F(1,93)	0.6181
Obs*R-squared	0.254890	Prob. Chi-Square(1)	0.6137

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:20

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002052	0.000640	3.203352	0.0019
RESID^2(-1)	0.051775	0.103510	0.500195	0.6181

R-squared	0.002683	Mean dependent var	0.002163
Adjusted R-squared	-0.008041	S.D. dependent var	0.005829
S.E. of regression	0.005852	Akaike info criterion	-7.423197
Sum squared resid	0.003185	Schwarz criterion	-7.369431
Log likelihood	354.6018	Hannan-Quinn criter.	-7.401471
F-statistic	0.250195	Durbin-Watson stat	2.000692
Prob(F-statistic)	0.618119		

Appendix 1.7 Netherland

Dependent Variable: LNFDINL

Method: ARDL

Date: 06/19/16 Time: 02:25

Sample (adjusted): 1991Q4 2015Q4

Included observations: 97 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (3 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 16384

Selected Model: ARDL(1, 0, 0, 3, 0, 3, 0, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDINL(-1)	-0.326600	0.093342	-3.498958	0.0008
LNWAGE	0.351041	0.109024	3.219859	0.0019
LNGDP	-0.021107	0.039198	-0.538456	0.5918
TARIFF	-0.002639	0.006722	-0.392624	0.6957
TARIFF(-1)	0.037433	0.009684	3.865572	0.0002
TARIFF(-2)	-0.033980	0.009858	-3.446906	0.0009
TARIFF(-3)	0.014075	0.006195	2.271896	0.0258
EX	0.009717	0.003299	2.945699	0.0042
MPD	0.001701	0.000895	1.900159	0.0611
MPD(-1)	-0.000108	0.001175	-0.092162	0.9268
MPD(-2)	-0.005981	0.001293	-4.627080	0.0000
MPD(-3)	0.002747	0.001098	2.501670	0.0144
OP	0.000346	0.000474	0.730871	0.4670
POL	-0.009335	0.005390	-1.731797	0.0872
POL(-1)	0.003003	0.007336	0.409416	0.6833
POL(-2)	-0.002979	0.007404	-0.402321	0.6885
POL(-3)	0.011526	0.005837	1.974678	0.0518
C	3.742778	0.727838	5.142325	0.0000

R-squared	0.468460	Mean dependent var	4.607270
Adjusted R-squared	0.354078	S.D. dependent var	0.043310
S.E. of regression	0.034808	Akaike info criterion	-3.712056
Sum squared resid	0.095717	Schwarz criterion	-3.234275
Log likelihood	198.0347	Hannan-Quinn criter.	-3.518865
F-statistic	4.095578	Durbin-Watson stat	1.783093
Prob(F-statistic)	0.000009		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDINL

Selected Model: ARDL(1, 0, 0, 3, 0, 3, 0, 3)

Date: 06/19/16 Time: 02:25

Sample: 1991Q1 2015Q4

Included observations: 97

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.285060	0.145025	1.965591	0.0529
D(LNGDP)	0.017467	0.099206	0.176066	0.8607
D(TARIFF)	-0.004192	0.006027	-0.695546	0.4888
D(TARIFF(-1))	0.020312	0.006319	3.214375	0.0019
D(TARIFF(-2))	-0.014823	0.005677	-2.610955	0.0108
D(EX)	0.007867	0.003806	2.067324	0.0420
D(MPD)	0.001248	0.001087	1.148109	0.2544
D(MPD(-1))	0.003114	0.000967	3.219801	0.0019
D(MPD(-2))	-0.002918	0.000955	-3.056070	0.0031
D(OP)	0.000952	0.000651	1.462597	0.1475
D(POL)	-0.009419	0.004959	-1.899335	0.0612
D(POL(-1))	-0.009516	0.005090	-1.869770	0.0652
D(POL(-2))	-0.012186	0.005274	-2.310760	0.0235
CointEq(-1)	-1.314748	0.094386	-13.929459	0.0000

Cointeq = LNFDINL - (0.2646*LNWAGE -0.0159*LNGDP + 0.0112*TARIFF + 0.0073*EX -0.0012*MPD + 0.0003*OP + 0.0017*POL + 2.8213)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	0.264617	0.079498	3.328612	0.0013
LNGDP	-0.015910	0.029627	-0.537017	0.5928
TARIFF	0.011223	0.002793	4.018420	0.0001
EX	0.007324	0.002404	3.046588	0.0031
MPD	-0.001237	0.000583	-2.123630	0.0368
OP	0.000261	0.000358	0.728925	0.4682
POL	0.001670	0.003641	0.458591	0.6478
C	2.821330	0.527414	5.349370	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:25

Sample: 1991Q4 2015Q4

Included observations: 97

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	20.47729	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDINL)

Method: Least Squares

Date: 06/19/16 Time: 02:25

Sample: 1991Q4 2015Q4

Included observations: 97

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TARIFF)	-0.003602	0.007254	-0.496610	0.6208
D(TARIFF(-1))	0.017828	0.007025	2.537876	0.0131
D(TARIFF(-2))	-0.014819	0.006691	-2.214734	0.0297
D(MPD)	0.001990	0.000911	2.184707	0.0319
D(MPD(-1))	0.002613	0.001126	2.320687	0.0229
D(MPD(-2))	-0.003183	0.001169	-2.722761	0.0080
D(POL)	-0.007533	0.005663	-1.330251	0.1873
D(POL(-1))	-0.008250	0.006513	-1.266710	0.2090
D(POL(-2))	-0.012278	0.006307	-1.946541	0.0551
C	4.251160	0.745626	5.701464	0.0000
LNWAGE(-1)	0.252861	0.118451	2.134727	0.0359
LNGDP(-1)	-0.002920	0.038277	-0.076293	0.9394
TARIFF(-1)	0.012466	0.004172	2.988196	0.0037
EX(-1)	0.007372	0.003526	2.090753	0.0398
MPD(-1)	-0.001013	0.000812	-1.247559	0.2159
OP(-1)	-1.69E-05	0.000501	-0.033823	0.9731
POL(-1)	0.001977	0.004985	0.396578	0.6927

LNFDINL(-1)	-1.331597	0.103021	-12.92549	0.0000

R-squared	0.765849	Mean dependent var	0.000110
Adjusted R-squared	0.715462	S.D. dependent var	0.068099
S.E. of regression	0.036325	Akaike info criterion	-3.626725
Sum squared resid	0.104244	Schwarz criterion	-3.148944
Log likelihood	193.8962	Hannan-Quinn criter.	-3.433534
F-statistic	15.19938	Durbin-Watson stat	1.835472
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.699373	Prob. F(2,77)	0.1896
Obs*R-squared	4.100542	Prob. Chi-Square(2)	0.1287

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:26

Sample: 1991Q4 2015Q4

Included observations: 97

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDINL(-1)	-0.298588	0.189140	-1.578656	0.1185
LNWAGE	0.035247	0.111331	0.316593	0.7524
LNGDP	0.009137	0.039211	0.233011	0.8164
TARIFF	-0.003951	0.007001	-0.564319	0.5742
TARIFF(-1)	0.005679	0.010262	0.553390	0.5816
TARIFF(-2)	0.003229	0.010023	0.322157	0.7482
TARIFF(-3)	-0.003047	0.006360	-0.479082	0.6332
EX	0.001161	0.003370	0.344420	0.7315
MPD	-4.63E-05	0.000888	-0.052119	0.9586
MPD(-1)	0.000836	0.001257	0.665102	0.5080
MPD(-2)	-0.000543	0.001328	-0.408666	0.6839
MPD(-3)	-0.000614	0.001138	-0.539358	0.5912
OP	2.94E-05	0.000471	0.062427	0.9504
POL	-0.000289	0.005412	-0.053474	0.9575
POL(-1)	-0.001898	0.007357	-0.257970	0.7971
POL(-2)	0.000467	0.007346	0.063579	0.9495
POL(-3)	0.000739	0.005801	0.127341	0.8990
C	1.016361	0.908406	1.118840	0.2667
RESID(-1)	0.438783	0.238668	1.838468	0.0698
RESID(-2)	-0.110809	0.140549	-0.788406	0.4329

R-squared	0.042274	Mean dependent var	-7.68E-16
Adjusted R-squared	-0.194048	S.D. dependent var	0.031576
S.E. of regression	0.034504	Akaike info criterion	-3.714012
Sum squared resid	0.091671	Schwarz criterion	-3.183144
Log likelihood	200.1296	Hannan-Quinn criter.	-3.499355
F-statistic	0.178881	Durbin-Watson stat	1.924201
Prob(F-statistic)	0.999944		

Heteroskedasticity Test: ARCH

F-statistic	1.831148	Prob. F(1,94)	0.1792
Obs*R-squared	1.834374	Prob. Chi-Square(1)	0.1756

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:26

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000861	0.000340	2.531969	0.0130
RESID^2(-1)	0.138194	0.102124	1.353199	0.1792

R-squared	0.019108	Mean dependent var	0.000997
Adjusted R-squared	0.008673	S.D. dependent var	0.003200
S.E. of regression	0.003186	Akaike info criterion	-8.639639
Sum squared resid	0.000954	Schwarz criterion	-8.586215
Log likelihood	416.7026	Hannan-Quinn criter.	-8.618044
F-statistic	1.831148	Durbin-Watson stat	2.000483
Prob(F-statistic)	0.179237		

Appendix 1.8 South Korea

Dependent Variable: LNFDISKO

Method: ARDL

Date: 06/19/16 Time: 02:27

Sample (adjusted): 1991Q3 2015Q4

Included observations: 98 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (3 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 16384

Selected Model: ARDL(1, 0, 0, 2, 0, 2, 0, 0)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDISKO(-1)	-0.226282	0.128715	-1.758014	0.0823
LNWAGE	-0.013202	0.011351	-1.163100	0.2480
LNGDP	0.002764	0.004857	0.569094	0.5708
TARIFF	0.000725	0.000959	0.756209	0.4516
TARIFF(-1)	-0.003114	0.001346	-2.314026	0.0231
TARIFF(-2)	0.001481	0.000805	1.840964	0.0691
EX	-0.000216	0.000362	-0.595271	0.5532
MPD	0.000137	0.000116	1.184882	0.2394
MPD(-1)	-0.000323	0.000153	-2.110390	0.0378
MPD(-2)	0.000374	0.000135	2.779223	0.0067
OP	-0.000112	6.27E-05	-1.783376	0.0781
POL	0.000279	0.000484	0.576101	0.5661
C	5.723563	0.586006	9.767075	0.0000

R-squared	0.362596	Mean dependent var	4.607725
Adjusted R-squared	0.272610	S.D. dependent var	0.005550
S.E. of regression	0.004733	Akaike info criterion	-7.745409
Sum squared resid	0.001904	Schwarz criterion	-7.402505
Log likelihood	392.5250	Hannan-Quinn criter.	-7.606711
F-statistic	4.029457	Durbin-Watson stat	1.974484
Prob(F-statistic)	0.000061		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form
Dependent Variable: LNFDISKO
Selected Model: ARDL(1, 0, 0, 2, 0, 2, 0, 0)
Date: 06/19/16 Time: 02:27
Sample: 1991Q1 2015Q4
Included observations: 98

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	-0.029911	0.019299	-1.549828	0.1249
D(LNGDP)	-0.002214	0.013159	-0.168273	0.8668
D(TARIFF)	0.000583	0.000840	0.694059	0.4895
D(TARIFF(-1))	-0.001473	0.000761	-1.936292	0.0562
D(EX)	-0.000599	0.000510	-1.174777	0.2434
D(MPD)	0.000169	0.000137	1.231686	0.2215
D(MPD(-1))	-0.000342	0.000126	-2.718005	0.0080
D(OP)	-0.000079	0.000085	-0.934537	0.3527
D(POL)	0.000223	0.000660	0.338632	0.7357
CointEq(-1)	-1.232875	0.123654	-9.970361	0.0000

Cointeq = LNFDISKO - (-0.0108*LNWAGE + 0.0023*LNGDP -0.0007
*TARIFF -0.0002*EX + 0.0002*MPD -0.0001*OP + 0.0002*POL + 4.6674
)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.010766	0.009398	-1.145602	0.2552
LNGDP	0.002254	0.003928	0.573823	0.5676
TARIFF	-0.000740	0.000338	-2.192824	0.0311
EX	-0.000176	0.000299	-0.588091	0.5580
MPD	0.000154	0.000079	1.943882	0.0552
OP	-0.000091	0.000050	-1.816055	0.0729
POL	0.000227	0.000397	0.572929	0.5682
C	4.667411	0.066128	70.581459	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:27

Sample: 1991Q3 2015Q4

Included observations: 98

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.63325	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDISKO)

Method: Least Squares

Date: 06/19/16 Time: 02:27

Sample: 1991Q3 2015Q4

Included observations: 98

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TARIFF)	0.000713	0.000990	0.720582	0.4731
D(TARIFF(-1))	-0.001165	0.000807	-1.444803	0.1522
D(MPD)	0.000110	0.000113	0.969661	0.3350
D(MPD(-1))	-0.000320	0.000135	-2.365508	0.0203
C	5.674961	0.589004	9.634851	0.0000
LNWAGE(-1)	-0.002933	0.012060	-0.243193	0.8084
LNGDP(-1)	0.001246	0.004649	0.268040	0.7893
TARIFF(-1)	-0.000633	0.000431	-1.466336	0.1462
EX(-1)	3.87E-05	0.000378	0.102331	0.9187
MPD(-1)	0.000137	9.16E-05	1.491631	0.1395
OP(-1)	-8.67E-05	6.25E-05	-1.388177	0.1687
POL(-1)	0.000345	0.000501	0.688806	0.4928
LNFDISKO(-1)	-1.227739	0.130005	-9.443807	0.0000

R-squared	0.613078	Mean dependent var	-7.61E-05
Adjusted R-squared	0.558454	S.D. dependent var	0.007230
S.E. of regression	0.004804	Akaike info criterion	-7.715581

Sum squared resid	0.001962	Schwarz criterion	-7.372677
Log likelihood	391.0635	Hannan-Quinn criter.	-7.576883
F-statistic	11.22355	Durbin-Watson stat	1.946360
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.706909	Prob. F(2,83)	0.4961
Obs*R-squared	1.641367	Prob. Chi-Square(2)	0.4401

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:28

Sample: 1991Q3 2015Q4

Included observations: 98

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDISKO(-1)	0.234146	0.359489	0.651328	0.5166
LNWAGE	0.002594	0.011628	0.223086	0.8240
LNGDP	0.000209	0.004921	0.042468	0.9662
TARIFF	-0.000255	0.001000	-0.255254	0.7992
TARIFF(-1)	0.000642	0.001460	0.439959	0.6611
TARIFF(-2)	-0.000186	0.000836	-0.222968	0.8241
EX	0.000105	0.000377	0.278619	0.7812
MPD	-6.68E-06	0.000117	-0.057338	0.9544
MPD(-1)	-2.31E-05	0.000157	-0.147283	0.8833
MPD(-2)	-6.79E-06	0.000137	-0.049697	0.9605
OP	5.04E-06	6.39E-05	0.078914	0.9373
POL	-0.000195	0.000513	-0.379411	0.7054
C	-1.101802	1.657416	-0.664771	0.5080
RESID(-1)	-0.264800	0.356387	-0.743012	0.4596
RESID(-2)	-0.096692	0.136816	-0.706732	0.4817

R-squared	0.016749	Mean dependent var	-1.47E-15
Adjusted R-squared	-0.149101	S.D. dependent var	0.004431
S.E. of regression	0.004750	Akaike info criterion	-7.721483
Sum squared resid	0.001872	Schwarz criterion	-7.325824
Log likelihood	393.3527	Hannan-Quinn criter.	-7.561447
F-statistic	0.100987	Durbin-Watson stat	1.985586
Prob(F-statistic)	0.999986		

Heteroskedasticity Test: ARCH

F-statistic	0.001645	Prob. F(1,95)	0.9677
Obs*R-squared	0.001679	Prob. Chi-Square(1)	0.9673

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:28

Sample (adjusted): 1991Q4 2015Q4

Included observations: 97 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.97E-05	8.73E-06	2.257842	0.0262
RESID^2(-1)	-0.004236	0.104458	-0.040555	0.9677

R-squared	0.000017	Mean dependent var	1.96E-05
Adjusted R-squared	-0.010509	S.D. dependent var	8.35E-05
S.E. of regression	8.40E-05	Akaike info criterion	-15.91168
Sum squared resid	6.70E-07	Schwarz criterion	-15.85859
Log likelihood	773.7163	Hannan-Quinn criter.	-15.89021
F-statistic	0.001645	Durbin-Watson stat	1.965221
Prob(F-statistic)	0.967736		

Appendix 1.9 Singapore

Dependent Variable: LNFDISP

Method: ARDL

Date: 06/19/16 Time: 02:30

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(1, 0, 0, 1, 0, 4, 0, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDISP(-1)	-0.047134	0.107175	-0.439784	0.6613
LNWAGE	-0.269347	0.118861	-2.266067	0.0261
LNGDP	0.041669	0.047974	0.868571	0.3876
TARIFF	0.012164	0.007663	1.587366	0.1163
TARIFF(-1)	-0.015144	0.007365	-2.056272	0.0430
EX	-0.003828	0.003692	-1.036721	0.3030
MPD	0.001504	0.001039	1.447056	0.1517
MPD(-1)	-0.002016	0.001276	-1.579769	0.1181
MPD(-2)	0.002412	0.001128	2.138245	0.0355
MPD(-3)	-0.001516	0.001109	-1.366402	0.1756
MPD(-4)	0.001963	0.000964	2.035074	0.0451
OP	-0.001265	0.000548	-2.307079	0.0236
POL	0.004422	0.006466	0.683881	0.4960
POL(-1)	-0.009788	0.006752	-1.449504	0.1511
C	6.064125	0.981776	6.176692	0.0000

R-squared	0.334879	Mean dependent var	4.622127
Adjusted R-squared	0.219920	S.D. dependent var	0.047044
S.E. of regression	0.041550	Akaike info criterion	-3.381241
Sum squared resid	0.139838	Schwarz criterion	-2.980561
Log likelihood	177.2996	Hannan-Quinn criter.	-3.219280
F-statistic	2.913028	Durbin-Watson stat	2.008513
Prob(F-statistic)	0.001301		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDISP

Selected Model: ARDL(1, 0, 0, 1, 0, 4, 0, 1)

Date: 06/19/16 Time: 02:30

Sample: 1991Q1 2015Q4

Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	-0.409697	0.169062	-2.423357	0.0176
D(LNGDP)	0.061154	0.118014	0.518189	0.6057
D(TARIFF)	0.011116	0.006595	1.685461	0.0957
D(EX)	-0.008218	0.004493	-1.828906	0.0711
D(MPD)	0.001285	0.001243	1.034478	0.3040
D(MPD(-1))	-0.002931	0.000988	-2.967007	0.0040
D(MPD(-2))	-0.000592	0.000949	-0.623722	0.5346
D(MPD(-3))	-0.001903	0.000870	-2.186671	0.0317
D(OP)	-0.000711	0.000762	-0.933576	0.3533
D(POL)	0.004333	0.005911	0.733025	0.4657
CointEq(-1)	-1.075051	0.110775	-9.704850	0.0000

Cointeq = LNFDISP - (-0.2572*LNWAGE + 0.0398*LNGDP -0.0028*TARIFF -0.0037*EX + 0.0022*MPD -0.0012*OP -0.0051*POL + 5.7912)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.257224	0.114749	-2.241614	0.0277
LNGDP	0.039793	0.045962	0.865795	0.3892
TARIFF	-0.002846	0.003966	-0.717596	0.4751
EX	-0.003655	0.003540	-1.032655	0.3048
MPD	0.002242	0.000928	2.415820	0.0179
OP	-0.001208	0.000532	-2.269182	0.0259
POL	-0.005124	0.004488	-1.141734	0.2569
C	5.791166	0.798698	7.250759	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:31

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.11524	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDISP)

Method: Least Squares

Date: 06/19/16 Time: 02:31

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TARIFF)	0.013593	0.007956	1.708537	0.0914
D(MPD)	0.000974	0.001029	0.946654	0.3466
D(MPD(-1))	-0.002467	0.001216	-2.027931	0.0459
D(MPD(-2))	-5.74E-05	0.001143	-0.050238	0.9601
D(MPD(-3))	-0.001834	0.001019	-1.799908	0.0756
D(POL)	0.000351	0.006912	0.050819	0.9596
C	5.548685	1.017561	5.452929	0.0000
LNWAGE(-1)	-0.109933	0.119044	-0.923470	0.3585
LNGDP(-1)	0.014327	0.046634	0.307221	0.7595
TARIFF(-1)	0.001541	0.004091	0.376716	0.7074
EX(-1)	0.000765	0.003675	0.208217	0.8356
MPD(-1)	0.001618	0.000988	1.637429	0.1054
OP(-1)	-0.000986	0.000591	-1.666296	0.0995
POL(-1)	-0.006448	0.004809	-1.340822	0.1837
LNFDISP(-1)	-1.116244	0.119494	-9.341421	0.0000
R-squared	0.616311	Mean dependent var		0.000627

Adjusted R-squared	0.549994	S.D. dependent var	0.064263
S.E. of regression	0.043109	Akaike info criterion	-3.307563
Sum squared resid	0.150530	Schwarz criterion	-2.906883
Log likelihood	173.7630	Hannan-Quinn criter.	-3.145601
F-statistic	9.293446	Durbin-Watson stat	1.985653
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.296926	Prob. F(2,79)	0.7439
Obs*R-squared	0.716260	Prob. Chi-Square(2)	0.6990

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:32

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDISP(-1)	0.114328	0.271926	0.420438	0.6753
LNWAGE	0.024987	0.124218	0.201156	0.8411
LNGDP	-0.000993	0.048640	-0.020411	0.9838
TARIFF	0.000291	0.008657	0.033563	0.9733
TARIFF(-1)	-0.000108	0.007937	-0.013549	0.9892
EX	0.000428	0.003801	0.112736	0.9105
MPD	1.38E-05	0.001066	0.012912	0.9897
MPD(-1)	-0.000247	0.001339	-0.184383	0.8542
MPD(-2)	0.000116	0.001151	0.100667	0.9201
MPD(-3)	-0.000268	0.001228	-0.218459	0.8276
MPD(-4)	7.25E-05	0.000987	0.073496	0.9416
OP	0.000164	0.000611	0.268575	0.7890
POL	-0.001128	0.006723	-0.167797	0.8672
POL(-1)	0.000717	0.006977	0.102710	0.9185
C	-0.667983	1.561583	-0.427760	0.6700
RESID(-1)	-0.152296	0.305167	-0.499057	0.6191
RESID(-2)	-0.060252	0.136415	-0.441681	0.6599

R-squared	0.007461	Mean dependent var	-9.91E-16
Adjusted R-squared	-0.193560	S.D. dependent var	0.038366
S.E. of regression	0.041915	Akaike info criterion	-3.347063
Sum squared resid	0.138795	Schwarz criterion	-2.892960
Log likelihood	177.6590	Hannan-Quinn criter.	-3.163507
F-statistic	0.037116	Durbin-Watson stat	1.938414
Prob(F-statistic)	1.000000		

Heteroskedasticity Test: ARCH

F-statistic	4.117305	Prob. F(1,93)	0.0453
Obs*R-squared	4.027542	Prob. Chi-Square(1)	0.0448

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:33

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001179	0.000346	3.403834	0.0010
RESID^2(-1)	0.208400	0.102705	2.029114	0.0453

R-squared	0.042395	Mean dependent var	0.001472
Adjusted R-squared	0.032098	S.D. dependent var	0.003120
S.E. of regression	0.003069	Akaike info criterion	-8.713953
Sum squared resid	0.000876	Schwarz criterion	-8.660187
Log likelihood	415.9128	Hannan-Quinn criter.	-8.692228
F-statistic	4.117305	Durbin-Watson stat	2.051707
Prob(F-statistic)	0.045305		

Appendix 1.10 Switzerland

Dependent Variable: LNFDISW

Method: ARDL

Date: 06/19/16 Time: 02:33

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(4, 1, 1, 4, 1, 4, 3, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDISW(-1)	-0.317073	0.088653	-3.576586	0.0006
LNFDISW(-2)	-0.292999	0.093926	-3.119456	0.0026
LNFDISW(-3)	-0.042650	0.086632	-0.492308	0.6240
LNFDISW(-4)	-0.508748	0.087925	-5.786164	0.0000
LNWAGE	-0.058419	0.027109	-2.154999	0.0346
LNWAGE(-1)	0.038022	0.027923	1.361657	0.1777
LNGDP	-0.053602	0.019249	-2.784629	0.0069
LNGDP(-1)	0.049228	0.017842	2.759080	0.0074
TARIFF	-0.001435	0.001131	-1.269145	0.2086
TARIFF(-1)	0.004483	0.001585	2.828069	0.0061
TARIFF(-2)	-0.003020	0.001731	-1.744503	0.0855
TARIFF(-3)	-0.004822	0.001664	-2.898126	0.0050
TARIFF(-4)	0.005244	0.001041	5.035811	0.0000
EX	-0.001969	0.000724	-2.718090	0.0083
EX(-1)	0.001277	0.000731	1.747066	0.0850
MPD	-6.86E-05	0.000208	-0.330280	0.7422
MPD(-1)	8.35E-05	0.000211	0.395091	0.6940
MPD(-2)	-0.000210	0.000212	-0.991708	0.3248
MPD(-3)	0.000382	0.000217	1.758409	0.0830
MPD(-4)	0.000301	0.000199	1.514503	0.1344
OP	-0.000266	0.000138	-1.932709	0.0573
OP(-1)	0.000489	0.000167	2.932454	0.0045
OP(-2)	-0.000430	0.000154	-2.792828	0.0067
OP(-3)	0.000180	0.000120	1.501247	0.1378
POL	0.001175	0.000601	1.953997	0.0547
C	10.09409	1.136480	8.881893	0.0000
R-squared	0.701384	Mean dependent var		4.608465

Adjusted R-squared	0.594736	S.D. dependent var	0.008415
S.E. of regression	0.005357	Akaike info criterion	-7.394967
Sum squared resid	0.002009	Schwarz criterion	-6.700456
Log likelihood	380.9584	Hannan-Quinn criter.	-7.114235
F-statistic	6.576605	Durbin-Watson stat	2.365189
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDISW

Selected Model: ARDL(4, 1, 1, 4, 1, 4, 3, 0)

Date: 06/19/16 Time: 02:34

Sample: 1991Q1 2015Q4

Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDISW(-1))	0.827395	0.180309	4.588757	0.0000
D(LNFDISW(-2))	0.545889	0.127051	4.296621	0.0001
D(LNFDISW(-3))	0.501083	0.081909	6.117525	0.0000
D(LNWAGE)	-0.060221	0.023279	-2.586872	0.0118
D(LNGDP)	-0.054102	0.015032	-3.599195	0.0006
D(TARIFF)	-0.001419	0.000901	-1.574730	0.1198
D(TARIFF(-1))	0.002555	0.000982	2.602204	0.0113
D(TARIFF(-2))	-0.000529	0.001013	-0.522128	0.6032
D(TARIFF(-3))	-0.005237	0.000925	-5.660938	0.0000
D(EX)	-0.002023	0.000611	-3.312350	0.0015
D(MPD)	-0.000061	0.000163	-0.375124	0.7087
D(MPD(-1))	-0.000478	0.000173	-2.761596	0.0073
D(MPD(-2))	-0.000669	0.000172	-3.895602	0.0002
D(MPD(-3))	-0.000287	0.000172	-1.665342	0.1003
D(OP)	-0.000269	0.000115	-2.341416	0.0221
D(OP(-1))	0.000258	0.000082	3.144787	0.0024
D(OP(-2))	-0.000178	0.000105	-1.695592	0.0944
D(POL)	0.001714	0.000780	2.198350	0.0312
CointEq(-1)	-2.149023	0.219310	-9.799027	0.0000

Cointeq = LNFDISW - (-0.0094*LNWAGE -0.0020*LNGDP + 0.0002*TARIFF -0.0003*EX + 0.0002*MPD -0.0000*OP + 0.0005*POL + 4.6700)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.009437	0.008251	-1.143691	0.2566
LNGDP	-0.002023	0.003223	-0.627734	0.5322
TARIFF	0.000208	0.000275	0.756724	0.4518
EX	-0.000320	0.000240	-1.331445	0.1874
MPD	0.000226	0.000066	3.402104	0.0011

OP	-0.000013	0.000054	-0.233826	0.8158
POL	0.000544	0.000280	1.941090	0.0563
C	4.670013	0.053661	87.028487	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:34

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	9.095765	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDISW)

Method: Least Squares

Date: 06/19/16 Time: 02:34

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDISW(-1))	0.844910	0.202663	4.169041	0.0001
D(LNFDISW(-2))	0.547931	0.142852	3.835666	0.0003
D(LNFDISW(-3))	0.516865	0.089751	5.758844	0.0000
D(LNWAGE)	-0.056793	0.028241	-2.011007	0.0482
D(LNGDP)	-0.047715	0.019862	-2.402281	0.0189
D(TARIFF)	-0.001732	0.001171	-1.479599	0.1435
D(TARIFF(-1))	0.002541	0.001132	2.245443	0.0279
D(TARIFF(-2))	-0.000364	0.001154	-0.315001	0.7537
D(TARIFF(-3))	-0.005292	0.001063	-4.977670	0.0000
D(EX)	-0.001872	0.000748	-2.502884	0.0147
D(MPD)	-0.000132	0.000214	-0.617571	0.5389
D(MPD(-1))	-0.000451	0.000232	-1.946529	0.0556
D(MPD(-2))	-0.000689	0.000213	-3.226063	0.0019
D(MPD(-3))	-0.000316	0.000203	-1.558118	0.1237
D(OP)	-0.000229	0.000141	-1.622208	0.1093

D(OP(-1))	0.000252	0.000118	2.145580	0.0354
D(OP(-2))	-0.000181	0.000123	-1.476726	0.1442
C	9.983104	1.158584	8.616642	0.0000
LNWAGE(-1)	-0.021646	0.019629	-1.102737	0.2739
LNGDP(-1)	-0.003286	0.007242	-0.453698	0.6514
TARIFF(-1)	0.000394	0.000632	0.623727	0.5348
EX(-1)	-0.000641	0.000549	-1.166631	0.2473
MPD(-1)	0.000465	0.000157	2.966119	0.0041
OP(-1)	-2.93E-05	0.000120	-0.243601	0.8083
POL(-1)	0.000583	0.000651	0.895351	0.3737
LNFDISW(-1)	-2.137686	0.245691	-8.700713	0.0000

R-squared	0.863343	Mean dependent var	9.31E-05
Adjusted R-squared	0.814537	S.D. dependent var	0.012702
S.E. of regression	0.005470	Akaike info criterion	-7.353245
Sum squared resid	0.002094	Schwarz criterion	-6.658735
Log likelihood	378.9558	Hannan-Quinn criter.	-7.072513
F-statistic	17.68929	Durbin-Watson stat	2.389099
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	5.255012	Prob. F(2,68)	0.0075
Obs*R-squared	12.85138	Prob. Chi-Square(2)	0.0016

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:34

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDISW(-1)	0.245442	0.124227	1.975763	0.0522
LNFDISW(-2)	0.241887	0.124177	1.947918	0.0556
LNFDISW(-3)	0.120600	0.089937	1.340933	0.1844
LNFDISW(-4)	0.031776	0.085859	0.370096	0.7125
LNWAGE	0.008490	0.025731	0.329971	0.7424
LNWAGE(-1)	0.008990	0.026512	0.339075	0.7356
LNGDP	-0.000861	0.018326	-0.046996	0.9627
LNGDP(-1)	0.001001	0.016945	0.059092	0.9531
TARIFF	0.001052	0.001123	0.936144	0.3525
TARIFF(-1)	-7.88E-06	0.001555	-0.005068	0.9960
TARIFF(-2)	-0.001425	0.001701	-0.837911	0.4050
TARIFF(-3)	0.000624	0.001601	0.389791	0.6979
TARIFF(-4)	8.68E-05	0.000990	0.087649	0.9304
EX	4.09E-05	0.000685	0.059712	0.9526
EX(-1)	0.000335	0.000700	0.478368	0.6339
MPD	1.66E-05	0.000197	0.084279	0.9331
MPD(-1)	-4.43E-05	0.000200	-0.221333	0.8255
MPD(-2)	1.04E-05	0.000201	0.051844	0.9588
MPD(-3)	-1.19E-05	0.000206	-0.057834	0.9541
MPD(-4)	-0.000209	0.000199	-1.052726	0.2962
OP	1.33E-05	0.000130	0.102240	0.9189
OP(-1)	5.26E-05	0.000158	0.332038	0.7409
OP(-2)	-1.20E-05	0.000147	-0.081763	0.9351
OP(-3)	2.87E-05	0.000114	0.252400	0.8015
POL	-0.000101	0.000571	-0.176908	0.8601
C	-3.058429	1.430502	-2.138012	0.0361
RESID(-1)	-0.524842	0.180685	-2.904731	0.0050
RESID(-2)	-0.345141	0.172795	-1.997408	0.0498

R-squared	0.133869	Mean dependent var	1.28E-15
Adjusted R-squared	-0.210037	S.D. dependent var	0.004599
S.E. of regression	0.005058	Akaike info criterion	-7.497019
Sum squared resid	0.001740	Schwarz criterion	-6.749084
Log likelihood	387.8569	Hannan-Quinn criter.	-7.194692
F-statistic	0.389260	Durbin-Watson stat	2.070557
Prob(F-statistic)	0.996000		

Heteroskedasticity Test: ARCH

F-statistic	0.293678	Prob. F(1,93)	0.5892
Obs*R-squared	0.299049	Prob. Chi-Square(1)	0.5845

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:35

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.00E-05	5.42E-06	3.685576	0.0004
RESID^2(-1)	0.056085	0.103493	0.541921	0.5892

R-squared	0.003148	Mean dependent var	2.11E-05
Adjusted R-squared	-0.007571	S.D. dependent var	4.81E-05
S.E. of regression	4.83E-05	Akaike info criterion	-17.01720
Sum squared resid	2.17E-07	Schwarz criterion	-16.96344
Log likelihood	810.3172	Hannan-Quinn criter.	-16.99548
F-statistic	0.293678	Durbin-Watson stat	2.008055
Prob(F-statistic)	0.589169		

Appendix 1.11 United Kingdom

Dependent Variable: LNFDIUK

Method: ARDL

Date: 06/19/16 Time: 02:36

Sample (adjusted): 1992Q1 2015Q4

Included observations: 96 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 312500

Selected Model: ARDL(1, 1, 4, 1, 4, 0, 3, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIUK(-1)	-0.304020	0.100100	-3.037164	0.0033
LNWAGE	0.103579	0.046984	2.204548	0.0306
LNWAGE(-1)	-0.178724	0.047522	-3.760876	0.0003
LNGDP	-0.086073	0.032189	-2.673968	0.0092
LNGDP(-1)	-0.022272	0.044975	-0.495212	0.6219
LNGDP(-2)	0.045664	0.039668	1.151154	0.2534
LNGDP(-3)	-0.061206	0.037472	-1.633381	0.1066
LNGDP(-4)	0.084897	0.030065	2.823780	0.0061
TARIFF	0.001551	0.001760	0.881457	0.3809
TARIFF(-1)	-0.004220	0.001795	-2.350728	0.0214
EX	0.000599	0.001283	0.466956	0.6419
EX(-1)	-0.005738	0.001413	-4.059944	0.0001
EX(-2)	-0.000207	0.000642	-0.322797	0.7478
EX(-3)	-0.000995	0.000691	-1.440621	0.1539
EX(-4)	0.002030	0.000615	3.299777	0.0015
MPD	0.000406	0.000201	2.018852	0.0471
OP	-0.000344	0.000219	-1.575362	0.1194
OP(-1)	0.000506	0.000283	1.786209	0.0782
OP(-2)	0.000208	0.000304	0.683303	0.4965
OP(-3)	0.000498	0.000220	2.269141	0.0262
POL	-0.000173	0.001119	-0.154256	0.8778
C	6.941112	0.542498	12.79471	0.0000

R-squared	0.491096	Mean dependent var	4.610191
Adjusted R-squared	0.346677	S.D. dependent var	0.011693
S.E. of regression	0.009451	Akaike info criterion	-6.287237
Sum squared resid	0.006610	Schwarz criterion	-5.699574
Log likelihood	323.7874	Hannan-Quinn criter.	-6.049694

F-statistic	3.400498	Durbin-Watson stat	2.116534
Prob(F-statistic)	0.000052		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form
Dependent Variable: LNFDIUK
Selected Model: ARDL(1, 1, 4, 1, 4, 0, 3, 0)
Date: 06/19/16 Time: 02:37
Sample: 1991Q1 2015Q4
Included observations: 96

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.099750	0.041289	2.415888	0.0182
D(LNGDP)	-0.078892	0.031604	-2.496261	0.0148
D(LNGDP(-1))	-0.072774	0.028744	-2.531744	0.0135
D(LNGDP(-2))	-0.021868	0.023478	-0.931446	0.3547
D(LNGDP(-3))	-0.087146	0.024726	-3.524506	0.0007
D(TARIFF)	0.001381	0.001557	0.887298	0.3778
D(EX)	0.000569	0.001106	0.514811	0.6082
D(EX(-1))	-0.000811	0.000568	-1.428673	0.1573
D(EX(-2))	-0.001038	0.000553	-1.877418	0.0644
D(EX(-3))	-0.002065	0.000526	-3.925699	0.0002
D(MPD)	0.000305	0.000291	1.046843	0.2986
D(OP)	-0.000308	0.000208	-1.481094	0.1428
D(OP(-1))	-0.000704	0.000180	-3.905470	0.0002
D(OP(-2))	-0.000496	0.000199	-2.489564	0.0150
D(POL)	0.000735	0.001291	0.569541	0.5707
CointEq(-1)	-1.306592	0.094461	-13.832074	0.0000

Cointeq = LNFDIUK - (-0.0576*LNWAGE -0.0299*LNGDP -0.0020*TARIFF
-0.0033*EX + 0.0003*MPD + 0.0007*OP -0.0001*POL + 5.3229)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.057626	0.018970	-3.037810	0.0033
LNGDP	-0.029899	0.009575	-3.122603	0.0026
TARIFF	-0.002047	0.000632	-3.237601	0.0018
EX	-0.003306	0.000660	-5.005990	0.0000
MPD	0.000311	0.000153	2.036268	0.0453
OP	0.000665	0.000143	4.658051	0.0000
POL	-0.000132	0.000859	-0.154161	0.8779
C	5.322858	0.125587	42.383951	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:37

Sample: 1992Q1 2015Q4

Included observations: 96

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	19.53581	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIUK)

Method: Least Squares

Date: 06/19/16 Time: 02:37

Sample: 1992Q1 2015Q4

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	0.090744	0.048494	1.871228	0.0653
D(LNGDP)	-0.053507	0.027237	-1.964481	0.0532
D(LNGDP(-1))	-0.074488	0.033896	-2.197529	0.0311
D(LNGDP(-2))	-0.019593	0.028726	-0.682084	0.4973
D(LNGDP(-3))	-0.084783	0.030087	-2.817942	0.0062
D(TARIFF)	0.000140	0.001862	0.075209	0.9403
D(EX)	0.000562	0.001288	0.436606	0.6637
D(EX(-1))	-0.000802	0.000708	-1.132612	0.2610
D(EX(-2))	-0.000942	0.000709	-1.329103	0.1879
D(EX(-3))	-0.002110	0.000616	-3.427257	0.0010
D(OP)	-0.000202	0.000204	-0.990379	0.3252
D(OP(-1))	-0.000674	0.000216	-3.117533	0.0026
D(OP(-2))	-0.000497	0.000219	-2.268550	0.0262
C	6.946107	0.542390	12.80649	0.0000
LNWAGE(-1)	-0.089301	0.027328	-3.267797	0.0016

LNGDP(-1)	-0.033457	0.012330	-2.713478	0.0083
TARIFF(-1)	-0.003165	0.000905	-3.496249	0.0008
EX(-1)	-0.004515	0.000919	-4.914919	0.0000
MPD(-1)	0.000381	0.000211	1.803831	0.0753
OP(-1)	0.000856	0.000202	4.243855	0.0001
POL(-1)	-0.001087	0.001107	-0.981948	0.3293
LNFDIUK(-1)	-1.295483	0.099479	-13.02265	0.0000

R-squared	0.749599	Mean dependent var	2.41E-05
Adjusted R-squared	0.678539	S.D. dependent var	0.016645
S.E. of regression	0.009437	Akaike info criterion	-6.290204
Sum squared resid	0.006591	Schwarz criterion	-5.702540
Log likelihood	323.9298	Hannan-Quinn criter.	-6.052661
F-statistic	10.54885	Durbin-Watson stat	2.142815
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.081652	Prob. F(2,72)	0.3445
Obs*R-squared	2.800269	Prob. Chi-Square(2)	0.2466

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 06/19/16 Time: 02:45

Sample: 1992Q1 2015Q4

Included observations: 96

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIUK(-1)	0.202298	0.173313	1.167242	0.2470
LNWAGE	0.004676	0.047528	0.098381	0.9219
LNWAGE(-1)	9.85E-06	0.047768	0.000206	0.9998
LNGDP	0.003378	0.033032	0.102248	0.9188
LNGDP(-1)	0.010181	0.046242	0.220171	0.8264
LNGDP(-2)	-0.008745	0.040645	-0.215160	0.8303
LNGDP(-3)	-0.000771	0.037604	-0.020501	0.9837
LNGDP(-4)	0.000878	0.030079	0.029194	0.9768
TARIFF	-0.000353	0.001780	-0.198373	0.8433
TARIFF(-1)	0.000553	0.001838	0.301157	0.7642
EX	8.87E-05	0.001314	0.067522	0.9464
EX(-1)	0.000322	0.001433	0.224925	0.8227
EX(-2)	6.04E-06	0.000641	0.009419	0.9925

EX(-3)	-6.10E-05	0.000697	-0.087577	0.9305
EX(-4)	-2.00E-05	0.000615	-0.032476	0.9742
MPD	-3.16E-05	0.000203	-0.155657	0.8767
OP	1.69E-05	0.000219	0.077404	0.9385
OP(-1)	-8.83E-06	0.000285	-0.030992	0.9754
OP(-2)	-2.90E-05	0.000305	-0.095189	0.9244
OP(-3)	-8.77E-05	0.000227	-0.385920	0.7007
POL	0.000172	0.001126	0.152704	0.8791
C	-1.014632	0.888411	-1.142075	0.2572
RESID(-1)	-0.273839	0.205780	-1.330736	0.1875
RESID(-2)	0.118075	0.135616	0.870657	0.3868

R-squared	0.029169	Mean dependent var	9.06E-16
Adjusted R-squared	-0.280957	S.D. dependent var	0.008342
S.E. of regression	0.009441	Akaike info criterion	-6.275174
Sum squared resid	0.006418	Schwarz criterion	-5.634087
Log likelihood	325.2083	Hannan-Quinn criter.	-6.016036
F-statistic	0.094057	Durbin-Watson stat	1.943940
Prob(F-statistic)	1.000000		

Heteroskedasticity Test: ARCH

F-statistic	0.064422	Prob. F(1,93)	0.8002
Obs*R-squared	0.065762	Prob. Chi-Square(1)	0.7976

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:45

Sample (adjusted): 1992Q2 2015Q4

Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.10E-05	1.47E-05	4.836245	0.0000
RESID^2(-1)	-0.026571	0.104689	-0.253815	0.8002

R-squared	0.000692	Mean dependent var	6.92E-05
Adjusted R-squared	-0.010053	S.D. dependent var	0.000125
S.E. of regression	0.000126	Akaike info criterion	-15.10512
Sum squared resid	1.47E-06	Schwarz criterion	-15.05135
Log likelihood	719.4931	Hannan-Quinn criter.	-15.08339
F-statistic	0.064422	Durbin-Watson stat	1.983186
Prob(F-statistic)	0.800199		

Appendix 1.12 United State of America

Dependent Variable: LNFDIUSA

Method: ARDL

Date: 06/19/16 Time: 02:41

Sample (adjusted): 1991Q2 2015Q4

Included observations: 99 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (2 lags, automatic): LNWAGE LNGDP TARIFF EX MPD OP POL

Fixed regressors: C

Number of models evaluated: 2187

Selected Model: ARDL(1, 0, 0, 0, 0, 0, 0, 0)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNFDIUSA(-1)	-0.031527	0.108977	-0.289300	0.7730
LNWAGE	-0.164776	0.078421	-2.101181	0.0384
LNGDP	0.011324	0.034743	0.325947	0.7452
TARIFF	-0.005937	0.002912	-2.039163	0.0444
EX	-0.004264	0.002499	-1.706250	0.0914
MPD	0.001010	0.000608	1.660875	0.1002
OP	-0.000258	0.000465	-0.554068	0.5809
POL	-0.002410	0.003680	-0.654949	0.5142
C	5.817079	0.737276	7.889966	0.0000

R-squared	0.080935	Mean dependent var	4.619066
Adjusted R-squared	-0.000759	S.D. dependent var	0.036781
S.E. of regression	0.036795	Akaike info criterion	-3.680404
Sum squared resid	0.121848	Schwarz criterion	-3.444484
Log likelihood	191.1800	Hannan-Quinn criter.	-3.584951
F-statistic	0.990705	Durbin-Watson stat	1.925188
Prob(F-statistic)	0.448752		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Cointegrating And Long Run Form

Dependent Variable: LNFDIUSA

Selected Model: ARDL(1, 0, 0, 0, 0, 0, 0, 0)

Date: 06/19/16 Time: 02:41

Sample: 1991Q1 2015Q4

Included observations: 99

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNWAGE)	-0.065065	0.145025	-0.448647	0.6548
D(LNGDP)	-0.090535	0.098962	-0.914849	0.3627
D(TARIFF)	0.001447	0.005869	0.246531	0.8058
D(EX)	-0.001536	0.003872	-0.396811	0.6924
D(MPD)	0.002694	0.001077	2.500952	0.0142
D(OP)	-0.000848	0.000648	-1.308652	0.1940
D(POL)	0.002754	0.005002	0.550515	0.5833
CointEq(-1)	-0.986999	0.118785	-8.309129	0.0000

Cointeq = LNFDIUSA - (-0.1597*LNWAGE + 0.0110*LNGDP -0.0058
*TARIFF -0.0041*EX + 0.0010*MPD -0.0002*OP -0.0023*POL + 5.6393)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGE	-0.159740	0.076783	-2.080415	0.0403
LNGDP	0.010978	0.033641	0.326338	0.7449
TARIFF	-0.005756	0.002806	-2.050919	0.0432
EX	-0.004134	0.002434	-1.698160	0.0929
MPD	0.000979	0.000601	1.627954	0.1070
OP	-0.000250	0.000453	-0.551856	0.5824
POL	-0.002337	0.003579	-0.653008	0.5154
C	5.639289	0.506019	11.144411	0.0000

ARDL Bounds Test

Date: 06/19/16 Time: 02:41

Sample: 1991Q2 2015Q4

Included observations: 99

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.25680	7

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Test Equation:

Dependent Variable: D(LNFDIUSA)

Method: Least Squares

Date: 06/19/16 Time: 02:41

Sample: 1991Q2 2015Q4

Included observations: 99

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.671858	0.803898	7.055442	0.0000
LNWAGE(-1)	-0.158966	0.080835	-1.966542	0.0523
LNGDP(-1)	0.037559	0.033470	1.122152	0.2648
TARIFF(-1)	-0.006051	0.002978	-2.032201	0.0451
EX(-1)	-0.004233	0.002600	-1.628124	0.1070
MPD(-1)	7.37E-05	0.000613	0.120230	0.9046
OP(-1)	0.000191	0.000476	0.400472	0.6898
POL(-1)	-0.004842	0.003735	-1.296331	0.1982
LNFDIUSA(-1)	-1.061849	0.113046	-9.393113	0.0000

R-squared	0.506122	Mean dependent var	-0.001058
Adjusted R-squared	0.462221	S.D. dependent var	0.050724
S.E. of regression	0.037198	Akaike info criterion	-3.658633
Sum squared resid	0.124530	Schwarz criterion	-3.422713
Log likelihood	190.1024	Hannan-Quinn criter.	-3.563180
F-statistic	11.52889	Durbin-Watson stat	1.864682
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.140778	Prob. F(2,88)	0.8689
Obs*R-squared	0.315739	Prob. Chi-Square(2)	0.8540

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 06/19/16 Time: 02:42
Sample: 1991Q2 2015Q4
Included observations: 99
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDIUSA(-1)	0.234832	0.456075	0.514898	0.6079
LNWAGE	0.016785	0.085540	0.196228	0.8449
LNGDP	0.000998	0.035278	0.028290	0.9775
TARIFF	0.000663	0.003235	0.204903	0.8381
EX	0.000479	0.002686	0.178443	0.8588
MPD	-0.000142	0.000671	-0.211726	0.8328
OP	2.44E-06	0.000470	0.005198	0.9959
POL	0.000350	0.003777	0.092794	0.9263
C	-1.212960	2.404700	-0.504412	0.6152
RESID(-1)	-0.250836	0.472811	-0.530521	0.5971
RESID(-2)	0.013717	0.119518	0.114766	0.9089

R-squared	0.003189	Mean dependent var	-1.52E-16
Adjusted R-squared	-0.110085	S.D. dependent var	0.035261
S.E. of regression	0.037151	Akaike info criterion	-3.643195
Sum squared resid	0.121460	Schwarz criterion	-3.354848
Log likelihood	191.3381	Hannan-Quinn criter.	-3.526529
F-statistic	0.028156	Durbin-Watson stat	1.898474
Prob(F-statistic)	0.999999		

Heteroskedasticity Test: ARCH

F-statistic	0.001514	Prob. F(1,96)	0.9690
Obs*R-squared	0.001545	Prob. Chi-Square(1)	0.9686

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/19/16 Time: 02:42

Sample (adjusted): 1991Q3 2015Q4

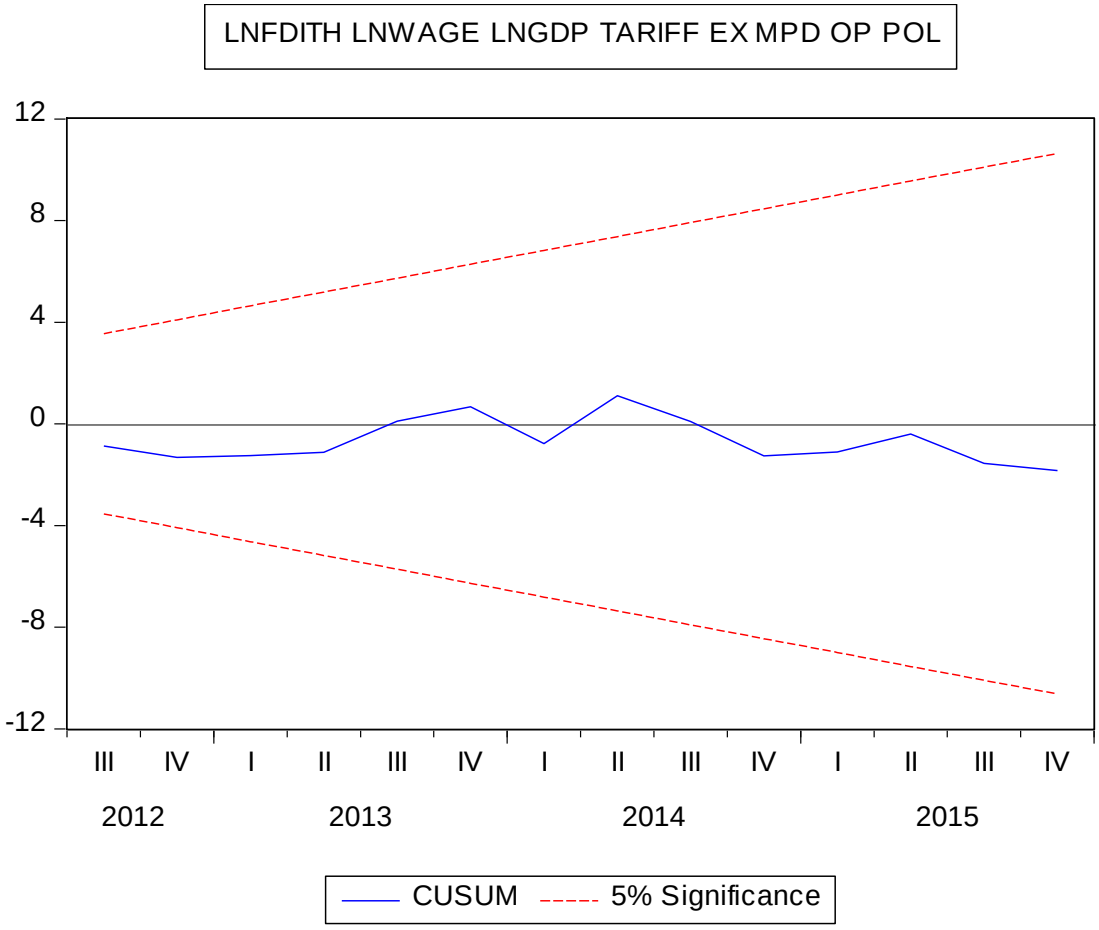
Included observations: 98 after adjustments

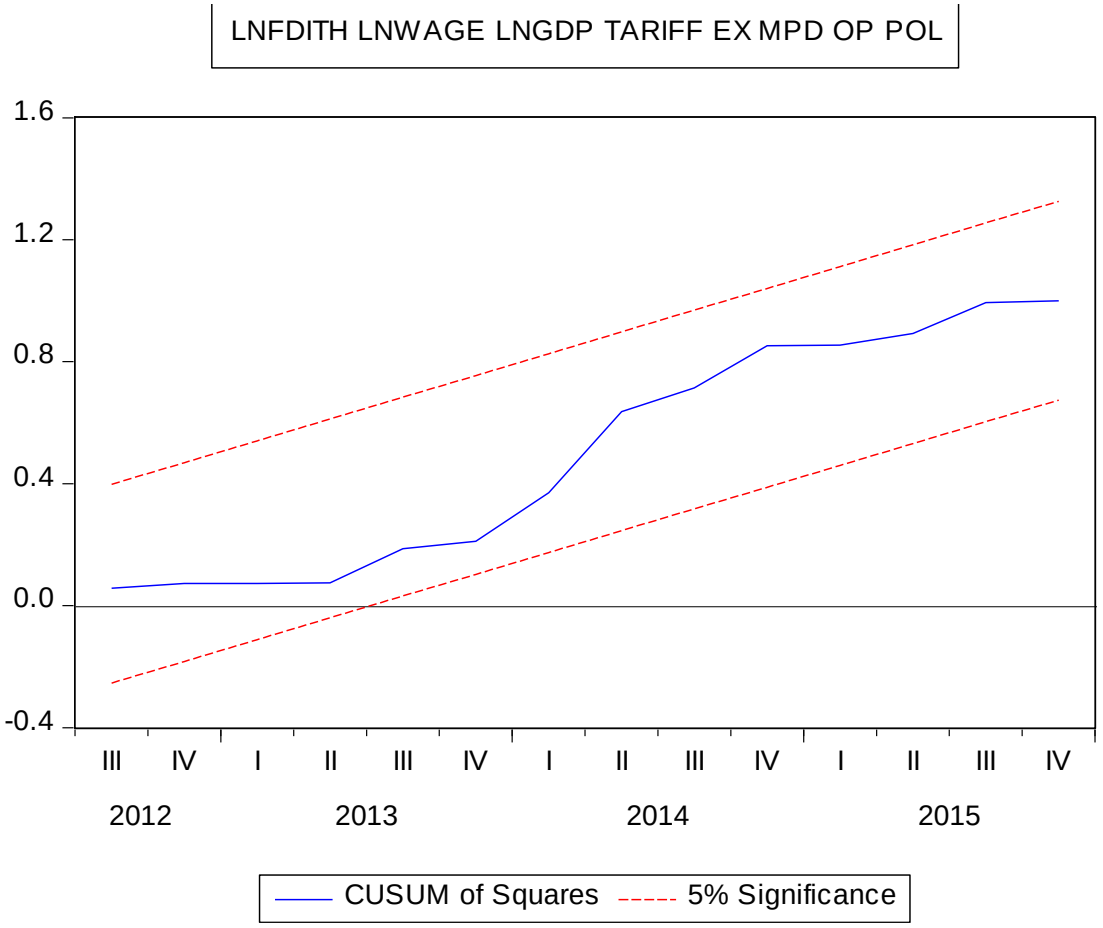
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001239	0.000518	2.389147	0.0188
RESID^2(-1)	0.004074	0.104707	0.038906	0.9690

R-squared	0.000016	Mean dependent var	0.001243
Adjusted R-squared	-0.010401	S.D. dependent var	0.004974
S.E. of regression	0.004999	Akaike info criterion	-7.738764
Sum squared resid	0.002400	Schwarz criterion	-7.686010
Log likelihood	381.1994	Hannan-Quinn criter.	-7.717426
F-statistic	0.001514	Durbin-Watson stat	1.950605
Prob(F-statistic)	0.969046		

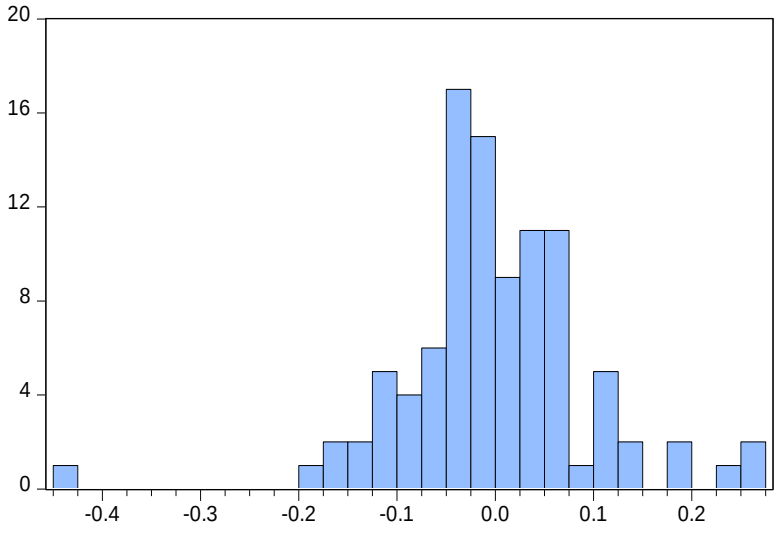
Appendix 2

Appendix 2.1 Thailand



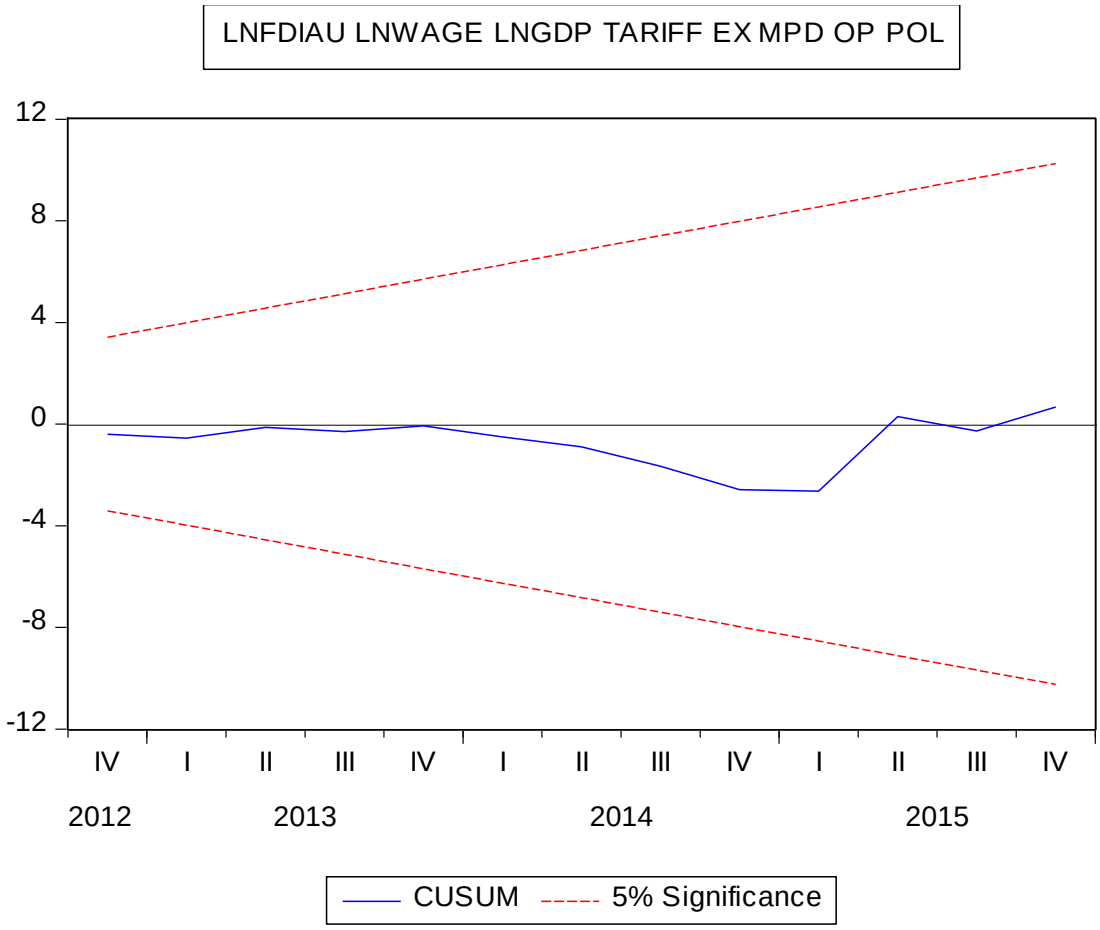

LNFDITH LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance

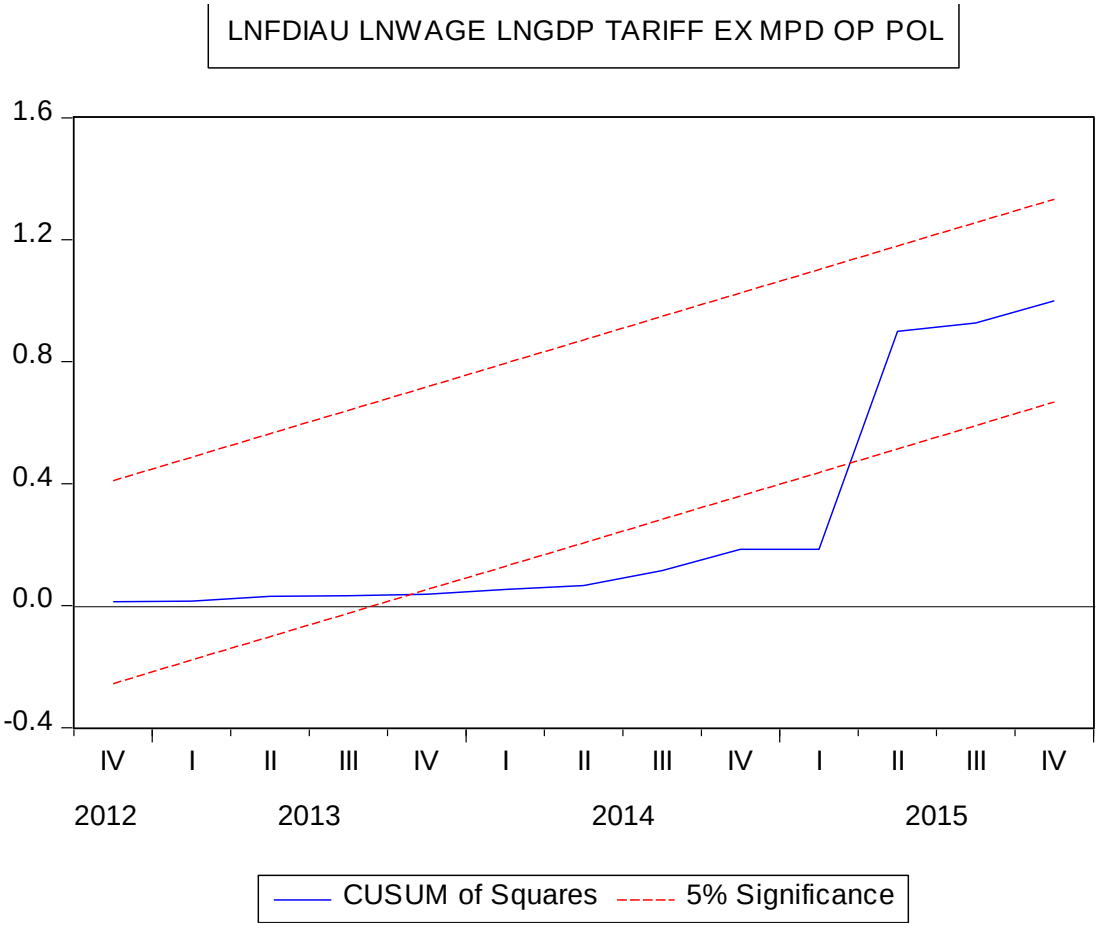
LNFDITH LNWAGE LNGDP TARIFF EX MPD OP POL



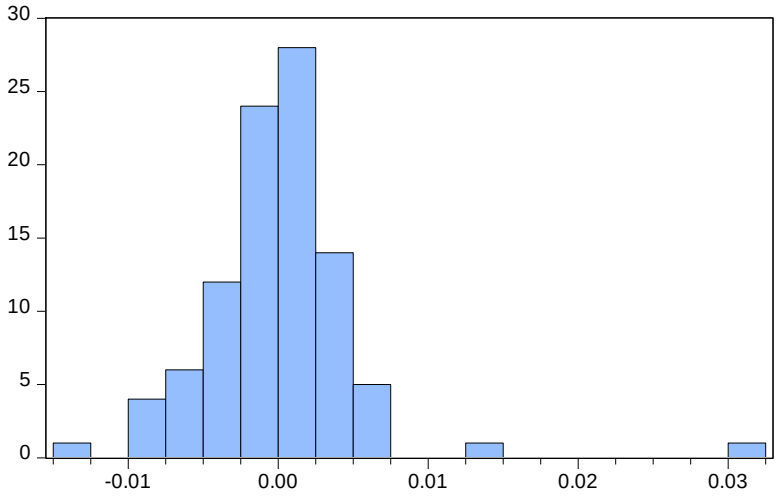
Series: Residuals	
Sample 1991Q4 2015Q4	
Observations 97	
Mean	1.34e-15
Median	-0.004621
Maximum	0.270098
Minimum	-0.425031
Std. Dev.	0.096275
Skewness	-0.320242
Kurtosis	6.691049
Jarque-Bera	56.72099
Probability	0.000000

Appendix 2.2 Australia



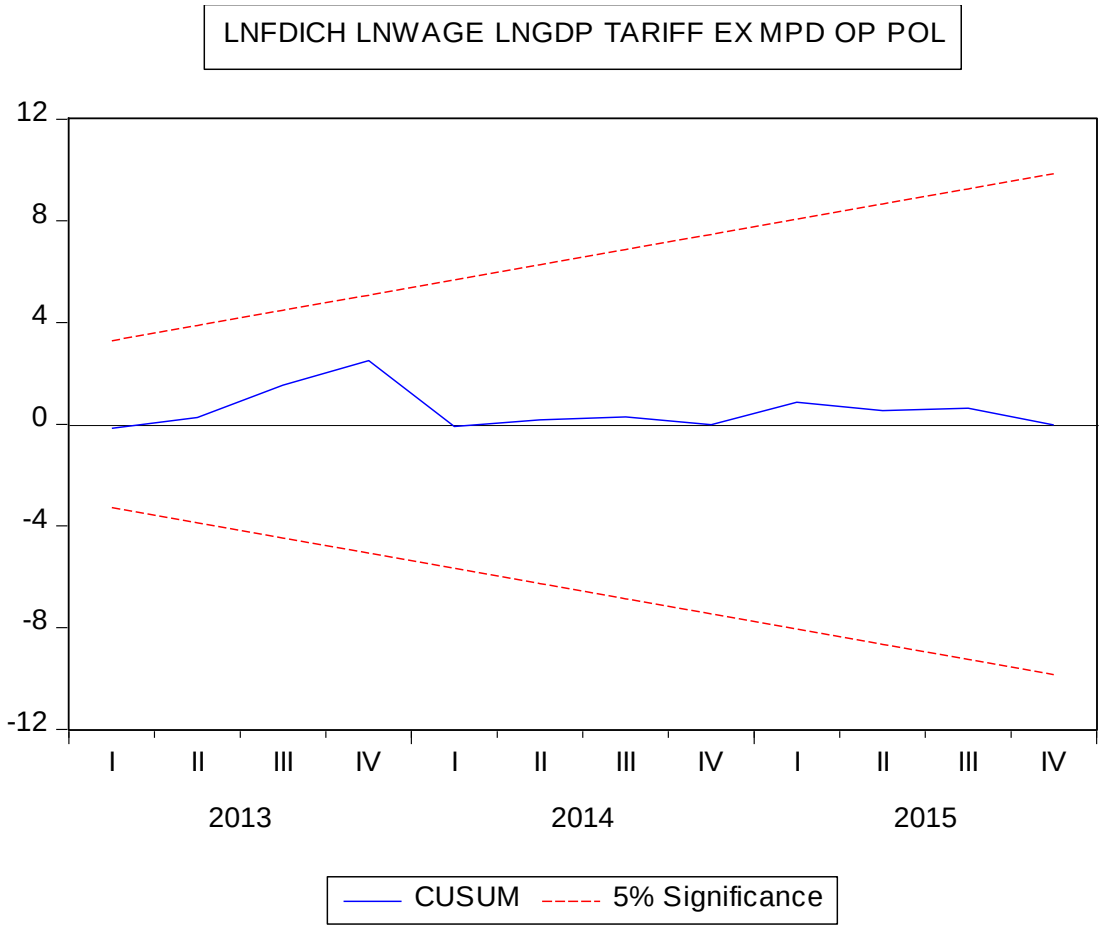

LNFDIAU LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance

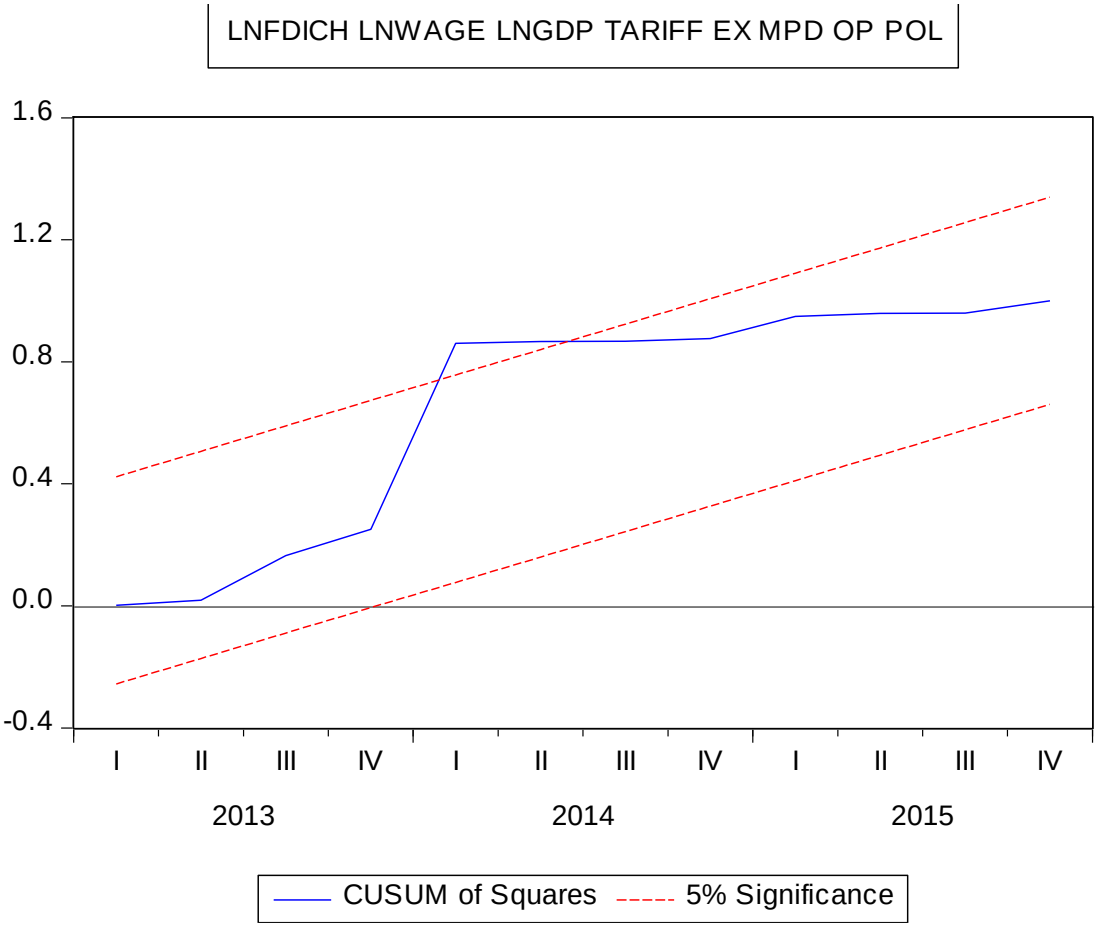
LNFDIAU LNWAGE LNGDP TARIFF EX MPD OP POL



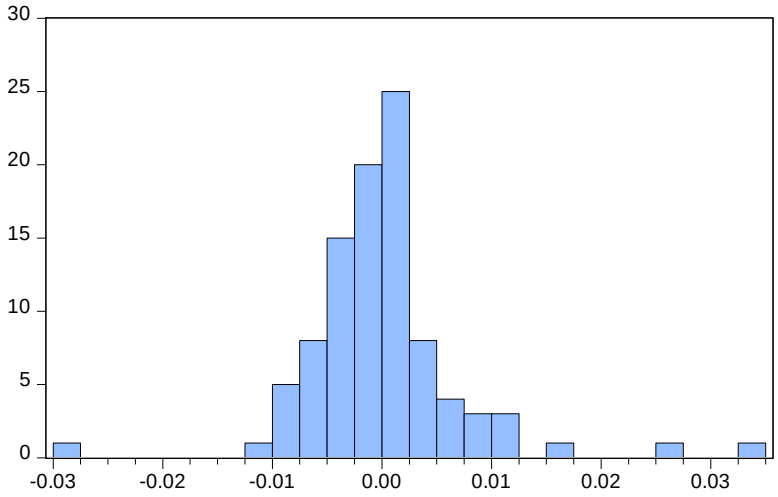
Series: Residuals	
Sample 1992Q1 2015Q4	
Observations 96	
Mean	-1.67e-15
Median	0.000176
Maximum	0.031278
Minimum	-0.014740
Std. Dev.	0.005154
Skewness	2.073167
Kurtosis	16.22723
Jarque-Bera	768.6068
Probability	0.000000

Appendix 2.3 China



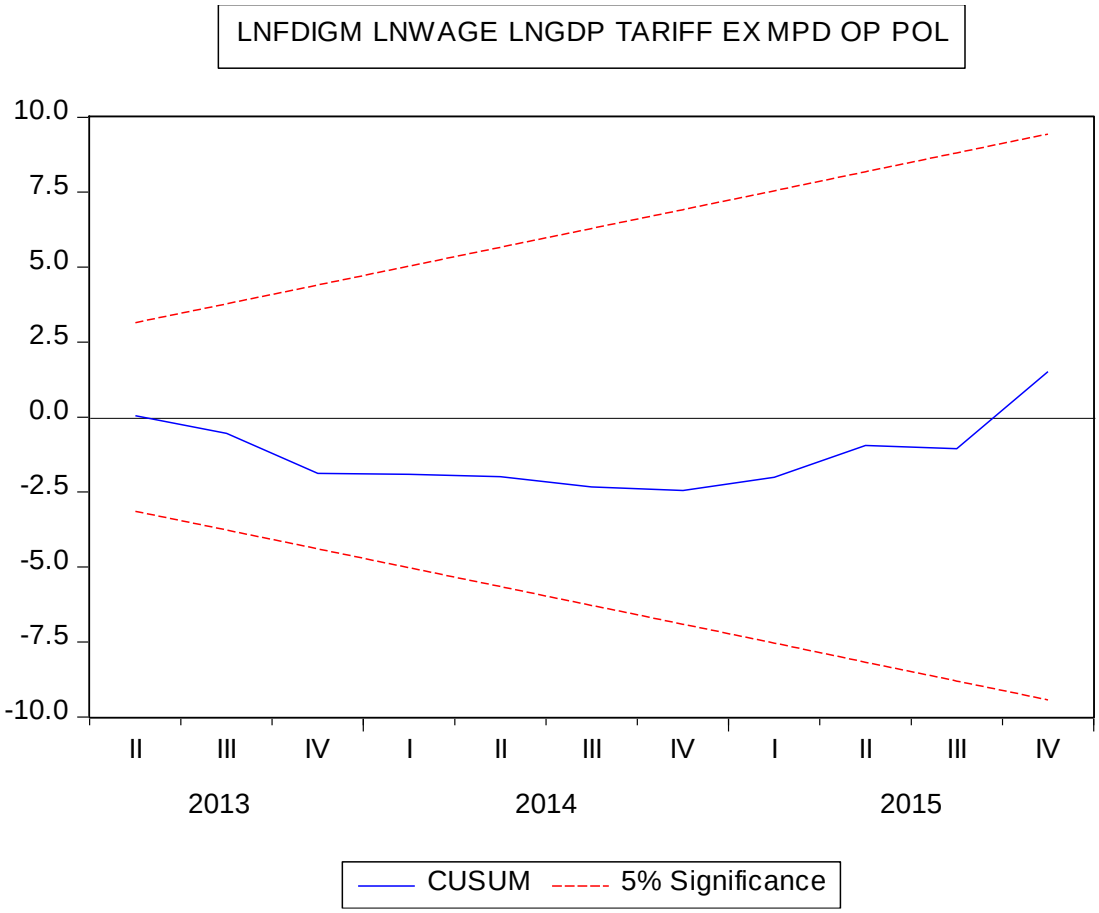

LNFDICH LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
I
II
III
IV
I
II
III
IV
I
II
III
IV
2013
2014
2015
CUSUM of Squares
5% Significance

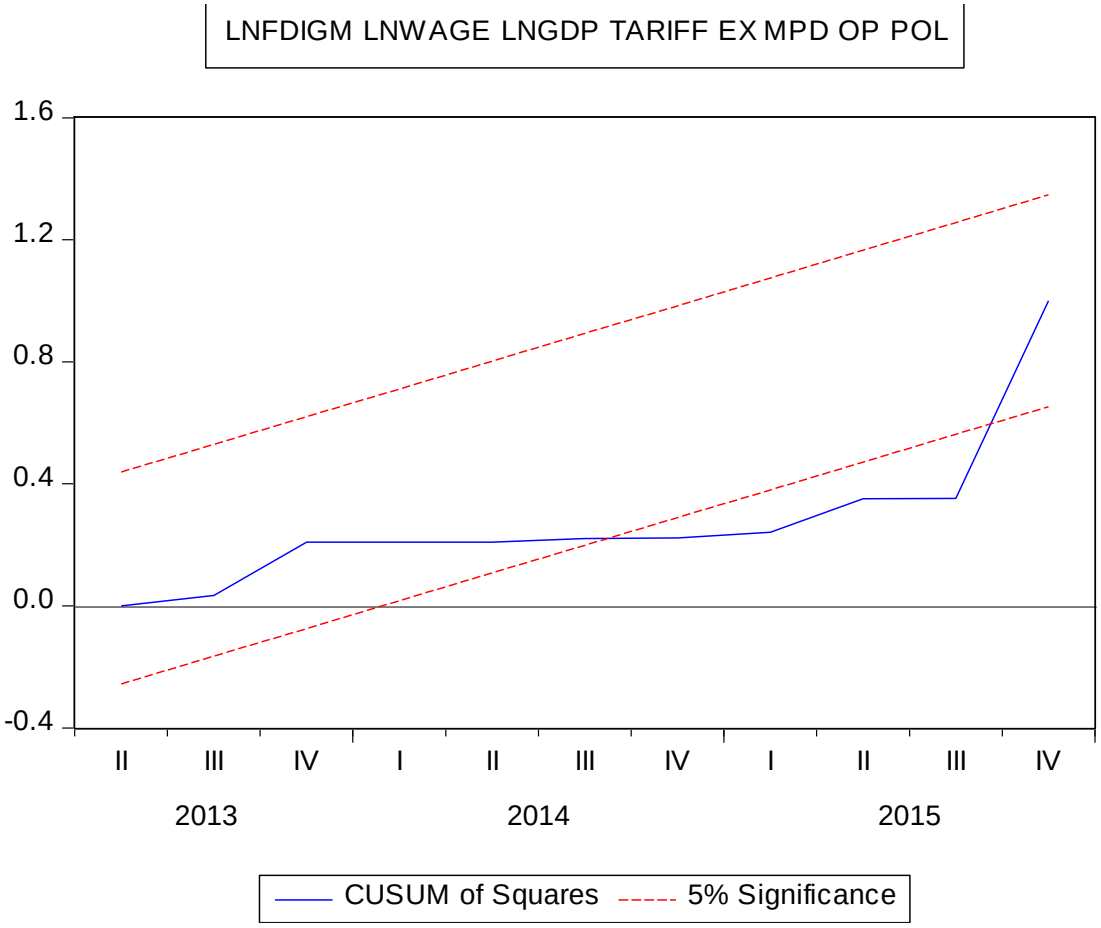
LNFDICH LNWAGE LNGDP TARIFF EX MPD OP POL

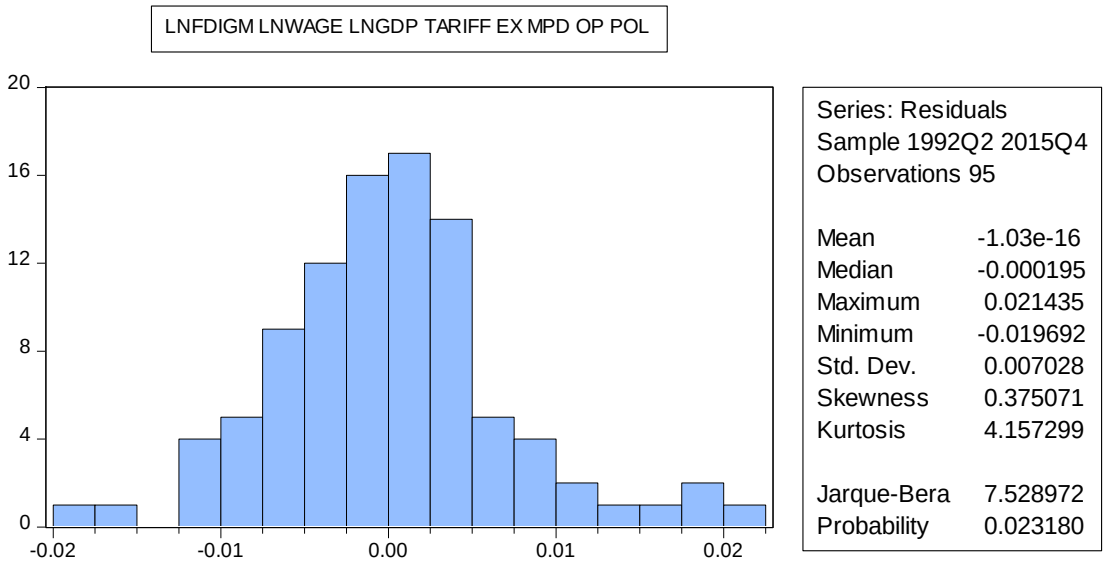


Series: Residuals	
Sample 1992Q1 2015Q4	
Observations 96	
Mean	3.89e-16
Median	-9.91e-05
Maximum	0.033256
Minimum	-0.027711
Std. Dev.	0.007122
Skewness	1.044767
Kurtosis	10.09213
Jarque-Bera	218.6580
Probability	0.000000

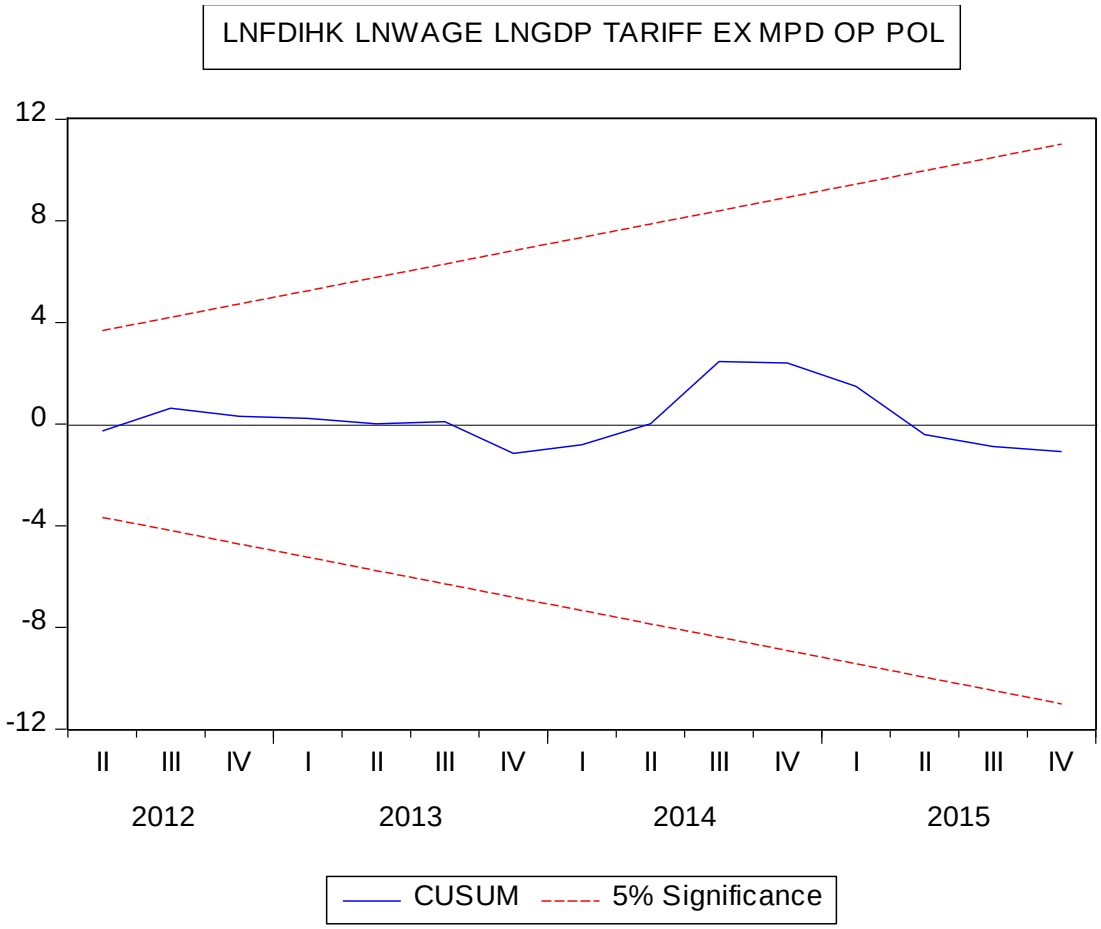
Appendix 2.4 Germany

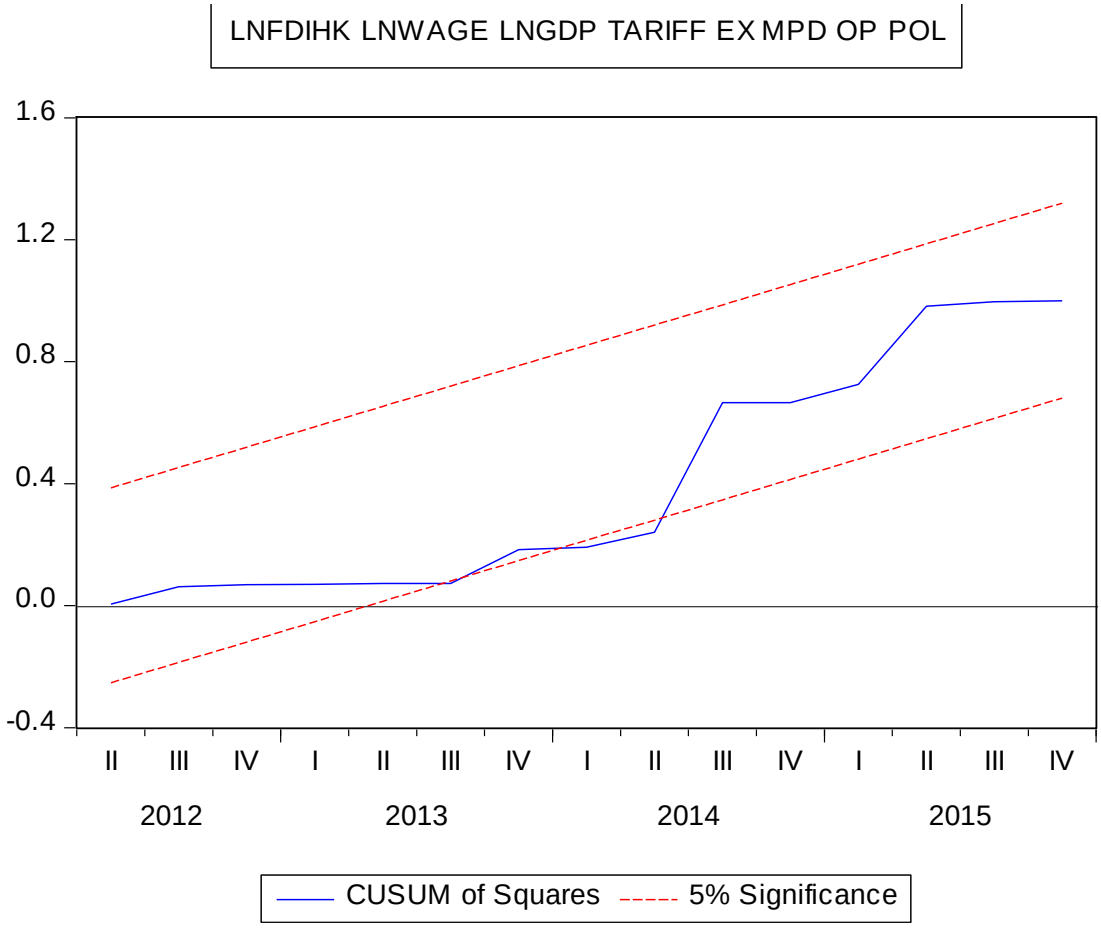


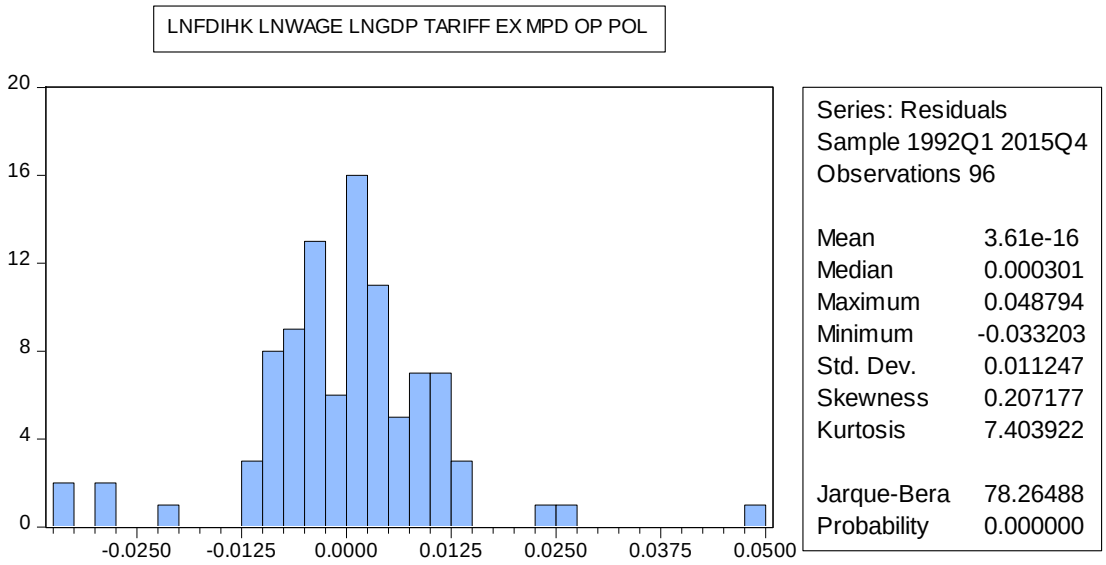

LNFDIGM LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
II
III
IV
I
II
III
IV
I
II
III
IV
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDIGM LNWAGE LNGDP TARIFF EX MPD OP POL
20
16
12
8
4
0
-0.02
-0.01
0.00
0.01
0.02
Series: Residuals
Sample 1992Q2 2015Q4
Observations 95
Mean -1.03e-16
Median -0.000195
Maximum 0.021435
Minimum -0.019692
Std. Dev. 0.007028
Skewness 0.375071
Kurtosis 4.157299
Jarque-Bera 7.528972
Probability 0.023180

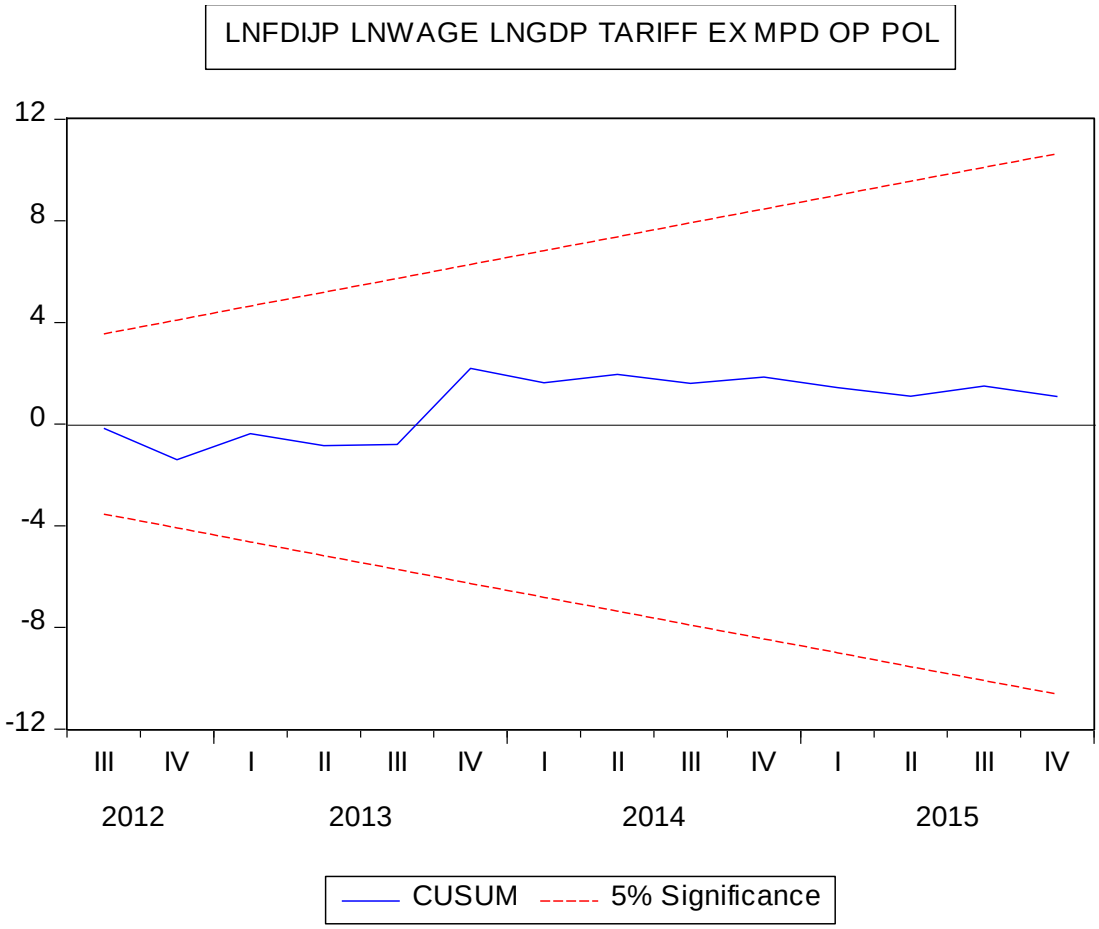
Appendix 2.5 Hong Kong

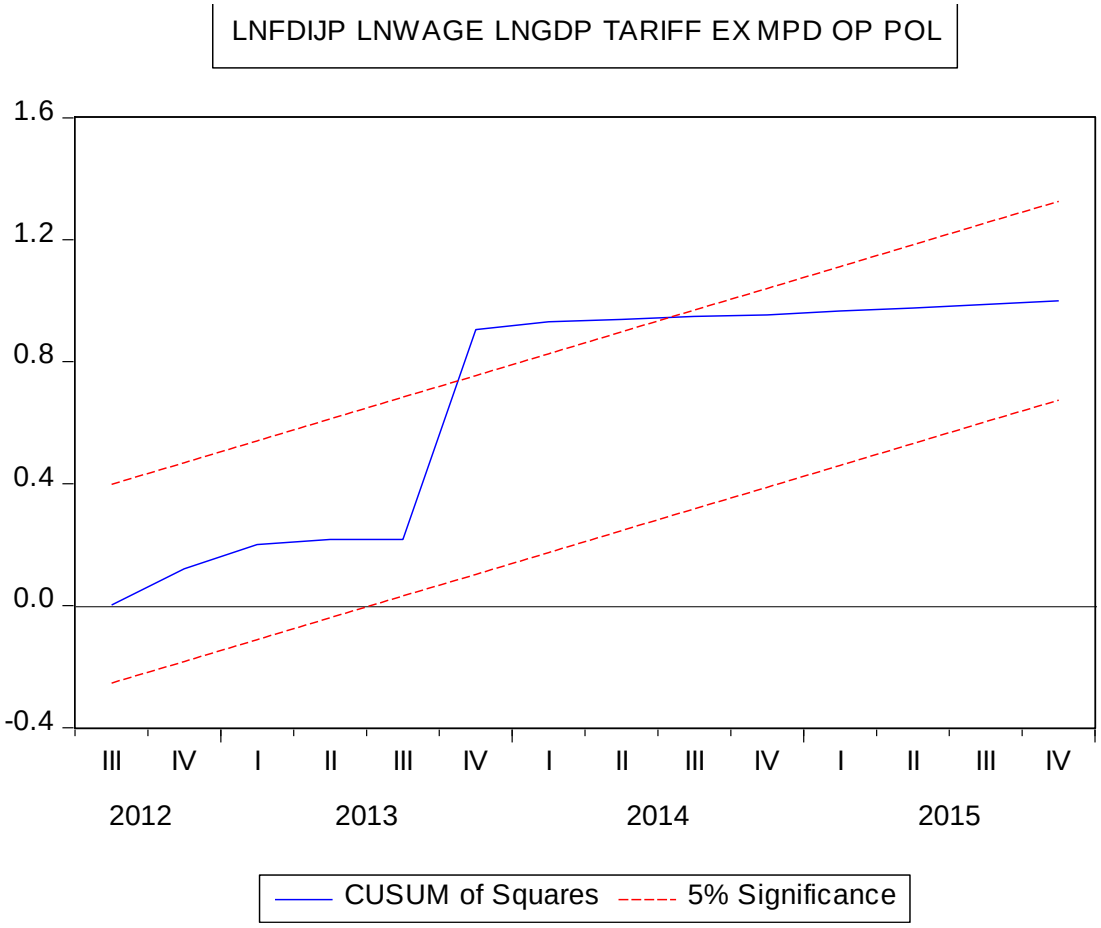


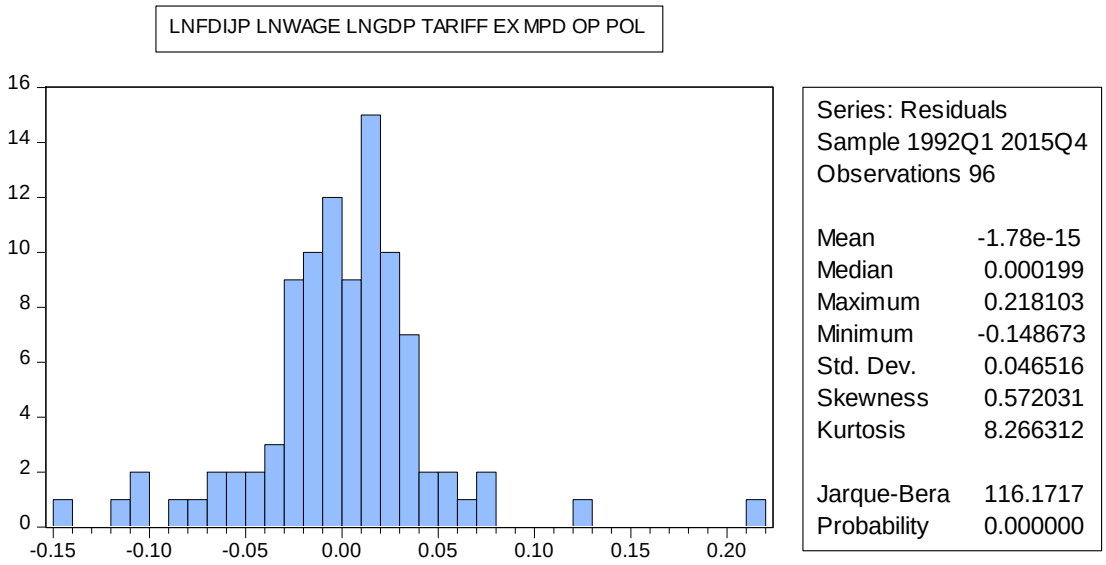

LNFDIHK LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
II III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDIHK LNWAGE LNGDP TARIFF EX MPD OP POL
20
16
12
8
4
0
-0.0250
-0.0125
0.0000
0.0125
0.0250
0.0375
0.0500
Series: Residuals
Sample 1992Q1 2015Q4
Observations 96
Mean 3.61e-16
Median 0.000301
Maximum 0.048794
Minimum -0.033203
Std. Dev. 0.011247
Skewness 0.207177
Kurtosis 7.403922
Jarque-Bera 78.26488
Probability 0.000000

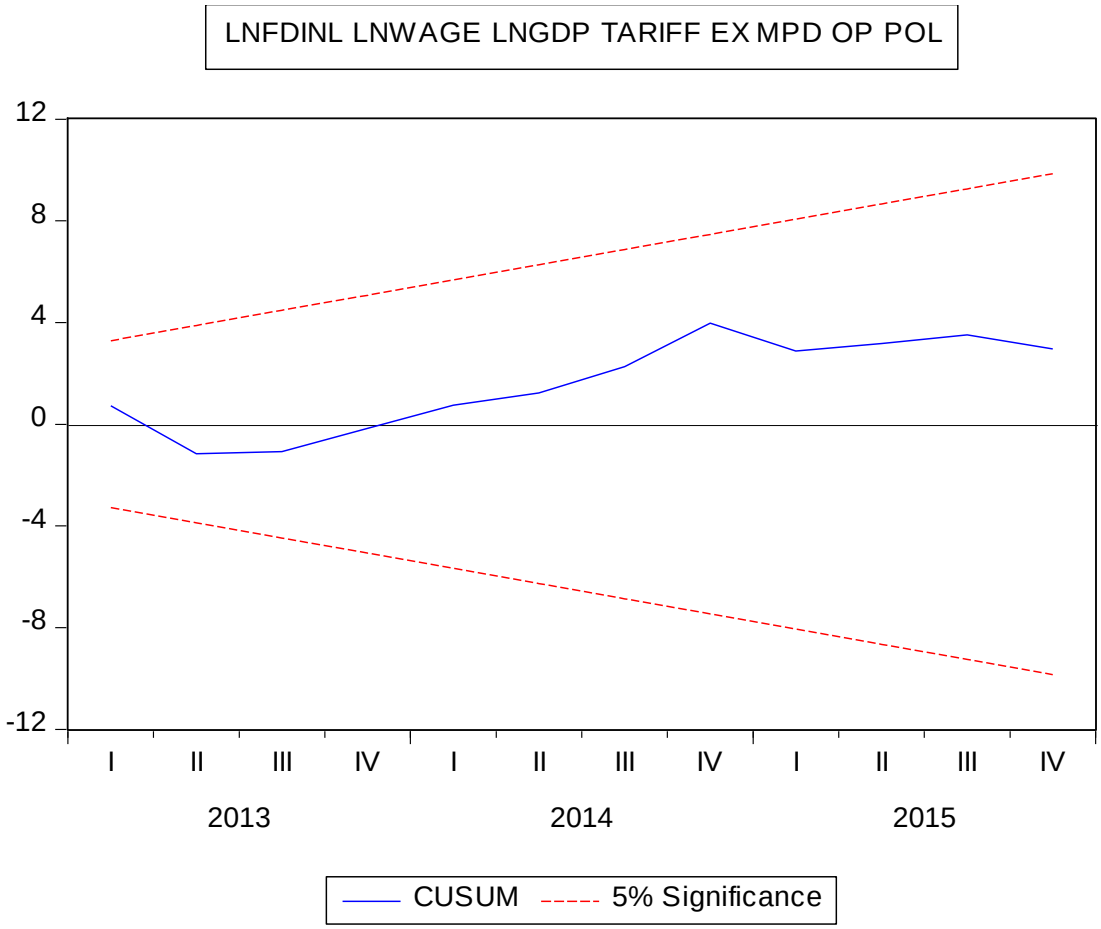
Appendix 2.6 Japan

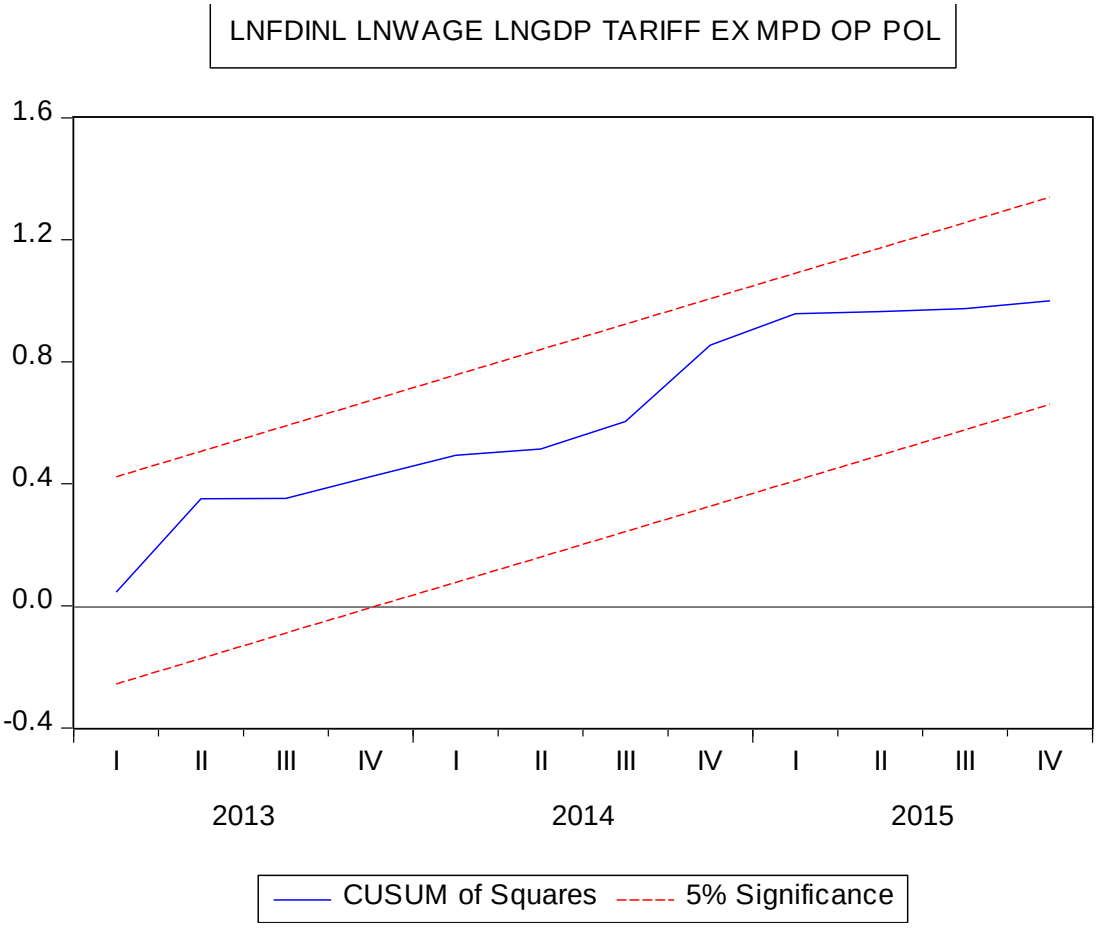


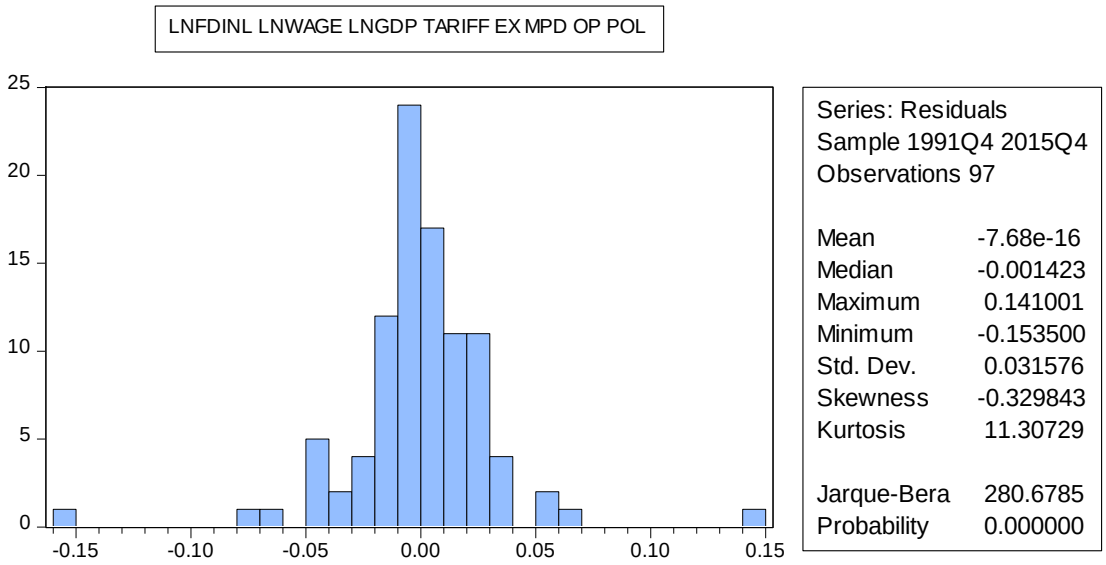

LNFDIJP LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDIJP LNWAGE LNGDP TARIFF EX MPD OP POL
16
14
12
10
8
6
4
2
0
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
Series: Residuals
Sample 1992Q1 2015Q4
Observations 96
Mean -1.78e-15
Median 0.000199
Maximum 0.218103
Minimum -0.148673
Std. Dev. 0.046516
Skewness 0.572031
Kurtosis 8.266312
Jarque-Bera 116.1717
Probability 0.000000

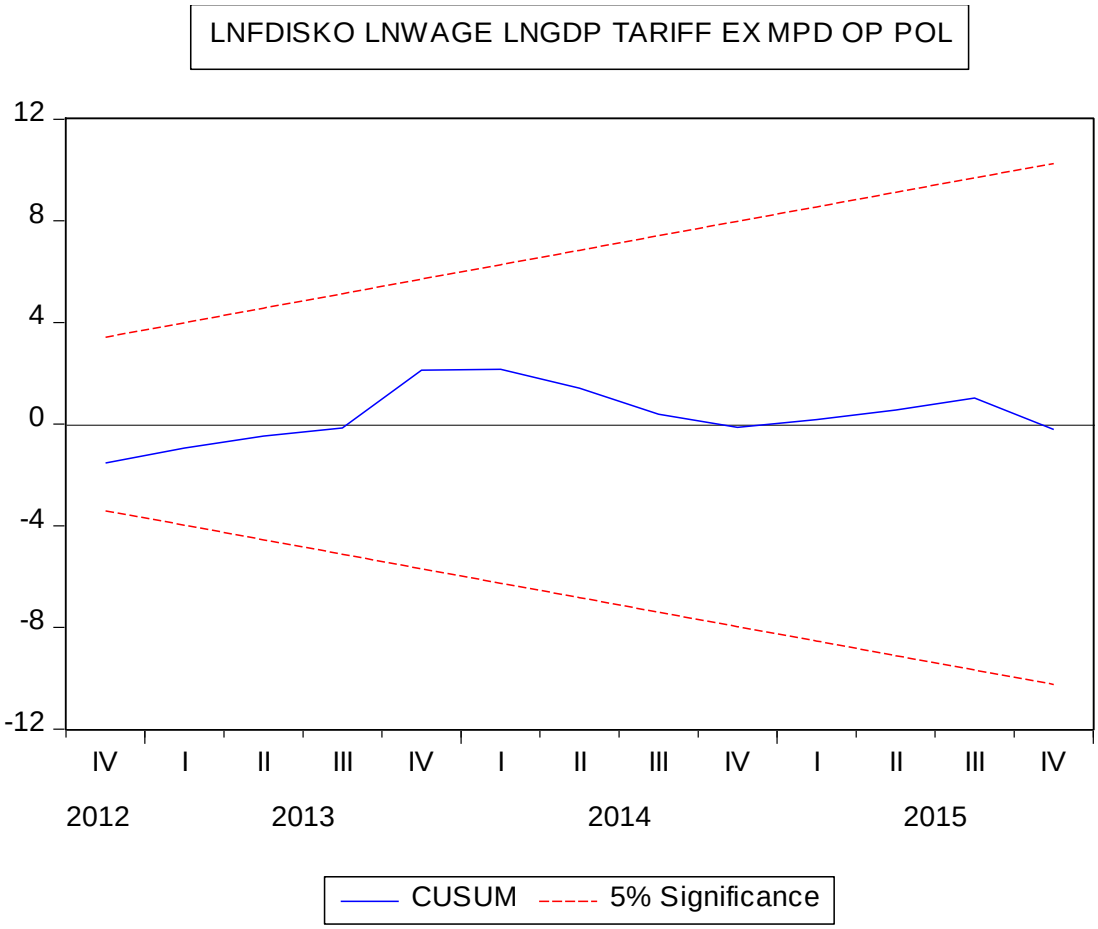
Appendix 2.7 Netherland

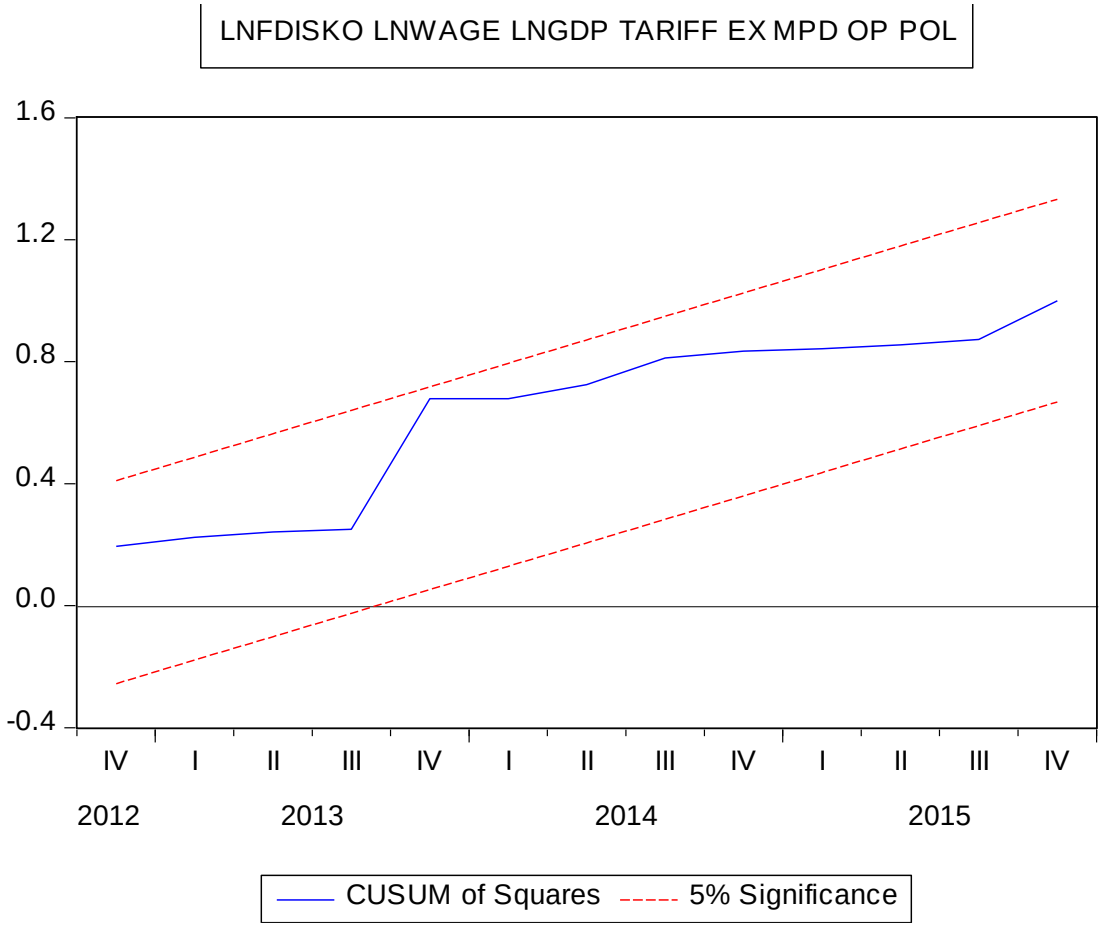


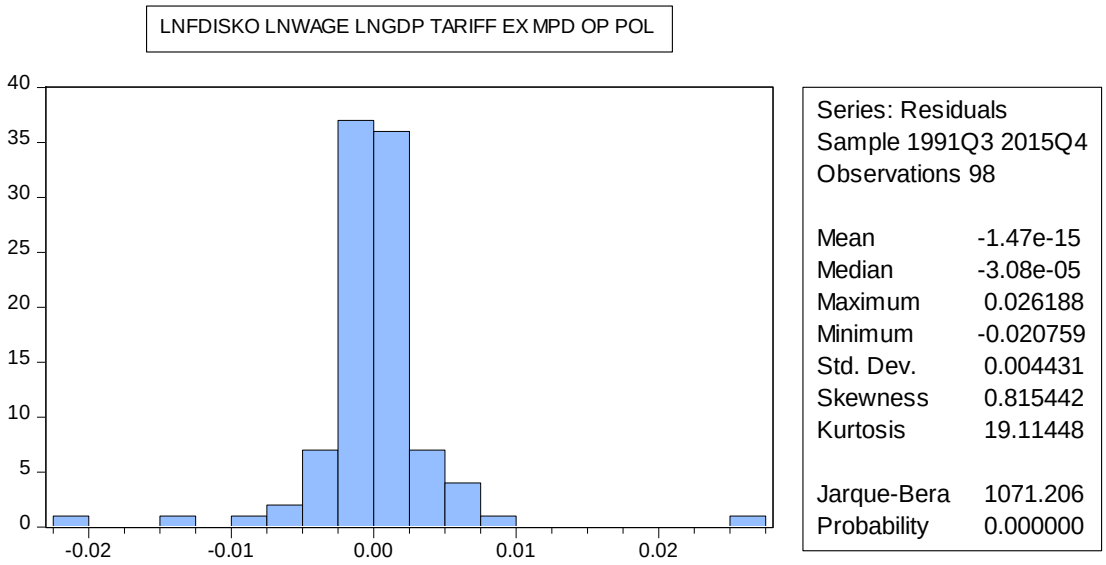

LNFDINL LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
I
II
III
IV
I
II
III
IV
I
II
III
IV
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDINL LNWAGE LNGDP TARIFF EX MPD OP POL
25
20
15
10
5
0
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
Series: Residuals
Sample 1991Q4 2015Q4
Observations 97
Mean -7.68e-16
Median -0.001423
Maximum 0.141001
Minimum -0.153500
Std. Dev. 0.031576
Skewness -0.329843
Kurtosis 11.30729
Jarque-Bera 280.6785
Probability 0.000000

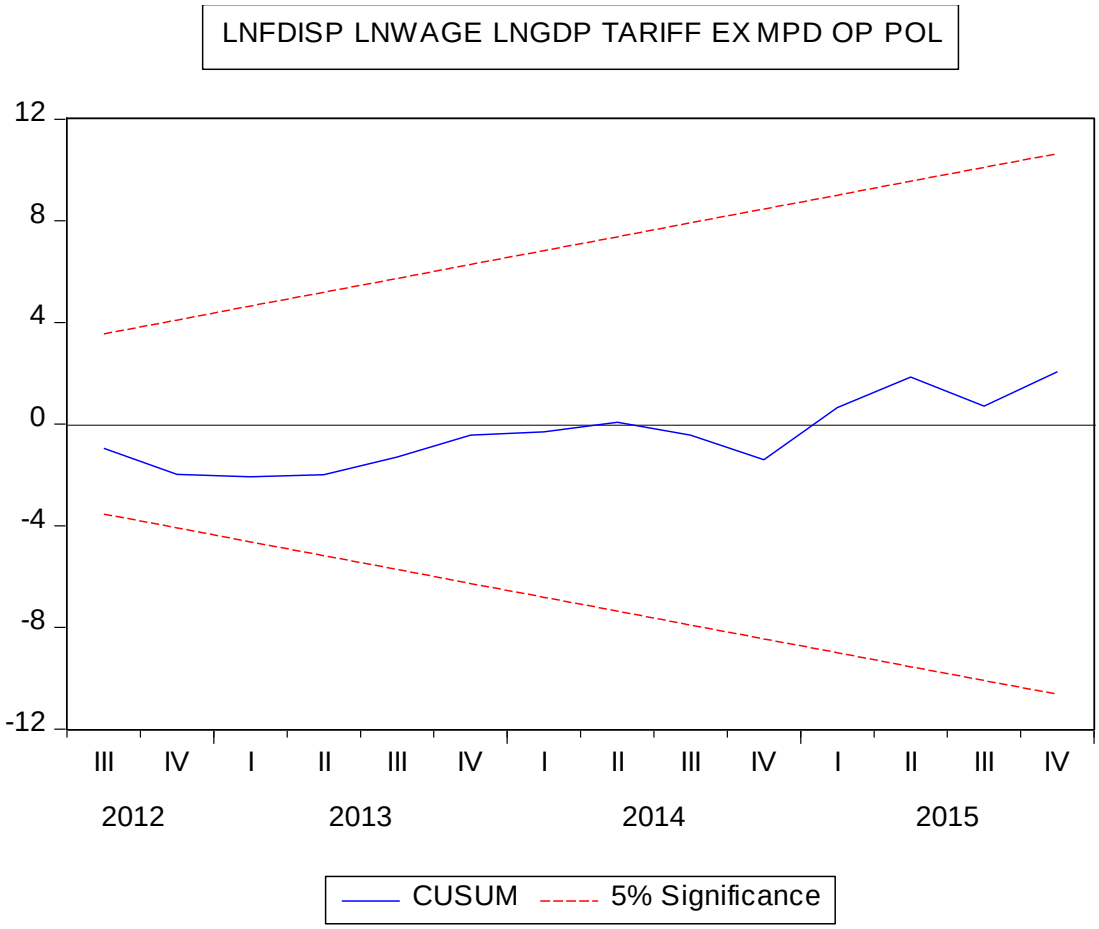
Appendix 2.8 South Korea

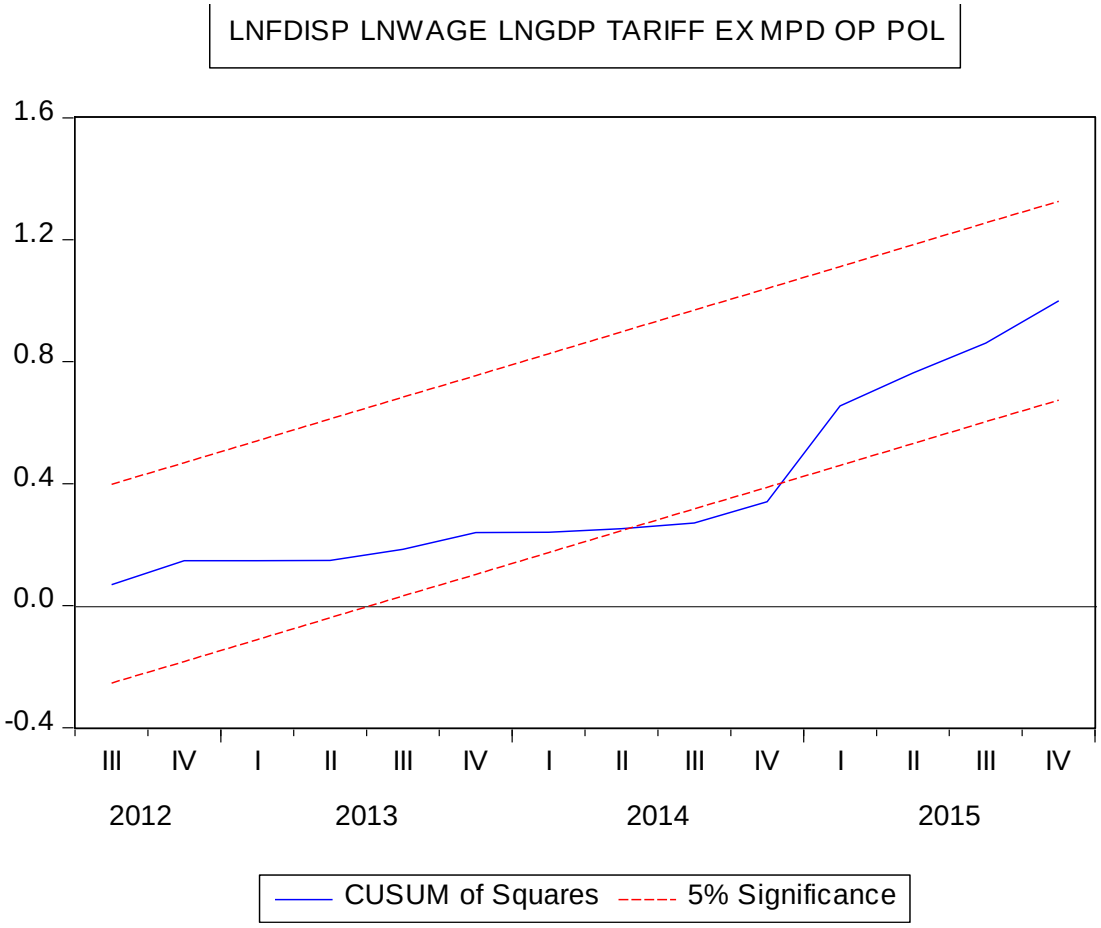


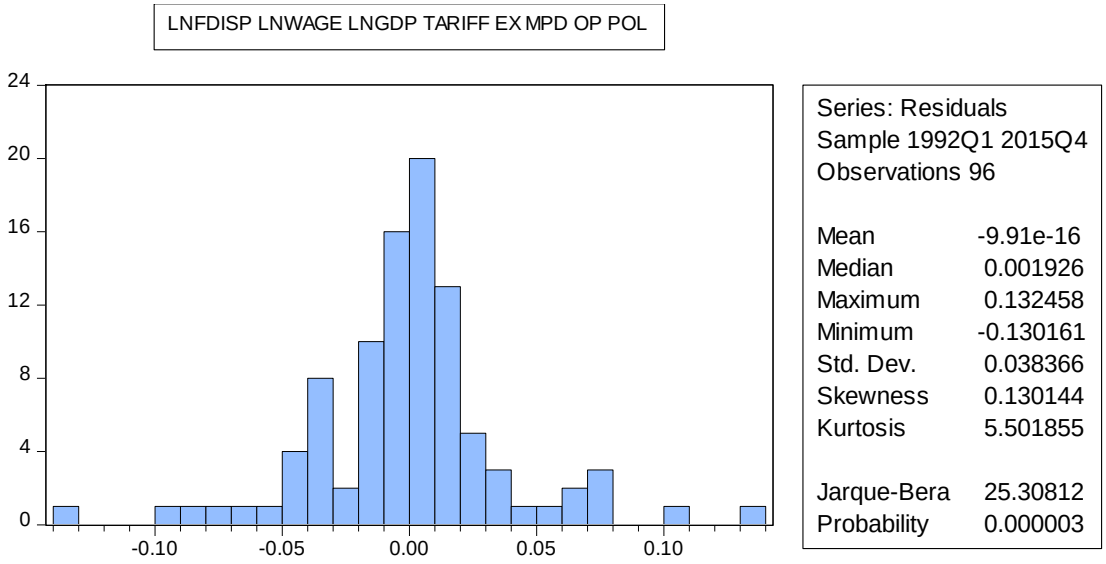

LNFDISKO LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
IV I II III IV I II III IV I II III IV
2012 2013 2014 2015
CUSUM of Squares
5% Significance


LNFDISKO LNWAGE LNGDP TARIFF EX MPD OP POL
40
35
30
25
20
15
10
5
0
-0.02
-0.01
0.00
0.01
0.02
Series: Residuals
Sample 1991Q3 2015Q4
Observations 98
Mean -1.47e-15
Median -3.08e-05
Maximum 0.026188
Minimum -0.020759
Std. Dev. 0.004431
Skewness 0.815442
Kurtosis 19.11448
Jarque-Bera 1071.206
Probability 0.000000

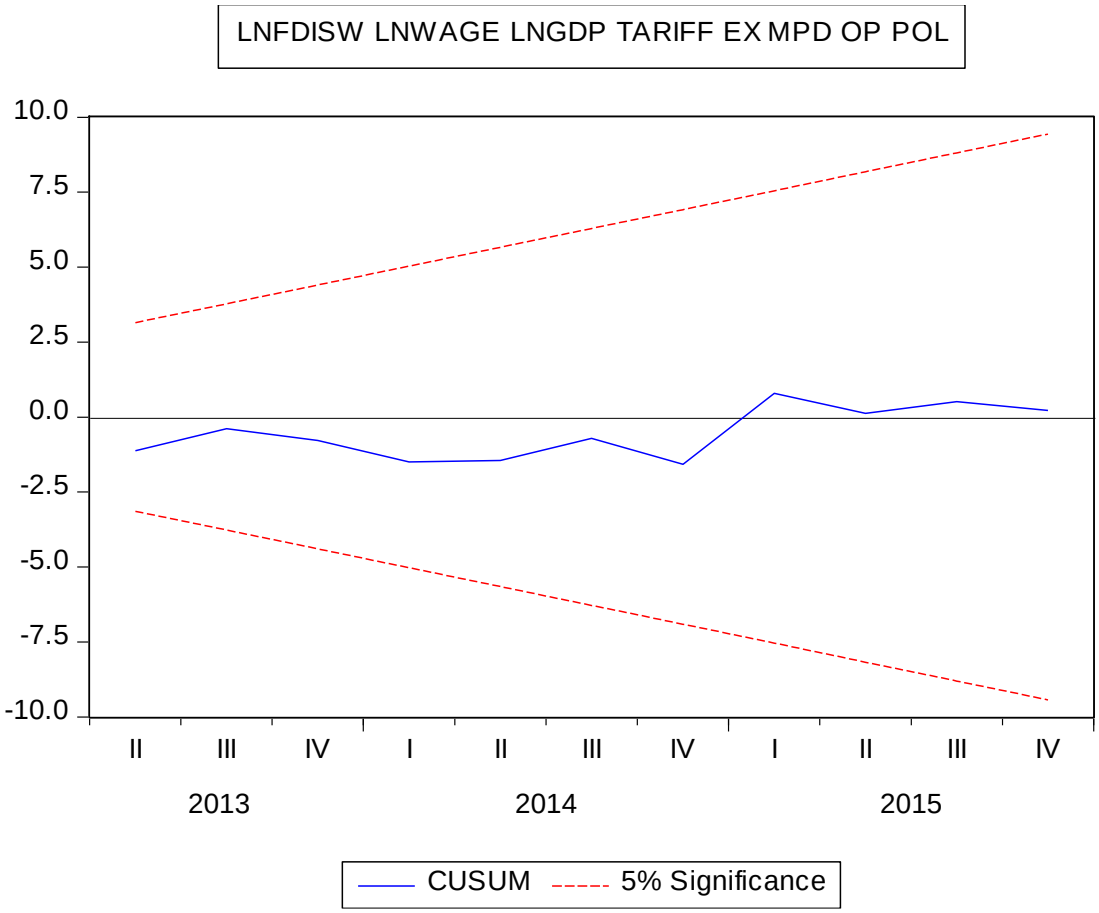
Appendix 2.9 Singapore

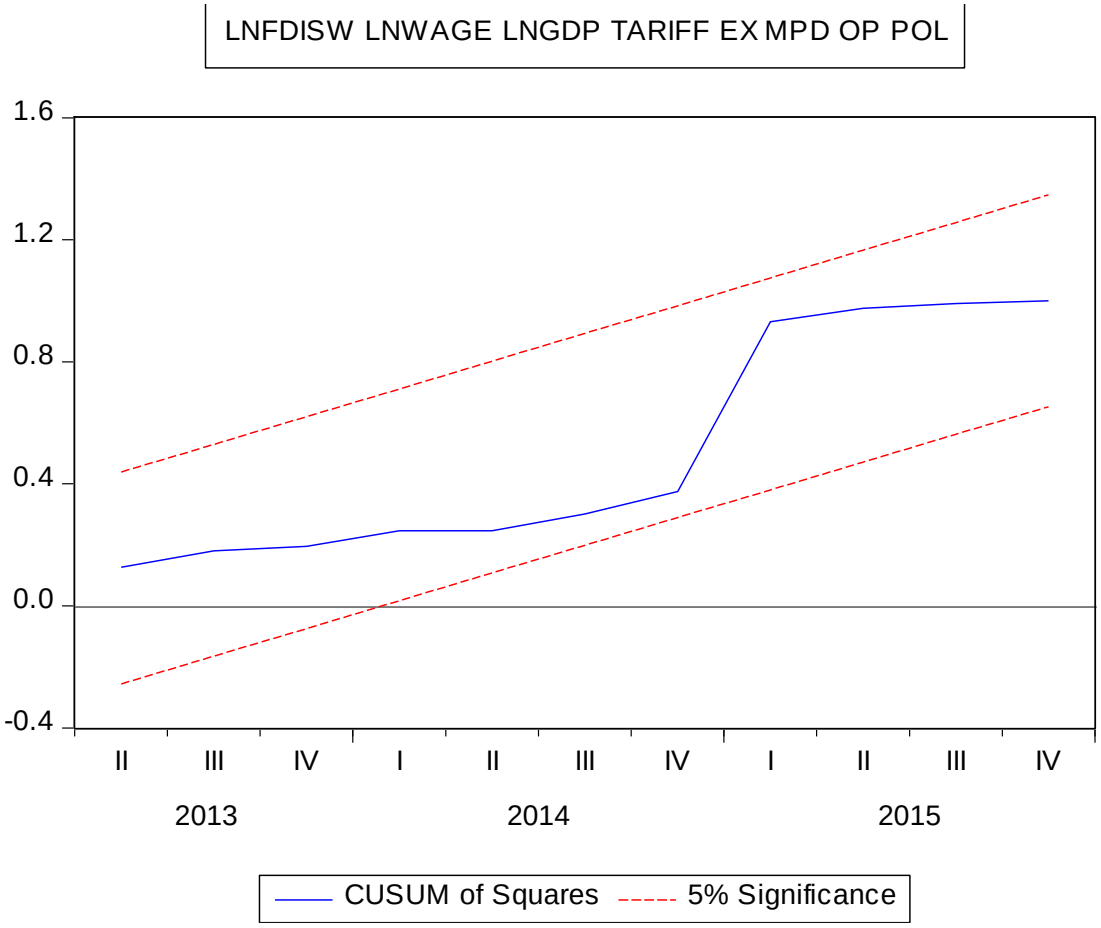


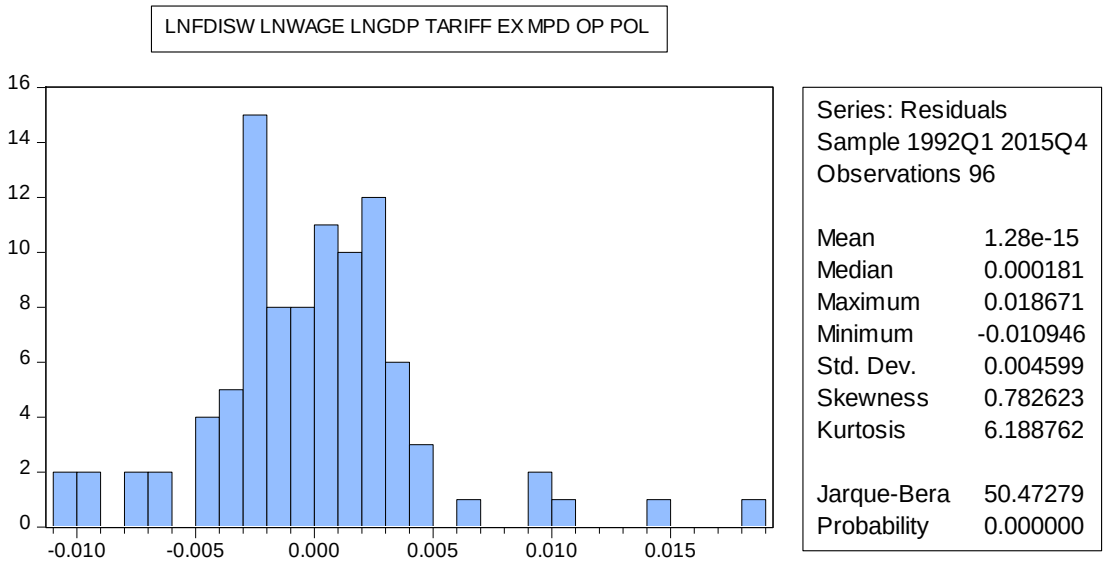

LNFDISP LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDISP LNWAGE LNGDP TARIFF EX MPD OP POL
24
20
16
12
8
4
0
-0.10
-0.05
0.00
0.05
0.10
Series: Residuals
Sample 1992Q1 2015Q4
Observations 96
Mean -9.91e-16
Median 0.001926
Maximum 0.132458
Minimum -0.130161
Std. Dev. 0.038366
Skewness 0.130144
Kurtosis 5.501855
Jarque-Bera 25.30812
Probability 0.000003

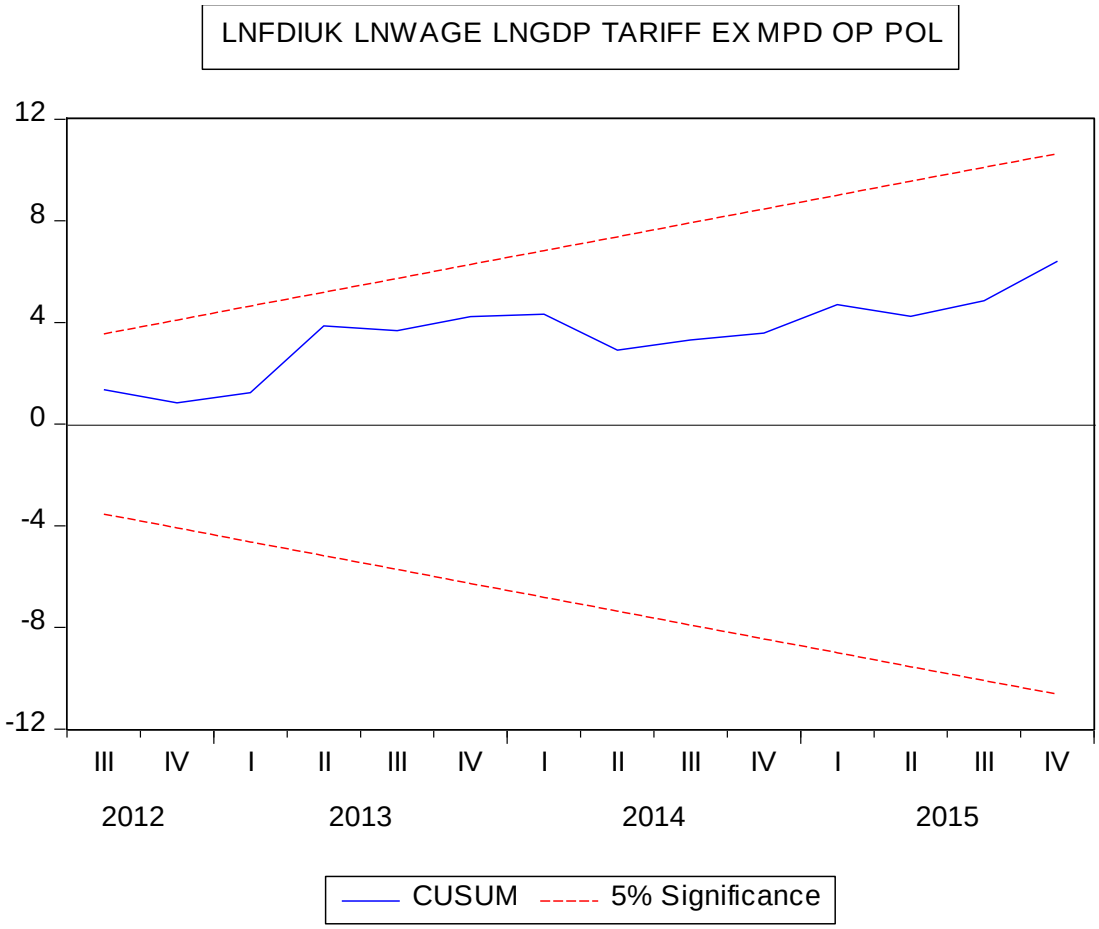
Appendix 2.10 Switzerland

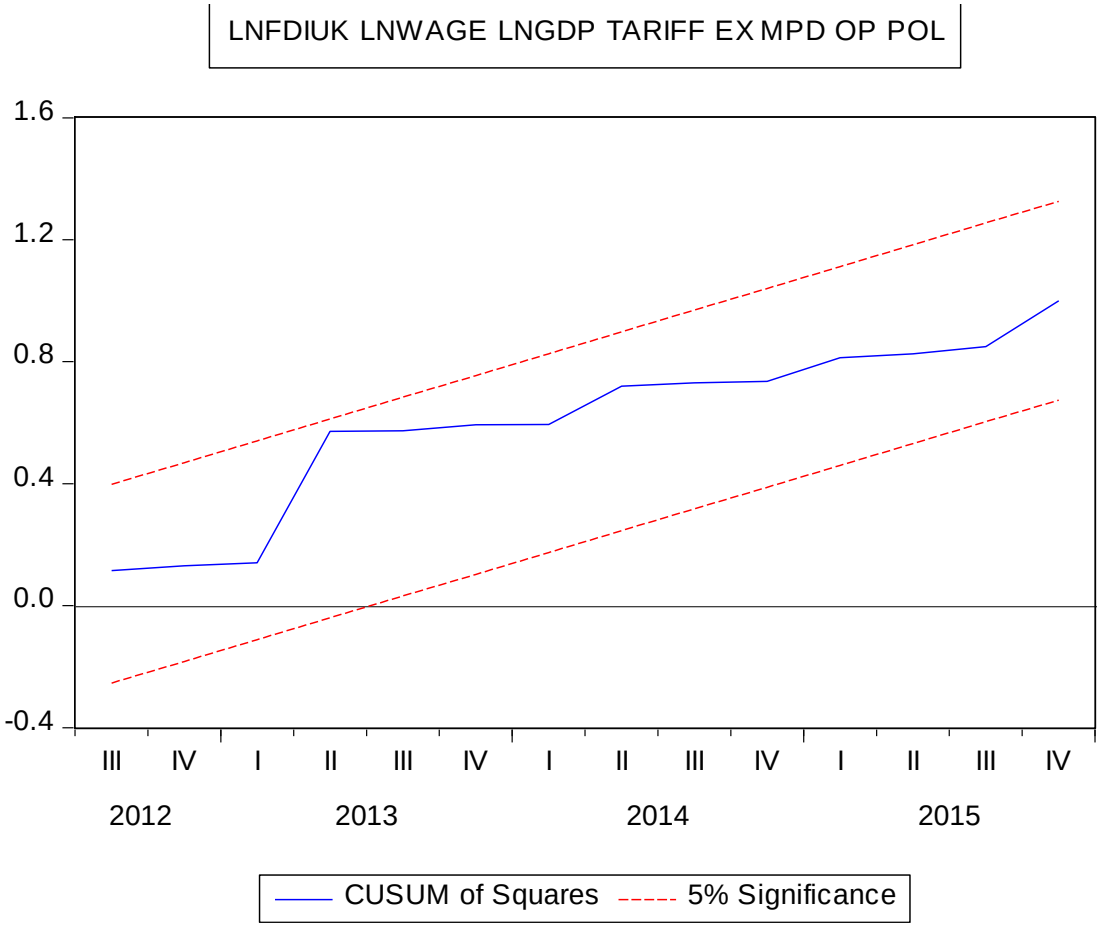


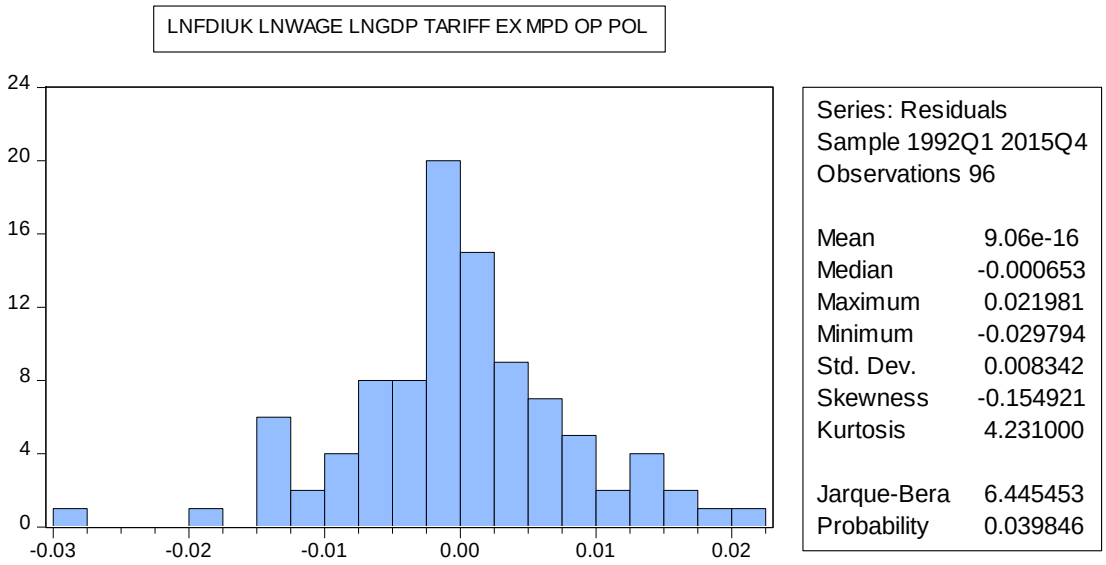

LNFDISW LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
II
III
IV
I
II
III
IV
I
II
III
IV
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDISW LNWAGE LNGDP TARIFF EX MPD OP POL
16
14
12
10
8
6
4
2
0
-0.010
-0.005
0.000
0.005
0.010
0.015
Series: Residuals
Sample 1992Q1 2015Q4
Observations 96
Mean 1.28e-15
Median 0.000181
Maximum 0.018671
Minimum -0.010946
Std. Dev. 0.004599
Skewness 0.782623
Kurtosis 6.188762
Jarque-Bera 50.47279
Probability 0.000000

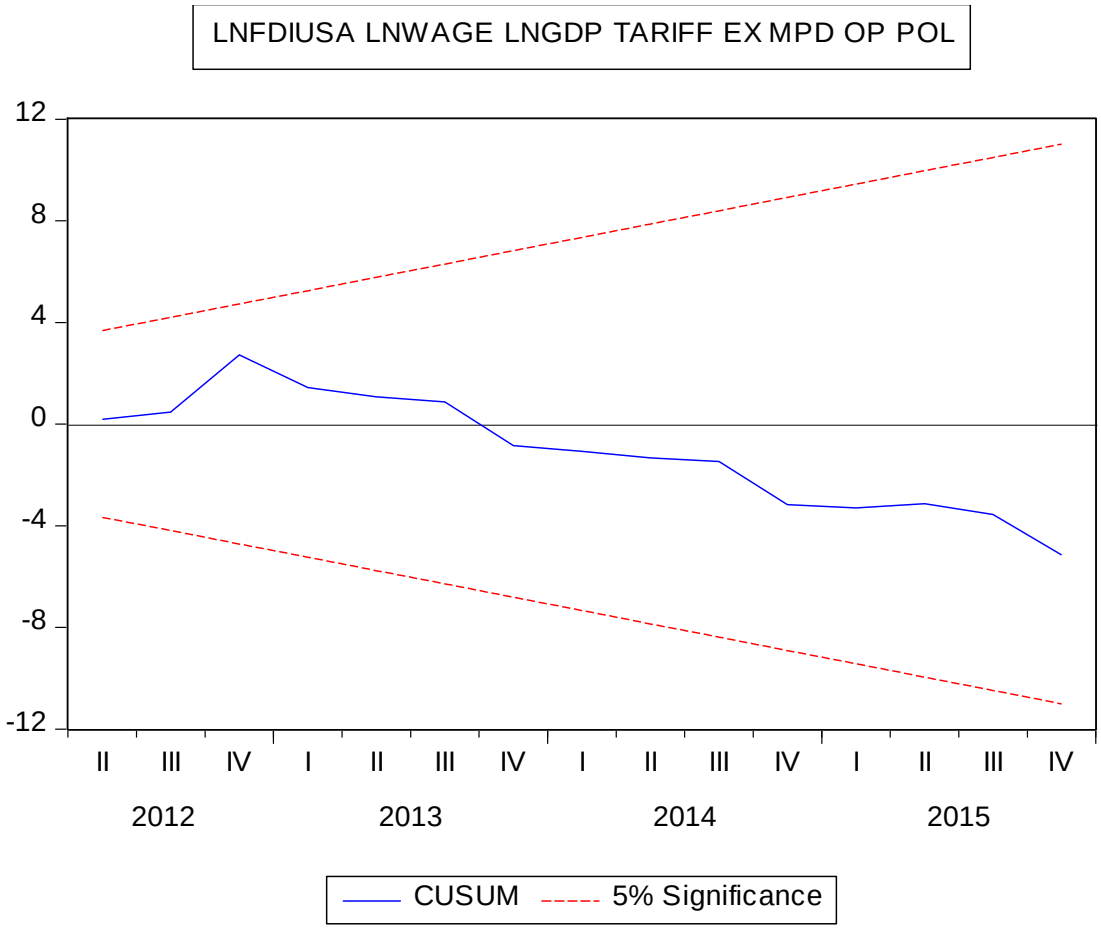
Appendix 2.11 United Kingdom

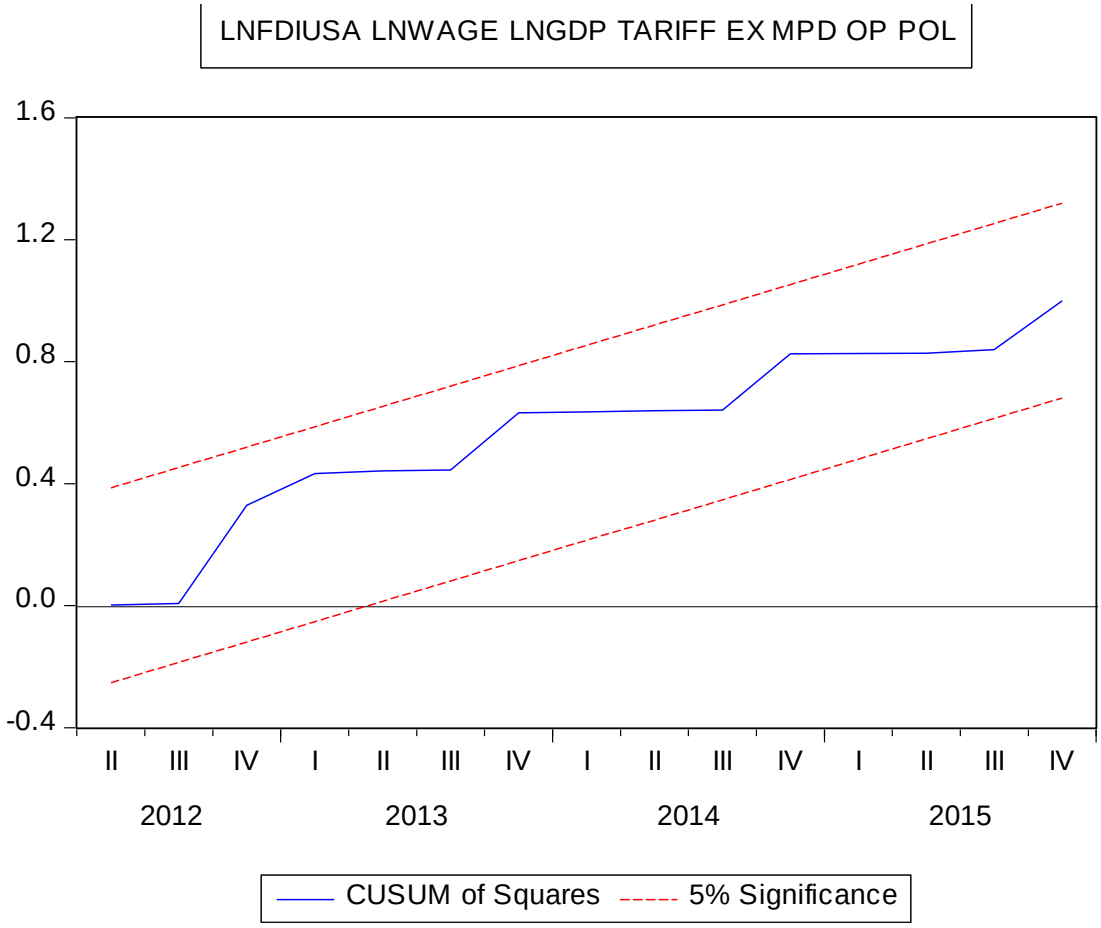


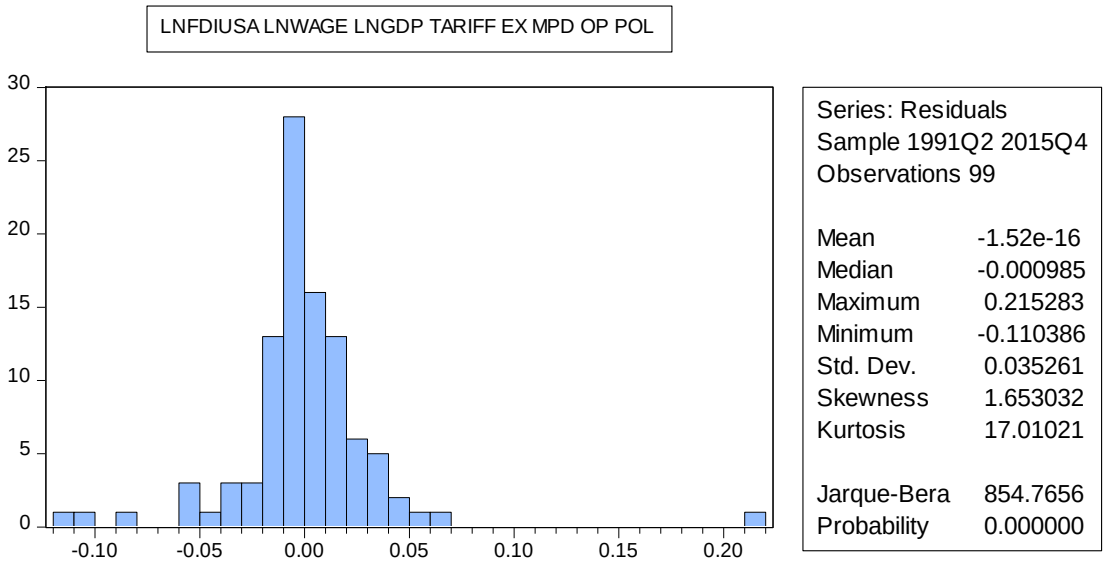

LNFDIUK LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDIUK LNWAGE LNGDP TARIFF EX MPD OP POL
24
20
16
12
8
4
0
-0.03
-0.02
-0.01
0.00
0.01
0.02
Series: Residuals
Sample 1992Q1 2015Q4
Observations 96
Mean 9.06e-16
Median -0.000653
Maximum 0.021981
Minimum -0.029794
Std. Dev. 0.008342
Skewness -0.154921
Kurtosis 4.231000
Jarque-Bera 6.445453
Probability 0.039846

Appendix 2.12 United State of America




LNFDIUSA LNWAGE LNGDP TARIFF EX MPD OP POL
1.6
1.2
0.8
0.4
0.0
-0.4
II III IV I II III IV I II III IV I II III IV
2012
2013
2014
2015
CUSUM of Squares
5% Significance


LNFDIUSA LNWAGE LNGDP TARIFF EX MPD OP POL
30
25
20
15
10
5
0
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
Series: Residuals
Sample 1991Q2 2015Q4
Observations 99
Mean -1.52e-16
Median -0.000985
Maximum 0.215283
Minimum -0.110386
Std. Dev. 0.035261
Skewness 1.653032
Kurtosis 17.01021
Jarque-Bera 854.7656
Probability 0.000000