FISCAL CONSEQUENCES OF FOREIGN DIRECT INVESTMENT ON PAKISTAN ECONOMY
(1975-2011)

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ABSTRACT

Foreign direct investment (FDI) helps in capital formation in an economy. It also contributes to economic growth in developing economies. Its impact depends on policies, available human resources, physical infrastructure and the nature of FDI in the economy. Since FDI is increasing in Pakistan, it is necessary to examine its effects on the economy. This study attempts to investigate the consequences of FDI on the economy of Pakistan.

The annual time-series data and panel data are used from 1975 to 2011. Auto Regressive Distributive Lag (ARDL) co-integration technique and error correction model are used for time-series data analysis. The study finds that the long-run relationships exist in the economic growth model, sector-specific labor productivity model, sector-specific employment model, and domestic investment model. Short-run relationships exist in the economic growth model and domestic investment model. Short-run relationships also exist in the sector-specific labor productivity model in case of the secondary sector and sector-specific employment model in case of the secondary and tertiary sectors. Short-run relationships do not exist in the primary sector’s employment model, primary sector’s labor productivity model and tertiary sector’s labor productivity model.

The study further reveals that the FDI has a positive and significant impact on economic growth and domestic investment. Sector-specific FDI has a positive and significant impact on sector-specific labor productivity in case of primary, secondary and tertiary sectors. Sector specific FDI also has a positive and significant impact on sector-specific employment in case of secondary and tertiary sectors. It has an insignificant impact on the employment of primary sector.
CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Foreign direct investment (FDI) has both positive and negative effects, which include the transfer of technology, organizational and managerial skills transfers, work training, job creation and introduction of new production processes, increase productivity and the social and cultural influences. FDI in open economies is financed by domestic savings and foreign capital inflows. Therefore, FDI enables investment recipient countries to achieve the level of investments outside of their ability to save, and then stimulate the economic growth.

FDI helps in the development of capital in the economy. It also adds to fiscal development in emerging countries. Its effect will depend on the policy, the available labor force, physical infrastructure, and the nature of the direct foreign investment in the economy. Due to the fact that FDI in Pakistan is increasing therefore it is essential to investigate its effect on the economy. This effort tries to incarcerate the implication of FDI on Pakistan’s economy.

Pakistan is a developing country. It requires FDI saving investment gap, the export-import gap, and to accelerate economic growth. The inflow of FDI has remained less than 2% of GDP in 2003, but increased sharply after 2003. It was 3.7% of GDP in 2007 (World Bank, 2010). FDI is increasing significantly and this can have both positive and negative impacts. So it is essential to investigate its effect on Pakistan’s economy.

The reforms of market economy in Pakistan were established in early 80’s while further extended in 1988. The Government of Pakistan began, improving investment and trade liberalization policies, incentives for FDI, for example, tax concessions, credit availability, and reduced rates and thereby mitigate the foreign exchange controls (Khan and Kim, 1999).

household savings, human development and gap of urban rural income in Pakistan. Yet, there are some other dimensions of the question that needs to be investigated. In this study, the researcher tries to investigate the effects of FDI in fiscal development, employment rate, labor income productivity, tax revenue, domestic investment, imports and exports, poverty and inequality of income in Pakistan.

Vernon (1966) found that FDI reduced imports and increased domestic production and fiscal development of the host economy. According to Hanson et al (2001), effect of welfare of technology the transfersences depended on the nature of FDI. Faced as production FDI host had major technical spillovers in the country that one of FDI faced by distribution, because faced as production FDI it had the best chaining with the local signatures. The Caves (1971) and Buckley and Casson (1976) spoke about the positive effects of FDI in transfersences of skill and formation of the labor, which might help to the labor in the discovery of employments. The Brander and Spencer (1987) affirmed that spillovers positives of FDI were generated by tax collection and employment increased by an increase of the level of production in the host country.

Aghion and Howitt (1998) declared that the inequality of salary was diminished due to increasing FDI in the advanced Countries. Nordstrom et al (1999) declared that foreign direct investment took effects of degree as the fiscal development, heightening fiscal actions, supporting employment rates, rising production, progress of skills, help the countries to tolerate unforeseen upsets and for all those links that help to the reduction of poverty.

Anjum and Nishat (2004) established that valuation of tax, price of tariffs and credit the installation were principal determinant of inflows FDI. Atique et al (2004) found that the FDI has an encouraging impact on the mass growth of our country giving formation and education to the home workers. They also found foreign direct investment had an improved effect on the Pakistan economy with the exportation-politics of promotion rather that politics of substitution of import.

1.2 OBJECTIVES

The objectives of this study are as under:

1. To examine the impact of Foreign Direct Investment on GNP per capita
2. To investigate the contribution of Foreign Direct Investment to employment
3. To analyze the impact of Foreign Direct Investment on labor productivity
4. To determine the relationship between Foreign Direct Investment and domestic investment
5. To inspect the impacts of Foreign Direct Investment on poverty

1.3 HYPOTHESES

The following Hypotheses have been tested:

1. The Foreign Direct Investment does not have any impact on the GNP per capita
2. The Foreign Direct Investment does not have any impact on the employment
3. The Foreign Direct Investment does not have any impact on the labor productivity
4. The Foreign Direct Investment does not have any impact on the domestic investment
5. The Foreign Direct Investment does not have any impact on the poverty

1.4 METHODOLOGY

The study will use URT(unit root tests) of Fuller and Dickey (1981), Parron and Phillips (1988), Zivot and Andrews (1992) and Perron and ng (2001) to test the stationarity in time series and co-integration test of Pesaran et al (2001) to check the long run relationship. To confine effects of foreign direct investment on the economic development, the thesis will utilize FDI and the expansion of finance market as a percentage of GNP, trade openness (entire commerce) as a percentage of GNP as independent variables and Gross National Product per capita to be able for the economic growth as the dependent variable.

Effects of FDI on fiscal development: Model measurement

Information on the GNP for capital, FDI wins clearly inflows, domestic credit to sector deprived and entire commerce when a percentage of GDP has been taken of Indicators of Development World indicators (WDI) by the World Bank. The information has been taken from 1975 to 2011.

Model to be used in the present study is given as under:
\[ GDPC = f(FDIG), (FMDG), (XMG), \]

Where,

GDPC= Gross Domestic Product per capita is a proxy for economic growth

FDIG= Foreign Direct Investment inflow as percentage of GDP

FMDG=Financial Market Development has a proxy which is Domestic credit to the private sector as a percentage of GDP

XMG= Total trade as GDP % is a proxy for trade openness

**Impact of FDI on Labor Productivity: Model Specification and Methodology**

Labor productivity model is as under:

\[ PROD = f(FDI) \]

Where,

PROD=Labor productivity

FDI = Foreign Direct Investment

**Impact of FDI on Employment: Model Specification**

The study will use the data of FDI and employment in primary, secondary and tertiary sectors for analysis. Model of labor productivity to be analyzed is as follows:

\[ EMP = f(FDI), \quad (GDP) \]

Where,

EMP= Sector-specific Employment
FDI= Sector-specific FDI

GDP= GDP is a proxy for aggregate demand

**Impact of FDI on Domestic Investment: Model Specification**

Model of the study to be examined is as under:

\[ \text{DIG} = f(\text{FDIG}), (\text{FMDG}), (\text{GR}) \]

Where,

\[ \text{DIG} = \text{Domestic Investment as a } \% \text{ of gross domestic product} \]

\[ \text{FDIG} = \text{Foreign Direct Investment inflows as a percentage of GDP} \]

\[ \text{FMDG} = \text{Financial Market Development has a proxy that is Domestic credit to the private sector as a } \% \text{ of GDP} \]

\[ \text{GR} = \text{GDP Growth Rate annual percentage} \]

**Impact of FDI on Poverty: Model Specification**

Model of the study to be analyzed is as under:

\[ \text{POV} = f(\text{FDIG}), (\text{GEHEG}), (\text{GR}) \]

Where,

\[ \text{POV} = \text{Poverty measured by head count ratio} \]

\[ \text{FDIG} = \text{Foreign Direct Investment inflows as a percentage of GDP} \]

\[ \text{GEHEG} = \text{Government Expenditure on Education and Health as a percentage of GDP} \]
GR = GDP Growth Rate annual percentage

1.5 SIGNIFICANCE OF THIS STUDY

This study aims at finding the consequences of FDI on Pakistan’s economy. The study attempts to analyze the role of FDI in determining the level of the general welfare of society. This has been done by exploring the impact of FDI on economic growth, labor productivity and employment level.

To find the impact of FDI on employment and labor productivity, the study uses sector-specific FDI on sector-specific labor productivity and employment. Besides economic growth, an extremely important aspect of FDI is to determine whether it decreases poverty. The relationship between FDI and domestic investment has been explored to see whether FDI increases domestic investment.

1.6 ORGANIZATION OF THE STUDY

This study consists of eight chapters. Chapter 1 deals with the introduction of the topic. Chapter 2 describes the overview of the economy of Pakistan. Chapter 3 examines the early literature related to the speculative aspect. Chapter 4 is on the methodology. The chapters 5, 6 and 7 deal with the consequences of FDI on economic growth, productiveness of work, employment, investment, fiscal income, international trade, inequality of income, poverty and ambience and chapter 8 draws the conclusion and pinpoints findings of the research.
CHAPTER 2
AN OVER VIEW OF PAKISTAN’S ECONOMY

Pakistan got independence in 1947. Pakistan has been depending on the agriculture sector since its independence. The structure and size of the industry were extremely limited to utilize the agricultural raw material. For example, jute production was 75% of the world’s jute production, but there was not even a single jute mill in the country. There was abundant production of good-quality cotton, sugarcane, tobacco, wool, hides and skins. There was also a vast domestic and foreign market. However, there were a few industrial units taking advantage of such resources. As a result there was an urgent need for establishing industry in Pakistan. After independence Pakistan was importing manufactured goods mainly from India. Both countries were using the same currency. The State Bank of Pakistan was set up in 1948 which issued its own currency. In 1949, UK Pound was devalued and many other countries including India also devalued their currencies. At that moment, the government of Pakistan did not devalue its currency by assuming that India would continue to import its raw material at higher prices but India suspended trade with Pakistan. However, at the same time due to the Korean War, increasing demand for Pakistan’s cotton and jute continued. Therefore, over-valuation of the currency and quantitative and qualitative import protection measures boosted the industrialization process in Pakistan. The average growth rate of industrial production was 23.6% during 1949-1954, 13.6% during 1954-58, and per capita income grew at about 7% during the same period, which was the result of import-substitution industrialization policy (Lewis, 1969 and 1970).

In 1950s and 1960s, the government encouraged the private sector in banking, insurance, international trade and industrial sectors. Especially, domestic private investment was encouraged in the service sector, and foreign investment in the service sector was discouraged. Trade policy was changed from quantitative to qualitative import policy. Open General License (OGL) was introduced in 1961. This policy encouraged the new traders in the import markets. A list of tariff free imports was introduced containing several items, which was extended from four items to fifty items in 1964. The composition of imports was changed by introducing the differential rates. The government aimed at promoting the industrialization
process through tariff policy. The Export Bonus Scheme was introduced in 1959 to encourage exporters (Lewis, 1970).

The premier industrial growth rate of the 1960s brought about high functional inequalities. According to Amjad (1982), there were 44 monopoly houses in 1970, which owned the 77% of total industrial assets of all manufacturing companies listed on Karachi Stock Exchange and 35% industrial assets of the entire large manufacturing sector. In the financial sector, these monopoly houses had complete control on seven out of seventeen Pakistani banks. Moreover, it had 60% of bank deposits and 50% of total bank loans. Pakistan Industrial Credit and Investment Corporation (PICIC) sanctioned 65% of total loans to 37 monopoly houses. This inequality was also associated with regional disparity between East and West Pakistan.

In January 1972, the first phase of nationalization started, and the government took over key industries. In that phase, the government took over 31 large firms from ten key industries like iron and steel, heavy engineering, heavy and basic chemical, cement and public service. In March 1972 the government took over 32 life insurance companies. From September 1972 to September 1974 the government took over educational institutions. In June 1973, the trading corporations of cotton and rice were nationalized. In September 1973, vegetable oil, petroleum marketing and shipping corporations were nationalized. In January 1974, all domestic privately owned banks were nationalized and in August 1976, cotton ginning, rice husking and flour mills were nationalized. All of these actions taken by government shattered the confidence of private investors. In May 1972, Pak Rupee was devalued by 131%, which resulted in high inflation like 29.98% in 1973-74 and 26.73% in 1974-75 but export in 1972-73 increased by 153% over the previous year (Government of Pakistan, 1985; Naqvi and Sarmad, 1984). The government also set up new industrial units like steel manufacturing units and textile units. The percentage share of public investment in total investment rose from 8.4% to 74.6% from 1971-72 to 1976-77 respectively (Naqvi and Sarmad, 1993).

The Foreign Private Investment Act was promulgated in 1976 in which all rules and regulations were almost the same as for domestic private investment (Khan and Kim,
The average real GDP growth remained 4.3%, and the average growth of the large-scale manufacturing sector remained 1.7% during 1971-72 to 1976-77. The growth rate of large-scale industries remained negative in four out of six years (Government of Pakistan, 1985).

During the period of 1977-81, the government made policies towards restoring the confidence of private investors. In September 1977, government denationalized the rice husking units, flour mills, cotton ginning and small engineering units. In December 1977, cement and chemical industries were opened for private investors. In March 1978, the government offered tax holidays to private investors in developing regions of Pakistan and interest rate on fixed investment was also reduced (Ahmad and Amjad, 1984). During this period, 12% growth rate for large-scale industry was set and achieved. Remittances increased in that period which stimulated the saving and investment rates. The share of investment was 20% in GDP in 1977 (Naqvi and Sarmad, 1993).

In 1980s, government policy was changed regarding public and private partnership. The role of government was restricted to existing enterprises and private sector was encouraged to make investments. The private sector was also allowed to invest in those sectors where government had ownership except some sensitive industries such as arms and ammunition. During this period, for the first time in Pakistan, export-led industrialization was the policy aim. FDI inflows increased after these changes occurring in the economy. Despite the above-mentioned liberalization, investors needed government sanctions for establishing those industries which were related to religious, security or socioeconomic problems. Secondly, the government also sanctioned those projects which required more than Pak Rs. 300 million investments or import of second hand equipment or 60% of importable raw material also projects which required FDI. All these categories of investment required clearances of central investment promotion committee and approval of the federal government (Khan and Kim, 1999).

The process of Islamization started during 1982-85 in Pakistan. The commission was formed in 1984 and Islamic law was enacted. Ahmad and Amjad (1984) argued that Islamization process involved the elimination of interest and improved the intra-social
relationship among society under the tenets of Islam.

In 1982, the exchange rate system of fixed-peg was replaced by managing floating exchange rate system. As a result, Pak Rupee devalued by 38.5% during 1982-88. In 1983, a negative list of imports was introduced; quantitative restrictions were reduced and replaced by tariff (Naqvi and Sarmad, 1993). During the period of 1985-88, government was engaged in increasing the share of private sector in Pakistan. Consequently, there was a decrease of public sector share from 72.74% to 17.85% in total industrial investment during the period from 1978-79 to 1987-88. During 1978-82 output growth of the public sector was greater than that of the private sector, afterwards growth of private sector remained greater than public sector (Asian Development Bank, 1985).

FDI was encouraged by joint equity participation. The government also established the Export Promotion Zone (EPZ) in Karachi. The foreign investors and overseas Pakistanis were encouraged to make an investment in export-oriented industries. During 1980s, the growth of FDI inflows was not significant due to inefficient financial market, high tariff rates on imports, ban on certain imports, and restrictions on industrial licenses. At the end of 1980s, Pakistan introduced a foreign investment policy that was more flexible. A Board of Investment was established, and one window facility was provided to set up industry in order to improve the investment environment and especially to attract foreign investment. The overall performance of the economy during 1977-88 remained good, and the average growth rate of GDP was 7% (Naqvi and Sarmad, 1993). Manufacturing GDP grew at 9.5%. Investment in medium and large-scale industries grew at 18.2%, and total private investment rate grew at 15.6% per annum on average (World Bank, 1988).

Structural Adjustment Program (SAP) initiated in 1988 with the help of the International Monetary Fund (IMF) and World Bank by a three-year agreement. The conditions of this program included privatization, further liberalization of industry, tariff reforms and new regulations for foreign investment. The detail of conditions included limiting the list of specific industries, raising the investment sanction limit, increasing private sector and enhancing corporate rationalization in the public sector industry. The export incentives enhanced, list of restricted import items reduced, level of protection reduced for imports, and
targeting tariff rates ranging from 0% to 100% were used. Level of indirect taxation increased and the government withdrew the subsidy on fertilizers, telephones, electricity and gas. Producer prices of major crops increased and there was a reduction in the development program during 1989-91. The restriction on borrowing and credit allocation imposed to the private sector (United Nations Industrial Development Organization, 1990). As a result of this program, there was an increase in competition and efficiency of the private sector. During that period, growth of manufacturing value-added was 6.3%. Electricity production increased by 5.9%. Investment in the energy sector increased by 5% in crude oil, 6% in gas and 9% in the electricity. The average growth rate of GDP was 5% during that period (World Bank, 1993). In November 1990, Disinvestment and Deregulation Committee was established. In November 1992, 49 industrial units transferred to the private sector. In late 1995, telephone and telegraph sector was partially privatized and two commercial banks were privatized.

During 1990s, foreign investors were allowed to hold 100% equity participation. The requirement for foreign investors to obtain approval from the government was removed except for alcoholic beverages, security printing, currency and mint, arms and ammunitions and high-explosive industries. Foreign investors were allowed to negotiate terms and conditions for the royalty payment for technology transfer. Foreign currency accounts were allowed for Pakistani residents as well as for foreign investors. The capital market was opened for foreigners. Pakistani companies could issue the shares to foreigners without taking permission from the government and certificates in foreign currency were also allowed to trade. Foreign currency account holders were allowed to take loans in Pak rupees against the collateral of foreign-currency accounts. Expansionary fiscal policy for the promotion of investment was implemented during 1990 to 1995; for example, three-year tax holidays were introduced to the newly established industry in any area of Pakistan. Special industrial zones were established to attract the foreign investment in export-oriented industries. Income tax holidays were given to foreign investors for investment in the industrial zones. Duty-free imports were allowed for machineries that were not manufactured locally. Tax exemptions were given on capital gains. There was no hindrance to remit profits and the principal amount of foreign investment either direct or indirect. There was an increase in export incentives and reduction in average import duty. Many quantitative restrictions and non-tariff barriers were removed. Some
strict policies were also introduced, such as investors had to have No Objection Certificate (NOC) from the provincial government for location of sensitive industries. Political instability was responsible for slow industrialization in that period. In 1997, the government liberalized the investment in those sectors which were previously banned, like agriculture and service sectors. Special incentives were offered to attract FDI in the cement industry, electronics industry, fertilizer industry, mining industry, engineering industry, pharmaceutical industry, dairy farming and tourism (Khan and Kim, 1999).

Nuclear test conducted by Pakistan in May 1998, shattered the confidence of foreign investor massively. Unexpected decision of policy makers of freezing foreign currency accounts yielded negative effects on foreign investment in Pakistan. This decision was immediately taken by government against the expected international sanctions as the result of nuclear test. At that time government was trying to improve its current account deficit through capital accounts but the efforts remained ineffective due to insufficient private direct investment to meet deficit. Foreign direct investment also declined and gross investment in each sector went down due to freezing of foreign currency accounts. Private investment was 6.8% of the GDP in 1990 and declined to the level of 1.7% of GDP in 1998. Over all there was net decrease in FDI around $614 Million in just four subsequent years i.e. 1998-2002 (Rashid et al. 2011).

In 1999, two commercial banks and two industrial banks were privatized. During 2000s, Government of Pakistan took various structural reforms and macroeconomic policies to attract foreign investment. The Major foreign direct investment was made in banking and finance, textile, automobiles, chemicals, trade, construction, oil and gas, petroleum refineries, food and beverage and energy sectors. Total foreign investment was 6 billion US dollars during 2007 out of which 4.16 billion US dollars were FDI. In 2007, total FDI grew at a better pace than the year 2006. Karachi Stock Exchange of Pakistan also attracted portfolio investment from foreign investors. Export rose to 3.4%, and imports declined to 2.1% (Government of Pakistan, 2007; Muhammad et al 2008).

Pakistan is a member of Economic Cooperation Organization and South Asian Free Trade Agreement (SAFTA). Pakistan has signed Bilateral Investment Treaties (BIT) with
forty-eight countries. According to these agreements, contracting parties would encourage investment from each other, there would be no discrimination between local and foreign investors, free transfers of investment, profits and repayment of loans, etc. An agreed dispute settlement mechanism would also be adopted to resolve disputes between investors and host countries (Ahmad, 2007).

The fiscal year 2012-13 started with continuous problems of power and gas shortages along with other internal and external challenges. The energy crisis deepened presenting paradoxical situation. While generating capacity is reported 20,000 MW, actual generation remains far below the demand resulting in nationwide long hours load shedding. The circular debt kept on increasing despite injections of the government, which built pressure on fiscal side. Similarly, the working of PSEs also deteriorated resulted in further supplementing the burden on budget. The adverse impact of these economic difficulties was further compounded by the ongoing war against extremism which continued unabated and not only on one hand caused irreparable loss to the economy but wiped out mental peace and harmony among the masses of the country. Karachi is the main hub of the economic activities, faced the series of attacks as well as similar incidence occurred in Punjab, KPK and Balochistan. In retaliation to these attacks and terrorists activities long and big sit down stage protests took place which sent a bad signal to outside world about the insecurity prevailing in the country. Investment which is the mirror image of the economy nosedived to 14.2% if to compare with 2008 when it was hovering around 19.21 % (base on year 2005-06). The resilience of economy was tested several times by one crisis than other. The financial global meltdown in 2008 which shocked the developed and developing economies of the world and its effects are still being felt, Pakistan in no exception to feel the heat. The GDP growth which was at 5.0 % in2007-08 dropped to 0.4% in 2008-09 (base2005-06). The inflation reached to highest level of 25 percent in October 2008. There was unprecedented surge in oil and commodities prices. In addition the behavior of natural climate during 2010 and 2011 further added to the overall economic suffering.

It is well documented in the literature that foreign direct investment (FDI) plays a positive role in the process of economic growth. Thamos, et al. (2008) argued that foreign affiliates of transnational corporation (TNCs) succeed in developing new products and technologies faster than local firms, there by exerting competitive pressure and forcing local firms to imitate and
innovate. This is one of the important reasons why developing countries are eager to attract FDI. Many developing countries including Pakistan faces the problem of saving-investment gap and FDI influences the process of economic growth by filling up this gap, increasing productivity, transferring advanced technology, employment creation and enhancing competition [Kobrin (2005) and Le and Ataullah (2006)]. These benefits have encouraged the developing countries to liberalize their FDI policies in order to attract FDI inflows. In the light of expected benefits of FDI, many studies have been carried out to examine the impacts of FDI on growth. However, theories and empirics appear to provide mixed evidence regarding the impact of FDI on economic growth in developing countries. Like many other developing countries, Pakistan has thrown its doors wide open to FDI, which is expected to bring huge benefits. However, unlike China and India, Pakistan has not been successful in obtaining substantial and consistent FDI inflows. Furthermore, the meagre inflows that the country has received have not been utilised appropriately to enhance the economic performance [Le and Ataullah (2006)]. FDI inflows are still too low and this might be because the economic reforms went far enough to change the character and type of FDI. The type of FDI and its structural composition matter as much for economic growth [Chakraborty and Nunnenkamp (2008)]. The structure and type of FDI are hardly considered in previous studies on the FDI-growth nexus in Pakistan.

This portion is an attempt to examine the impact of FDI on economic growth. The research contributes to the literature on FDI in three ways. First, were view the policy measure that the government of Pakistan has undertaken to attract the FDI. Secondly, we examine the impact of FDI on economic growth. The theoretical link between FDI and economic growth can be traced back to modernization and dependency theories [Adams (2009)]. Modernization theories suggest that FDI could promote economic growth under the principle that growth requires capital investment [Adams (2009)]. However, the new growth theories emphasizes the role of technology transfer through FDI because developing countries lacks necessary infrastructure such as education, liberalised financial markets, socio-economic and political stability [Calvo and Sanchez-Robles (2002) and Adams (2009)]. Apart from technology transfer, FDI also accompanies with it organizational and managerial skills, marketing know-how and market access through the marketing networks of multinational enterprises [Balasubramanyam, et al. (1996), Kumar and Pradhan (2002) and Adams (2009)]. Nath (2005) has argued that FDI plays a
two-fold function by contributing to capital accumulation and by increasing total factor productivity. In contrast, the dependency theories suggest that dependency on foreign investment is expected to produce negative impact on growth and income distribution because FDI creates monopolies in industrial sector, which in turn leads to underutilization of domestic resources [Bornschier and Chase-Dunn (1985) and Adams (2009)]. This implies that the economy is controlled by foreigners and rather than developing organically, it grows in a disarticulated manner [Amin (1974)]. Therefore, the multiplier effect is weak and leads to stagnant growth in developing countries [Adams (2009)]. Based on these mixed theoretical views, many empirical studies have been carried out to examine the relationship between FDI and economic growth, inter alia by Alfaro, et al. (2004), Borensztein, et al. (1998), Makki and Somwaru (2004), Campos and Kinoshita (2002) and Zhang (2001) among others. For example, Zhang (2001) reported that FDI promotes economic growth in countries where the domestic infrastructure is well developed and trade and FDI policies are more liberal. Balasubramanyam, et al. (1996) concluded that growth enhancing effects of FDI are stronger in countries where the labor force is highly educated and pursuing export promotion rather than import substitution trade policies. Campos and Kinoshita (2002) found that only when FDI is in the form of pure transferred technology there is a positive and significant impact on growth. Similarly, Carkovic and Levine (2005) claim that micro-level positive effects of FDI on growth can be treated with skepticism, as most of the studies do not control for simultaneity bias and country-specific effects. Some studies find insignificant effects of FDI on growth [e.g. Akinlo (2004), Aynwale (2007) and Hermes and Lensink (2003)]. Hermes and Lensink (2003) concluded that FDI exerts significant negative effect on the host country. Similar results were found by Fry (1993), Agosin and Mayer (2000) and Sylwester (2005). As far as direction of causality is concerned, Elias (1990) argues that the removal of international credit and liquidity constraints had encouraged FDI in the 1980s in most of the Latin American countries. De Mello (1997) argues that the direction of causality depends on the recipient country’s trade regime. Nair-Reichert and Weinhold (2001) argue that the effect of FDI on growth is highly heterogeneous across countries and this heterogeneity is more pronounced for more open economies. Therefore, there is a need for host country-specific study. A higher level of savings and investment is necessary to increase the rate of capital formation. However, in developing countries the level of domestic savings falls below the desired level because of low per capita income [Khan (2007)]. In the case of Pakistan, domestic
savings account for 11.2 percent of GDP—a decline of 5.1 percent from 2006. The gap between domestic savings and desired level of investment can be filled by the transfer of resources from outside; FDI is one of the most important sources [Zaidi (2004)]. To increase the level of foreign capital inflows, liberalization of trade and investment regime is required. This can be achieved by relaxing controls and offering financial and trade incentives like tax concessions and tariff reductions [Zaidi (2004)]. Furthermore, host countries need to pursue active liberalization policies to overcome trade deficit and encourage investment in export-led sectors. To ensure that FDI stimulates domestic economic activity, the host country should make it mandatory for the foreign investor to use a certain amount of locally made inputs in the production of final goods [Zaidi (2004)]. The domestic policies opted by the host country have an important influence on the decision of foreign investment. To attract FDI, the host country should adopt concrete and investor friendly policies. Strong infrastructure is also a pre-condition to restore the confidence of foreign investors. After following somewhat restrictive economic policies, the government of Pakistan initiated market-based reforms in the 1990s. These reforms included gradual liberalization of trade and investment regime by providing various trade and fiscal incentives to foreign investors through tax concessions, credit facilities, tariff reduction and easing foreign exchange controls [Khan (1997) and Aqeel and Nishat (2004)]. In the early 1990s, the government undertook a number of policy and regulatory measures to improve the business environment and attract foreign investment [Anwer (2002)]. Restrictions on capital inflows and outflows were also gradually lifted. Foreign investors were allowed to hold 100 percent of the equity in industrial project on a repairable basis, without any prior approval [Khan (2008)]. Furthermore, investment shares issued to nonresidents could be exported and remittance of dividends and disinvestments proceeds was permissible without any prior permission of State Bank of Pakistan (SBP). In 1994, restrictions on some capital transactions were partially relaxed and foreign borrowing, and certain outward investments, were allowed to some extent. Full convertibility of the Pak-rupee was established on current international transactions. The establishment of an interbank foreign exchange market also marked an important step towards decentralizing the management of foreign exchange and allowing market forces to play a greater role in exchange rate determination [Khan (2008)]. Pakistan’s foreign investment regime mainly consists of three components: (i) regulatory, (ii) economic, and (iii) socio-political. Regarding privatization and deregulation, Pakistan has opted very liberal regulatory regime. The regulatory
framework for foreign investment consists of three laws facilitating and protecting foreign investors; (i) Foreign Private Investment (Promotion and Protection) Act 1976, (ii) Furtherance and Protection of Economic Reforms Act 1992, and (iii) Foreign Currency Accounts (Protection) Ordinance 2001. In addition Bilateral Agreements include investment protection with 43 countries and avoidance of double taxation with 51 countries. To protect the intellectual property rights (IPRs), Pakistan has also updated IPR laws to bring them in compliance with international requirements, particularly those mandatory under the Agreement on Trade Related Intellectual Property Rights (TRIPS) of the WTO. The salient features of Pakistan’s regulatory regime are:

These measures includes (a) removal of the requirement of government approval of foreign investment, (b) permission of foreign equity participation of up to 100 percent, (c) permission to negotiate the terms and conditions of payment of royalty and technical fees suited to foreign investors for transferring technology, (d) liberalizing of foreign exchange regime, (e) permission of remittances of principal and dividends from FDI and portfolio investment including an extensive set of fiscal incentives and allowances to foreign investors, (f) convertibility of Pak-rupee from July1994, (g) liberalization of import policy, and (h) opening up the sectors of agriculture, telecommunications, energy and insurance to FDI in 1997. For further detail see Anwer (2002), Zaidi (2004) and further details can be seen on Pakistan’s board of investment (BOI). Freedom to bring, hold and take out foreign currency from Pakistan in any form. Privatization of an enterprise is fully protected. Neither it can be renationalized, nor can the government take over any foreign enterprise. Original FDI as well as profits earned can be repatriated to the country of origin. Equal treatment is provided to the foreign investor and local investor in terms of import and export of goods. FDI is not subject to taxes in addition to those levied on domestic investment. Foreign currency accounts are fully protected and they cannot be frozen. All the economic sectors are open to FDI; foreign equity up to 100 percent is allowed in all sectors, including the agricultural sector. There is no lower limit on the size of FDI in manufacturing sector. However, in agriculture, infrastructure and social sectors the minimum amount of foreign equity investment is $0.3 million and in services sector the minimum amount of foreign equity investment is $0.15 million. No government sanction is required to set up any industry, in terms of field of activity, location and size, except arms and ammunitions, high explosives, radioactive substances, security printing, currency and mint, and alcoholic beverages. No double taxation on income earned by foreign investors. Pakistan has also rationalized its
tariff regime. Custom duty on import of plant machinery is zero percent in the agricultural sector, while in the manufacturing, services, infrastructure and social sectors it is not more than 5 percent. There are no restrictions for payment of royalty and technical fees in the manufacturing sector, whereas in the non-manufacturing sector, a maximum rate of 5 percent of net sales is allowed. Tax relief (IDA, percent of PME (Plant, Machinery and Equipment)cost), 50 percent in manufacturing and non-manufacturing sectors. Pakistan has received comparatively higher amount of FDI over the past two decades, due to its market-oriented investment policies and enabling investment environment. FDI inflows to Pakistan can be explained in terms of its size and percentage of gross domestic product (GDP). Due to inconsistent investment policies, the flow of FDI was insignificant until 1991; however, its steadily increased in the post-liberalization period. Actual inflows of FDI to Pakistan have increased from $119.6 million in 1975-79 to $3299.8 million in 1995-99 and from $485 million in 2001-02 to $5,152.80 million in 2007-08. FDI has showed a declining trend since 2007-08, which is due to the lack of enabling environment for investment in the country in recent years.

The economy on average grew since 2008-09 at 2.94%. During FY12 and FY13 the power shortage became so severe that it wiped out 2% from our GDP. Agriculture, Manufacturing as well as Services sector performed below their capacity. Though economy has the growth trajectory of more than 6%, but the worst energy crises, bleeding public sector enterprises, economic mismanagement and menace of informal economy hemorrhaged the system. The other challenges to the macroeconomic environment emanated from the external front. After remaining in primarily surplus driven by inflows under Coalition Support Fund (CSF), strong remittances and a lower trade deficit, turned current account into deficit of US$ 1.4 billion in July-April 2012-13. Although the cumulative current account deficit was much lower than the same period of last year, the external outlook remains challenging with scheduled payments to the IMF in the rest of FY13. The liquid foreign reserves have declined to US$ 11.5 billion. On domestic front, the growth in FBR revenues remained sluggish, while expenditure on power subsides and debt servicing increased sharply. Finally the government had to resort increasingly to borrow from SBP to finance fiscal deficit. The fiscal deficit remained at 4.6 percent during July-March FY13 as compared to 6.4 percent of the GDP in the comparable period of last year. The improvement came on account of CSF inflows and provincial budget
surpluses. On a positive note, inflation fell significantly, and LSM showed signs of recovery. Fiscal year 2012-13 started with single digit inflation and likely to remains during the current financial year, food and non-food inflation as well as whole sale price index, sensitive price index and core inflation remained in single digit. The growth in industrial sector increased on the back of recovery in large scale manufacturing, construction and mining and quarrying. Amid of severe energy crisis, the LSM performed well. The latest data of March FY13 suggests a growth 9.3% on YoY basis and 4.3% on average July-March FY 13. If this trend continues it may help in overall improvement in GDP. However, Services sector remained subdued due to decline in growth rates of transport, storage and communication. Thus overall recent growth of GDP (at new base 2005-06) is registered at 3.6 percent in FY13 as compared to 4.4 percent in FY12. The economy received nominal support from farms income particularly from minor crop and livestock whereas the major crops particularly cotton and rice missed the target but to some extent compensated by the better crops of sugarcane and wheat. The Rabi crop has done well; as fertilizer prices remained relatively stable compared to last year, the government raised the support price for wheat, adequate irrigation water was available at the time of sowing (unlike the kharif season) the frequent rains and moderate temperatures throughout the season helped improving the crop productivity and finally, agri-credit disbursement were higher compared to last year. The kharif crops of rice and cotton, on the other hand, were adversely affected due to heavy rains and localized flooding. Therefore, the overall growth in major crops during FY13 has remained lower than last year. The outgoing fiscal year has seen some improvement in foreign direct investment in third quarter of current fiscal year. The pace of foreign direct investment at the start of fiscal year was slow which continued till February, but from March it started picked up and in April reached to US$ 213.6 million posted a growth of 289 percent over last year US$ 59.6 million. During July-April FY13 the foreign direct investment witnessed a growth of 29.7% and stood at US$ 853.5 million compared to US$658.2 million in corresponding period of last fiscal year. The Foreign Private Investment registered a growth of 80.4 percent during the period under discussion on account of 445.5percent growth in portfolio investment. The main contributions in foreign direct inflows, on average were from United States, UAE and United Kingdom having share 14.0, 12.6 and10.2 percent, respectively. Oil and Gas Exploration remains the significant sector which attracted 23.5 percent foreign inflows followed by Financial Business and Communications which attracted 18.1 and 10.6 percent,
respectively. The outflow was seen in communications and power sectors. Despite the global slowdown, the uptrend in KSE-100 index encouraged foreign investment in stock market. The Karachi Stock Exchange (KSE) reached to historical height of 22000 plus points. This positivity of foreign portfolio investment further reinforced the confidence of investors. In capital market the major contribution came from USA, UK and Hong Kong. This year the National Accounts have been rebased on 2005-06 and System of National Accounts improved from 1993 to 2008. Many countries in the world update their base year periodically, some after five years and some after 10 years or even every year. This become essential on account of continuous process of development and innovations as a number of new products appears in the market and at the sometime many products disappear. Moreover, on the demand side of the economy consumption and investment pattern also face structural changes. All these factors make it necessary and in conformity to international best practice the National Accounts have been rebased to 2005-06 from 1999 to 2000. Under rebasing of 2005-06, new versions of International Classifications have been introduced. According to the latest international concepts, basic prices instead of factor cost valuation, double deflation, exploration costs, FISIM and many others have been adopted. The classifications applied are industrial, consumption, product, functions, occupation, etc. Which are parallel to the latest available international classifications. The new base has expanded its coverage to include new economic activities. National accounts are now using more surveys, census and studies for the computation of value addition for different sectors. The growth rate recorded of small scale manufacturing has increased from 7.5 percent in the earlier base to 8.2 percent. This revision was made following results of the new survey of small household and manufacturing industries. The financial sector has been changed on the basis of SNA 2008. Since this sector’s output was neither visible nor directly measurable. SNA 2008 was an indirect measurement method, called “Financial Intermediation Services Indirectly Measured” (FISIM). A slight improvement in trade sector has been witnessed as the trade deficit contracted by 2.5 percent on July-April FY13. This improvement was due to 0.15 percent rise in export and 0.9 percent decline in import. During the first ten months of current FY13, exports stood at $20.5 billion as recorded the same in the comparable period of FY12, while imports amounted to $33.0 billion against $33.3 billion during the same period of FY12. Trade deficit has been reduced to US$ 12.5 billion during July-April, FY13 as compared to US$ 12.9 billion in the comparable period of FY12. During July-April FY13, the worker’s remittances stood at
$11.6 billion against $10.9 billion last year, showing a growth of 6.4 percent. During July to 10th May FY13, money supply (M2) increased by 9.9 percent (Rs.753.2 billion) against the growth of 9.1 percent (Rs.606.8 billion) in the comparable period last year. The growth in M2 during July to 10th May FY13 was mainly contributed by the improvement in Net foreign assets (NFA), rise in Net domestic assets (NDA) and credit off take by the Public Sector Enterprises (PSEs). NDA of the banking sector increased by 13.4 percent (Rs.950.0 billion) as compared to net expansion of 14.8 percent (Rs.875.0 billion) in the same period last year. The PSEs borrowed Rs.48.9 billion during July to 10th May, FY13 against the retirement of Rs.142.6 billion during the same period last year. Net Foreign Assets (NFA) during the period under review reduced to Rs.196.8 billion as compared to the net contraction of Rs.268.7 billion last year. NFA remained under tremendous pressure due to decline in foreign exchange reserves on account of debt repayment to IMF since February 2012. Till 25th May, Pakistan has repaid $4.1 billion to IMF. The recent improvement to be compared last year is mainly on account of realization of $1.8 billion under the Coalition Support Fund (CSF) during the first half of FY13. Alongside the above developments there have been some weak areas which require serious attention in the short to medium term. First, the foremost is the issue of handling energy crisis on a sustainable basis. The real outcome is to tap more hydel resources and to complete the ongoing along with revival of dormant hydel projects. Similarly, the PSEs issue also required urgent attention; efforts are underway but need to be put on fast track as it is a burden on fiscal side and putting government into problem in managing fiscal discipline. In the past five year the economy is growing at a slow pace and this slow growth contributed to other serious socio economic problem, unemployment, social unrest, lawlessness. At the moment the unemployment rate is 6% and to absorb this rate at least 6-7% growth as well good economic governance is required.

Growth and Investment: The framework for economic growth approved by the government in FY11 identified a coherent approach to growth that targets public service delivery, productivity, competitive markets, innovation and entrepreneurship. The strategy was based on sustained reform that builds efficient and knowledgeable governance structure, and markets in attractive and well-connected locations, however, the desired objectives are yet to be realized. Pakistan’s economic problems are structural in nature. Major structural reforms which are needed contains tax legislation, trade reforms, privatization of State Owned Enterprises
(SOEs), financial sector reforms, human resource development and social protection. The real GDP growth for FY 13 has been estimated at 3.6 percent based on nine month data as compared to 4.4 percent (revised) in the previous year after rebasing the national accounts at constant prices of 2005-06. The Agriculture sector recorded a growth of 3.3 percent against the previous year’s growth rate of 3.5 percent. The Large Scale Manufacturing sector grew by 2.8 percent as compared to the growth of 1.2 percent last year. The Services sector recorded a growth of 3.7 percent as compared to 5.3 percent in FY 12. Commodity Producing Sector (CPS) consists of agriculture and industry. CPS accounted for 42.3 percent of GDP after rebasing of national accounts during the outgoing fiscal year. The commodity producing sector has performed better in outgoing fiscal year as compared to last year; its growth rate this year was 3.4 percent against the growth of 3.1 percent last year. However, the growth of the commodity producing sector remained far below its potential due to heavy rains, energy crises, law and order situation etc.

Agriculture provides food items and raw materials for industrial units and accounts for 21.4 percent of GDP, 45 percent of employment and also contributes in the development of other sectors as a supplier of raw materials to industry as well as a market for industrial products and is also the main source of foreign exchange earnings. The performance of the agriculture sector remained weak due to unfavorable weather conditions which resulted in lower production of cotton and rice. However, this sector posted a growth of 3.3 percent against the growth of 3.5 percent last year. The agriculture sector consists of various sub sectors which include crops, livestock, fisheries and forestry. The crop sub-sector is further divided into important crops, other crops and cotton ginning. The important crops account for 25.24 percent of agricultural value added and registered a growth of 2.3 percent compared to a growth of 7.4 percent last year. The important crops included wheat, maize, rice, sugarcane and cotton witnessed growth of 3.23 percent, 6.74 percent, -10.05 percent, 6.98 percent and -4.19 percent, respectively. The main reason for the negative growth of rice and cotton was unfavorable weather conditions and effects of rains in the rice and cotton growing areas. Other crops contributed 12.34 percent to value addition in overall agriculture. Growth in the production of this sub-sector was recorded at 6.7 percent against the negative growth of -7.7 percent last year. Cotton ginning has a 2.91 percent share in overall agriculture sector. Cotton Ginning has recorded a growth of -2.9 percent as compared to 13.8 percent growth last year. Previously it was a component of manufacturing sector, now under new base 2005-06; it is included in the agriculture sector. Livestock is an
important sub sector of agriculture, which accounts for 55.44 percent of agriculture value addition. Its share in GDP is 11.9 percent. This sub-sector is highly labour intensive. It has also emerged as a major source of income for the small farmers as well as the landless rural poor. Livestock has recorded a growth of 3.7 percent against the growth of 3.9 percent last year. The fisheries sector having 2.05 percent share in agriculture recorded a growth of 0.7 percent against the growth of 3.8 percent last year. The growth of the forestry sub-sector was recorded at 0.1 percent as compared to the growth of 1.7 percent last year. Forests are a key component of our environment and degradation of forest can pose severe socio-economic challenges for the coming generations. The manufacturing sector is another important sector of the economy having much contribution in the progress of our economy. The manufacturing sector captured 63 percent share of the overall industrial sector. It has been hard hit by domestic and international factors. Power crises, unstable law and order situation, campaign against terrorism have created uncertain environment, resulted in loss of working hours. All these factors have caused slower growth in manufacturing sector. The growth was recorded at 3.5 percent compared to the growth of 2.1 percent last year. The construction sector is one of the potential components of industrial sector having 11.42 percent share in overall industrial sector. The construction sector has recorded 5.2 percent growth as compared to 3.2 percent growth last year. The increase in growth is due to rapid execution of work on the rehabilitation of the flood affected areas, increased investment in small scale construction and rapid implementation of PSDP schemes and other development projects of Federal and Provincial Governments. The mining and quarrying component contains 14.74 percent share of the overall industrial sector. Pakistan has economically exploitable reserves of coal, rock salt, limestone and onyx marble, china clay, dolomite, fire clay, gypsum, silica sand and granite, as well as precious and semi-precious stones. The mining and quarrying sector recorded a growth of 7.6 percent during the year 2012-13 against the growth of 4.6 percent last year. Much of the country’s mining reserve exists in remote areas. Infrastructure improvements are necessary to sustain and achieve higher growth rates in future. The electricity generation & distribution and gas distribution contains 10.86 percent share in overall industrial sector. This sub-sector has recorded a negative growth at 3.2 percent as compared to 2.7 percent last year. The services sector has emerged as the main driver of economic growth and playing a vital role in sustaining economic activities in Pakistan. The share of the services sector has increased from 56 percent of GDP in 2005-06 to 57.7 percent in
2012-13. The services sector consists of the sub-sectors: Transport, Storage and Communication; Wholesale and Retail Trade; Finance and Insurance; Housing Services (Ownership of Dwellings); General Government Services (Public Administration and Defense); and Other Private Services (Social Services). The services sector has recorded a growth rate of 3.7 percent in 2012-13. This performance was mainly contributed by Finance and Insurance at 6.6 percent, General Government Services at 5.6 percent, Housing Services at 4.0 percent, Other Private Services at 4.0 percent, Transport, Storage and Communication at 3.4 percent and Wholesale and Retail Trade at 2.5 percent. Services sector in our economy has a great potential to grow at a rapid pace. In order to develop the services sector, the government has recognized the needs to liberalize operating rights and has separated regulators from operators. The expansion of output is the sum of consumption (both private and public), investment (public and private) and net exports of goods and services. Pakistan’s economic growth is historically characterized as consumption-led growth like other developing countries. The growth driven by the private consumption expenditure reached to 76.98 percent of GDP, whereas public consumption expenditures were 10.68 percent of GDP. Total consumption expenditure has reached to 87.66 percent of GDP in 2012-13 compared to 88.86 percent last fiscal year. Total consumption has declined 1.2 percent of GDP, private consumption decreased by 1.55 percent of GDP as it declined from 78.53 percent of GDP to 76.98 percent of GDP. While public consumption increased by 0.35 percent of GDP as it increased from 10.33 percent of GDP to 10.68 percent of GDP. Decline in consumption expenditure might be positive thing if consumption is diverted to investment expenditure. Per capita income is regarded as one of the key indicators of economic well-being over a period of time. Per Capita Income in dollar terms grew at a nominal rate of 3.4 percent in 2012-13 and increased to $1,368 in 2012-13. Investment plays the key role in the determination of economic growth of a country. Investment has been hard hit by internal and external factors during the last few years and is considered as a key concern. Total investment has decreased from 19.21 percent of GDP in 2007-08 to 14.22 percent of GDP in 2012-13. Fixed investment has declined to 12.6 percent of GDP in 2012-13 from 17.61 percent of GDP in 2007-08. Private investment recorded a contraction of 8.7 percent in 2012-13 compared to 12.8 percent of GDP in 2007-08. Public investment as a percent of GDP also decreased to 3.9 percent in 2012-13 against the 4.8 percent in 2007-08. The resolve of the government is to address this issue and create an enabling environment to revive the confidence of the investors. National savings
were 13.5 percent of GDP in 2012-13 compared to 11.0 percent in 2007-08. Domestic savings have also decreased from 9.1 percent of GDP in 2007-08 to 8.7 percent of GDP in 2012-13. Net foreign resource inflows are financing the saving investment gap.

Foreign direct investment (FDI) has emerged as a major source of private external flows for developing countries. Pakistan during last few years could not attract FDI as per potential of the country due to number of reasons as explained above. Some signs of improvements have been seen in March and April suggesting improvement in investor’s confidence and also due to peaceful transition of democracy the investment is likely to pick up. As is evident that post 2013 election, the capital market crossed 22,000 plus points emitting positive signals to the investor’s confidence. The new government has a comprehensive plan to create investment friendly environment and to attract foreign investors in the country. Workers’ remittances from overseas have been a major source of foreign exchange earnings during the last few years. Inflows of remittances also improving the standard of living of recipient household and increase domestic demand and indirectly play a role to reduce unemployment. SBP resolve is to further bring additional remittances through its PRI scheme. The new elected government is also aiming to explore more markets to export its manpower as well as incentives for the remittances to further enhance its growth. The approval of National Policy for Overseas is a welcome development.

According to which legal rights of overseas Pakistanis & their families abroad and in Pakistan are restored and protected. There is motivations and encouragement for overseas Pakistanis to save and send their remittances through legal channels. Workers’ Remittances totaled $ 11569.82 million in July-April of 2012-13, as against $ 10876.99 million in the comparable period of last year, which indicate an increase of 6.37 percent over the period. Remittances from Saudi Arabia and UK recorded massive growth of 12.84 percent and 27.49 percent during the period under review.

Fiscal Development: During the past five years the economy faced numerous challenges on external and internal front on account of power crisis, persistent inflationary pressures, unprecedented floods, low tax to GDP ratio, high fiscal deficit, mounting public debt, high interest payments, high growth in subsidies on account of circular debt and resource drain through PSEs. Consequently, the expenditure overrun surpassed the revenue increases, thereby
resulted pressure on the fiscal deficit. However, it is worth noting that amid mounting pressures on public spending, government’s various corrective measures during the past five years to rationalize expenditure and broadening of tax base have brought fiscal deficit to 6.8 percent in 2011-12 from 7.3 percent in 2007-08. Fiscal deficit during the first nine months of 2012-13 stood at 4.6 percent against 6.4 percent of GDP (including debt consolidation of Rs 391 billion arrears of electricity). On the other hand provincial resource mobilization performed remarkably well during the first nine months of fiscal year 2012-13 with the growth rate of 20.8 percent. After the announcement of 7th NFC award, provinces received a significant amount of the federal government taxes as their share from the divisible pool along with additional grants. Government continued its efforts to broaden the tax base and simplifying the tax structure. During the current fiscal year various measures to increase the revenues expected to generate additional tax revenues of Rs. 41 billion e.g. the sectors with zero rating facility have been brought under tax as 2.0 percent sales tax was imposed on local supplies of five leading export sectors (Sports, Surgical, Carpet, Textile and Leather, standardized withholding tax regime at the import stage by imposing a uniform rate of 5 percent tax on the imports of commercial and industrial importers, mobile telephone sets, silver, all fibers, yarns, fabrics and goods covered by the five leading export sectors, broadening of sales tax, withholding regime, withdrawal of concessionary rate of 5 percent on tea. FBR tax collection for the fiscal year 2012-13 was targeted at Rs. 2, 381 billion which was 26.4 percent higher over the actual collection of Rs. 1, 883.0 billion during 2011-12. During first ten months of current fiscal year, FBR tax collection reached to Rs. 1, 505.2 billion against Rs 1, 426.2 billion in the same period last year, posting a growth of 5.5 percent.

Money and Credit: Monetary policy in Pakistan has undergone substantial changes in tandem with volatile economic conditions within the country. The current policy stance has been largely supportive of the dual objective of promoting economic growth and price stability along with the revival of credit to private sector. SBP has adopted relatively an expansionary policy stance for the past two years as the policy rate has been reduced by cumulative 400 basis points from 13.5 percent in August 2011 to 9.5 percent in December 2012. During July-10th May 2012-13, money supply (M2) increased by 9.9 percent against the growth of 9.1 percent in the comparable period last year on account of improvement in Net foreign assets (NFA), rise in Net domestic assets (NDA) and credit off take by the Public Sector Enterprises (PSEs).
improvement in NFA however, was mainly on account of realization of $1.8 billion under the Coalition Support Fund (CSF) during the first half of 2012-13. Despite some improvement, NFA remained under great pressure due to decline in foreign exchange reserves on account of debt repayment to IMF since February 2012 and drying up of external financial inflows. Till 25th May, 2013 Pakistan has repaid $ 4.1 billion to IMF. Credit to private sector increased to Rs. 92.9 billion during July-10th May 2012-13 as compared to the expansion of Rs. 235.1 billion in the comparable period of last year. During the current fiscal year, following a decline in policy rate by 250 bps points, weighted average lending rates of commercial banks also reduced by 267 bps points to 10.5 percent in March, 2013 against 13.1 percent in June, 2012. Weighted average lending rate (including zero mark-up) on outstanding loans stood at 10.46 percent, while weighted average deposit rate (including zero mark-up) stood at 5.21 percent. Banks have also cut the deposit rates from its peak level of 7.11 percent in July, 2012 to 5.21 percent in March 2013, in order to avoid fall in their profits. A declining trend has been witnessed in the banking spread, as it reduced to 4.45 percent in February, 2013, while it rose to 5.25 percent in March, 2013. Lending rate is expected to reduce further due to low level of investment and fresh disbursements by the banks. On the other hand, deposit rate is likely to increase from April, 2013 onwards, because the banks will start paying interest on average balance of saving accounts instead of minimum as per directives issued by the SBP.

Capital Market: The capital market not only reflects the general condition of the economy, but also smoothenes and accelerates the process of economic growth. Various institutions of the capital market like non-bank financial intermediaries allocate the resources rationally in accordance with the development needs of the country. The proper allocation of resources results in the expansion of trade and industry in both public and private sectors, thus promoting balanced economic growth in the country. In Pakistan, Capital Market mainly consists of stock (equity) and Debt Markets.

Pakistan Stock Markets has outperformed during current fiscal year among Global Stock Markets including India, China, Hong Kong, Tokyo, USA and UK. Participation of foreign investment was the main reason behind the better performance of Karachi Stock Exchange (KSE). In addition, the better return on Pakistan Stocks has also attracted the foreigners which they did not find in the other Global Markets. Beside this, the local investors has found the best
avenue in the capital market because of consecutive decline in the discount rate. Pakistan’s stock markets showed robust growth during current financial year mainly due to the pre and post-election political environment of the country. The KSE 100 index which was at the level of 13,801.41 at the end of last financial year crossed first the barrier of 19,000 level mark at the end of April, 2013 and was trading around 19,900 level on 10th May before election and then broke all previous records and reached all time high level of above 22,000. The KSE 100 index in cumulative terms increased by 57 percent during current fiscal year (Jul-May). Other factors which contributed to this bullish trend include implementation of long awaited Capital Gain Tax Rules, Demutualization of the stock exchanges, considerable decline in the discount rate by SBP which was brought down to 9.5% in December 2012, substantial foreign interest in stocks and declining inflation. In global scenario, the US S&P 500 has registered an increase of 15.2 per cent while the UK FTSE 100 was up by 15.1 per cent during Jul-March, FY13. The Index of Tokyo NIKKEI 225, however, stood at 12,397.91 with an impressive increase of 37.7 per cent The Hong Kong market went upward by 14.7 percent but China Shanghai Composite could not perform and increased only by 0.5 percent. Beside this, Bombay Sensex Index stood at 18,835.77. It may be noted that as compared with the other world indices, Pakistan Stock market performed well during current fiscal year. It has been observed over the years that Pakistan’s economy mostly relied on the banking system to meet the financing needs of the economy whereas capital markets relatively developed slowly. During the past few years, the significance of debt markets and in particular bond markets has been realized as a complimentary source of finance. The major drivers of financial assets in Pakistan are deposits and government bonds, whereas corporate bonds remain a very small portion.

During July-March, FY13 a total of 6 debt securities issued through private placement which also included two Sukuk issues of Rs.108.393 billion by Pakistan Domestic Sukuk Company Ltd.

Inflation: The inflationary trend in the economy subdued during 2012-13. The annualized inflation rate measured in terms of Consumer Price Index (CPI) for (July-May) 2012-13 averaged at 7.5 percent as against 10.9 percent recorded in the same period of 2011-12. Food and non-food inflation followed almost the overall inflationary trends. Food inflation averaged at 6.6 percent against 11.1 percent last year and non-food inflation at 8.1 percent as compared to 10.9 percent
in the same period of last year. Similarly, the Sensitive Price Indicator (SPI) and Wholesale Price Index (WPI) each increased by 7.8 percent and 7.6 percent during the period under review. The slower increase in inflation is the result of better supply situation domestically and decline in international commodity prices. The CPI headline inflation on year on year (YoY) basis dropped to 5.1 percent in May 2013 as compared to 12.3 percent last year. WPI stood at 4.1 percent and SPI inflation 6.8 percent as compared to 7.1 percent and 8.1 percent, respectively during the same period last year. Food inflation down to 6.5 percent on year on year (YoY) basis and that of non-food 4.1 percent while core inflation stood at 8.1 percent as compared to 11.3, 13.1 and 11.1 percent, respectively last year. Food inflation in this fiscal year is much slower than a year earlier, reflecting improved supply while deceleration in non-food inflation stemmed mainly from decreased prices of gas and fuel related component. The lower trend in Wholesale Price Index (WPI) inflation was mainly due to a decrease in wholesale prices of sugar, pulses, fertilizers, fuel and cotton related items while the downward trend in Sensitive Price Index inflation was due to decrease in retail prices of chicken, potatoes, sugar, pulses and fresh vegetables.

Trade and Payments: The world trade statistics reflect weakening demand that originated in the euro area transmitting to the rest of the word during 2nd half of 2011 and further declined in 2012. As a result, imports of the United States and Japan also slowed significantly in the second half of 2012. East Asian economies that trade significantly with the major developed countries have experienced commensurate declines in exports. The EU and the US represent the most important destinations of Pakistan exports and their markets absorb 31 percent and 23 percent of exports. While China represents the third most important destination with an 11.5 percent share. UAE, Afghanistan, Oman and Turkey have recently become important destinations. Therefore, slowdown in US and European economies and weak demand have significant impact on Pakistan’s export growth. The government started the three year policy cycle and presented its first Strategic Trade Policy Framework 2009-12 in September 2009. STPF 2009-12 achieved its export targets at the end of 2010-2011. In spite of various challenges faced by economy, our trade has shown consistent improvement. Our exports increased by 27 percent in the year 2010-11 and touched a record level of US $ 25.4 billion. There was a slight fall of 4.7 percent in exports during 2011-12, due to external factors like shrinkage in global demand in
wake of the global financial crisis and lower prices of cotton in the international market etc. The second Strategic Trade Policy Framework (STPF) for next three-year period, 2012-15 essentially build on the STPF 2009-12 and seeks to identify those aspects of Pakistan’s export competitiveness which have been relatively less attended such as focusing on regional trade, promotion of export of services sector, facilitating export industry by overcoming energy crises and many more. For the promotion of regional trade between India and Pakistan, both governments have in the past two years shown courage and taken steps to follow up. Pakistan took the initiative in November 2011 by announcing that it would apply Most Favored Nation (MFN) treatment to goods coming from India by the end of 2012 (India granted Pakistan MFN in 1996). In February 2012, both countries announced the conclusion of agreements on customs cooperation, mutual recognition of standards, and redressal of trade grievances. In September 2012, both governments announced a new visa agreement that included provisions designed to facilitate business travel and build an atmosphere of confidence and trust and for that the only way is economic partnership. It is expected that outcomes and benefits of these measures will emerged shortly.

Pakistan is sixth most populous country in the world with an estimated population of 184.35 million in 2012-2013. The growth rate of population during 2012-2013 is 2.0 percent. Under current circumstances, it is expected that Pakistan will attain fifth position in the world in terms of total population in 2050. Government is making efforts to control the population growth rate through various population welfare programme and by creating awareness among people. In this regard, the population welfare program has established 2891 family welfare centers (FWC), 340 reproductive health centers and 292 mobile service units during 2011-12. These Population welfare programme are contributing significantly in controlling population growth rate, fertility rate, infant mortality rate and maternal mortality rate. According to the Labour Force Survey 2010-11, Pakistan has a labour force of 57.24 million people which is 0.91 million more than the last year. Out of which, total number of people employed during 2010-11 were 53.84 million. Most of the labour force in Pakistan works in the rural areas where agriculture is the dominant activity. The total labour force working in the agricultural sector remained unchanged during the period 2008-2011. In manufacturing sector the participation rate has increased from 13.2 percent in 2009-10 to 13.7 percent in 2010-11 and the share of community/social and personal sector has
decreased from 11.2 percent to 10.8 percent. Unemployment is the central problem being faced by every developing country in the 21st century. The unemployment rate has increased to 6.0 percent in 2010-11. The unemployment rate in rural area has decreased from 4.8 percent in 2009-10 to 4.7 percent in 2010-11 while in urban area the unemployment rate has increased from 7.2 percent 2009-10 to 8.8 percent in 2010-11. Often it is perceived that the unemployment rate in rural areas is greater because in rural areas there is a lower chance of employment as compared to the urban areas where employment opportunities are relatively better due to greater economic activities. The apparent reason of this hard reality is that the industrial sector is facing an acute shortage of energy resources and therefore there was a reduction in job opportunities. The government is committed in producing skilled workers in order to send them abroad to ensure higher foreign exchange. In this regard, MOUs have been signed with a number of labour importing countries e.g. Qatar, Malaysia and Saudi Arabia. The number of emigrant which was 0.45 million in 2011 increased to 0.63 million in 2012 which included 0.26 million unskilled, 0.26 million skilled, 0.1 million semiskilled workers.
CHAPTER 3

LITERATURE REVIEW

This section explores the theoretical and empirical studies on the consequences of FDI for host countries. The overall effects of FDI on any economy are difficult to determine. However, some effects can be measured. The study captures the literature review of the consequences of FDI on economic growth, productivity growth, employment, domestic investment, tax revenue, international trade, environment and poverty and income inequality.

Vernon (1966) found that FDI reduced imports and increased domestic production and economic growth of the host country. Aharoni (1966) found that FDI came with capital, technology and better management that helped in recognizing opportunities and increased the economic growth in host countries. Kindleberger (1969) found that FDI had a positive impact on economic growth by using new technology. This was a source of becoming a market leader in developing economies and influenced the Multinational Enterprises (MNEs) to invest in such countries. Ozawa and Castello (2003) suggested that host governments should provide ownership-advantage and should take care of the location-advantage. This may ensure the business expansions and the economic growth, which, in return, may assist in filling the developmental gaps. However, this may also result in losing the host country’s cultural identity and make heavy dependence on foreign investment.

Blomstrom et al. (1994) found that FDI had a positive impact on economic growth in high income developing countries. The low-income countries did not get the benefit of the economic growth due to the low level of education, low labor-force participation rate and initial low level of income. Balasubramanyam et al. (1996) found that FDI raised economic growth when a country had a liberal international trade.

De Mello (1997) mentioned that foreign investors used new technology in the production process and generated capital spillovers in an economy, which resulted in increasing productivity and economic growth. Secondly, the foreign investors used a good management practices and organizational arrangements, which helped in labor training and knowledge
transfer in local labor and also increased labor productivity. Borensztein et al. (1998) found that FDI increased domestic investment and per-capita GDP growth through productivity spillovers. He also stated that the impact depended on geographic location, level of education, infrastructure and factor endowment of the host country. Borensztein et al. (1998) found that level of education in the local labor force, factor endowments, infrastructure and geographical location were responsible for the positive impact of FDI on economic growth. De Mello (1999) found that FDI increased the technological progress, productivity of the host country and the output growth. Hence, the impact of FDI on economic growth depended whether FDI was promoting domestic investment.

Zhang (2001) examined the positive effects of FDI on economic growth of the countries which had improved education level, macroeconomic stability and liberal trade regimes that promoted export-oriented FDI. Alfaro et al. (2001) found that FDI enhanced economic growth in those countries which had well developed local financial markets. Campos and Kinoshita (2002) and Balasubramanayam et al. (1996) found a positive impact of FDI on the economic growth and stated that FDI had a stronger impact for those countries that preferred the export-promotion trade policy to the import-substituting trade policy. Organization of Economic Cooperation and Development (OECD) (2002) documented that eleven out of fourteen studies found a positive impact of FDI on economic growth and labor productivity. King and Varadi (2002) found that FDI increased market concentration and hindered future economic growth.

Panel studies have been undertaken to avoid the country-specific differences in infrastructure, macroeconomic policies, technology and level of education. Bengoa and Sanches-Robles (2003) found that economic stability, human capital and liberal markets were the prerequisites for the positive relationship between economic growth and FDI. Durham (2004) found an insignificant positive relationship between FDI and economic growth by using data of eighty countries for the period 1979-98. He also stated that the growth effect depended on the absorptive capacity of an economy.

Katerina et al. (2004) found insignificant relationship between FDI and economic growth in transition economies. Li and Liu (2005) found a positive and significant relationship between FDI and economic growth by using the panel data of 84 countries over the period 1970-99.
and suggested the endogenous effect of FDI on the economic growth. Lee and Chang (2009) stated that the benefits of FDI could only gain if a country reached a certain level of financial development. They found that financial development had a greater impact on the economic growth than that of the FDI. Whalley and Xin (2010) found that foreign enterprises in China contributed 20% in GDP.

MacDougall (1960) found that FDI had positive spillovers on the host countries through technology and production growth. Streeten (1969) suggested that the host country’s welfare could increase by FDI through technology. Caves (1971) claimed that FDI could increase the welfare of the host country by introducing new technology, new skills, better marketing techniques and production techniques. He also claimed that FDI had the main advantage of product differentiation in imperfect competition in the host country, which affected the MNE’s decision to invest in that country.

Buckley and Casson (1976) claimed that MNEs invested in the host country due to market imperfection to gain monopoly power. MNEs developed and transferred the knowledge and skills in the host country and created the benefit for both host and home countries. Buckley and Casson (1981) stated that FDI could reduce the imports of final goods and increase the imports of capital goods, which could improve productivity levels in the host country. Magee (1977) found a positive impact of FDI on technology transfers in the host country and further stated that the degree of transfers depended on trademark law and patent system of the recipient country. Casson (1987) claimed that MNEs could affect the economic and cultural environment of the recipient country and could also become a source of technology transfer with better productivity.

Findlay (1978) stated that FDI was the source of technology, including capital and management. Technology depended on the host country’s educational level, market structure and laws relating to licensing, patents and royalties. He also stated that the degree of technological change in the backward regions of the host country depended on the level of foreign capital in such regions. Koizumi and Kopecky (1977) explained that the transfer of technology depended on the share of foreign capital in the total capital stock of the host country. When FDI increased the foreign capital stock, the marginal product of capital would
raise greater than the host country’s rate of interest. Domestic capital stock increased up to the point where the marginal product of capital equalized the rate of interest. There would also be capital intensity in the host country with this process.

Das (1987) assumed that MNEs had superior technology and monopoly powers. Technology was transferred to the firms of a host country when MNEs set up their firms. MNEs enjoyed monopoly power and higher profits while the profits of the domestic firms were not certain and depended on the elasticity of demand and supply of the domestically produced goods.

Wang and Blomstrom (1992) explained that MNEs were the source of technology diffusion in the host country. It was an endogenous phenomenon showing how quickly the local firms adapted the technology and cut their cost. The host country enjoyed the technology spillovers, because it enhanced international competitiveness, trade performance and economic growth. Dunning (1996) stated that technology spillovers of MNEs to the host country depended on economic structure and institutional environment of that country. Moreover, it also depended whether MNEs set up an entire firm or entered into a joint venture. The spillover of FDI depended on the host country’s market structure, policies, level of competition, the extent of ownership advantage, the absorptive capacity of local firms, investment type, diffusion and accumulation of new knowledge and technology.

According to Hanson et al. (2001), welfare effect of technology transfers depended on the nature of FDI. Production-oriented FDI had greater technical spillovers on the host country than that of distribution-oriented FDI, because production-oriented FDI had better linkage with the local firms. Pearce and Singh (1991) stated that MNEs decentralized the innovation activities which helped in technological advancement in the host countries.

Caves (1974) used the data of Canadian and Australian manufacturing industries and found that FDI had a positive impact on the labor productivity in Australia. However, in case of Canadian manufacturing industries, he did not find any significant relationship between FDI and productivity levels. Blomstrom and Persson (1983) found a positive relationship between the productivity levels of domestic plants and industry’s foreign employment share in Mexico. Chen (1983b) found a positive and significant relationship between industry’s technical
progress and FDI in Hong Kong. Fairchild and Sosin (1986) conducted a survey of domestic and foreign-owned firms. They found a positive impact of FDI on technical activities and performance of manufacturing firms.

Blomstrom and Wolff (1989) used the Mexican data and found that the higher level of FDI and its share in industrial production had a positive impact on the labor productivity in domestic firms. Pearce and Singh (1997) suggested that the Research and Development activities in MNCs helped in fulfilling local demand and adjusted production process and technology according to local conditions. Haddad and Harrison (1993) found the insignificant productivity spillovers of FDI on Moroccan manufacturing firms, but the FDI in joint ventures benefited the productivity spillovers. Kokko (1994) found a positive impact of FDI on labor productivity in domestic firms in the Mexican manufacturing industry, but such relation did not exist in those industries which had large technology gaps.

Singh et al. (1998) found in a survey that strategy of the most of the foreign firms concentrated on research and development activities in UK, which could help in raising productivity level. Conyon et al. (1999) found that FDI had a positive impact on labor productivity after foreign acquisition of the local firms in UK manufacturing firms. Gorg and Strobl (2000) surveyed 12,812 manufacturing plants in Ireland. They found that MNEs benefited the domestic firms in high-tech industries, but low-tech industry did not get any benefit from FDI. Branstetter (2000) investigated the Japanese investment in the United States and found bi-directional knowledge spillovers.

Harris and Robinson (2002) claimed that they did not find any positive spillovers of FDI on UK manufacturing plants, even productivity of these plants fell after foreign acquisition. Keller and Yeaple (2003) used the data of 1115 US manufacturing firms to find the impact of FDI and imports on productivity spillovers. They found that both FDI and imports had a positive impact on productivity spillovers. Girma et al. (2004) used 4,600 UK manufacturing firms to find the impact of horizontal, backward, forward, export-oriented and market-oriented FDI on productivity spillovers. They found backward and forward productivity spillovers from MNEs to domestic firms. There was no productivity spillover through horizontal linkage.
Chakraborty and Nunnenkamp (2006) found that the industry-specific FDI had a significant and positive impact on the secondary sector, insignificant and positive impact on the primary sector and the transitory effect on the tertiary sector. Singh (2008) found that MNEs invested a significant amount in specialist technology in the water industry, which improved the productivity in this industry. Suyanto et al. (2009) found the positive technological spillovers from FDI in Indonesia through changed technical and scale efficiencies. Whalley and Xin (2010) found that labor productivity of the foreign investment enterprises were 20% higher than that of the domestic enterprises.

MacDougal (1960) stated that FDI had positive effects on capital formation and employment generation in the host country. Aharoni (1966) and Vernon (1966) stated that FDI had positive effects on employment, management abilities, skill transfer and know-how of the host country’s labor. Streeten (1969) stated the positive spillovers on direct and indirect employment creation. That was also a source of enhancing new skills in local labor through training, promoting managerial skills in local managers causing the higher domestic wages.

Caves (1971) and Buckley and Casson (1976) discussed the positive effects of FDI on skill transfers and training of manpower, which could help the labor force in finding jobs. Brander and Spencer (1987) claimed that positive spillovers of FDI were generated through tax collection and increased employment through a rise in production level in the host country. Dunning (1996) stated that FDI generated the direct and indirect employment and further stated that foreign firms could provide better jobs than the local firms. It depended on the host country’s human-resource development, favorable market structure, favorable culture, and the availability of the educational and technological infrastructure. Haaparanta (1996) stated that in high-wage countries, the government could give a subsidy to attract FDI and FDI could become a source of employment creation in those countries.

Haaland and Wooton (1999) gave the economic justification of giving a subsidy to attract FDI. FDI increased demand for domestic inputs including labor. In the long-run, FDI could establish modern sector through agglomeration effects and help in industrial development and in generating employment. Mudambi (1999) claimed that region-specific FDI could play a role to increase employment in underdeveloped areas. Haaland and Wooton (2001) mentioned
that foreign investors could initially volunteer jobs to get the benefit of a subsidy from the host country’s government and subsequently could redundant the labor. Welfare effects of subsidy depended on government policies. If government reduced the amount of subsidies and raised the payments for redundancy, the welfare effects could be maximized. Hanson et al. (2001) stated that the welfare effects of FDI on employment depended on the nature of FDI. Production-oriented FDI had a better impact on training and job creation than that of distribution-oriented FDI.

In a survey of the Hong Kong manufacturing firms, Chen (1983a) found that multinational firms spent more on training programs than the domestic firms did. The same result has been reported by Gerschenberg (1987) in Kenya. Such training programs could be much beneficial for enhancement in the labor skills and employment. The Department of Trade and Industry (1995) gave a report after conducting a survey of thirty foreign manufacturing firms in the United Kingdom. The report revealed that these firms generated 21515 direct jobs, and every 100 direct jobs further created 19.5 indirect jobs in the UK. Lipsey (1994) found that foreign firms employed a greater number of employees in administrative jobs than the local firms.

Hymer (1976) stated that FDI had a positive impact through the transfers of management and entrepreneurial skills in the host country. Usually, FDI had a positive impact on domestic investment through the increase in demand for other commodities and had an accelerating effect on investment. Streeten (1969) stated that FDI could establish links with overseas banks and other organizations. It promoted the growth of entrepreneurship in the host countries. The impact of FDI depended on government involvement, who wanted to maximize welfare from FDI. Vernon (1966) stated that FDI increased competition for local firms when the host countries switched from importing to export due to production of standardized products. According to Caves (1971), FDI usually floated into oligopolistic markets where it could have scale economies. FDI could improve market structure by increasing competition through pricing and product strategies in order to get the advantage of entering the market.

It is well documented in the literature that foreign direct investment (FDI) plays a positive role in the process of economic growth. Thamos, et al. (2008) argued that foreign affiliates of transnational corporation (TNCs) succeed in developing new products and technologies faster
than local firms, there by exerting competitive pressure and forcing local firms to imitate and innovate. This is one of the important reasons why developing countries are eager to attract FDI. Many developing countries including Pakistan faces the problem of saving-investment gap and FDI influences the process of economic growth by filling up this gap, increasing productivity, transferring advanced technology, employment creation and enhancing competition [Kobrin (2005) and Le and Ataullah (2006)]. These benefits have encouraged the developing countries to liberalize their FDI policies in order to attract FDI inflows. In the light of expected benefits of FDI, many studies have been carried out to examine the impacts of FDI on growth. However, theories and empirics appear to provide mixed evidence regarding the impact of FDI on economic growth in developing countries. Like many other developing countries, Pakistan has thrown its doors wide open to FDI, which is expected to bring huge benefits. However, unlike China and India, Pakistan has not been successful in obtaining substantial and consistent FDI inflows. Furthermore, the me age inflows that the country has received have not been utilised appropriately to enhance the economic performance [Le and Ataullah (2006)]. FDI inflows are still too low and this might be because the economic reforms went far enough to change the character and type of FDI. The type of FDI and its structural composition matter as much for economic growth [Chakraborty and Nunnenkamp (2008)]. The structure and type of FDI are hardly considered in previous studies on the FDI-growth nexus in Pakistan.

This portion is an attempt to examine the impact of FDI on economic growth. The research contributes to the literature on FDI in three ways. First, were view the policy measure that the government of Pakistan has undertaken to attract the FDI. Secondly, we examine the impact of FDI on economic growth. The theoretical link between FDI and economic growth can be traced back to modernization and dependency theories [Adams (2009)]. Modernization theories suggest that FDI could promote economic growth under the principle that growth requires capital investment [Adams (2009)]. However, the new growth theories emphasizes the role of technology transfer through FDI because developing countries lacks necessary infrastructure such as education, liberalised financial markets, socio-economic and political stability [Calvo and Sanchez-Robles (2002) and Adams (2009)]. Apart from technology transfer, FDI also accompanies with it organizational and managerial skills, marketing know-how and market access through the marketing networks of multinational enterprises [Balasubramanyam, et al.
(1996), Kumar and Pradhan (2002) and Adams (2009)). Nath (2005) has argued that FDI plays a two-fold function by contributing to capital accumulation and by increasing total factor productivity. In contrast, the dependency theories suggest that dependency on foreign investment is expected to produce negative impact on growth and income distribution because FDI creates monopolies in industrial sector, which in turn leads to underutilization of domestic resources [Bornschier and Chase-Dunn (1985) and Adams (2009)]. This implies that the economy is controlled by foreigners and rather than developing organically, it grows in a disarticulated manner [Amin (1974)]. Therefore, the multiplier effect is weak and leads to stagnant growth in developing countries [Adams (2009)]. Based on these mixed theoretical views, many empirical studies have been carried out to examine the relationship between FDI and economic growth, inter alia by Alfaro, et al. (2004), Borensztein, et al. (1998), Makki and Somwaru (2004), Campos and Kinoshita (2002) and Zhang (2001) among others. For example, Zhang (2001) reported that FDI promotes economic growth in countries where the domestic infrastructure is well developed and trade and FDI policies are more liberal. Balasubramaniam, et al. (1996) concluded that growth enhancing effects of FDI are stronger in countries where the labor force is highly educated and pursuing export promotion rather than import substitution trade policies. Campos and Kinoshita (2002) found that only when FDI is in the form of pure transferred technology there is a positive and significant impact on growth. Similarly, Carkovic and Levine (2005) claim that micro-level positive effects of FDI on growth can be treated with skepticism, as most of the studies do not control for simultaneity bias and country-specific effects. Some studies find insignificant effects of FDI on growth [e.g. Akinlo (2004), Aynwale (2007) and Hermes and Lensink (2003)]. Hermes and Lensink (2003) concluded that FDI exerts significant negative effect on the host country. Similar results were found by Fry (1993), Agosin and Mayer (2000) and Sylwester (2005). As far as direction of causality is concerned, Elias (1990) argues that the removal of international credit and liquidity constraints had encouraged FDI in the 1980s in most of the Latin American countries. De Mello (1997) argues that the direction of causality depends on the recipient country’s trade regime. Nair-Reichert and Weinhold (2001) argue that the effect of FDI on growth is highly heterogeneous across countries and this heterogeneity is more pronounced for more open economies. Therefore, there is a need for host country-specific study. A higher level of savings and investment is necessary to increase the rate of capital formation. However, in developing countries the level of domestic savings falls below the
desired level because of low per capita income [Khan (2007)]. In the case of Pakistan, domestic savings account for 11.2 percent of GDP—a decline of 5.1 percent from 2006. The gap between domestic savings and desired level of investment can be filled by the transfer of resources from outside; FDI is one of the most important sources [Zaidi (2004)]. To increase the level of foreign capital inflows, liberalization of trade and investment regime is required. This can be achieved by relaxing controls and offering financial and trade incentives like tax concessions and tariff reductions [Zaidi (2004)]. Furthermore, host countries need to pursue active liberalization policies to overcome trade deficit and encourage investment in export-led sectors. To ensure that FDI stimulates domestic economic activity, the host country should make it mandatory for the foreign investor to use a certain amount of locally made inputs in the production of final goods [Zaidi (2004)]. The domestic policies opted by the host country have an important influence on the decision of foreign investment. To attract FDI, the host country should adopt concrete and investor friendly policies. Strong infrastructure is also a pre-condition to restore the confidence of foreign investors.

After following somewhat restrictive economic policies, the government of Pakistan initiated market-based reforms in the 1990s. These reforms included gradual liberalization of trade and investment regime by providing various trade and fiscal incentives to foreign investors through tax concessions, credit facilities, tariff reduction and easing foreign exchange controls [Khan (1997) and Aqeel and Nishat (2004)]. In the early 1990s, the government undertook a number of policy and regulatory measures2 to improve the business environment and attract foreign investment [Anwer (2002)]. Restrictions on capital inflows and outflows were also gradually lifted. Foreign investors were allowed to hold 100 percent of the equity in industrial project on a repairable basis, without any prior approval [Khan (2008)]. Furthermore, investment shares issued to nonresidents could be exported and remittance of dividends and disinvestments proceeds was permissible without any prior permission of State Bank of Pakistan (SBP). In 1994, restrictions on some capital transactions were partially relaxed and foreign borrowing, and certain outward investments, were allowed to some extent. Full convertibility of the Pak-rupee was established on current international transactions. The establishment of an interbank foreign exchange market also marked an important step towards decentralizing the management of foreign exchange and allowing market forces to play a greater role in exchange rate determination [Khan (2008)].

Pakistan’s foreign investment regime mainly consists of three components: (i) regulatory, (ii) economic, and (iii) socio-political. Regarding
privatization and deregulation, Pakistan has opted very liberal regulatory regime. The regulatory framework for foreign investment consists of three laws facilitating and protecting foreign investors; (i) Foreign Private Investment (Promotion and Protection) Act 1976, (ii) Furtherance and Protection of Economic Reforms Act 1992, and (iii) Foreign Currency Accounts (Protection) Ordinance 2001. In addition Bilateral Agreements include investment protection with 43 countries and avoidance of double taxation with 51 countries. To protect the intellectual property rights (IPRs), Pakistan has also updated IPR laws to bring them in compliance with international requirements, particularly those mandatory under the Agreement on Trade Related Intellectual Property Rights (TRIPS) of the WTO. The salient features of Pakistan’s regulatory regime are: These measures includes (a) removal of the requirement of government approval of foreign investment, (b) permission of foreign equity participation of up to 100 percent, (c) permission to negotiate the terms and conditions of payment of royalty and technical fees suited to foreign investors for transferring technology, (d) liberalizing of foreign exchange regime, (e) permission of remittances of principal and dividends from FDI and portfolio investment including an extensive set of fiscal incentives and allowances to foreign investors, (f) convertibility of Pakistani Rupee from July 1994, (g) liberalization of import policy, and (h) opening up the sectors of agriculture, telecommunications, energy and insurance to FDI in 1997. For further detail see Anwer (2002), Zaidi (2004) and further details can be seen on Pakistan’s board of investment (BOI). Freedom to bring, hold and take out foreign currency from Pakistan in any form. Privatization of an enterprise is fully protected. Neither it can be renationalized, nor can the government take over any foreign enterprise. Original FDI as well as profits earned can be repatriated to the country of origin. Equal treatment is provided to the foreign investor and local investor in terms of import and export of goods. FDI is not subject to taxes in addition to those levied on domestic investment. Foreign currency accounts are fully protected and they cannot be frozen. All the economic sectors are open to FDI; foreign equity up to 100 percent is allowed in all sectors, including the agricultural sector. There is no lower limit on the size of FDI in manufacturing sector. However, in agriculture, infrastructure and social sectors the minimum amount of foreign equity investment is $0.3 million and in services sector the minimum amount of foreign equity investment is $0.15 million. No government sanction is required to set up any industry, in terms of field of activity, location and size, except arms and ammunitions, high explosives, radioactive substances, security printing, currency and mint, and alcoholic beverages.
No double taxation on income earned by foreign investors. Pakistan has also rationalized its tariff regime. Custom duty on import of plant machinery is zero percent in the agricultural sector, while in the manufacturing, services, infrastructure and social sectors it is not more than 5 percent. There are no restrictions for payment of royalty and technical fees in the manufacturing sector, whereas in the non-manufacturing sector, a maximum rate of 5 percent of net sales is allowed. Tax relief (IDA, percent of PME (Plant, Machinery and Equipment)cost), 50 percent in manufacturing and non-manufacturing sectors. Pakistan has received comparatively higher amount of FDI over the past two decades, due to its market-oriented investment policies and enabling investment environment. FDI inflows to Pakistan can be explained in terms of its size and percentage of gross domestic product (GDP). Due to inconsistent investment policies, the flow of FDI was insignificant until 1991; however, it steadily increased in the post-liberalization period. Actual inflows of FDI to Pakistan have increased from $119.6 million in 1975-79 to $3299.8 million in 1995-99 and from $485 million in 2001-02 to $5,152.80 million in 2007-08. FDI has showed a declining trend since 2007-08, which is due to the lack of enabling environment for investment in the country in recent years.

Grossman (1984) claimed that FDI might have harmful effects on developing economies through increasing competition, lowering prices and could drive out local firms through competition. Horstmann and Markusen (1987a) stated the trade-off between concentrating production to economies of scale and promoting proximity to customers. The impact of FDI on domestic firms depends on the fact; whether FDI adds competition or sends their profits back to the mother countries. According to Dunning (1996), impact of FDI on market structure and efficiency of production depended on the type of FDI, existing market structure and policies of the host country.

Dunning (1958) used data from US owned firms in the UK and found that foreign firms could be dominant producers and could make a monopoly or oligopoly in the market. Rosenbluth (1970) found a positive correlation between FDI and industrial concentration. He also found that the average size of foreign firms was greater than that of domestic firms. Wilmore (1976) found a positive relationship between FDI and level of concentration. Evans (1977) used data of Brazil’s pharmaceutical industry to find a relationship between FDI and industrial concentration and concluded that FDI reduced the industrial concentration in developing
economies. In case of a single country’s analysis, Van (1977) found a direct positive impact of FDI on Canadian capital formation and a negative indirect impact on domestic investment.

Chen (1983b) found that FDI concentrated in those industries where profitability was high to recover the innovation cost. However, he did not conclude the exact relationship of FDI and competition. Feldstein (1995) used the US data and checked the macroeconomic impact of FDI on domestic investment. He found a negative relationship, which confirmed that FDI was a substitute for domestic investment. In case of developing countries, Bosworth et al. (1999) found that FDI increased domestic investment and had a greater impact than that of bank loans and portfolio investment. In case of developing and developed countries, De Mello (1999) found a positive relationship between FDI and domestic investment in the broad panel but a negative relationship in case of OECD countries.

Lipsey (2000) found a negative and insignificant impact of FDI on domestic investment. Agosín and Mayer (2000) found a strong crowding-in effect of FDI on domestic investment. They further explored the degree of impact in different regions and found that FDI had stronger crowding-in effect for Africa than for Asia and also had strong crowding-out effect for Latin America. Agrawal (2000) found that FDI had a positive impact on domestic investment. Driffield (2001) found that FDI reduced the industry-specific concentration and increased competition among domestic firms and reduced welfare loss, which could be possible in the case of monopoly powers. Razin (2002) found a long-run positive relationship between FDI and domestic investment and that FDI had the largest impact on domestic investment than loan inflows or portfolio investment. Hejazi (2002) found that FDI increased total domestic investment significantly and had an insignificant impact on non-service industry in Canada.

Kim and Seo (2003) used the Vector Auto Regressive (VAR) model to find a relationship among domestic investment, FDI and economic growth in Korea. They found that FDI had a negative and insignificant impact on domestic investment, and domestic investment had a significant and negative impact on FDI. FDI could also generate imperfect competition in developing economies.
Barrios et al. (2004) used data of Irish manufacturing firms and found that initially FDI created competition and afterward positive spillovers out-weighted negative spillovers in local firms. So, FDI had a positive impact on the development of local firms. Desai et al. (2005) used the aggregate data of OECD countries and found a negative impact of FDI on domestic investment. Using the German data, Lipponer (2006) found the insignificant negative relationship between FDI and domestic investment. Mukherjee and Suetrong (2009) found bi-directional causality between FDI and privatization and FDI enhanced the privatization process in transition economies.

MacDougall (1960) found that economic welfare could be increased in host countries through tax revenue generated from the profits of foreign investment and large capital stocks. Kemp (1962) suggested that countries could introduce the optimal tax rate on foreign investment to increase welfare from FDI instead offering subsidies to attract FDI. Streeten (1969) stated that foreign investment generated government revenue and helped in filling saving and foreign exchange gaps.

Caves (1971) claimed that foreign investment had a positive welfare effect through the collection of corporate income taxes. FDI could raise the general welfare in the host country through an increase in the tax revenue. The welfare decreases when a country offers relaxation in the tax for foreign investment or if there had been a transfer pricing from foreign firms to their mother countries (Kopits, 1976). Markusen (1984) claimed that the welfare effect of FDI was uncertain. Foreign investment increased welfare through an increase in competition and tax on their profits and reduced welfare through transfer of profits earned by local enterprises to the foreign enterprises.

According to Bond and Samuelson (1986), host countries could lose some tax revenue in the short-run if tax holidays were given to attract FDI in the early period. The tax revenue could increase in the long-run because foreign investment would not pull out after that tax holiday period. Brander and Spencer (1987) stated that host countries could attract FDI by imposing tariffs on imports and relaxing the tax on local production. It was stated that FDI could increase the national welfare by reducing unemployment, rising productivity through technology transfers and raising government revenue through taxation.
Horstmann and Markusen (1987b) analyzed the welfare effect through government revenue, change in consumer surplus and trade policy. The host-country government might impose a tax on imports and might relax foreign investors from taxes. As tariff increased government revenue, so it had a better welfare effect than foreign investment with tax concession. So, welfare depended on whether foreign investment took place or imports were continued with tariff. Horstmann and Markusen (1992) found that countries with a single domestic producer had higher levels of welfare than two-firm duopoly from which one firm was domestic, and the other one was MNE. A country with a single firm (MNE) had the lowest level of welfare. Government of the host country could affect welfare through relaxing trade policy, supporting education and research and development activities by offering tax concessions.

Dunning (1996) observed that the welfare effects of FDI in the host county depended on the bargaining power of the host country with foreign investors, either it offered the tax rebates on energy or labor cost to attract foreign investment or imposed tax. Raff and Srinivasan (1998) claimed that the government should sacrifice some tax revenue to attract foreign investment because FDI could create employment, local labor’s training, transferred technology and better management skills. Mudambi (1999) claimed that countries could increase welfare by choosing the right type of foreign investment in appropriate areas of countries and increased tax base, which would assist in raising the living standards in underdeveloped areas.

Markusen (2001) modeled the welfare effects with a choice among FDI, exporting and licensing and found that FDI had the highest level of welfare of the host country. Welfare effect of FDI with high trading cost was positive for skilled labor-abundant countries. Welfare effects of FDI were also positive for large countries and skilled labor-abundant small countries with low trading cost (Markusen et al., 1996; Markusen and Venables, 1997 and Markusen, 2002).

There is a limited empirical work on testing the impact of FDI on tax revenue. Gropp and Kostial (2000) used the panel data of nineteen OECD countries to find the relationship between FDI and tax revenue. They found a weak correlation between FDI and corporate
income tax and found a strong positive impact of FDI inflows on the profit tax and total tax revenue.

MacDougall (1960) stated that FDI had an adverse impact on the terms of trade and balance of payments. FDI in export-oriented and import-substituted industries could improve the terms of trade (Vernon, 1966; Streeten, 1969 and Kindleberger, 1969). Hymer (1976) stated that FDI enjoyed the imperfect market with monopolistic advantage in the host country. Imports by the foreign investors depended on the returns earned by FDI and host country’s marginal propensity to imports.

According to Helpman (1984), MNEs from human-capital rich countries produced the services for their subsidiary firms in the host country. So, the imports of the host country increased in terms of import of services and intermediate goods, while the imports of the final goods fell. The goods exported from the host to the home country could have a positive impact on the balance of payments. Markusen (1984) stated that MNEs had a positive impact on trade creation and therefore, also had a positive impact on country’s trade performance. Ethier (1986) stated that the foreign investor who invested in the host country and imported intermediate goods from their home country had changed the pattern of trade from inter-industry trade to intra-industry trade.

Jones and Kierzkowski (1990) stated that MNEs divided their production process in different countries. The impact of FDI on balance of trade depended on the difference between value of raw material imported into the host country and reduction in imports of finished commodities. This impact rose in exports from MNE’s production units. Dunning (1993) claimed that FDI changed the composition of trade from inter-industry trade to intra-industry trade. The impact of FDI on balance of payments depended on the degree of efficiency, economies of scale and degree of product differentiation of MNEs. Brainard (1993) suggested that FDI could have a positive impact on the balance of trade of the host country if the economies of scale reaped by foreign investors in the host country were greater than the transport cost of exporting the goods from their mother country.
Zhang and Markusen (1999) observed that the small countries attracted FDI less than large countries due to limited local markets. The welfare effect of FDI depended on the difference in imports and exports of foreign affiliates. Hanson et al. (2001) stated that production-oriented FDI had greater welfare effects than that of distribution-oriented welfare effects of FDI.

Lall and Streeten (1977) found that multinational firms were more export-oriented than local firms after conducting a survey of manufacturing industries from six developing economies. Lall and Streeten (1977) showed that foreign-owned industries exported more percentage of their production than local producers. Bergstrand (1985) combined the constant elasticity of substitution in demand and supply functions and Heckscher-Ohlin Samuelson model of inter and intra-industry trade. He developed a gravity model to find the flows of trade from one region to the other. He excluded population from Anderson’s (1979) model and found that the GDP had a positive impact on trade, and distance had a negative impact.

The gravity model had also been used to explain FDI flows in a country (Stone and Jeon, 1999), the impact of distance on FDI (Egger and Pfaffermayr, 2004a, 2004b) and bilateral relationship between trade and FDI (Gopinath and Echeverria, 2004). Gravity model captured the distance and relative size of economies for FDI. Distance measured the transaction cost of foreign investment and their activities, i.e. transportation cost, the cost of sending experts, institution’s informational cost and legal factors like tax structure and property rights (Deardorff, 1995; Portes and Rey, 2005 and Bevan and Estrin, 2004).

Graham and Krugman (1993) found that FDI was import-intensive in the United States and imports of intermediate goods per worker by foreign firms, were more than local firms. They also found that FDI used more imported intermediate goods that helped in reducing the demand for final goods imported into the host country. By using the Irish aggregate data, O’Sullivan (1993) found a positive and significant impact of FDI on exports. He further stated that FDI helped in transforming the Irish economy from agriculture to modern industrialized economy.
McCallum (1995) used the gravity model and found that the distance affected trade pattern on USA and Canada. Deardorff (1995) used the Heckscher-Ohlin model and constant elasticity of substitution to derive the Gravity Model and claimed that distance of countries reduced the substitutability of traded goods. Barry and Bradley (1997) used qualitative analysis on the Irish plant level and aggregate data and checked the export performance of foreign-owned manufacturing plants. They stated that FDI helped to structural change in the Irish economy and enhanced economic growth. In this situation, FDI also increased the intra-firm trade.

Aitken et al. (1997) and Sousa et al. (2000) found that multinational firms had positive export-spillovers on local firms. By using data from 2104 Mexican manufacturing units, Aitken et al. (1997) found that concentration of foreign-owned plants increased the probability of local firm’s exports. Sousa et al. (2000) used the same methodology and collected data from 3662 manufacturing firms and found that increased competition from foreign-owned plants enhanced the probability of domestic firms to export and prove the positive export spillover on the local manufacturers. Wong (1988) found that capital inflows had a positive and significant impact on exports of United States (US).

Ratnayake and Townsend (1999) used the Gravity Trade Model on New Zealand and its trading partners. They found that distance had a negative and highly significant impact on trade. While, exporter population had a positive and significant impact on trade, but importer population had the significant impact on trade for only three out of six years. Stone and Jeon (1999) applied the Gravity Model on Asian-Pacific region with host and home countries’ GDP, population, distance and dummies for dynamic Asian economies in the estimation of equations. They found that FDI flows had the greater impact on trade by home countries’ GDP and population than host countries.

Brenton et al. (1999) used the Gravity Model to find the relationship between FDI flows and trade flows among European Union and Central and Eastern European countries. They found no link between FDI and trade in Switzerland, Germany, France and Netherlands. Although, Australia, Finland, Norway, UK, US, Japan and South Korea showed strong complementarity between FDI and trade. Liu et al. (2001) found that FDI inflows had a positive and significant
impact on Chinese's exports to MNE’s home countries, and FDI inflows had a positive but an insignificant impact on imports.

Kumar and Zajc (2003) used Gravity Model for Slovenia trade and FDI flows, and their results were consistent with Brenton et al. (1999). Egger and Pfaffermayr (2004a) analyzed the impact of distance on exports and FDI flows by using non-OECD countries. Egger and Pfaffermayr (2004a) found that distance had a greater impact on exports than plant setup cost. Gopinath and Echeverria (2004) found that the greater distances between economies had a greater bilateral trade. Hence, the geographical distance influenced home country’s trade to FDI.

Portes and Rey (2005) found the weak evidence for complementary between foreign investment flows and trade. They further reported that distance had a negative impact on foreign investment flows, and financial markets had a positive impact on foreign investment flows. Whalley and Xin (2010) found that foreign firms contributed 50% of Chinese exports and 60% of Chinese's imports. Anwar and Nguyen (2011) found backward and forward linkage effects between local and foreign firms in Vietnam, which effected decision of domestic firms to export as well as their export share.

FDI may increase income inequality by increasing the gap between skilled and unskilled labor in less-developed host countries (Feenstra and Hanson, 1997). Markusen and Venable (1997) stated that the effect of FDI on wage inequality depended on FDI restriction, relative endowment, trade cost and country size. Mayne (1997) claimed that the impact of FDI on poverty reduction depended on the policies of the host country, the role of institutions, the nature of the investment, flexibility of the labor market and the nature of the regulatory framework. Roemer and Gugerty (1997) found that with the increase in the rate of growth in per-capita GDP, the income of bottom 40% poor population was also increased at the same rate approximately.

Aghion and Howitt (1998) stated that wage inequality decreased with rising FDI in the host developed countries. Nordstrom et al. (1999) stated that FDI had scale effects through economic growth, enhancing economic activities, promoting employment levels, increasing
productivity levels, skill improvement, helping the country to bear unexpected shocks and through all these channels helping poverty reduction. Saravanamuttoo (1999) claimed that capital formation was done by domestic and foreign investors. Levels of investment were responsible for productive employment and thus resulted in poverty alleviation; but low level of investment, especially the rate of investment lower than population growth, did not have the capacity to reduce poverty levels.

Dollar and Kraay (2002) found by using Deninger and Squire Data base that there was a positive relationship between FDI and economic growth and incomes of the poor increased proportionally with an increase in economic growth. Kakwani (2000) found that the positive effects of FDI were greater than negative effects, and that resulted in economic growth and poverty reduction. Klein et al. (2001) claimed that the FDI enhanced quality of economic growth, increased safety net for the country through government-led programs to redistribute income and assets, reduced financial instability shocks to the poor and thereby reduced poverty level in a country. According to Hayami (2001), Todaro and Smith (2003), FDI was a source of filling the gap between desired investment and domestic savings and was enhancing the use of technology, productivity of the host country and helped in breaking the vicious circle of underdevelopment.

Mah (2002) found a positive relationship between FDI and income inequality in South Korea. Hanson (2003) conducted a study in Mexico and found that foreign investors raised the demand for skilled labor, which gave more benefits to skilled labor than the unskilled labor. Lipsey and Sjoholm (2004) also found the same results. Figini and Gorg (2006) found that initially wage inequality increased with the increase in FDI and reduced with the further increase in FDI. Nunnenkamp et al. (2007) found that FDI promoted growth in Bolivia and increased income inequality. Basu and Guariglia (2007) found the same results by using the panel data of 119 developing countries.

According to Dunning (1996), the cultural, political and environmental effects of FDI depended on the government policies. Jaffe et al. (1995) and Beghin (1996) found that the dirty industries moving from the developed countries to the developing countries were proof of pollution-heaven hypotheses, and in some cases the developing countries also purposely
relaxed the environmental policies to attract the foreign investments. In such countries, pollution level would rise with the expansion of foreign investments in dirty industries.

Copeland and Taylor (1997) found that capital intensive country would produce and trade a pollution intensive product and would increase the world’s pollution level. Similarly, capital rich country also invested in poor countries and again increased pollution levels. According to Organization of Economic Cooperation and Development’s (1997) report, FDI activities generated environmental degradation in the host countries even foreign investors followed greater environmental standards than local firms.

Kolstad and Xing (1998) collected data from manufacturing industries located in developing and developed countries. They found that relaxing environmental standards were a significant determinant of FDI. The countries, which attracted FDI by relaxing environmental regulation, would have to face the heavy cost in terms of pollution. Goldenman (1998) and Zarsky (1999) stated that foreign investors used better production technologies than local manufacturers. So FDI seemed favorable for the environment. Dean (1999) found that scale effect would emerge with increasing foreign investment, and there would be greater economic activities, which resulted in depletion of environmental resources and greater pollutant emissions.

Talukdar and Meisner (2001) used the carbon dioxide emissions as a proxy for the environment and FDI in developing countries. The study found a negative relationship between FDI from developed countries and carbon dioxide emissions. It was an evidence to use cleaner technology by developed countries. Smarzynska and Wei (2001) collected data from 534 MNEs from different economies and tested the Pollution-Heaven Hypothesis of FDI. They found a positive but an insignificant relationship between FDI and relax environmental regulations. Bora (2002) investigated the pollution intensity of US owned MNEs and found that developed countries had the highest proportion of pollution-intensive production in foreign production activities. Xing and Kolstad (2002) stated that developing countries used to relax environmental laws to attract FDI from developed countries in dirty industries. They also found that US’s FDI had a negative impact on environmental quality of developing countries.
Yang (2005) used the provincial level data in China and found a negative relationship between FDI and sulfur dioxide emissions. Liang (2006) used the panel data of 260 greatest cities of China and tested the environmental effects of FDI and per-capita GDP and found a negative relationship between FDI and sulfur dioxide (SO2) emissions. The finding suggested that FDI was helpful in reducing sulfur dioxide emissions in China. He (2006) claimed that a negative impact of FDI on the environment was due to lenient environmental regulation and also claimed that environmental quality would improve with technical and knowledge spillovers with FDI.

Merican et al. (2007) investigated the impact of FDI on carbon dioxide emissions. The study found that FDI did not have any impact on enhancing carbon dioxide emissions in Indonesia and Singapore. The case of Singapore also showed that substantial foreign investment was in the tertiary sector which did not usually contribute in pollutant emissions. Baek and Koo (2008) investigated data of India and China. They found the long-run relationships among FDI, SO2 emissions and economic growth and a unidirectional causality from FDI to economic growth and SO2 emissions in these countries. Acharyya (2009) used the data of India for the years 1980-03 and found that FDI had a positive and significant impact on the economic growth and carbon dioxide emissions.

Hasan and Nishat (1989) collected primary data from 19 foreign-owned companies and criticized the hypothesis that FDI could be done in those industries even where there was a great competition in managerial skills. Ashfaque (1997) observed that political instability, macroeconomic instability, inadequate infrastructure, slow bureaucratic process, inappropriate business environment and lack of skilled labor were the factors for slow FDI growth in Pakistan. Nishat and Anjum (1998) stated the importance of human and physical resources to attract the FDI in Pakistan. Shah and Masood (2003) analyzed the determinants of FDI. They found that transport expenditure, political stability, market size, communication and capital cost had the significant long-run impact on FDI in Pakistan. Shah (2003) found that cost of capital had a significant impact on FDI inflows.

Nishat and Anjum (2004) found that tax rate, tariff rate and credit facility were the main determinants of FDI inflows. Atique et al. (2004) found that foreign investment had a positive
impact on human development of Pakistan by providing training and education to the local labor force. They also found that FDI had a better impact on Pakistan’s economy with export-promotion policy rather than import-substitution policy. There was a common belief that FDI was done in those industries where there was a shortage of management skills. Aqeel and Nishat (2004) used tariff rate, exchange rate, tax rate, credit to the private sector, general share price index, wages and per-capita income as explanatory variables and FDI as the dependent variable. They found the same relations among variables, which were expected.

Siddiqui and Kemal (2006) claimed that foreign capital was not sufficient to utilize the resources of Pakistan’s economy. He also claimed that the short-run growth of FDI inflows depended on the previous growth rate of FDI. Akmal et al. (2007) found that trade openness and FDI helped in reducing poverty in Pakistan in the long-run. Ozturk and Kalyoncu (2007) found a unidirectional causality from GDP growth to FDI, which is evidence for demand factor, which was attracting FDI in Pakistan. Khan (2007) found the negative impacts of FDI, interest rate and external debts on private investment. Khan (2007) claimed that there was a need to develop financial market to capitalize the FDI inflows. Shahbaz et al. (2007) found a positive and significant impact of FDI on rural-urban income gap in Pakistan.

Yousaf et al. (2008) found that FDI had a positive impact on demand for imports and a negative impact on demand for exports. Shahbaz et al. (2007), Saeed (2001) and Mahmood and Chaudhary (2009) found the positive impact of FDI on economic growth. Shahbaz et al. (2008) found the bi-directional causality between FDI and domestic savings. Hashim et al. (2009) found that the literacy rate, per-capita income, competition and foreign trade had a significant and positive impact on FDI. Azam and Khattak (2009) found that human capital had a significant and positive impact on FDI inflows, and political instability had an insignificant and negative impact on FDI inflows. Mughal (2009) found a positive and significant impact of FDI on economic growth, but further FDI had a lesser impact on economic growth than that of domestic investment.
CHAPTER 4

METHODOLOGY

In this section, the study discusses the econometrics methodology which has been used in the empirical analysis of the consequences of FDI. The study uses unit root tests developed by Dickey and Fuller (1981), Phillips and Perron (1988), Zivot and Andrews (1992) and Ng and Perron (2001) to test the stationarity in time series and co-integration test developed by Pesaran et al. (2001) to check long-run and short-run relationships.

4.1 UNIT ROOT TESTS

Most of the time-series are not stationary and Ordinary Least Square (OLS) can produce spurious results (Engle and Granger, 1987). Therefore, study checks the stationarity of time series through various unit root tests.

4.1.1 Augmented Dickey-Fuller Unit Root Test

At first, the study discusses the Augmented Dickey-Fuller (ADF) test, which was produced by Dickey and Fuller (1981) to check the stationarity in the time series. This test proposed the following equation with intercept to detect the non-stationarity.

$$\Delta Y_t = \alpha + \delta Y_{t-1} + \gamma_1 Y_{t-1} + \gamma_2 Y_{t-2} + \ldots + \gamma_m Y_{t-m} + \nu, \quad t=1,2,\ldots,n \quad (4.1)$$

Where, $\Delta$ is a difference operator, $t$ refers to the time period, and $u$ is a residual at
time period \( t \). \( Y_t \) denotes the variable, which is investigated for stationarity. The equation (4.1) includes intercept \( A \) and can also be assumed with intercept and time-trend \( t \) as follows:

\[
\Delta Y_t = a + \lambda T + \delta Y_{t-1} + \gamma 1 \Delta Y_{t-1} + \gamma 2 \Delta Y_{t-2} + \cdots + \gamma \Delta m t m u_t , \quad t = 1, 2, \ldots, n
\]  

(4.2)

Where, \( \lambda \) is the coefficient of time-trend (T). ADF test checks the null hypothesis \( (\delta = 0) \), if \( \delta \) is statistically significant, and it is not zero, then time series has no unit root problem. A time-series variable is stationary with two conditions. At first, \( \delta \) should be statistically non-zero, and it should be negative.

### 4.1.2 Phillips and Perron Unit Root Test

Phillips and Perron (1988) (PP) developed the unit root test which is different from ADF tests in dealing with heteroscedasticity and serial correlation. PP test removes the serial correlation by giving ranks to the residuals. Equation of PP test is as follows:

\[
\Delta Y_t = a + \lambda T + \delta Y_{t-1} + u_t , \quad t = 1, 2, \ldots, n
\]  

(4.3)

\( U_t \) may have heteroscedasticity, so for correction of serial correlation and heteroscedasticity, PP test uses the modified statistic as follows: \( Z_t \) and \( Z_{\delta} \). 

\[
Z_t = \left( \frac{\hat{\sigma}^2}{\hat{\pi}^2} \right)^{1/2} \sum_{\delta=0}^{T} \left( \frac{\hat{\pi}^2}{\hat{\sigma}^2} \right) \left( \frac{T \cdot SE(\hat{\delta})}{\hat{\pi}^2 - \hat{\sigma}^2} \right), \quad (4.4)
\]

\[
Z_{\delta} = T \hat{\delta} - \frac{1}{2} \frac{T^2 \cdot SE(\hat{\delta})}{\hat{\sigma}^2} \left( \hat{\pi}^2 - \hat{\sigma}^2 \right), \quad (4.5)
\]

and heteroscedasticity. PP test uses the modified statistic as follows: \( Z_t \) and \( Z_{\delta} \) are 

\[
\hat{\sigma}^2 = \lim_{T \to \infty} T^{-1} \sum_{t=1}^{T} E \left[ u_t^2 \right], \quad (4.6)
\]

\[
\hat{\pi}^2 = \lim_{T \to \infty} \sum T^{-1} E \left[ T^{-1} S_T^2 \right], \quad (4.7)
\]
Where, $S_T$ and $T$ is the time-trend. $Z_t$ and $Z_\delta$ of PP test follows the same distribution as the t-statistic of ADF test under the null hypothesis $\delta = 0$. PP test has an advantage over ADF test that it robust heteroscedasticity in the error term $(\epsilon_t)$. Secondly, it does not need to specify the lag length for its estimation.

### 4.1.3 Ng and Perron Unit Root Test

Ng and Perron (2001) developed efficient and a modified version of PP test by using generalized least square de-trending data. This procedure is also efficient for large negative errors and can do better estimation than PP test. The efficient and modified PP tests are as follows: Where, the statistics (4.8) and (4.10) are efficient versions of PP test and

$$MZ^d_\alpha = \left( T^{-1} \left( y^d_T \right)^2 - f_0 \right) / 2k,$$

(4.8)

$$MSB^d = (k/f_0)^{1/2},$$

(4.9)

$$MZ^d_i = MZ^d_\alpha \times MSB^d,$$

(4.10)

$$MPT^d_T = \left( (\bar{\epsilon}^2 k + (1-\bar{\epsilon})T^{-1}) \right) \left( y^d_T \right)^2 / f_0,$$

(4.11)

errors and can do better estimation than PP test. The efficient and modified PP tests are as follows: Where, the statistics (4.8) and (4.10) are efficient versions of PP test and

$$k = \sum_{t=2}^{T} (y^d_{t-1})^2 / T^2, \bar{\epsilon} = -13.5 f_0 = \sum_{j=-(T-1)}^{T-1} \varphi(j)k(j/l),$$

(4.12)

Where, $\lambda$ is a bandwidth parameter (which acts as a truncation lag in the covariance weighting) and $\varphi(j)$ is the j-th sample auto covariance of residuals. The value (-13.5) is calculated by Ng and Perron (2001).
4.1.4 Zivot and Andrews Unit Root Test

Zivot and Andrews (1992) modified the PP and ADF unit root test, which also considers the one-unknown structural break. The ADF test may fail in identifying the true result in the presence of a structural break whether time series is stationary or not. ADF and PP tests do not allow for structural break in data. Zivot-Andrews test uses the sequential ADF test to find the break with the following equations.

Model (A):

\[
\Delta Y_t = \mu_1^A + \gamma_1^A t + \mu_2^A DU_t(\lambda) + \alpha^A Y_{t-1} + \sum_{j=1}^{k} \beta_j \Delta Y_{t-j} + \epsilon_t,
\]

(4.13)

Model (B):

\[
\Delta Y_t = \mu_1^B + \gamma_1^B t + \gamma_2^A DT_t^*(\lambda) + \alpha^B Y_{t-1} + \sum_{j=1}^{k-1} \beta_j \Delta Y_{t-j} + \epsilon_t,
\]

(4.14)

Model (C):

\[
\Delta Y_t = \mu_1^C + \gamma_1^C t + \mu_2^C DU_t(\lambda) + \gamma_2^C DT_t^*(\lambda) + \alpha^C Y_{t-1} + \sum_{j=1}^{k-1} \beta_j \Delta Y_{t-j} + \epsilon_t,
\]

(4.15)

Where \(DU_t(\lambda)\) is 1 and \(DT_t^*(\lambda)\)=t-T \(\lambda\) if \(t>T \lambda\), 0 otherwise. \(T_B/T, T_B\), represents a possible break point. Equation is tested sequentially for \(T_B=2,3,\ldots, T-1\), where T is the number of observations after adjustment of differencing and lag length. Model (A) allows for a change in the intercept of the series, Model (B) allows for a change in the trend of a series, while Model (C) allows changes in both intercept and trend. The time of the break is selected based on value of where \(t\)-statistic becomes maximized. The null hypothesis is stationary without a structural break against the alternative hypothesis that variable is stationary with a one-time break in the intercept in model (A), a one-time break in the trend in model (B) and a one-time break in the both intercept and trend in the model (C).
4.2 CO-INTEGRATION TEST

After testing the unit root problem in the time-series variables, the cointegration test can be used to find the long-run relationship among the variables. Long-run relationship states the long-run equilibrium among variables, which may have the shock of disequilibrium in the short-run from long-run, but it will move again in long-run equilibrium (Harris and Sollis, 2003). There are many techniques, which are available for cointegration analysis i.e. Engle and Granger (1987), Johansen (1991), Johansen (1992), Johansen (1995) and Johansen and Juselius (1990). These techniques require that all variables should be stationary at the same level of integration i.e. I(0) or I(1) or I(2). So these techniques cannot be applied if variables have mixed order of integration. Auto-Regressive Distributive Lag (ARDL) bound testing technique has been introduced by Charemza and Deadman (1992), Pesaran and Pesaran (1997), Pesaran et al (1998), Pesaran et al (1999), and Pesaran et al (2001). ARDL can be applied if variables have mixed order of integration (Pesaran and Pesaran, 1997).

This approach takes the optimum lag length for each variable separately in the model which helps in the data generating process from a general to a specific model. The problems resulting from non-stationarity of data can also be avoided by using an ARDL approach (Laurenceson and Chai, 2003). Through a simple linear transformation, the Error Correction Model (ECM) can be derived from ARDL model. ECM captures the short-run dynamics without losing long-run information (Bannerjee et al 1998).

The general form of ARDL model developed by Pesaran et al. (2001) is given below:

\[ \Delta z_t = \alpha + \lambda z_{t-1} + \sum_{i=0}^{q} \phi_i \Delta x_{t-i} + \sum_{i=1}^{p} \phi_i \Delta y_{t-1} + \varepsilon_t, \ t = 1,2,\ldots,n \quad (4.16) \]

Where, \( \Delta \) is a first difference operator, \( z \) is the vector of both \( x \) and \( y \), \( x \) is the vector of independent variable, \( y \) is the vector of dependent variables, \( t \) is a variable for the time period, \( i \) is to capture the optimum lag length, \( \alpha \) is a vector of intercepts and \( \phi \) and \( \phi \) are the vectors of coefficients. The F-Statistic is calculated on a system of equations after selection of optimum lag length for each variable separately in the model with the null hypothesis of no cointegration. The F-Statistic compares with lower and upper bound
critical values generated by Pesaran et al. (2001) to test the cointegration among the variables of the model. The long-run estimates are following:

$$\gamma_i = \frac{\hat{\phi}_i(1, \hat{q})}{\hat{\phi}_i(1, \hat{p})} = \frac{\sum_{i=0}^{\hat{q}} \hat{\phi}_i}{1 - \sum_{i=1}^{\hat{p}} \hat{\phi}_i}, \forall i = 1, 2, \ldots, k$$  \hspace{1cm} (4.17)

Where $k$ is selected lag length for $p$ and $q$. 
CHAPTER 5

CONSEQUENCES OF FDI ON ECONOMIC GROWTH, LABOR PRODUCTIVITY AND EMPLOYMENT

In this section, the study analyses the impact of aggregate-FDI on economic growth and sector-specific FDI on sector-specific labor productivity and employment.

5.1 IMPACT OF FDI ON ECONOMIC GROWTH

FDI has been appreciated by the developing countries as it has played a vital role in the economic growth of these countries. The positive impact of FDI on the economic growth of the host country is still debatable. Investment is financed by the domestic savings in a close economy. However, in an open economy, investment is financed by both domestic and foreign savings and through FDI. In this way, the host countries can invest more than their saving capacity with the help of FDI.

The impact of FDI on economic growth depends whether FDI enhances the overall investment in a country. According to Macroeconomic Growth Theory, there must be the optimum stock of capital, which could enhance the economic growth in a country in the long-run, and rate of capital growth must remain same in order to maintain a balanced growth path (Romer, 2001). FDI enters into an economy and contributes to its total investment and enhances economic growth in production by increasing labor productivity through utilizing the latest technology. FDI is the source of technology transfers from developed to developing country, which could increase the marginal productivity of capital. It reduces cost associated with innovation as technology is transferred and has enhanced the long-run economic growth (Borensztein et al 1998).

Berthelemy and Demurger (2000) claim the two effects which contribute to growth. Firstly, it creates the extension effect through specialization of input producers and extension of intermediate good’s sector. Second is the external effect, that when foreign investors undertook research and development activities, it was not only helpful in advancing
knowledge but was also useful for local firms to utilize it up to some extent. So, these effects can raise productivity and economic growth directly from FDI and indirectly from local firms.

5.1.1 Model Specification and Methodology

To capture the impact of FDI on economic growth, the study uses FDI and financial market development as a percentage of GDP, trade openness (total trade) as a percentage of GDP as independent variables and gross domestic product per-capita proxy for economic growth as the dependent variable. Financial market development is necessary for economic growth because it helps to mobilize the surplus fund from society for productive use where and when needed. It reduces the risk through diversification of funds (Nissanke and Stein, 2003). It may help in increasing aggregate demand as it gives loans for consumption and investment purpose, appreciates investment and promotes economic growth through efficient resource allocation. It also helps to foreign investors in performing their operations.

Trade openness may increase the size of the market which allows the production units to expand greater than the requirement of the domestic market and reap economies of scale. Trade openness may also increase the competition for local production units, who would try to improve their technologies to compete with foreign commodities. Production units may need to import raw materials and machineries. These may also need the foreign markets for their commodities. International trade integrates the economies and initiates domestic producers for research and development activities. Consequently, economic growth may rise through improving the productivity. Trade openness also attracts foreign investors who also need to import the inputs and to export their products. Therefore, trade openness is helpful in enhancing the economic growth.

Model of the study is as follows:

$$GDPC_t = f (FDIG_t, \ FMDG_t, \ XMG_t), \quad (5.1)$$

$$t = 1975, 1976, \ldots \ldots 2011$$
Where,

\[ \text{GDPC}_t = \text{Gross Domestic Product per capita} \text{ is a proxy for economic growth at PPP constant year 2000 US$ at time } t. \]

\[ \text{FDIG}_t = \text{Foreign Direct Investment inflow as percentage of GDP at time } t. \]

\[ \text{FMDG}_t = \text{Domestic credit to the private sector as a percentage of GDP is a proxy for Financial Market Development at time } t. \]

\[ \text{XMG}_t = \text{Total trade, exports plus imports as a percentage of GDP is a proxy for trade openness at time } t. \]

At first, the study checks the stationarity of data by applying ADF, PP and Ng-Perron unit root test to check the order of integration of variables. Then Zivot-Andrews unit root test will be applied to check the stationarity with structural break in the data and subsequently ARDL co integration technique is applied based on selected lag length for each variable in the model (5.1). The study uses the Schwartz-Bayesian Criteria (SBC) to find the optimum lag length for the equation (5.2). SBC is known as parsimonious criteria for selecting the smallest possible lag length. ARDL model is as follows:

\[
\begin{align*}
\Delta \text{GDPC}_t &= \delta_{a0} + \delta_{a1} \text{GDPC}_{t-1} + \delta_{a2} \text{FDIG}_{t-1} + \delta_{a3} \text{FMDG}_{t-1} \\
&+ \delta_{a4} \text{XMG}_{t-1} + \sum_{i=1}^{p} \delta_{a1i} \Delta \text{GDPC}_{t-i} + \sum_{i=0}^{q} \beta_{a2i} \Delta \text{FDIG}_{t-i} \\
&+ \sum_{i=0}^{s} \beta_{a4i} \Delta \text{XMG}_{t-i} + a \Delta \text{GDPC} + \xi_{at} + \sum_{i=0}^{r} \beta_{a3i} \Delta \text{FMDG}_{i} \\
&= (5.2)
\end{align*}
\]

In equation (5.2), the first difference of per-capita gross domestic product
is the dependent variable. The null hypothesis is \((H_0:\hat{\delta}_a1=\hat{\delta}_a2=\hat{\delta}_a3=\hat{\delta}_a4=0)\). The alternate hypothesis is \((\hat{\delta}_a1\neq\hat{\delta}_a2\neq\hat{\delta}_a3\neq\hat{\delta}_a4 \neq 0)\) which shows the existence of a long-run relationship in the model, \(\hat{\delta}_a0\) is a constant and \(\hat{\delta}_at\) is the error term. \(D_{GDPC}\) is included in equation for a possible structural break and to complete information in the model. This is also shown as \(F_{GDPC_t} (GDPC_t, FDIG_t, FMDG_t, XMG_t)\). The study uses the critical values of F-statistics generated by Narayan (2005) for small sample size. If the calculated value is greater than the upper bound of critical value, then we can reject the null hypothesis of no co-integration. If the calculated value is less than lower critical bound, then we accept the null hypothesis and if the calculated value falls in between the critical value, then the decision is inconclusive. If co-integration exists in the model, then long-run and short-run coefficients will be calculated. Error correction term can be used to find the short-run relationship in the model. The error correction model is following:

\[
\begin{align*}
\Delta GDPC_t &= \gamma_a + \sum_{i=1}^{p} \beta a1\Delta GDPC_{t-i} + \sum_{i=0}^{q} \beta a2i\Delta FDIG_{t-i} \\
&+ \sum_{i=0}^{r} \beta a3i\Delta FMDG_{t-i} + \sum_{i=0}^{s} \beta a4i\Delta XMG_{t-i} \\
&+ \phi a D GDPC + \phi a ECT_{t-1} + \zeta at 
\end{align*}
\tag{5.3}
\]

\(\phi a\) is showing the speed of adjustment from short-run disequilibrium to long-run equilibrium. Afterward, diagnostic tests will be used to check the normality, functional form, heteroscedasticity and serial correlation in the model. \textit{CUSUM(Cumulative Sum control chart)} and \textit{CUSUMsq statistics} will be used to verify the reliability of the parameters.
These tests are used to check the specification of the model and confirm the stability of parameters calculated in the model (Bahmani-Oskooee and Nasir, 2004).

**5.1.2 Data Source:**

Data on GDP per capita, FDI net inflows, domestic credit to the private sector and total trade as a percentage of GDP has been taken from World Development Indicators (WDI) by World Bank. Data has been taken from 1975 to 2011.

**5.1.3 Empirical Results:**

The study uses the Augmented Dickey Fuller (ADF), Phillips-Perron and Ng-Perron tests to check the unit root problem in all variables in the model. Results are given in the table as below.
Table 5.1

Unit Root Tests at Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>MZ_a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MZ_a</td>
</tr>
<tr>
<td>Model Specification: Intercept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDPC_t</td>
<td>0.965(0)</td>
<td>0.899(4)</td>
<td>1.155(1)</td>
</tr>
<tr>
<td>FDIG_t</td>
<td>2.961(6)</td>
<td>-0.777(3)</td>
<td>6.168(1)</td>
</tr>
<tr>
<td>XMG_t</td>
<td>-2.973*(1)</td>
<td>-3.064*(3)</td>
<td>-8.511*(0)</td>
</tr>
<tr>
<td>FMDG_T</td>
<td>-2.293(0)</td>
<td>-2.591(2)</td>
<td>-6.084(1)</td>
</tr>
<tr>
<td>Model Specification: Intercept and Trend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDPC_t</td>
<td>-2.813(1)</td>
<td>-1.661(5)</td>
<td>-5.990(4)</td>
</tr>
<tr>
<td>FDIG_t</td>
<td>-0.379(4)</td>
<td>-1.919(3)</td>
<td>-12.050(1)</td>
</tr>
<tr>
<td>XMG_t</td>
<td>-2.990(1)</td>
<td>-2.993(3)</td>
<td>-10.929(1)</td>
</tr>
<tr>
<td>FMDG_t</td>
<td>-2.907(0)</td>
<td>-3.071(2)</td>
<td>-0.802(0)</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively, contains the optimum lag length.

Table 5.1 shows that all variables at the level with all tests used in the analysis are non-stationary except XMG_t, which is stationary at 5% level of significance with ADF, PP and Ng-Perron (MZA and MZ_t) with intercept.
### Table 5.2
#### Unit Root Test: Zivot-Andrews

<table>
<thead>
<tr>
<th>Variable</th>
<th>K</th>
<th>Year of Break</th>
<th>α</th>
<th>$t_a$</th>
<th>Type of Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPC$_t$</td>
<td>4</td>
<td>1997</td>
<td>-0.495</td>
<td>-4.689</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>1987</td>
<td>-0.647</td>
<td>-4.244</td>
<td>C</td>
</tr>
<tr>
<td>FDIG$_t$</td>
<td>1</td>
<td>1999</td>
<td>-0.657*</td>
<td>-4.692</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>1995</td>
<td>-1.718*</td>
<td>-5.392</td>
<td>C</td>
</tr>
<tr>
<td>FMDG$_t$</td>
<td>1</td>
<td>1990</td>
<td>-0.675*</td>
<td>-4.812</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2003</td>
<td>-0.605</td>
<td>-4.164</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1990</td>
<td>-0.700</td>
<td>-4.762</td>
<td>C</td>
</tr>
<tr>
<td>XMG$_t$</td>
<td>0</td>
<td>1998</td>
<td>-0.934*</td>
<td>-4.963</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1991</td>
<td>-0.853</td>
<td>-3.853</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1998</td>
<td>-0.951</td>
<td>-4.588</td>
<td>C</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively. k is optimal lag length

Table 5.2 shows the results of Zivot-Andrews unit root test for variables at the level. GDPC$_t$ remains non-stationary with a significant structural break in the intercept for the year 1997 and the intercept and trend for the year 1987. FDIG$_t$ becomes stationary at 5% level of significance with a significant break in the trend for the year 1999 and significant break in the both intercept and trend for the year 1995. It was not stationary in ADF, PP and ng-Perron unit root tests. FMDG$_t$ becomes stationary at 5% level of significance with a significant break in the intercept for the year 1990 and stay non-stationary with a significant break in the trend for the year 2003 and the intercept and trend for the year 1990. XMG$_t$ is stationary at 5% level of significance with a significant break in the intercept for the year 1998 and remain non-stationary with a significant break in the trend for the year 1991 and the both intercept and trend for the year 1998.

### Table 5.3
#### Unit Root Tests at First Difference
Variables | ADF | PP | Ng-Perron
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MZ(_a)</td>
<td>MZ(_t)</td>
</tr>
</tbody>
</table>

**Model Specification: Intercept**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td>dGDPC(_t)</td>
<td>-3.493**(1)</td>
<td>-3.765**(3)</td>
<td>-13.800**(0)</td>
</tr>
<tr>
<td>dFDIG(_t)</td>
<td>-5.067**(4)</td>
<td>-3.421**(6)</td>
<td>-139.200**(1)</td>
</tr>
<tr>
<td>dXMG(_t)</td>
<td>-6.430**(1)</td>
<td>-9.856**(3)</td>
<td>-17.274**(1)</td>
</tr>
<tr>
<td>dFMDG(_t)</td>
<td>-4.978**(0)</td>
<td>-4.967**(5)</td>
<td>-16.349**(1)</td>
</tr>
</tbody>
</table>

**Model Specification: Intercept and Trend**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td>dGDPC(_t)</td>
<td>-3.929**(1)</td>
<td>-4.628**(4)</td>
<td>-17.568*(0)</td>
</tr>
<tr>
<td>dFDIG(_t)</td>
<td>-6.983**(4)</td>
<td>-4.281**(5)</td>
<td>-212.840**(1)</td>
</tr>
<tr>
<td>dXMG(_t)</td>
<td>-6.371**(1)</td>
<td>-9.801**(3)</td>
<td>-17.259**(1)</td>
</tr>
<tr>
<td>dFMDG(_t)</td>
<td>-5.030**(1)</td>
<td>-5.614**(5)</td>
<td>-19.083**(1)</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively. (0) contains the optimum lag length.

Table 5.3 shows the unit root tests at first difference. Results show that all variables are the stationary at first difference with all tests used in the table. The overall results show the mixed order of integration \( I(0) \) and \( I(1) \). The study uses ARDL co-integration technique to find the long-run relationship in the model. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable \( D_{GDPC} \) in the ARDL model to complete the information in the model. Optimum lag length is 1 for \( dGDPC_t \), 1 for \( dFDIG_t \), 0 for \( dXMG_t \) and 0 for \( dFMDG_t \). The study selects year 1987 as a break period where GDPC\(_t\) has significant break in the both intercept and trend and puts 0 from 1972 to 1987 and 1 afterward in \( D_{GDPC} \). The calculated F-statistic for the selected ARDL model is given in table 5.4.

Table 5.4

**ARDL Bound Test: Using ARDL(1,1,0,0)***
The F-statistic is 12.638. It is greater than the upper bound at 1% level of significance. The null hypothesis of no co-integration is rejected and the alternate hypothesis of co-integration is accepted. The long-run relationships exist in the model.

** Means at 1% significant level reject the null hypotheses of no co-integration  
* Means at 5% significance level reject the null hypotheses of no co-integration
Table 5.5

Long-Run Results: Dependent Variable is GDPC\_t

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDIG_t</td>
<td>158.897***</td>
<td>34.499</td>
<td>4.606</td>
<td>0.000</td>
</tr>
<tr>
<td>FMDG_t</td>
<td>22.838**</td>
<td>9.705</td>
<td>2.353</td>
<td>0.025</td>
</tr>
<tr>
<td>XMG_t</td>
<td>4.856</td>
<td>7.717</td>
<td>0.625</td>
<td>0.536</td>
</tr>
<tr>
<td>C</td>
<td>762.257**</td>
<td>329.325</td>
<td>2.315</td>
<td>0.027</td>
</tr>
<tr>
<td>DGDPC</td>
<td>561.357***</td>
<td>56.835</td>
<td>9.877</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S. E. is the standard error. C is intercept.

Table 5.5 shows the long-run coefficients of the estimated ARDL model for the variables in the analysis. The coefficient of FDIG\_t is positive and statistically significant at 1% level of significance and foreign direct investment has a positive and significant impact on economic growth. The coefficient of FMDG\_t is positive and significant at 1% level of significance and financial market development also has a positive and significant impact on the economic growth. The coefficient of XMG\_t is positive and insignificant. The study concludes that trade openness has insignificant impact on economic growth. Intercept (C) is significant at 5% level of significance and D\_GDPC is positive and significant at 1% level of significance. So, intercept has changed after the year 1987.
### Table 5.6

**Error Correction Model: Dependent Variable is \(dGDPC_t\)**

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dFDIG_t)</td>
<td>35.941**</td>
<td>13.588</td>
<td>2.647</td>
<td>0.013</td>
</tr>
<tr>
<td>(dFMDG_t)</td>
<td>4.786**</td>
<td>1.770</td>
<td>2.704</td>
<td>0.011</td>
</tr>
<tr>
<td>(dXMG_t)</td>
<td>1.516</td>
<td>1.261</td>
<td>1.203</td>
<td>0.233</td>
</tr>
<tr>
<td>(C)</td>
<td>36.819***</td>
<td>8.009</td>
<td>4.597</td>
<td>0.000</td>
</tr>
<tr>
<td>(DGDPC)</td>
<td>0.157</td>
<td>1.072</td>
<td>0.147</td>
<td>0.912</td>
</tr>
<tr>
<td>(ECT_{t-1})</td>
<td>-0.247**</td>
<td>0.101</td>
<td>-2.457</td>
<td>0.035</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S. E. is the standard error. C is intercept.

Table (5.6) shows that all coefficients of differenced variables are significant except \(dXMG_t\) and \(DGDPC\). The lagged value of the error correction term is negative and significant. It is showing convergence from short-run disequilibrium towards the long-run equilibrium in approximately 24.7% in a year. So, a short-run relationship exists among variables of this model.
The study uses Breusch-Godfrey serial correlation test for detection of serial correlation in the ARDL model. Breusch-Pagan heteroscedasticity test is used to detect the problem of heteroscedasticity. Ramsey RESET test is used to ensure the specification of model. Jarque-Bera test is used to check the normality of model. Results of the table (5.7) show that p-values of serial correlation test, functional form test, normality test and heteroscedasticity test are greater than 0.10, so there is no problem of serial correlation, normality, functional form and heteroscedasticity in the model.

Figure 5.1, in the appendix, shows CUSUM and CUSUMsq tests. These tests are used to check the specification of the model and confirm the stability of parameters calculated in the model (Bahmani-Oskooee and Nasir, 2004). Figures show that CUSUM and CUSUMsq do not exceed the critical boundaries at 5% level of significance. So, the growth model is correctly specified and long-run parameters are valid.
5.1.4 Conclusion

For the analysis of the consequences of FDI on economic growth, the study uses the GDP per capita as a proxy for economic growth as dependent variable and FDI, financial market development and total trade as percentage of GDP as independent variables. Annual data is taken from 1975 to 2011. The study uses ARDL co-integration technique and its error correction model to find the long-run and short-run relationships. The study finds that the long-run and short-run relationships exist in the growth model. FDI and financial market development have a positive and significant impact on the economic growth and trade openness does not have any significant impact on the economic growth.

5.2 IMPACT OF FDI ON LABOR PRODUCTIVITY

The impact of FDI on the host country’s labor productivity level depends on technology transfers and training of labor. Foreign firms working in developing countries usually possess superior technology and efficient technique of operation. These enhance the competition among local firms and forced to adopt better technologies and operate their production process efficiently. So, foreign investment can increase labor productivity in these countries. Technology transfers also have positive externalities on local firms. Local firms will also try to use modern technology to compete with foreign firms. Technology will transfer to local firms if local investors buy intermediate goods from foreign firms. Foreign firms use domestic labors. The labor transfers their skills when they are employed by local firms or when they set their own business after leaving foreign firms. Local knowledge of labor also rises with new inventions abroad (Fosfuri et al 2001). Blomstrom and Kokko (1998) claimed that the productivity of labor can grow through learning-by-watching effect. Foreign investors are expert in proprietary technology, so they can help in enhancing the marketing and management skills.

5.2.1 Model Specification and Methodology

To capture the impact of sector-specific FDI on sector-specific labor productivity,
the study takes sector-specific FDI as independent variable and sector-specific labor productivity as the dependent variable. Model of labor productivity is analyzed as under:

\[ \text{PROD}_{jt} = f(\text{FDI}_{jt}), \quad t=1,2,\ldots,n \]  \hspace{1cm} (5.4)

Where,

\[ \text{PROD}_{jt} = \text{Productivity of labor at } j\text{sector and at } t\text{time period} \]
\[ \text{FDI}_{jt} = \text{Foreign Direct Investment at } j\text{ sector and at } t\text{time} \]

At first, the study checks the stationarity of data by applying ADF and PP unit root tests to find the order of integration of individual variable for each sector \( j \). Then Zivot-Andrews unit root test will be applied to examine stationarity with structural break in the data and afterwards ARDL co-integration technique will be applied with the selected lag length for each variable in the model (5.8) for all sectors separately. The study uses the SBC to find the maximum relevant lag length for the equation (5.4). To find the co-integration among labor productivity and FDI, the ARDL model is as under:

\[
\Delta \text{PROD}_{jt} = \delta_{j0} + \delta_{c1} \text{PROD}_{jt-1} + \delta_{c2} \text{FDI}_{jt-1} + \sum_{i=1}^{p} \beta_{c1i} \Delta \text{PROD}_{jt-i} + \sum_{i=0}^{q} \beta_{c2i} \Delta \text{FDI}_{jt-i} + \lambda_{c} \text{DPROD}_{j} + \epsilon_{jct} \]  \hspace{1cm} (5.5)

In equation (5.5), the first difference of \( \text{PROD}_{jt} \) is the dependent variable. The null hypothesis is \( H_{0}: \delta_{c1} = \delta_{c2} = 0 \). The alternate hypothesis is \( (\delta_{c1} \neq \delta_{c2} \neq 0) \) which shows the existence of a long-run relationship in the model, \( \delta_{j0} \) is a constant for each sector \( j \) and \( \delta_{jct} \) is the error term for each sector \( j \). \( \text{DPROD}_{j} \) is included in equation for a possible structural break and to complete the information. This is also shown as \( \text{FPROD}_{jt}(\text{PROD}_{jt} / \text{FDI}_{jt}) \). If co-integration exists in the model, then long-run and short-run coefficients will be calculated. Error correction term can be used to find the short-run
relationship in the model. The error correction model is as following:

\[
P^q \Delta \text{PROD}_{jt} + \sum_{c=1}^{p} \Delta \text{PROD}_{jt-c} \Delta \text{FDI}_{jt-1} + \sum_{c=1}^{q} \beta_c \Delta \text{FDI}_{jt-1} + \phi_{jc} \Delta \text{PROD}_{jt-1} + \phi_{jc} \cdot \text{ECT}_{jt-1} + \zeta_{jt} \]

\( \varphi_{jc} \) is showing the speed of adjustment from short-run disequilibrium to long-run equilibrium for each sector \( j \). Afterwards, diagnostic tests will be used to check the normality, functional form, heteroscedasticity and serial correlation in the model. CUSUM and CUSUMsq statistics will be used to ensure the stability of the parameters.

### 5.2.2 Data Sources

Data on GDP, employed labor force and percentage contribution of GDP and employed labor force of primary, secondary and tertiary sectors has been taken from WDI by World Bank from the year 1975 to 2011. Data of FDI in primary, secondary and tertiary sectors has been taken from Foreign Liabilities & Assets and Investment in Pakistan by State Bank of Pakistan.

### 5.2.3 Empirical Results

At first, the study checks for stationarity of variables. It uses the ADF and PP unit root tests to check the unit root problem in all variables in the model. Results are given in the table below.
### Table 5.8

Unit Root Tests at Level

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C &amp; C&amp;T</td>
<td>C &amp; C&amp;T</td>
</tr>
<tr>
<td>Primary</td>
<td>PROD&lt;sub&gt;t&lt;/sub&gt;</td>
<td>-1.322 (0)</td>
<td>-1.352 (0)</td>
</tr>
<tr>
<td></td>
<td>FDI&lt;sub&gt;t&lt;/sub&gt;</td>
<td>-3.368* (1)</td>
<td>-3.315* (0)</td>
</tr>
<tr>
<td>Secondary</td>
<td>PROD&lt;sub&gt;t&lt;/sub&gt;</td>
<td>-0.936 (0)</td>
<td>-1.998 (1)</td>
</tr>
<tr>
<td></td>
<td>FDI&lt;sub&gt;t&lt;/sub&gt;</td>
<td>0.441 (3)</td>
<td>-1.303 (3)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>PROD&lt;sub&gt;t&lt;/sub&gt;</td>
<td>-1.266 (3)</td>
<td>-2.164 (2)</td>
</tr>
<tr>
<td></td>
<td>FDI&lt;sub&gt;t&lt;/sub&gt;</td>
<td>1.983 (4)</td>
<td>1.007 (4)</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show stationarity of variables at the 0.10, 0.05 and 0.01 level respectively. (0) contains optimum lag length. C is intercept and C&T is intercept and trend.

Table (5.8) shows that PROD<sub>t</sub> is non-stationary in all sectors with both ADF and PP tests. FDI<sub>t</sub> in the primary sector is stationary at the level at 5% level of significance with intercept, and with both intercept and trend by using ADF and PP unit root tests. FDI<sub>t</sub> in the secondary sector is non-stationary with ADF and PP tests with intercept and with both intercept and trend except it is stationary at 1% level of significance with intercept and trend with PP test. FDI<sub>t</sub> in the tertiary sector is non-stationary with both ADF and PP tests.
Table 5.9

Unit Root Test: Zivot-Andrews

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>K</th>
<th>Year of</th>
<th>$\alpha$</th>
<th>$t_{\alpha}$</th>
<th>Type of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$PROD_t$</td>
<td>2</td>
<td>2000</td>
<td>-0.479</td>
<td>-4.442</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>1998</td>
<td>-0.589</td>
<td>-4.274</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>1995</td>
<td>-0.651</td>
<td>-4.688</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>3</td>
<td>1997</td>
<td>-0.723*</td>
<td>-4.935</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1990</td>
<td>-0.812*</td>
<td>-4.560</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1987</td>
<td>-0.963*</td>
<td>-5.281</td>
<td>C</td>
</tr>
<tr>
<td>Secondary</td>
<td>$PROD_t$</td>
<td>2</td>
<td>2000</td>
<td>-0.561</td>
<td>-4.136</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1995</td>
<td>-0.479</td>
<td>-3.141</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2000</td>
<td>-0.521</td>
<td>-3.405</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>2</td>
<td>1983</td>
<td>-1.374*</td>
<td>-5.095</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1991</td>
<td>-1.578**</td>
<td>-5.771</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1992</td>
<td>-1.579**</td>
<td>-5.671</td>
<td>C</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$PROD_t$</td>
<td>2</td>
<td>1995</td>
<td>-0.413</td>
<td>-2.973</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>1981</td>
<td>-0.278</td>
<td>-1.824</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-0.206</td>
<td>-1.857</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>1</td>
<td>2003</td>
<td>-0.182</td>
<td>-1.405</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-1.405**</td>
<td>-5.551</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-2.388**</td>
<td>-9.182</td>
<td>C</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively. $k$ is optimum lag length.

Table 5.9 shows that $PROD_t$ in the primary sector is non-stationary with a significant break for the 2000 in the intercept, a significant break in the trend for the year 1998 and a significant break in the both intercept and trend for the year 1995. $PROD_t$ in the secondary sector is non-stationary with a significant break for the year 2000 in the intercept, a significant break for the year 1995 in the trend and a significant break for the year 2000 in the both intercept and trend. $EMP_t$ in the tertiary sector is non-stationary with a significant break in the intercept for the year 1995, a significant break for the year 1981 in the trend and a significant break for the year 2003 in the both intercept and trend. $FDI_t$ in
the primary sector is stationary at 5% level of significance with a significant break in the intercept for the year 1997, a significant break in the trend for the year 1990 and a significant break in the both intercept and trend for the year 1987. FDI\(_t\) in the secondary sector is stationary at 5% level of significance with a significant break in the intercept for the year 1983. It is stationary at 1% level of significance with a significant break in the trend for the year 1991 and a significant break in the both intercept and trend for the year 1992. FDI\(_t\) in the tertiary sector is non-stationary with a significant break in the intercept for the year 2003. It is stationary at 1% level of significance with a significant break for the year 2003 in the trend, and in the both intercept and trend.

Table 5.10

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>C&amp;T</td>
</tr>
<tr>
<td>Primary</td>
<td>PROD(_t)</td>
<td>-5.077**(1)</td>
<td>-5.041**(1)</td>
</tr>
<tr>
<td></td>
<td>FDI(_t)</td>
<td>-8.374**(1)</td>
<td>-8.254**(1)</td>
</tr>
<tr>
<td>Secondary</td>
<td>PROD(_t)</td>
<td>-6.401**(1)</td>
<td>-6.311**(1)</td>
</tr>
<tr>
<td></td>
<td>FDI(_t)</td>
<td>-3.236*(3)</td>
<td>-3.745**(3)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>PROD(_t)</td>
<td>-4.132**(2)</td>
<td>-4.089**(2)</td>
</tr>
<tr>
<td></td>
<td>FDI(_t)</td>
<td>-4.678**(4)</td>
<td>-5.503**(4)</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively. (0) contains optimum lag length. C is intercept and C&T is intercept and trend.

Table (5.10) shows that PROD\(_t\) is stationary at 1% level of significance with both ADF and PP unit root tests in all sectors. FDI\(_t\) in the primary sector is stationary at 1% level of significance in both ADF and PP tests. FDI\(_t\) in the secondary sector is stationary at 1% level of significance in both ADF and PP tests except in ADF test with intercept at 5% level of significance. FDI\(_t\) in the tertiary sector is stationary at 1% level of significance in both ADF and PP tests. There is the evidence for a mix order of integration I(0) and I(1) in all sectors. So, ARDL model is suitable to apply here. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable D\(_{PROD}\) in each sector’s
model separately to complete the information. Optimum lag length is 1 for $dPROD_t$ and 0 for $dFDI_t$ in the primary sector productivity model. The study selects the year 1995 for break period and put 0 from 1972 to 1991 and 1 afterward in $D_{PROD}$. Optimum lag length is 1 for $dPROD_t$ and 0 for $dFDI_t$ in the secondary sector productivity model. The study selects the year 2000 for break period and puts 0 from 1972 to 2000 and 1 afterwards in $D_{PROD}$. Optimum lag length is 1 for $dPROD_t$ and 1 for $dFDI_t$ in the tertiary sector productivity model. The study selects the year 2003 for break period and put 0 from 1972 to 2003 and 1 afterwards in $D_{PROD}$. The calculated F-statistic for selected ARDL models is given in table 5.18.

**Table 5.11**

**ARDL Bound Test**

<table>
<thead>
<tr>
<th>Sector</th>
<th>VARIABLES (when taken as a dependent)</th>
<th>F-Statistic (Calculated)</th>
<th>At 0.05</th>
<th>At 0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>I(0)</td>
<td>I(1)</td>
</tr>
<tr>
<td>Primary</td>
<td>$d(PROD_t)$</td>
<td>7.983**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
<tr>
<td>Secondary</td>
<td>$d(PROD_t)$</td>
<td>8.286**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$d(PROD_t)$</td>
<td>8.925**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
</tbody>
</table>

**Means at 1% significant level reject the null hypotheses of no cointegration * Means at 5% significant level reject the null hypotheses of no cointegration**

Table 5.11 shows that the F-value, for all sectors, is greater than upper bound values at 1% level of significance. So, the long-run relationships exist in the models of all sectors.

**Table 5.12**

**Long-Run Results: Dependent Variable is $PROD_j$**
<table>
<thead>
<tr>
<th>Sector</th>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$FDI_t$</td>
<td>3.51E-3*</td>
<td>1.91E-3</td>
<td>1.842</td>
<td>0.074</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>605.169***</td>
<td>219.455</td>
<td>2.758</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>$D_{PROD}$</td>
<td>192.231***</td>
<td>31.241</td>
<td>6.153</td>
<td>0.000</td>
</tr>
<tr>
<td>Secondary</td>
<td>$FDI_t$</td>
<td>5.78E-6****</td>
<td>1.85E-6</td>
<td>3.129</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>981.553***</td>
<td>49.697</td>
<td>19.751</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$D_{PROD}$</td>
<td>127.336</td>
<td>123.617</td>
<td>1.030</td>
<td>0.310</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$FDI_t$</td>
<td>1.62E-6***</td>
<td>6.25E-7</td>
<td>2.588</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>1837.469***</td>
<td>655.341</td>
<td>2.803</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>$D_{PROD}$</td>
<td>403.771***</td>
<td>111.844</td>
<td>3.610</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show significance of variables at the 0.10, 0.05 and 0.01 levels respectively. S.E. is standared error and C is intercept.

Table 5.12 shows the results of long-run estimates with the selected ARDL model. The coefficient of $FDI_t$ in the primary sector is positive and significant at 10% level of significance. $FDI_t$ has a positive and significant impact on PROD$_t$ in the primary sector. Intercept is positive and significant at 1% level of significance. Coefficient of $D_{PROD}$ is positive and significant. So, intercept has changed after the year 1995. The results of the secondary sector show that the coefficient of $FDI_t$ in the secondary sector is positive and significant at 1% level of significance. $FDI_t$ has a positive and significant impact on PROD$_t$ in the secondary sector. Intercept (C) is positive and significant. The coefficient of $D_{PROD}$ is positive and insignificant. The results of the tertiary sector show that the coefficient of $FDI_t$ in the tertiary sector is positive and significant at 5% level of significance. $FDI_t$ has a positive and significant impact on PROD$_t$ in the tertiary sector. Intercept (C) is positive and significant at 1% level of significance. The coefficient of $D_{EMP}$ is positive and significant. So, intercept has changed after the year 2003.

**Table 5.13**

**Error Correction Model: Dependent Variable is $dPROD_{jt}$**
<table>
<thead>
<tr>
<th>Sector</th>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$dFDI_t$</td>
<td>5.96E-5***</td>
<td>1.68E-5</td>
<td>3.550</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>4.162</td>
<td>7.278</td>
<td>0.572</td>
<td>0.571</td>
</tr>
<tr>
<td></td>
<td>$DPROD$</td>
<td>71.891</td>
<td>48.413</td>
<td>1.485</td>
<td>0.147</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>-0.169</td>
<td>0.111</td>
<td>-1.528</td>
<td>0.136</td>
</tr>
<tr>
<td>Secondary</td>
<td>$dFDI_t$</td>
<td>5.14E-6</td>
<td>5.26E-6</td>
<td>-0.978</td>
<td>0.335</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>26.891**</td>
<td>12.828</td>
<td>2.096</td>
<td>0.044</td>
</tr>
<tr>
<td></td>
<td>$DPROD$</td>
<td>-67.935</td>
<td>76.935</td>
<td>-0.879</td>
<td>0.385</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>-0.290*</td>
<td>0.160</td>
<td>-1.813</td>
<td>0.076</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$dFDI_t$</td>
<td>4.61E-8*</td>
<td>2.31E-8</td>
<td>1.989</td>
<td>0.055</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>49.582**</td>
<td>21.462</td>
<td>2.345</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td>$DPROD$</td>
<td>-129.971</td>
<td>124.645</td>
<td>-1.043</td>
<td>0.305</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>0.0103</td>
<td>0.0109</td>
<td>0.947</td>
<td>0.351</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 level of significance respectively. C is intercept.

Table 5.13 shows the estimates of short-run. Results of the primary sector show that all coefficients are insignificant except $dFDI_{t-1}$. The coefficient of $ECT_{t-1}$ is negative and insignificant. So, there is no short-run relationship in the model of productivity of the primary sector. Results of the secondary sector show that the coefficients of all variables are insignificant except C. Coefficient of $ECT_{t-1}$ is negative and significant at 10% level of significance. The short-run relationship exists in the secondary sector, and the speed of adjustment is 29% in a year. The results of the tertiary sector show that the coefficients of $dFDI_t$ and C are positive and significant. The coefficient of $DPROD$ is negative and insignificant. The coefficient of $ECT_{t-1}$ is positive and insignificant. The short-run relationship does not exist in the tertiary sector employment model.

Table 5.14

Diagnostic Tests
<table>
<thead>
<tr>
<th>Sector</th>
<th>Serial Correlation ($\chi^2$)</th>
<th>Functional Form ($\chi^2$)</th>
<th>Normality ($\chi^2$)</th>
<th>Heteroscedasticity ($\chi^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>0.004</td>
<td>1.620</td>
<td>0.541</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>(0.915)</td>
<td>(0.203)</td>
<td>(0.363)</td>
<td>(0.770)</td>
</tr>
<tr>
<td>Secondary</td>
<td>0.533</td>
<td>2.160</td>
<td>0.111</td>
<td>2.105</td>
</tr>
<tr>
<td></td>
<td>(0.466)</td>
<td>(0.142)</td>
<td>(0.946)</td>
<td>(0.157)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1.414</td>
<td>1.263</td>
<td>0.953</td>
<td>1.146</td>
</tr>
<tr>
<td></td>
<td>(0.234)</td>
<td>(0.270)</td>
<td>(0.493)</td>
<td>(0.312)</td>
</tr>
</tbody>
</table>

Note: (0) contains p-values

Results of the table 5.14 show that p-values of serial correlation, functional form, normality and heteroscedasticity are greater than 0.10 in case of all models. So, there is no problem of serial correlation, functional form, normality and heteroscedasticity in the models.

Figure (5.2), in the appendix, is showing CUSUM and CUSUMsq tests for primary, secondary and tertiary sectors respectively. Figures show that CUSUM and CUSUMsq do not exceed the critical boundaries at 5% level of significance in all models. So, the estimates are reliable.

5.2.4 Conclusions

To find the impact of FDI on labor productivity, the study uses sector-specific FDI as
independent variables and sector-specific labor productivity as the dependent variable. The study uses the data of the primary, secondary and tertiary sector, and data is taken from 1975 to 2011 for analysis. The study uses ARDL co-integration bound testing technique to find the long-run and short-run relationships for each sector separately. The results show that the long-run relationships exist in the labor productivity model of all sectors. The short-run relationship exists in case of the secondary sector productivity model. The short-run relationships do not exist in case of primary and tertiary sector labor productivity models. Sector-specific FDI has a positive and significant impact on labor productivity in case of all sectors. So, the study concludes that FDI is helpful in raising labor productivity in all sectors.

5.3 IMPACT OF FDI ON EMPLOYMENT

Demand for labor is derived demand. If there will be demand for goods and services, then there will be demand for labor as well. FDI can have direct and indirect effect on employment. When foreign investors intend to invest in any country, they need the skilled and unskilled labor force in their production process. FDI is helping in employment generation through forward and backward linkage with domestic firms and multiplier effects on the local economy. In forward linkage, foreign investors are suppliers of local firms and create more ideas and employment in local firms. In backward linkage effect, foreign investors are the buyers of local firms, which create demand for local firms’ product and local firms create the demand for labor. Aaron (1999) found that 26 million direct jobs and 41.6 million indirect jobs were created by FDI in developing countries in 1997. FDI is a source of capital accumulation in a country and enhances the new skills in labor force through training and development. So, labor can have a greater capacity to finding new jobs.

5.3.1 Model Specification and Methodology

To find the effect of sector-specific FDI on sector-specific employment, the study uses sector-specific employment as dependent variable and sector-specific FDI and aggregate GDP as the independent variable. The study uses GDP as a proxy for aggregate demand. As mentioned, the demand for labor is derived demand. The rise in GDP
comes with the rise in economic activities, which will be a source of employment. FDI is also attracted to those countries where demand condition is satisfactory. When foreign investors operate in a country, they need labor. So, high GDP level is good for both FDI and employment. The study uses the data of FDI and employment in primary, secondary and tertiary sectors for analysis. Model of labor productivity is used as follows:

\[
EMP_{jt} = f(FDI_{jt}, GDP_{t}), \ t=1975, 1976, \ldots, 2011
\]  

(5.7)

Where,

\[EMP_{jt} = \text{Sector-specific Employment at sector } j \text{ at time } t.\]

\[FDI_{jt} = \text{Sector-specific Foreign Direct Investment at sector } j \text{ and time } t.\]

\[GDP_{t} = \text{Gross Domestic Product is a proxy for aggregate demand at constant year 2000 US$ at time } t.\]

At first, the study checks the stationarity of data by applying ADF and PP unit root test to check the order of integration of variables for each sector \( \Delta j \) separately. Then, Zivot-Andrews unit root test will be used to check the stationarity with a possible break in the data and then ARDL co-integration technique is applied on the basis of selected lag length for each variable in the model (5.7). The study uses the SBC to obtain the maximum relevant lag length for the equation (5.8). To find the co-integration amongst GDP, sector-specific employment and sector-specific FDI, the ARDL model is following:

\[
\Delta EMP_{jt} = \delta_{0} + \delta_{1}EMP_{jt-1} + \delta_{2}FDI_{jt-1} + \delta_{3}GDP_{t-1} + \sum_{i=1}^{p-1} \beta_{1i} \Delta EMP_{jt-i} + \sum_{i=0}^{q-1} \beta_{2i} \Delta FDI_{jt-i} + \sum_{i=0}^{r} \beta_{3i} \Delta GDP_{t-i} + \beta_{d} D EMP_{j} + \epsilon_{td} \]

(5.8)

In equation (5.8), the first difference of \( EMP_{jt} \) is the dependent variable. The null
The alternate hypothesis is \( H_0: \delta d_1=\delta d_2=\delta d_3=0 \) which shows the existence of long-run relationships in the models. \( \delta j d \) is a constant and \( \delta j dt \) is the error term. \( DEMP_j \) is included in the equation for a possible structural break and to complete information. This is also shown as 

\[
(EMP_{jt} - \bar{EMP}_{jt}), GDP_{t} \]

If co-integration exists in the models, then long-run and short-run coefficients will be calculated. Error correction term can be used to find the short-run relationships in the models. The error correction model is following:

\[
\Delta EMP_{jt} = \gamma_{jd} + \sum_{d1}^p \Delta EMP_{jt-i} + \sum_{d2}^q \Delta FDI_{jt-i} + \sum_{d3}^r \Delta GDP_{t-i} + \gamma_{dj} DEMP_j + \gamma_{dj} ECT_{jt-1} + \zeta_{jdt}
\]  

\( \psi_jd \) is showing the speed of adjustment from short-run disequilibrium to long-run equilibrium for each sector \( j \) afterwards, diagnostic tests will be used to check the normality, functional form, heteroscedasticity and serial correlation in the models. CUSUM and CUSUMsq statistics will be used to ensure the stability of the parameters.

### 5.3.2 Data Sources

Data on sector-specific FDI is taken from Foreign Liabilities & Assets and Investment in Pakistan by State Bank of Pakistan. GDP, total employment and employment share in primary, secondary and tertiary sectors are taken from WDI by World Bank. Data is taken from 1975 to 2011.

### 5.3.3 Empirical Results

At first, the study checks for stationarity of variables. The study uses the ADF and
PP unit root tests to check the stationarity in all variables in the model. Results are given in the table below.
Table 5.15

Unit Root Tests at Level

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ADF</td>
<td>PP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>C&amp;T</td>
</tr>
<tr>
<td>Primary</td>
<td>EMP_t</td>
<td>0.781 (1)</td>
<td>-1.911 (1)</td>
</tr>
<tr>
<td></td>
<td>FDI_t</td>
<td>-3.368*(1)</td>
<td>-3.315*(0)</td>
</tr>
<tr>
<td>Aggregate</td>
<td>GDP_t</td>
<td>0.529 (1)</td>
<td>-2.005 (5)</td>
</tr>
<tr>
<td>Secondary</td>
<td>EMP_t</td>
<td>1.933 (0)</td>
<td>-0.254 (1)</td>
</tr>
<tr>
<td></td>
<td>FDI_t</td>
<td>0.441 (3)</td>
<td>-1.303 (3)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>EMP_t</td>
<td>1.983 (7)</td>
<td>0.007 (5)</td>
</tr>
<tr>
<td></td>
<td>FDI_t</td>
<td>1.983 (4)</td>
<td>1.007 (4)</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show stationarity of variables at the 0.10, 0.05 and 0.01 level respectively. (0) contains the optimum lag length. C is intercept and C&T is intercept and trend.

Table (5.15) shows that EMP_t is non-stationary at level in all sectors with both ADF and PP tests. GDP_t is non-stationary at the level with both ADF and PP tests. FDI_t in the primary sector is stationary at the level at 5% level of significance with intercept and intercept and trend with ADF and PP unit root tests. FDI_t in the secondary sector is non-stationary with ADF and PP tests with intercept and with intercept and trend except it is stationary at 1% level of significance with intercept and trend with PP test. FDI_t in the tertiary sector is non-stationary with both ADF and PP tests.
### Table 5.16

Unit Root Test: Zivot-Andrews

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>K</th>
<th>Year of Break</th>
<th>$A$</th>
<th>$t_\alpha$</th>
<th>Type of Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$EMP_t$</td>
<td>3</td>
<td>2000</td>
<td>-0.947</td>
<td>-3.406</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1998</td>
<td>-0.993</td>
<td>-4.080</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1991</td>
<td>-0.914</td>
<td>-4.174</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>3</td>
<td>1997</td>
<td>-0.723*</td>
<td>-4.935</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1990</td>
<td>-0.812*</td>
<td>-4.560</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1987</td>
<td>-0.963*</td>
<td>-5.281</td>
<td>C</td>
</tr>
<tr>
<td>Aggregate</td>
<td>$GDP_t$</td>
<td>1</td>
<td>2003</td>
<td>-0.051</td>
<td>-1.065</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-0.304*</td>
<td>-4.633</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2001</td>
<td>-0.275</td>
<td>-4.037</td>
<td>C</td>
</tr>
<tr>
<td>Secondary</td>
<td>$EMP_t$</td>
<td>2</td>
<td>2002</td>
<td>-0.377</td>
<td>-2.818</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2001</td>
<td>-1.032</td>
<td>-3.057</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1998</td>
<td>-0.845</td>
<td>-3.294</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>2</td>
<td>1983</td>
<td>-1.374*</td>
<td>-5.095</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1991</td>
<td>-1.578**</td>
<td>-5.771</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1992</td>
<td>-1.579**</td>
<td>-5.671</td>
<td>C</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$EMP_t$</td>
<td>1</td>
<td>2003</td>
<td>-0.323</td>
<td>-3.229</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1990</td>
<td>-0.776</td>
<td>-3.651</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>1989</td>
<td>-0.774</td>
<td>-2.364</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>$FDI_t$</td>
<td>1</td>
<td>2003</td>
<td>-0.182</td>
<td>-1.405</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-1.405**</td>
<td>-5.551</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>2003</td>
<td>-2.388**</td>
<td>-9.182</td>
<td>C</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 levels respectively. $k$ is optimum lag length.

Table (5.16) shows that $GDP_t$ becomes stationary at 5% level of significance with a significant structural break in the trend for the year 2003. It is non-stationary with a significant break for the year 2003 in the intercept and a significant break for the year 2001 in the both intercept and trend. $EMP_t$ in the primary sector is non-stationary with a significant break for the year 2000 in the intercept, a significant break for the year 1998 in the trend and a significant break for the year 1991 in the both intercept and trend. $EMP_t$ in
the secondary sector is non-stationary with a significant break for the year 2002 in the intercept, a significant break for the year 2001 in the trend and a significant break in 1998 in the both intercept and trend. EMP\textsubscript{t} in the tertiary sector is non-stationary with a significant break for the year 2003 in the intercept, a significant break for the year 1990 in the trend and a significant break for the year 1989 in the both intercept and trend. FDI\textsubscript{t} in the primary sector is stationary at 5% level of significance with a significant break for the year 1997 in the intercept, a significant break for the year 1990 in the trend and a significant break for the year 1987 in the both intercept and trend. FDI\textsubscript{t} in the secondary sector is stationary at 5% level of significance with a significant break for the year 1983 in the intercept. It is stationary at 1% level of significance with a significant break for the year 1991 in the trend and significant break for the year 1992 in the both intercept and trend. FDI\textsubscript{t} in the tertiary sector is non-stationary with a significant break for the year 2003 in the intercept. It is stationary at 1% level of significance with a significant break for the year 2003 in the trend, and in the both intercept and trend.

Table 5.17

Unit Root Tests at First Difference

<table>
<thead>
<tr>
<th>Sector</th>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C&amp;T</td>
<td>C</td>
</tr>
<tr>
<td>Primary</td>
<td>EMP\textsubscript{t}</td>
<td>-7.342**(1)</td>
<td>-7.667**(1)</td>
</tr>
<tr>
<td></td>
<td>FDI\textsubscript{t}</td>
<td>-3.368*(1)</td>
<td>-3.315*(0)</td>
</tr>
<tr>
<td>Aggregate</td>
<td>GDP\textsubscript{t}</td>
<td>-3.452*(2)</td>
<td>-4.105***(1)</td>
</tr>
<tr>
<td>Secondary</td>
<td>EMP\textsubscript{t}</td>
<td>-5.471***(1)</td>
<td>-6.194***(1)</td>
</tr>
<tr>
<td></td>
<td>FDI\textsubscript{t}</td>
<td>-3.236*(3)</td>
<td>-3.745***(3)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>EMP\textsubscript{t}</td>
<td>-3.678**(5)</td>
<td>-5.503***(4)</td>
</tr>
<tr>
<td></td>
<td>FDI\textsubscript{t}</td>
<td>-4.678***(4)</td>
<td>-5.503***(4)</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level of significance respectively. C is intercept and C&T is intercept and trend.

Table (5.17) shows that all variables in the models are stationary with both ADF.
and PP tests. There is evidence for a mix order of integration $I(0)$ and $I(1)$ in all models. So, ARDL model is suitable to apply here. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable $D_{EMP}$ in each model separately in the ARDL model to complete the information. Optimum lag length is 2 for $dEMP_t$, 0 for $dFDI_t$ and 0 for $dGDP_t$ in the primary sector employment model. The study selects the year 1991 for break period and puts 0 from 1972 to 1991 and 1 afterward in $D_{EMP}$. Optimum lag length is 1 for $dEMP_t$, 0 for $dFDI_t$ and 0 for $dGDP_t$ in the secondary sector employment model. The study selects the year 1998 for break period and puts 0 from 1972 to 1998 and 1 afterwards in $D_{EMP}$. Optimum lag length is 2 for $dEMP_t$, 1 for $dFDI_t$ and 0 for $dGDP_t$ in the primary sector employment model. The study selects the year 1989 for break period and puts 0 from 1972 to 1989 and 1 afterwards in $D_{EMP}$. The calculated F-statistic for the selected ARDL model is given in table (5.18).

Table 5.18

<table>
<thead>
<tr>
<th>Sector</th>
<th>VARIABLES (when taken as dEMP&lt;sub&gt;t&lt;/sub&gt;)</th>
<th>F-Statistic (Calculated)</th>
<th>At 0.05</th>
<th>At 0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$d(EMP_t)$</td>
<td>7.473**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
<tr>
<td>Secondary</td>
<td>$d(EMP_t)$</td>
<td>9.287**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$d(EMP_t)$</td>
<td>10.283**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
</tbody>
</table>

** Means at 1% significant level reject the null hypotheses of no co-integration * Means at 5% significant level reject the null hypotheses of no co-integration

Table (5.18) shows that all calculated values are greater than upper bound values at 1% level of significance. So, long-run relationships exist in the models of all sectors.

Table 5.19

Estimated Long-Run Results: Dependent Variable is $EMP_{jt}$
<table>
<thead>
<tr>
<th>Sector</th>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>$FDI_t$</td>
<td>8.56E^{-3}</td>
<td>5.41E^{-3}</td>
<td>1.583</td>
<td>0.141</td>
</tr>
<tr>
<td></td>
<td>$GDP_t$</td>
<td>4.69E^{-5}*</td>
<td>2.49E^{-5}</td>
<td>1.878</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>9.99E^{-6}**</td>
<td>3.21E^{6}</td>
<td>3.111</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>-1.19E^{-6}**</td>
<td>4.86E^{-5}</td>
<td>-2.464</td>
<td>0.019</td>
</tr>
<tr>
<td>Secondary</td>
<td>$FDI_t$</td>
<td>2.74E^{-4}**</td>
<td>1.24E^{-4}</td>
<td>2.213</td>
<td>0.020</td>
</tr>
<tr>
<td></td>
<td>$GDP_t$</td>
<td>1.87E^{-5}***</td>
<td>2.11E^{-6}</td>
<td>8.891</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>3.48E^{-6}***</td>
<td>3.06E^{-5}</td>
<td>11.362</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>8.92E^{-5}**</td>
<td>3.89E^{-5}</td>
<td>2.294</td>
<td>0.028</td>
</tr>
<tr>
<td>Tertiary</td>
<td>$FDI_t$</td>
<td>1.71E^{-4}***</td>
<td>4.98E^{-5}</td>
<td>3.412</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$GDP_t$</td>
<td>5.23E^{-5}***</td>
<td>4.07E^{-6}</td>
<td>12.777</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>2.26E^{-6}***</td>
<td>4.82E^{-5}</td>
<td>4.684</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>1.05E^{-5}</td>
<td>6.09E^{-5}</td>
<td>0.173</td>
<td>0.864</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show significant of variables at the 0.10, 0.05 and 0.01 levels respectively. S.E. is standard error. $C$ is intercept.

Table 5.19 shows the results of long-run estimates with the selected ARDL model. The coefficient of $FDI_t$ in the primary sector is positive and insignificant. $FDI_t$ has not a significant impact on $EMP_t$ in the primary sector. The coefficient of $GDP_t$ is positive and significant at 10% level of significance. So, $GDP_t$ has a positive and significant impact on $EMP_t$ in the primary sector. Intercept is positive and significant at 5% level of significance. Coefficient of $DEMP$ is negative and significant at 5% level of significance. So, intercept has changed after the year 1991. The results of the secondary sector show that the coefficient of $FDI_t$ in the secondary sector is positive and significant at 5% level of significance. $FDI_t$ has a positive and significant impact on $EMP_t$ in the secondary sector. The coefficient of $GDP_t$ is positive and significant at 1% level of significance. $GDP_t$ has a positive and significant impact on $EMP_t$ in the secondary sector. Intercept is positive and significant. The coefficient of $DEMP$ is positive and insignificant.
Table 5.20

Error Correction Model: Dependent Variable is $dEMP_t$

<table>
<thead>
<tr>
<th>Sector</th>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$dEMP_{t-1}$</td>
<td>-0.330</td>
<td>0.168</td>
<td>-1.969</td>
<td>0.058</td>
</tr>
<tr>
<td></td>
<td>$dFDI_t$</td>
<td>-4.66E-3</td>
<td>3.34E-3</td>
<td>-1.394</td>
<td>0.173</td>
</tr>
<tr>
<td></td>
<td>$dGDP_t$</td>
<td>2.76E-6</td>
<td>2.46E-6</td>
<td>1.117</td>
<td>0.273</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>1.33E5</td>
<td>2.61E5</td>
<td>0.511</td>
<td>0.613</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>-1.61E3</td>
<td>9.65E4</td>
<td>-0.017</td>
<td>0.999</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>6.01E-3</td>
<td>3.07E-2</td>
<td>0.196</td>
<td>0.846</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$dFDI_t$</td>
<td>4.29E-4</td>
<td>3.44E-4</td>
<td>1.249</td>
<td>0.221</td>
</tr>
<tr>
<td></td>
<td>$dGDP_t$</td>
<td>1.04E-6</td>
<td>2.01E-6</td>
<td>0.518</td>
<td>0.608</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>4.90E4</td>
<td>1.34E5</td>
<td>0.366</td>
<td>0.716</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>6.81E4</td>
<td>4.28E4</td>
<td>1.591</td>
<td>0.176</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>-0.191</td>
<td>0.110</td>
<td>-1.731</td>
<td>0.083</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$dEMP_{t-1}$</td>
<td>-0.367</td>
<td>0.162</td>
<td>-2.264</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td>$dFDI_t$</td>
<td>6.08E-5</td>
<td>1.62E-4</td>
<td>0.376</td>
<td>0.710</td>
</tr>
<tr>
<td></td>
<td>$dGDP_t$</td>
<td>1.01E-5</td>
<td>5.23E-6</td>
<td>1.934</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>$C$</td>
<td>3.46E5</td>
<td>2.02E5</td>
<td>1.713</td>
<td>0.096</td>
</tr>
<tr>
<td></td>
<td>$DEMP$</td>
<td>2.17E4</td>
<td>1.98E4</td>
<td>1.398</td>
<td>0.315</td>
</tr>
<tr>
<td></td>
<td>$ECT_{t-1}$</td>
<td>-0.189</td>
<td>0.086</td>
<td>-2.208</td>
<td>0.011</td>
</tr>
<tr>
<td>Tertiary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. (0) contains the number of lags. S.E. is standard error. C is intercept.

Table 5.20 shows the estimates of short-run models. Results of the primary sector show that all coefficients are insignificant except $dEMP_{t-1}$. The coefficient of $ECT_{t-1}$ is positive and insignificant. So, there is no short-run relationship among the models of the primary sector. Results of the secondary sector show that the coefficients of all variables are insignificant. Coefficient of $ECT_{t-1}$ is negative and significant at 10% level of significance. The short-run relationship exists in the secondary sector and speed of adjustment is 19.1% in a year. The results of the tertiary sector show that coefficient $EMP_{t-1}$ is negative and significant. It can be due to employment in a year which reduces the availability of employment in the next year. The coefficient of $dFDI_t$ is positive and insignificant. The coefficient of $dGDP_t$ is positive and significant. So, raising GDP has a
positive impact on employment in the short-run. The coefficient of $\text{ECT}_{t-1}$ is negative and significant at 5% level of significance. The short-run relationship exists in the tertiary sector employment model and speed of adjustment is 18.9% in a year.

Table 5.21

Diagnostic Tests

<table>
<thead>
<tr>
<th>Sector</th>
<th>Serial Correlation</th>
<th>Functional Form</th>
<th>Normality $(\chi^2)$</th>
<th>Heteroscedasticity $(\chi^2)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>1.414</td>
<td>1.263</td>
<td>0.953</td>
<td>1.146</td>
</tr>
<tr>
<td>Secondary</td>
<td>0.391</td>
<td>0.351</td>
<td>0.256</td>
<td>0.835</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1.026</td>
<td>0.061</td>
<td>2.431</td>
<td>2.685</td>
</tr>
</tbody>
</table>

(0) contains probability values.

Results of the table (5.21) show that p-values of serial correlation, functional form, normality and heteroscedasticity are greater than 0.10 in case of all models. So, there is no problem of serial correlation, functional form, normality and heteroscedasticity in the models.

Figure (5.3), in the appendix, is showing CUSUM and $\text{CUSUMsq}$ tests for primary, secondary and tertiary sectors respectively. Figures show that CUSUM and $\text{CUSUMsq}$ do not exceed the critical boundaries at 5% level of significance in all sectors’ models. So, the estimates are reliable.

5.3.4 Conclusion

To find the impact of FDI on employment, the study uses the aggregate-GDP proxy for aggregate demand and sector-specific FDI as independent variables and
sector-specific employment as the dependent variable. The study uses the data of primary, secondary and tertiary sector, and the data is taken from 1975 to 2011 for analysis. The study uses ARDL co-integration bound testing technique to find the long-run and short-run relationships for each sector separately. Results show that long-run relationship exists in the model. The short-run relationship exists in case of secondary and tertiary sector employment models. The short-run relationship does not exist in case of the primary sector employment model. Sector-specific FDI has a positive and significant impact on employment in case of the secondary and tertiary sector. In case of the primary sector model, FDI does not have a significant impact on employment. So, the study concludes that FDI is helpful in raising employment in secondary and tertiary sectors in Pakistan. Aggregate demand is helpful in raising employment in all sectors.
5.4 CONCLUSIONS

To check the consequences of FDI on economic growth, the study uses the time series annual data from 1975 to 2011. To examine the impact of FDI on economic growth, the study uses GDP per capita at PPP as dependent variable and FDI, financial market development and total trade as a percentage of GDP as independent variables. Long-run and short-run relationships are found in the economic growth model. FDI and financial market development have the positive and significant impact on economic growth. Trade openness has a positive but insignificant impact on economic growth.

To check the impact of sector-specific FDI on sector-specific labor productivity and employment, the study uses data for primary, secondary and tertiary sectors. In the sector-specific labor productivity model, the study uses sector-specific labor productivity as dependent variable and sector-specific FDI as the independent variable. The study finds the long-run relationships in primary, secondary and tertiary sectors’ labor productivity models. The short-run relationship is found in the secondary sector’s labor productivity model. The short-run relationship does not exist in primary and tertiary sectors’ labor productivity models. Sector-specific FDI has a positive and significant impact on labor productivity in all sectors.

In a sector-specific employment model, the study uses sector-specific employment as dependent variable and sector-specific FDI and GDP as independent variables. The study finds the long-run relationships in primary, secondary and tertiary sectors models. The short-run relationships are found in secondary and tertiary sectors’ models, and the study does not find any short-run relationship in the primary sector’s employment model. Sector-specific FDI has a positive and significant impact on employment in secondary and tertiary sectors. Sector-specific FDI has a positive but insignificant impact on employment in the primary sector. Aggregate demand has a positive and significant impact on employment in all sectors.

CHAPTER 6

CONSEQUENCES OF FDI ON DOMESTIC INVESTMENT
In this section, the study analyses the impact of FDI on domestic investment by utilizing the aggregate time-series data.

6.1 IMPACT OF FDI ON DOMESTIC INVESTMENT

The impact of FDI on domestic investment is controversial. It depends on the nature of commodities, which the foreign investors produce in the home country, level of competition and level of development in the host country. According to United Nations Conference on Trade and Development (UNCTAD) (2000), FDI could be a complement for domestic investment as it initiatives to produce new commodities that have not been produced by the local firms. Moreover, FDI has a crowding-in effect by increasing income levels and enhancing demand for commodities produced by the local firms. It also buys their commodities as inputs. On the other hand, FDI could have crowding-out effect when foreign investors become the competitors of the local firms by producing the same commodities. If FDI drives out the domestic firms from the market then it becomes a substitute of domestic investment. The impact of FDI on domestic investment also depends on the motive of foreign investors. If it is done for removing trade barriers on the imports of the recipient country, then it would not increase domestic investment. If it is done for comparative advantage, then it could help in raising domestic investment through forward and backward linkage effects.

6.1.1 Model Specification and Methodology

To capture the impact of FDI on domestic investment, the study uses domestic investment as a percentage of GDP as dependent variable and uses FDI and financial market development as the percentage of GDP and GDP growth rate as independent variable. McKinnon (1973) argued that financial market is essential for entrepreneurial development. A domestic investor may not get positive externalities from FDI if financial market is limited. So it is an effective variable to determine the effect of FDI on domestic investment. Financial sector gives loan to private investors by pooling surplus funds from the economy. It may help in generating the funds through credit multiplier effect for the potential entrepreneur who invests the money for the best return. The financial market
may also be helpful in raising aggregate demand through financial resource mobilization. So, it can help in raising economic activities and investments. Local or foreign investments will be done in those economies that are growing and have greater market size. With the high economic growth, there will be great domestic market, high demand and substantial investments as well to cover the demand from the economy. So, the study uses FDI, GDP growth and financial market development as independent variables to check the impact of FDI on domestic investment.

**Model of the study is as under:**

\[
DIG_t = f(FDIG_t, \ FMDG_t, \ GR_t), \ t=1972,1973, \ldots, 2008 \quad (6.1)
\]

where,

- \( DIG_t \) = Domestic Investment as a percentage of GDP at time \( t \)
- \( FDIG_t \) = Foreign Direct Investment inflows as a percentage of GDP at time \( t \)
- \( FMDG_t \) = Domestic credit to the private sector as a percentage of GDP is a proxy for Financial Market Development at time \( t \)
- \( GR_t \) = GDP Growth Rate annual percentage at time \( t \)

At first, the study checks the stationarity of data by applying ADF, PP and g-Perron unit root test to check the order of integration of variables. Then Zivot Andrews unit root test will be used to check the stationarity with a possible break in the data and afterwards ARDL co-integration technique will be applied, based on selected lag length for each variable in the model (6.1). The study uses the SBC to find the optimum relevant lag length for the equation (6.2). ARDL model used is as under:

\[
\Delta DIG_t = z_0 + \delta_1 DIG_{t-1} + \delta_2 FDIG_{t-1} + \delta_3 FMDG_{t-1} + \delta_4 GR_{t-1} + \sum_{i=1}^{p} \delta_{1i} \Delta DIG_{t-i} + \sum_{i=1}^{q} \delta_{2i} \Delta FDIG_{t-i} + \sum_{i=1}^{r} \delta_{3i} \Delta DIG_{t-i} + \sum_{i=1}^{s} \delta_{4i} \Delta FDIG_{t-i} + \epsilon_t
\]
\[ + \sum_{i=0}^{p} e_i \Delta FMDG_{t-i} + \sum_{i=0}^{q} e_i \Delta GR_{t-i} + \lambda e \, D DIG + \epsilon_t \]  

(6.2)

In equation 6.2, the first difference of \( DIG_t \) is the dependent variable. The null hypothesis is \( H_0: \delta_e 1 = \delta_e 2 = \delta_e 3 = \delta_e 4 = 0 \). The alternate hypothesis is \( \delta_e 0 \neq \delta_e 2 \neq \delta_e 3 \neq \delta_e 4 \neq 0 \), which shows a long-run relationship in the model, \( \delta_e 0 \) is a constant and \( \epsilon_t \) is the error term. \( D DIG \) is included in equation for a possible structural break and to complete information. This is also shown as \( F DIG_t \) (\( DIG_t/ \Delta DIG_t, FMDG_t, GR_t \)). If co-integration exists in the model, then long-run and short-run coefficients will be calculated. Error correction term can be used to find the short-run relationship in the model. The error correction model is as under:

\[ \Delta DIG_t = \phi e + \sum_{i=0}^{p} e_i \Delta DIG_{t-i} + \sum_{i=0}^{q} e_i \Delta FDIG_{t-i} + \sum_{i=0}^{r} e_i \Delta FMD_{t-i} + \sum_{i=0}^{s} e_i \Delta GR_{t-i} + e D DIG + \theta e ECT_{t-1} + \epsilon_t \]  

(6.3)

\( \phi e \) is showing the speed of adjustment from short-run disequilibrium to long-run equilibrium. Afterwards, diagnostic tests will be used to check the normality, functional form, heteroscedasticity and serial correlation in the model. CUSUM and CUSUMsq statistics will be used to ensure the stability of the parameters.

6.1.2 Data Source

Data on domestic investment, FDI and domestic credit to the private sector as a percentage of GDP and GDP growth rate have been taken from WDI by World Bank. Data has been taken from the period 1975 to 2011.

6.1.3 Empirical Results

The study uses the Augmented Dickey Fuller (ADF), Phillips-Perron and Ng-Perron tests to check the unit root problem in all variables in the model. Results are given in the table below.
Table 6.1  
Unit Root Tests at Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MZ_a</td>
<td>MZ_t</td>
<td>MSB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Model Specification: Intercept
|          |        |         |           |           |
| $DIG_t$  | 3.313(5)| 1.452(9)| 2.469(4)  | 2.809     | 1.069     | 7.541     |
| $FDIG_t$ | 2.961(6)| -0.777(3)| 6.168(1)  | 22.064    | 3.570     | 17.080    |
| $FMDG_t$ | -2.293(0)| -2.591(2)| -6.084(1) | -1.677    | 0.276     | 4.237     |
| $GR_t$   | -5.258**(1)| -5.269**(2)| -15.489**(1)| -2.707**  | 0.178*    | 0.643**   |
| Model Specification: Intercept and Trend
|          |        |         |           |           |
| $DIG_t$  | 2.778(5)| 1.356(7)| 2.890(3)  | 1.521     | 0.526     | 8.713     |
| $FDIG_t$ | -0.379(4)| -1.919(3)| -12.050(1)| -1.339    | 0.152     | 5.962     |
| $FMDG_t$ | -2.907(0)| -3.071(2)| -0.802(0) | -1.895    | 0.236     | 11.648    |
| $GR_t$   | -5.471**(0)| -5.470**(1)| -14.559(0)| -2.878    | 0.173*    | 5.505*    |

Note: * and ** show stationarity of variables at the 0.05 and 0.01 levels respectively. (0) contains the optimum lag length.

Table (6.1) shows that $DIG_t$, $FDIG_t$ and $FMDG_t$ are non-stationary at the level. $GR_t$ is stationary at 1% level of significance with intercept, and with both intercept and trend with ADF and PP tests. Ng-Perron test show that $GR_t$ is stationary at 5% level of significance in MSB and MPT tests and not stationary in $MZ_a$ and $MZ_t$ tests with both intercept and trend.

Table 6.2

Unit Root Tests: Zivot-Andrews
Table 6.2 shows the results of Zivot-Andrews unit root test. DIGₜ is non-stationary with significant breaks in 1983, 1990 and 1986 in models A, B and C of Zivot-Andrews test respectively. FDIGₜ is stationary at 5% level of significance with breaks in models B and C. It was not stationary in tests applied in the table (6.1). FMDGₜ is stationary with a significant break for the year 1990 in the intercept and non-stationary with significant breaks in the trend for the year 2003, and in the both intercept and trend for the year 1990. GRₜ is stationary at 5% level of significance with a significant break in the intercept for the year 1985, significant break in the trend for the year 1986 and significant break in the both Intercept and trend for the year 1986.

Table 6.3

Unit Root Tests at First Difference

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MZₐ</td>
<td>MZₜ</td>
<td>MSB</td>
</tr>
<tr>
<td>Model Specification: Intercept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dDIGₜ</td>
<td>-2.923*(4)</td>
<td>-4.413**(3)</td>
<td>-16.903**(2)</td>
</tr>
<tr>
<td>dFDIGₜ</td>
<td>-5.067**(4)</td>
<td>-3.421***(6)</td>
<td>-139.200***(1)</td>
</tr>
</tbody>
</table>
Table 6.3 shows that all variables are stationary at their first difference. Most of the variables are stationary at 1% level of significance. $dDIG_t$ is stationary at 5% level of significance in Ng-Perron (MSB) with both intercept and trend. $dFMDG_t$ is stationary at 5% level of significance in Ng-Perron (MZ_a and MZ_t) with both intercept and trend. $dGR_t$ is stationary at 5% level of significance in Ng-Perron (MZ_a, MZ_t and MPT) with both intercept and trend. There is evidence for a mix order of integration I(0) and I(1). So, ARDL model is suitable to apply here. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable $DDIG$ in the ARDL model to complete the information in the model. Optimum lag length is 1 for $dDIG_t$, 0 for $dFDIG_t$, 1 for $dFMDG_t$ and 0 for $dGR_t$. The study selects year 1986 for break period and puts 0 from 1972 to 1986 and 1 afterwards in $D_DIG$. The calculated F-statistic for the selected ARDL model is given in table (6.4).

Table 6.4

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>F-Statistic</th>
<th>At 0.05</th>
<th>At 0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>$d(DIG_t)$</td>
<td>7.762**</td>
<td>4.433</td>
<td>5.245</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 levels respectively. (0) contains p-value.
** Means at 1% significant level reject the null hypotheses of no co-integration * Means at 5% significant level reject the null hypotheses of no co-integration.

Table (6.4) shows that F-statistic is 7.762. Which is greater than the upper bound value and the null hypothesis of no co-integration is rejected at 1% level of significance. So, the long-run relationships exist among variables in the model.

**Table 6.5**

**Long-Run Results: Dependent Variable is DIG**

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>T-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDIGt</td>
<td>1.857</td>
<td>0.709**</td>
<td>2.620</td>
<td>0.012</td>
</tr>
<tr>
<td>FMDGt</td>
<td>0.190</td>
<td>0.058***</td>
<td>3.265</td>
<td>0.003</td>
</tr>
<tr>
<td>GRt</td>
<td>0.128</td>
<td>0.039***</td>
<td>3.316</td>
<td>0.003</td>
</tr>
<tr>
<td>C</td>
<td>9.188</td>
<td>1.414***</td>
<td>6.496</td>
<td>0.000</td>
</tr>
<tr>
<td>DDIG</td>
<td>6.527</td>
<td>2.455**</td>
<td>2.658</td>
<td>0.013</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S.E. is standard error. C is intercept.

Table (6.5) shows the long-run results based on ARDL model. The coefficient of $FDIG_t$ is positive and significant at 5% level of significance. So, FDI has a positive and significant impact on domestic investment. The result is proving the complementary of FDI and domestic investment. The coefficient of $FMDG_t$ is positive and significant at 1% level of significance. So, the financial market development has a positive impact on the domestic investment. The coefficient of $GR_t$ is positive and significant at 1% level of significance. So, the economic growth has a positive and significant impact on the domestic investment. Intercept is positive and significant at 1% level of significance. The coefficient of $DDIG$ is positive and significant at 5% level of significance. It is also showing that the intercept has changed after 1986.

**Table 6.6**
Error Correction Model: Dependent Variable is \(dDIG_t\)

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>T-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dFDIG_t)</td>
<td>0.173*</td>
<td>0.093</td>
<td>1.873</td>
<td>0.071</td>
</tr>
<tr>
<td>(dGR_t)</td>
<td>-0.046</td>
<td>0.049</td>
<td>-0.941</td>
<td>0.354</td>
</tr>
<tr>
<td>(dFMDG_t)</td>
<td>0.127***</td>
<td>0.039</td>
<td>3.202</td>
<td>0.003</td>
</tr>
<tr>
<td>(C)</td>
<td>0.517***</td>
<td>0.171</td>
<td>3.018</td>
<td>0.005</td>
</tr>
<tr>
<td>(DDI)</td>
<td>0.774*</td>
<td>0.399</td>
<td>1.937</td>
<td>0.062</td>
</tr>
<tr>
<td>(ECT_{t-1})</td>
<td>-0.124***</td>
<td>0.041</td>
<td>-3.002</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 level respectively. S. E. is the standard error. C is intercept.

Table (6.4) shows that all coefficients are statistically significant except \(dGR_t\). Results show that FDI and financial market development have the positive and significant impact on domestic investment in the short-run at 10% and 1% respectively. Coefficient of \(ECT_{t-1}\) is negative and significant at 1% level of significance. So, the short-run relationship exists among variables in the model and speed of adjustment from short-run disequilibrium to longrun equilibrium is 12.4% in a year.

Table 6.7

Diagnostic Tests

<table>
<thead>
<tr>
<th></th>
<th>LM version</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Correlation ((\chi^2))</td>
<td>2.327</td>
<td>0.127</td>
</tr>
<tr>
<td>Functional Form ((\chi^2))</td>
<td>0.029</td>
<td>0.865</td>
</tr>
<tr>
<td>Normality ((\chi^2))</td>
<td>1.904</td>
<td>0.386</td>
</tr>
<tr>
<td>Heteroscedasticity ($\chi^2$)</td>
<td>0.794</td>
<td>0.373</td>
</tr>
</tbody>
</table>

Results of the table (6.7) show that all p-values are greater than 0.1, so there is no problem of serial correlation, functional form, normality and heteroscedasticity in the model.

Figure (6.1), in the appendix, shows CUSUM and $CUSUMsq$ tests. Figures show that CUSUM and $CUSUMsq$ do not exceed the critical boundaries at 5% level of significance. This means that the model of domestic investment is correctly specified, and the long-run coefficients of the regressors are reliable.

### 6.1.4 Conclusion

To check the impact of foreign direct investment on domestic investment, the study uses FDI and financial market development as the percentage of GDP, and GDP growth rate as independent variables. The study uses ARDL co-integration technique and its error correction model to check the long-run and short-run relationships in the domestic investment model. The results show that the long-run and short-run relationships exist in the model. FDI, financial market development and economic growth have the positive and significant impact on the domestic investment. Results prove that FDI has a complementary effect on the domestic investment.

### CHAPTER 7

**CONSEQUENCES OF FDI ON POVERTY**

In this Chapter the study analyses the impact of FDI on poverty by utilizing the annual time-series data.

### 7.2 IMPACT OF FDI ON POVERTY

FDI is a vital source of development through filling the gap between desired investment and domestic savings (Todaro and Smith, 2003). FDI could help in breaking
the vicious circle of poverty (Hayami, 2001) and its impact depended on recipient country’s policies, quality of the labor market, level of investment and economic environment (Mayne, 1997). The impact of FDI on poverty also depends on the location of FDI either it is done in backward areas and helps in poverty reduction in that area or in a comparatively developed area of the country. FDI is increasing economic growth and economic activities so it increases the overall income of people in a country so it could help in reducing poverty of a country.

7.2.1 Model Specification and Methodology

To analyze the impact of FDI on poverty, the study uses head count ratio, proxy for poverty, as dependent variable. The study uses FDI, government expenditure on health and education as the percentage of GDP and GDP growth rate as independent variables. In developing countries, government spending on health is the major source of improvement in the health of low income groups and according to efficiency wage theories healthy labor may prove more productive and can get higher wage. In this way government spending can contribute in reduction of poverty. Similarly, education is considered the main source of skill building and technical training for low income class. Skilled and well trained labor can get more employment opportunities and access to labor can reduce their poverty. Economic growth may reduce poverty by increasing per capita income. It would be done if the country’s abundant factor of production is being utilized in the production process. It may increase poverty if growth comes with high income and wealth inequalities. Economic growth with structural change can reduce poverty. For example, converting from agriculture to the industrial sector can reduce poverty. FDI may also reduce poverty by providing employment.

Model of the study is as under:

\[
POV_t = f (FDIG_t, GEHEG_t, GR_t),
\]

\[
t = 1975, 1976, \ldots, 2006
\]

Where,
POVt = Poverty measured by head count ratio at time t.

FDIGt = Foreign Direct Investment inflows as a percentage of GDP at time t.

GEHEGt = Government Expenditure on Education and Health as a percentage of GDP at time t.

GRt = GDP Growth Rate annual percentage at time t.

Firstly the study checks the stationarity of data by applying ADF, PP and Ng-Perron unit root test to check the order of integration of variables. Then, it uses Zivot-Andrews unit root test to check stationarity with a possible break in the data and afterwards ARDL co-integration technique is applied based on selected lag length for each variable in the model (7.4). The study uses the SBC to find the optimum lag length for the equation (7.5). To find the cointegration among variables of the model (7.4), ARDL model used can be written as:

\[
\Delta POV_t = \delta_{m0} + \delta_{m1} POV_{t-1} + \delta_{m2} FDIG_{t-1} + \delta_{m3} GEHEG_{t-1} + \delta_{m4} GR_{t-1} + \sum_{i=1}^{p} \delta_{m1i} \Delta POV_{t-i} + \sum_{i=1}^{q} \delta_{m2i} \Delta FDIG_{t-i} + \sum_{i=0}^{r} \delta_{m3i} \Delta GEHEG_{t-i} + \sum_{i=0}^{s} \delta_{m4i} \Delta GR_{t-i} + \lambda \sum_{i=0}^{r} DPOV^i \delta_{mt} + \mu_t
\]

(7.5)

In equation 7.5, the first difference of POV is the dependent variable. The null hypothesis is \(H_0: \delta_{m1} = \delta_{m2} = \delta_{m3} = \delta_{m4} = 0\) and alternate hypothesis is \((\delta_{m1} \neq \delta_{m2} \neq \delta_{m3} \neq \delta_{m4} \neq 0)\) which shows the existence of a long-run relationship in the model, \(\delta_{m0}\) is a constant and \(\delta_{mt}\) is the error term. DPOV is included in equation for a possible structural break and to complete information. This is also shown as FPOVt (POVt / FDIGt, GEHEGt, GRt). If co-integration exists in the model, then long-run and short-run coefficients will be calculated. Error correction term can be used to find
the short-run relationship in the model. The errorcorrection model is given as under:

\[
\Delta POV_t \approx \varphi_m + \sum_{i=1}^{p} \beta_i \Delta POV_{t-i} + \sum_{i=0}^{q} \beta_i \Delta FDIG_{t-i} + \sum_{i=0}^{r} \beta_i \Delta GEHEG_{t-i} + \sum_{i=0}^{s} \beta_i \Delta GR_{t-i} + \varphi \cdot DPOV + \varphi_m \cdot ECT_{t-1} + \varepsilon_{mt}
\]  (7.6)

\( \varphi_m \) is showing the speed of adjustment from short-run disequilibrium to long-run equilibrium. Afterwards, diagnostic tests will be used to check the normality, functional form, heteroscedasticity and serial correlation in the model. CUSUM and CUSUMsq statistics will be used to ensure the stability of the parameters.

### 7.2.2 Data Sources

Data on Poverty is taken from Jamal (2004). Data on FDI and government expenditure on health and education as a percentage of GDP and GDP growth rate are taken from WDI by World Bank. Data is taken from 1975 to 2011.

### 7.2.3 Empirical Results

The study uses the Augmented Dickey Fuller (ADF), Phillips-Perron and Ng-Perron tests to check the unit root problem in all variables in the model. Results are given in the table (7.8).

#### Table 7.8

**Unit Root Tests at Level**

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MZ (_a)</td>
</tr>
</tbody>
</table>

**Model Specification: Intercept**
Table 7.8 shows that \(POV_t\), \(FDIG_t\) and \(GEHEG_t\) are non-stationary at the level. \(GR_t\) is stationary at 1% level of significance with intercept in ADF, PP and Ng-Perron (\(MZ_a\), \(MZ_t\) and \(MPT\)) tests, and it is stationary at 5% level of significance with Ng-Perron (MSB) test. \(GR_t\) is stationary with both intercept and trend at 1% level of significance with ADF and PP tests, at 5% level of significance with Ng-Perron (MPT and MSB) tests, and it is non-stationary with Ng-Perron (\(MZ_a\) and \(MZ_t\)) tests.

Table 7.9

Unit Root Test: Zivot-Andrews

<table>
<thead>
<tr>
<th>Variable</th>
<th>(k)</th>
<th>Year of Break</th>
<th>(\alpha)</th>
<th>(t_\alpha)</th>
<th>Type of Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>(POV_t)</td>
<td>1</td>
<td>1987</td>
<td>-0.497</td>
<td>-2.839</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1986</td>
<td>-0.439</td>
<td>-2.691</td>
<td>C</td>
</tr>
<tr>
<td>(FDIG_t)</td>
<td>3</td>
<td>1999</td>
<td>-1.252*</td>
<td>-4.739</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1995</td>
<td>-1.523*</td>
<td>-5.206</td>
<td>C</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level respectively. (0) contains the optimum lag length.
Table (7.2) shows $POV_t$ is non-stationary with a significant break for the year 1987 in the trend and with a significant break in the both intercept and trend for the year 1986. $FDIG_t$ becomes stationary at 5% level of significance with a significant break for the year 1999 in the trend, and with a significant break for the year 1995 in the both intercept and trend. $GEHEG_t$ is non-stationary with a significant break for the year 1984 in the intercept, with a significant break for the year 1991 in the trend, and with a significant break for the year 1988 in the both intercept and trend. $GR_t$ is stationary at 5% level of significance with the significant break for a year 1985 in the intercept, with a significant break for the year 1986 in the trend, and with a significant break for the year 1986 in the both intercept and trend.

Table 7.10

Unit Root Tests at First Difference

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$MZA$</td>
<td>$MZ_t$</td>
<td>$MSB$</td>
</tr>
<tr>
<td>Model Specification: Intercept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$dPOV_t$</td>
<td>-4.099**(0)</td>
<td>-4.083**(2)</td>
<td>-13.289***(0)</td>
</tr>
<tr>
<td>$dFDIG_t$</td>
<td>-8.222**(1)</td>
<td>-9.079**(2)</td>
<td>-13.239*(1)</td>
</tr>
<tr>
<td>$dGEHEG_t$</td>
<td>-7.627**(2)</td>
<td>-7.598**(1)</td>
<td>-13.849***(0)</td>
</tr>
<tr>
<td>$dGR_t$</td>
<td>-6.732**(1)</td>
<td>-8.726**(3)</td>
<td>-14.273**(1)</td>
</tr>
</tbody>
</table>
**Model Specification: Intercept and Trend**

<table>
<thead>
<tr>
<th></th>
<th>Intercept</th>
<th>Trend</th>
<th>Constant</th>
<th>(t)</th>
<th>(\delta)</th>
<th>(\lambda)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dPOV_t)</td>
<td>-8.604**(1)</td>
<td>-9.402**(2)</td>
<td>-24.319**(0)</td>
<td>-4.445**</td>
<td>0.148*</td>
<td>5.594*</td>
</tr>
<tr>
<td>(dFDIG_t)</td>
<td>-7.494**(2)</td>
<td>-7.494**(1)</td>
<td>-19.956**(0)</td>
<td>-2.913*</td>
<td>0.180*</td>
<td>5.474*</td>
</tr>
<tr>
<td>(dGEHEG_t)</td>
<td>-6.632**(1)</td>
<td>-6.832**(2)</td>
<td>-17.843**(0)</td>
<td>-3.157**</td>
<td>0.103**</td>
<td>5.183**</td>
</tr>
<tr>
<td>(dGR_t)</td>
<td>-6.632**(1)</td>
<td>-6.832**(2)</td>
<td>-15.843**(0)</td>
<td>-3.157**</td>
<td>0.103**</td>
<td>5.183**</td>
</tr>
</tbody>
</table>

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level respectively. 
(0)contains the optimum lag length.

Table (7.10) shows that \(dPOV_t\) is stationary at 1% level of significance in all tests except Ng-Perron (MZ and MSB) test with intercept in which it is stationary at 5% level of significance. \(dPOV_t\) is stationary at 1% level of significance in all tests except Ng-Perron (MSB and MPT) test with both intercept and trend in which it is stationary at 5% level of significance. \(dFDIG_t\) is stationary at 1% level of significance in ADF and PP tests and stationary at 5% level of significance with Ng-Perron tests with intercept. It is stationary at 1% level of significance in ADF, PP and Ng-Perron (MZa and MZt) tests with both intercept and trend and stationary at 5% level of significance in Ng-Perron (MSB and MPT) tests. \(dGEHEG_t\) is stationary at 1% level of significance in ADF and PP tests and stationary at 5% level of significance with Ng-Perron (MZa and MZt) tests with intercept and stationary at 5% with Ng-Perron (MSB and MPT). It is stationary at 1% level of significance in ADF, PP and Ng-Perron (MZa) tests with both intercept and trend and stationary at 5% with Ng-Perron (MZa, MSB and MPT) tests. \(GR_t\) is stationary at 1% level of significance with all tests. There is evidence for a mix order of integration I(0) and I(1). So, ARDL model is suitable to apply here. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable \(D_{POV}\) in the ARDL model to complete the information in the model. Optimum lag length is 1 for \(dPOV_t\), 2 for \(dFDIG_t\), 0 for \(dGEHEG_t\) and 0 for \(dGR_t\). The study selects the year 1986 for break period and put 0 from 1972 to 1986 and 1 afterward in \(D_{POV}\). The calculated F-statistic for the selected ARDL model is given in table (7.11).
Table 7.11

ARDL Bound Test: Using ARDL(1,2,0,0)

<table>
<thead>
<tr>
<th>VARIABLES (when taken as a dependent)</th>
<th>F-Statistic</th>
<th>At 0.05</th>
<th>At 0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>d(POV_t)</td>
<td>8.542**</td>
<td>4.535</td>
<td>5.415</td>
</tr>
</tbody>
</table>

** Means at 1% significant level reject the null hypotheses of no co-integration * Means at 5% significant level reject the null hypotheses of no co-integration

Table (7.11) shows that F-statistic is 8.542. Which is greater than the upper bound value and the null hypothesis of no co-integration is rejected at 1% level of significance, and it is an evidence for a long-run relationship in the model.

Table 7.12

Long-Run Results: Dependent Variable is POV_t

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDIG_t</td>
<td>-2.316**</td>
<td>1.099</td>
<td>-2.106</td>
<td>0.045</td>
</tr>
<tr>
<td>GEHEG_t</td>
<td>-3.042***</td>
<td>0.899</td>
<td>-3.381</td>
<td>0.002</td>
</tr>
<tr>
<td>GR_t</td>
<td>-0.321*</td>
<td>0.171</td>
<td>-1.881</td>
<td>0.072</td>
</tr>
<tr>
<td>C</td>
<td>25.781**</td>
<td>12.376</td>
<td>2.083</td>
<td>0.049</td>
</tr>
<tr>
<td>DPOV</td>
<td>5.797***</td>
<td>0.884</td>
<td>6.557</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S. E. is the standard error. C is intercept.

Table (7.12) shows that the coefficient of FDIG_t is negative and significant. So, FDI is helping in reducing the poverty level. In the section 7.1.4, FDI is increasing income inequality. However, its overall effect on poverty is acceptable, which is due to increasing overall income levels. The coefficient of GEHEG_t and d GRT are negative and significant at 1% and 10% respectively. So, government expenditure on health and education and GDP
growth rate is helpful in reducing the poverty level. Intercept (C) is positive and significant at 5% level of significance. The coefficient of $D_{POV}$ is positive and significant at 1% level of significance. It is showing the change of intercept after the year 1986.

**Table 7.13**

**Error Correction Model: Dependent Variable is $dPOV_t$**

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Parameter</th>
<th>S. E.</th>
<th>t-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$dFDIG_t$</td>
<td>-1.453</td>
<td>1.129</td>
<td>-1.1286</td>
<td>0.210</td>
</tr>
<tr>
<td>$dFDIG_{t-1}$</td>
<td>-2.437</td>
<td>1.396</td>
<td>-1.746</td>
<td>0.093</td>
</tr>
<tr>
<td>$dGEHEG_t$</td>
<td>0.651</td>
<td>0.568</td>
<td>1.146</td>
<td>0.267</td>
</tr>
<tr>
<td>$dGR_t$</td>
<td>-0.321</td>
<td>0.171</td>
<td>-1.881</td>
<td>0.071</td>
</tr>
<tr>
<td>$C$</td>
<td>0.339</td>
<td>0.071</td>
<td>4.797</td>
<td>0.000</td>
</tr>
<tr>
<td>$DPOV$</td>
<td>0.643</td>
<td>3.937</td>
<td>0.163</td>
<td>0.872</td>
</tr>
<tr>
<td>$ECT_{t-1}$</td>
<td>-0.273</td>
<td>0.127</td>
<td>-2.172</td>
<td>0.039</td>
</tr>
</tbody>
</table>

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S. E. is the standard error. C is intercept.

Table (7.13) shows that coefficients of $dFDIG_t$, $dGEHEG_t$ and $D_{POV}$ are statistically insignificant. The coefficients of $dFDIG_{t-1}$, $dGR_t$ and C are significant at 10%, 10% and 1% respectively. Results show that $dGR_t$ and lagged value of $dFDIG_t$ are helping in reducing poverty levels in the short-run. The coefficient of $ECT_{t-1}$ is negative and significant at 5% level of significance. It is showing the short-run relationship in the model and also showing the speed of adjustment from short-run disequilibrium to long-run equilibrium in 27.3% in a year.

**Table 7.14**

**Diagnostic Tests**
The study uses Breusch-Godfrey serial correlation test for detection of serial correlation in the ARDL model. Breusch-Pagan heteroscedasticity test is used to detect the problem of heteroscedasticity. Ramsey RESET test is used to ensure the specification of model (functional form). Jarque-Bera test is used to check the normality of model. Results of the table (7.14) show that all p-values are greater than 0.1, so there is no problem of serial correlation, functional form, normality and heteroscedasticity in the model.

Figures (7.2), in the appendix, show CUSUM and CUSUMsq test below. Figures show that CUSUM and CUSUMsq do not exceed the critical boundaries at 5% level of significance. This means the model of poverty is correctly specified and long-run coefficients are reliable.

7.2.4 Conclusion

To check the impact of foreign direct investment on poverty, the study uses FDI and government expenditure on health and education as a percentage of GDP and GDP growth rate as independent variables and head count ratio, proxy for poverty, as the dependent variable. The study uses ARDL co-integration technique and its error correction model to check the long-run and short-run relationships respectively. Results of the poverty model show the existence of the long-run and short-run relationships. FDI, government expenditure on health and education and GDP growth rate have a negative and significant impact on poverty which help in reducing the poverty level.

CHAPTER 8

CONCLUSIONS

8.1 MAIN FINDINGS AND POLICY IMPLICATIONS
The study focuses on the consequences of FDI in Pakistan. For this purpose, it utilizes the data of aggregate FDI, sector-specific FDI and country-specific FDI. In chapter 5, the results show that FDI has a positive impact on economic growth. Sector-specific FDI has a positive and significant impact on labor productivity in primary, secondary and tertiary sectors in Pakistan. Chapter 5 further shows that Sector-specific FDI has a positive and significant impact on employment in secondary and tertiary sectors and has a positive but insignificant impact on employment in the primary sector.

To check the consequences of FDI on economic growth, the study uses the time series annual data from 1975 to 2011. To examine the impact of FDI on economic growth, the study uses GDP per capita at PPP as dependent variable and FDI, financial market development and total trade as a percentage of GDP as independent variables. Long-run and short-run relationships are found in the economic growth model. FDI and financial market development have the positive and significant impact on economic growth. Trade openness has a positive but insignificant impact on economic growth.

To check the impact of sector-specific FDI on sector-specific labor productivity and employment, the study uses data for primary, secondary and tertiary sectors. In the sector-specific labor productivity model, the study uses sector-specific labor productivity as dependent variable and sector-specific FDI as the independent variable. The study finds the long-run relationships in primary, secondary and tertiary sectors’ labor productivity models. The short-run relationship is found in the secondary sector’s labor productivity model. The short-run relationship does not exist in primary and tertiary sectors’ labor productivity models. Sector-specific FDI has a positive and significant impact on labor productivity in all sectors.

In a sector-specific employment model, the study uses sector-specific employment as dependent variable and sector-specific FDI and GDP as independent variables. The study finds the long-run relationships in primary, secondary and tertiary sectors models. The short-run relationships are found in secondary and tertiary sectors’ models, and the study does not find any short-run relationship in the primary sector’s employment model. Sector-specific FDI has a positive and significant impact on employment in secondary and tertiary sectors. Sector-specific FDI has a positive but insignificant impact on employment in the primary sector. Aggregate demand has a positive and significant impact
on employment in all sectors.

In chapter 6, the results show that FDI has a positive and significant impact on the domestic investment. While chapter 7, shows that the results of FDI has a negative and significant impact on poverty. So, it helps in poverty reduction in Pakistan.

The overall results show that FDI has positive consequences on the economy of Pakistan by increasing economic growth directly and indirectly by reducing poverty, improving labor productivity, generating employment and increasing domestic investment.

8.2 POLICY IMPLICATIONS

The consequences of FDI depend on the economic environment and policies by investment receiving country. Pakistan, being a developing economy, needs foreign investment in the areas where local investment is missing. As FDI increases domestic investment, economic growth and reduces poverty, so there is a need to open the economy for further foreign investment. FDI has a positive impact on labor productivity and employment in the primary, secondary and tertiary sectors. So, FDI should warmly be welcomed in these sectors by offering special incentives. FDI is raising poverty. Government should give some benefits in using labor-intensive technology, particularly in the backward areas where there is low level of income and lesser opportunities of employment. By using such policy, poverty may be reduced. Government should increase its spending on health and education as the study finds its positive role in reducing poverty. Financial markets need more liberalization and development as the study confirms the positive impact of financial market development on economic growth and domestic investment. These policies will also encourage more FDI to Pakistan. Overall, FDI has a positive contribution to economic growth through direct and indirect channels. So, FDI should be welcomed in Pakistan, and liberal policy should be made to encourage foreign investment.
REFERENCES


Acquisition on Wages and Productivity in the UK. GLM Research Paper No. 99/8, University of Nottingham, UK: Centre for Research on Globalisation and Labor Markets, Nottingham.


NOTES

Most of the definitions of variables are taken from World Development Indicators except the variables which are generated by the author of the present study.

1. Gross domestic product (GDP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output. GDP per capita is GDP divided by mid-year population. It is calculated from constant year 2000 US$ and multiplied by Purchasing Power Parity (PPP) factor.

2. Foreign direct investment net inflows are net inflows of investment to acquire a lasting interest in, or management control over an enterprise operating in the economy other than that of the investor. They are the sum of equity capital, reinvestment of earnings, and other short-term and long-term capital, as shown in the balance of payments. Net inflows refer to new investments made during the reporting period netted against disinvestments.

3. Domestic credit to private sector is financial resources provided to the private sector such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable that establish a claim for repayment.

5. Data on productivity of labor for primary, secondary and tertiary sectors is generated by taking the percentage contribution of these sectors in aggregate GDP, and each sector’s contribution in GDP is divided by labor force employed in that sector.

6. Data on domestic investment is generated by subtracting FDI from gross capital formation. Gross capital formation, used as proxy for total gross investment, is taken in constant year 2000 US$, whereas Gross capital formation consists of outlays on additions to the economy’s fixed assets plus net changes in the level of inventories.

Fig. 5.1: Economic Growth Model

Fig. 5.2: Sector-Specific
fic Productivity Models

5.2.1 Primary Sector
1.2.2 Secondary Sector
5.2.3 Tertiary Sector
Fig. 5.3: Sector-Specific Employment Models
5.3.1 Primary Sector
5.3.2 Secondary Sector
5.3.3 Tertiary Sector
Fig. 6.1: Domestic Investment Model
Fig. 7.2: Poverty Model