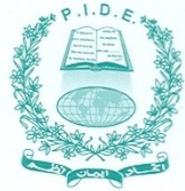


PIDE WORKING PAPERS

2007:18



Foreign Direct Investment and Economic Growth: The Role of Domestic Financial Sector

Muhammad Arshad Khan

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

PIDE Working Papers
2007:18

Foreign Direct Investment and Economic Growth: The Role of Domestic Financial Sector

Muhammad Arshad Khan

Research Associate

Pakistan Institute of Development Economics, Islamabad



**PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
ISLAMABAD**

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means—electronic, mechanical, photocopying, recording or otherwise—without prior permission of the author(s) and or the Pakistan Institute of Development Economics, P. O. Box 1091, Islamabad 44000.

© **Pakistan Institute of Development
Economics, 2007.**

Pakistan Institute of Development Economics
Islamabad, Pakistan

E-mail: publications@pide.org.pk

Website: <http://www.pide.org.pk>

Fax: +92-51-9210886

Designed, composed, and finished at the Publications Division, PIDE.

C O N T E N T S

	<i>Page</i>
Abstract	v
1. Introduction	1
2. Theories of Foreign Direct Investment	4
2.1. Neoclassical Economic Theory of FDI	4
2.2. Dependency Theory of FDI	6
2.3. Industrialisation Theory on FDI and Spillover Effects	6
3. Theoretical Framework of FDI Flows and Growth	9
4. An Overview of FDI Inflows in Pakistan	15
4.1. Dimensions of FDI in Pakistan	19
5. Theoretical Modelling of FDI and Growth	25
6. Data Description and Methodology	30
6.1. Data Description	30
6.2. Bound Testing Approach	31
7. Empirical Analysis	33
8. Conclusions	39
References	40

List of Tables

Table 1. FDI Inflows in Pakistan 1970–2005 (in Million US\$)	18
Table 2. FDI Inflows in Pakistan from 1989-90 to 2004-05	20
Table 3. Country-wise Shares of FDI Inflows in Pakistan (in %)	21
Table 3a. Top Investing Countries in Pakistan from 2002-03 to 2005-06	22
Table 3b. Sector Receiving Maximum FDI during 2002-03 to 2005-06	23

	<i>Page</i>
Table 4. Inflow of FDI by Sector-wise (in Million US\$)	23
Table 5. Results of the Unit Root Test	34
Table 6. FDI and Growth of Real GDP	35
Table 7. Short- and Long-run Elasticities of Economic Growth in Pakistan	36

List of Figures

Figure 1. Linkages between FDI and Development	2
Figure 2. Foreign Direct Investment in Pakistan	18
Figure 3. FDI as Percentage of GDP	20
Figure 4. Country-wise Share of FDI Inflows, 1990–2005	22
Figure 5. Economic Group-wise FDI Inflows	24
Figure 6. Sector-wise Inflow of FDI	25
Figure 7. Plot of CUSUM and CUSUMSQ Tests of Stability	34

ABSTRACT

Recent theoretical and empirical literature suggests that foreign direct investment (FDI) exerted positive impact on economic growth through the process of technological diffusion. The literature also suggests that the development of the domestic financial system of the host country is an important pre-condition for FDI to have a positive impact on economic growth. A well-developed domestic financial sector enhances efficient allocation of financial resources and improves the absorptive capacity of a country with respect to FDI inflows. Particularly, a more developed financial system positively contributes to the process of technological diffusion associated with foreign direct investment. In this study, we examine the link between FDI, domestic financial sector, and economic growth for Pakistan over the period 1972–2005. Empirical analysis is based on the *bound testing approach* of cointegration advanced by Pesaran, *et al.* (2001). The results suggest that FDI inflows exerted positive impact on economic growth in the short-run and the long-run if the domestic financial system has achieved a certain minimum-level development. The results further suggest that better domestic financial conditions not only attract foreign companies to invest in Pakistan, but also allow maximising the benefits of foreign investment.

JEL classification: F21, F36, F43, O16

Keywords: Foreign Direct Investment, Financial Sector Development, Economic Growth, Technology Spillovers

1. INTRODUCTION

The role of foreign direct investment (FDI) has been widely recognised as a growth-enhancing factor in developing countries. There are a variety of channels through which FDI can promote economic growth, in the host country. The most important being is technology transfer and spillovers. Literature on economic growth has established the importance of technological progress in economic development. FDI often leads to technology transfer to affiliates of multinational firms in the host countries. Spillover can occur through the interaction of multinational firms with domestic suppliers, customers and worker mobility. Therefore, FDI can have impact on income [Gao (2004)]. Most of the developing countries rely primarily on FDI as a source of external finance because FDI stimulates economic growth more than other sources of capital inflows. Particularly, FDI is supposed to be less volatile to offer financial resources, transfer of modern technology, market access and managerial know-how. Financial resources are largely used to expand productive capacity by increasing fixed investment in the host countries, while transfer of technology and managerial know-how improves productive capacity. Furthermore, FDI brings various networks such as sales and procurement networks to the host countries, which can be used to expand their business opportunities. FDI also increases competitive pressures to the local firms that result in an improvement in technical and allocative efficiency in the host country.

UNCTAD (2006) asserts that FDI has the potential to generate employment, raise productivity, transfer foreign skills and technology, enhance exports and contribute to the long-term economic development of the world's developing countries. Moreover, over some 64000 foreign affiliates of transactional corporations (TNCs) generate 53 million jobs. FDI is the largest source of external finance of developing countries, and the inward stock of FDI in 2000 amounted to around one-third of their GDP, as compared to just 10 percent in 1980.

Acknowledgements: I would like to express my gratitude to Dr Nadeem Ul Haque, Vice-Chancellor, PIDE, for providing an opportunity to complete this paper. I am also thankful to Dr Faiz Bilquees, Joint Director, PIDE, for her invaluable comments which helped improve the study. Thanks are also due to Mr Kalbe Abbas for proofreading the preliminary draft of the paper. I am also grateful to Ms Lubna Hasan, Mr Wasim Shahid Malik, Mr Mahmood Khalid, and Mr Akhtar Hussain Shah and other participant of PIDE's "Nurturing Minds" seminar series for their valuable comments and suggestions.

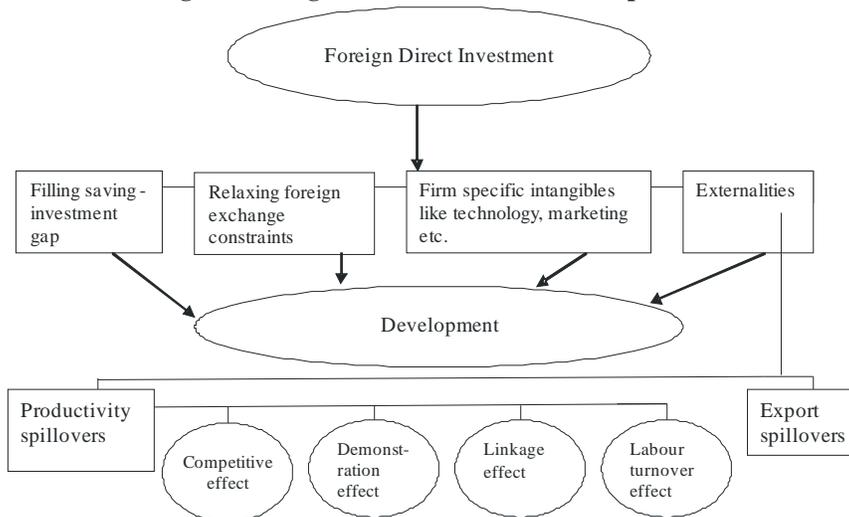
The author of the paper is Associate Professor at Government Postgraduate College Muzaffarabad (Azad Kashmir) and currently he is working as Research Associate at the Pakistan Institute of Development Economics, Islamabad.

According to UNCTAD (2000), world FDI inflows grow from an annual average of \$159 billion over 1986-91 to \$865 billion in 1999. FDI inflows as a percentage of gross domestic capital formation in the world rose from 2.3 percent in 1980 to 11.1 percent in 1998. As a result, multinational firms accounted for 25 percent of the world's GDP by 1997. Approximately three-quarters of civilian research and development (R & D) and 90 percent of trade in technology and technology intensive products are conducted by multinational firms [Dunning (1993)].

It can be argued that economic growth depends on technological progress and FDI can play a crucial role because it facilitates technology diffusion.¹ Zhang (2001) has noted that FDI is likely to be an engine of host country's economic growth, because (i) inward FDI may enhance capital formation and employment generation, (ii) FDI may promote manufacturing exports, (iii) FDI may bring resources into host country such as, management know-how, access of skilled labour to international production networks, and established brand names, and (iv) FDI may result in technology transfers and spillover effects. In the light of important contributions that FDI delivers to both home and host countries, it is useful to analyse its impacts on growth of the domestic economy.

Figure 1 has identified the following linkages between FDI and development.

Fig. 1. Linkages between FDI and Development*



*For further detail, see Pradhan (2003).

¹Technology should be interpreted as product, process, distribution, management, marketing and so on.

Historically, FDI flows in developing countries followed uneven path at the beginning of 1980s and then started rising in the subsequent periods. Particularly, this flow has increased from \$10100 millions in 1986 to \$87124 millions in 1994 [UNCTAD (1985-95)]. The density of FDI has varied significantly across countries. Specifically, it ranged from a maximum of 31 percent of the total FDI received by China to 13 percent by Brazil and to just close to 3 percent by India and Venezuela. The FDI inflow in Pakistan was \$1101.7 millions in 1995-96 and was jumped to \$1524 at the end of 2004-05. Today, it was around \$3020.2 million.

Hermes and Lensink (2003) has pointed out that the development of financial system of the host country is an important pre-condition for FDI to have a positive impact on economic growth. The financial system enhances the efficient allocation of resources and helps to improve absorptive capacity of a country with respect to FDI inflows. A more developed financial system may contribute to the process of technological diffusion associated with FDI. It is argued that transactional corporations (TNCs) transfer modern technology and know-how to their foreign affiliates may depend on capacity to absorb FDI, openness to trade and institutional development of the host country. The other factors such as rule of law, the degree of corruption, the quality of public management, the protection against property rights infringements and discretionary government interference is also very important in attracting FDI [Nunnenkamp and Spatz (2004)].

Like other developing countries, FDI in Pakistan is being widely considered as an important vehicle for economic growth. Pakistan has introduced a wide range of incentives, congenial for local and foreign investors and has increasingly tended to turn to FDI as source of capital, technology, managerial skills and market access needed for sustained economic development. The country provides a one-window facility for setting up business, and foreign investment is fully protected by law, including avoidance of double taxation. The outward orientation in policies designed by the government to attract more FDI has been accompanied by the adoption of policies relating to privatisation and deregulation of economic activity and greater reliance on market forces in the country. Pakistan's recent reforms offer unprecedented and conducive business environment to all multinational corporations (MNCs). Pakistan is now one of those countries in the region whose reforms and economic achievements during the last few years have steered the country to a business-friendly environment, creating a win-win situation for both investors and consumers. Investment in electronics and other high-tech industries is widely seen as special desirable in developing countries like Pakistan, providing employment opportunities, and boosting exports by increasing production and help in modernising the economy.

This study makes two main contributions to the empirical literature. *First*, it examines the links between FDI and economic growth by including the role of domestic financial sector. As far as Pakistan is concerned, earlier studies [Shabbir and Mahmood (1992); Ahmed and Hamdani (2003); Yasmin, *et al.* (2003); Shah and Ahmed (2003); Ahmed, *et al.* (2003) and Naveed and Shabbir (2006)] have not included the financial sector development variable in examining the link between FDI and growth. The introduction of financial sector indicator is expected to improve and reinforce the link between FDI and economic performance, as well as reflect the level of absorptive capability of a recipient country in enjoying the benefits embodied in FDI inflows. *Second*, it applies recent econometric techniques of cointegration namely, the bound testing approach to cointegration developed by Pesaran, *et al.* (2001). This modeling technique does not require any precise identification of the order of integration, whether the variables are $I(0)$ or $I(1)$.

The remaining sections of the study are as follows. Section 2 discusses the theories of foreign direct investment. Theoretical framework of FDI inflows and growth is discussed in sector 3. An overview of FDI inflows in Pakistan is given in Section 4. Section 5 presents some theoretical models linking FDI and economic growth. Section 6 discusses data description and recent econometric techniques used in investigating short- and long-run relationships between the variables concerned. Results interpretation are discussed in Section 7, while some concluding remarks and given in the final section.

2. THEORIES OF FOREIGN DIRECT INVESTMENT

Theories play an important role in shaping legal attitudes both nationally and internationally. Theories of FDI assert that the basis for such investment lies in the transaction costs of transferring technical and other knowledge. Three important theories of FDI are discussed below.

2.1. Neoclassical Economic Theory of FDI

Neoclassical economic theory propounds that FDI contributes positively to the economic development of the host country and increases the level of social wellbeing [Bergten, *et al.* (1978)]. The reason behind this argument is that the foreign investors are usually bringing capital in to the host country, thereby influencing the quality and quantity of capital formation in the host country. The inflow of capital and reinvestment of profits increases the total savings of the country. Government revenue increases via tax and other payments [Seid (2002)]. Moreover, the infusion of foreign capital in the host country reduces the balance of payments pressures of the host country.

The other argument favouring the neoclassical theory is that FDI replaces the inferior production technology in developing countries by a superior one from advanced industrialised countries through the transfer of technology,

managerial and marketing skills, market information, organisational experience, and the training of workers [Kojima (1978)].

The MNCs through their foreign affiliates can serve as primary channel for the transfer of technology from developed to developing countries. The welfare gain of adopting new technologies for developing countries depends on the extent to which these innovations are diffused locally. Antonelli (1991) has noted that the cost of adoption of technology is affected by following: the availability of information about the technology from other users, the availability of trained and skilled manpower, the availability of technical assistance and maintenance, the availability of complementary equipment and software, and the availability of complementary innovations, both technological and organisational. Due to the scarce availability of these factors in developing countries, the cost of adoption of new technology remains high.

The proponents of neoclassical theory further argue that FDI raises competition in an industry with a likely improvement in productivity [Kojima (1978); Bureau of Industry Economics (1995)]. Rise in competition can lead to reallocation of resources to more productive activities, efficient utilisation of capital and removal of poor management practices. FDI can also widen the market for host producers by linking the industry of host country more closely to the world markets, which leads to even greater competition and opportunity to technology transfer [Bureau of Industry Economics (1995)].

It is also argued that FDI generates employment, influences incomes distribution and generates foreign exchange, thereby easing balance of payments constraints of the host country [Reuber, *et al.* (1973); Sornarajah (1994); Bergen, *et al.* (1978)]. Furthermore, infrastructure facilities would be built and upgraded by foreign investors. The facilities would be the general benefit of the economy [Sornarajah (1994)].

The Guidelines on the Treatment of Foreign Direct Investment incorporates the neoclassical theory when it recognises:²

... that a greater flow of direct investment brings substantial benefits to bear on the world economy and on the economies of the developing countries in particular, in terms of improving the long-term efficiency of the host country through greater competition, transfer of capital, technology and managerial skills and enhancement of market access and in terms of the expansion of international trade.

Kennedy (1992) has noted that host countries became more confident in their abilities to gain greater economic benefits from FDI without resorting to nationalisation, as the administrative, technical and managerial capabilities of the host countries increased.

²The World Bank Guidelines on the Treatment of FDI are reproduced in Convention establishing the International for the Settlement of Investment Disputes (1992).

The success of the Newly Industrialised Economies³ has been as model of other LDCs. The experience of these countries shows that a mix of regulation and openness to FDI may become more beneficial to the host country [Chu (1989)]. The same position is likely to be held in most of the developing countries [Lall (1993)].

2.2. Dependency Theory of FDI

The impact of foreign capital and multinational corporations (MNCs) on host countries can be traced back in the writings of the “dependency school”. Influential works of this school of thought include the ontology of dependency; Karl Marx’s theory on development and underdevelopment; Paul Baran’s analysis of economic backwardness and economic growth; Andre Gunder Frank’s analysis of the development of underdevelopment; and the writings of Samir Amin on unequal development [Fan (2003)].⁴

Dependency school theory argues that foreign investment from developed countries is harmful to the long-term economic growth of developing nations. It asserts that First World nations became wealthy by extracting labour and other resources from the Third World nations. It further argued that developing countries are inadequately compensated for their natural resources and are thereby sentenced to conditions of continuing poverty. This kind of capitalism based on the global division of labour causes distortion, hinders growth, and increases income inequality in developing countries. Hence, Third World nations must develop independently without depending on foreign capital and goods.

The influence of the dependency theory peaked in the 1970s; many authors advocated that dependency theory provided some useful qualitative methods to restrict foreign capital. Various countries adopted dependency theory perspectives in the 1970s, including East Asian and Latin American countries. A number of these countries adopted import substitution strategy and demonstrated a hostile attitude toward foreign investment. These policies had harmful effects on these economies [Hein (1992)]. During 1970s and 1980s East Asian countries also shifted their attention from dependency theory to more liberal policies to attract foreign investment.

2.3. Industrialisation Theory on FDI and Spillover Effects

The standard neoclassical model developed by Heckscher and Ohlin (H-O) based on the restrictive assumptions about the immobility of factors of production and identical production functions across countries, assumed that no international difference existed at the technological levels. However, H-O model

³ South Korea, Taiwan, Hong Kong and Singapore.

⁴See Ghosh (2001) and Brewer (1990) for reviews.

fails to mention technology transfer and spillover effects of the MNCs. The neoclassical portfolio theory also considered MNCs simply as arbitrageurs of capital. Capital under neoclassical portfolio theory is seen to flow from countries where returns are low to those where they are higher. This theory does not distinguish between the role played by portfolio and FDI capital inflows [Dunning and Rayman (1985); Teece (1985)]. Hymer (1976) draws attention to the neglected aspects of MNC's role as global industrial organisations. His major contribution was to shift the attention away from neoclassical financial theory. He maintained that FDI is more than a process by which financial assets are exchanged internationally and involves international production. Furthermore, FDI represents not simply a transfer of capital, but the transfer of a "package" in which capital, management, and new technology are combined. He characterised FDI as international industrial organisation theory.

Caves (1971) and (1974) and Kindleberger (1984) extended the industrial organisation theory of FDI by emphasising the behaviour of the firms that deviate from perfect competition as the determinants of FDI. They are of the view that in comparison to the domestic firms, MNCs face a number of problems such as geographical distances in managing enterprises, linguistic, and cultural barriers. When a firm undertakes FDI in a foreign country, it must possess some special ownership advantages over domestic competitors. Such advantages include marketing and management skills, brand names, patent-protected superior technology, cheaper source of financing, preferential access to markets and economies of scale [Haque (1992)]. Unlike portfolio investment, FDI entails a cross-border transfer of a variety of resources including, process and product technology, managerial skills, marketing and distribution know how, and human capital. However, earlier theorists neither calculated the benefits and costs of technology transfers, nor analysed their impacts on a host country via spillover effects.

Koizumi and Kopecky (1977) modeled FDI and technology transfer using a partial equilibrium framework to analyse technology transfer from a patent firm to its subsidiary. Their analysis implied that an increase in a country's saving ratio would reduce foreign capital and through its effects on technical efficiency, reduce its steady state capital intensity.

Findlay (1978) constructed a model to examine the relationship between FDI and technological change in a backward region. The model assumed that the rate of technological diffusion from the advanced to a backward country depends on two factors: (a) the rate of technological progress in a backward region is an increasing function of technology gap between the advanced regions; therefore, the larger the technological gap between the foreign and the domestic firms, the larger the spillovers;⁵ (b) technological diffusion is similar to

⁵This argument is based on the Gerschenkron's hypothesis (1962), which states that the greater the relative disparity in development levels between a backward country and an industrialised country, the faster the catch up rate [Fan (2003)].

the spread of a contagious disease, therefore, technology is most efficiently diffused when there is a personal contract between those having knowledge of the innovation and those who adopt it.

These arguments have led to the hypothesis that technological progress in a backward region increases with the opening up to FDI. Findlay further demonstrated that besides technology, saving propensity, tax rate of foreign profit and backward dependency on foreign capital are important factors that determine the transfer of technology from an advanced country to a backward region. He concluded that foreign investment helps in increasing the rate of technical progress in the host country through a “contagion effect” from the more advanced technology and the adoption of management practices used by the foreign firms.

Das (1987) analysed the transfer of technology from patent firm to its subsidiary by utilising the price-leadership model of oligopoly. He argued that domestic firms learn from MNCs and become more efficient. This increase in efficiency among domestic firms is assumed to be exogenous and costless. The rate of increase in efficiency is positively related to the activities of the MNC’s subsidiary. He concluded that MNC benefits from the technology transfer from its patent company and the host country benefits are unambiguous. However, the behaviour of the local firm is still not explicitly taken into account in this model.

Wang and Blomstrom (1992) developed a model which emphasised that international transfer of technology through MNCs takes place due to the interaction between host country firms and foreign subsidiaries. The model assumed that foreign subsidiaries and domestic firms could take their own investment decisions to maximise the profit. Both firms solve their individual dynamic optimisation problems subject to the other’s actions in the context of game theory.

Solving the dynamic optimisation problem, they concluded that:⁶

- Technology transfer from a parent company to a subsidiary is positively related to the level and cost efficiency of a domestic firm’s learning investment.
- The lower is the subsidiary’s discount rate the more rapid would be the technological transfer. The higher is operational risk the more reluctant foreign firms will be to transfer technology.
- Technology transfer is proportional to the size of the technological gap. The less costly the technology spillovers from the parent to subsidiary firms, the faster would be the technology transfer.

⁶See for example, Fan (2003), p. 39.

3. THEORETICAL FRAMEWORK OF FDI FLOWS AND GROWTH

There is a considerable body of literature emphasising the positive impact of FDI on economic growth.⁷ FDI helps in increasing capital formation and economic growth by introducing new technologies such as new production techniques, managerial skills, ideas, and variety of new capital goods.⁸ The literature suggests that the growth rate of LDCs depends heavily on developed countries. By adopting new technologies and ideas, LDCs may catch up to the level of technology in developed countries.

During the 1960s and 1970s, the impact of FDI on growth was presumed to be negative and growth retarding for host LDCs. The perceptions about MNCs regarding development linkage were more ideological and historical than based on the rational economic theory [Caves (1982); Lall (1993)]. One of the important functions that FDI can perform in a poor country is to supplement the meager domestic savings and hence allow the host country to achieve a higher level of capital formation. This raises the growth performance of the poor country by utilisation of resources that would have remained unutilised otherwise. However, the contemporary theoretical thoughts of 1960s and 1970s do not share this optimism from FDI.

Singer (1950) argued that the contribution of foreign investment in the growth process of a poor country has been largely unfortunate because of the following reasons: *firstly*, it removed most of the secondary and cumulative effects of investment with respect to income, employment, capital, technical knowledge and growth of external economies from the country in which the investment took place to the investing country. *Secondly*, it promoted the specialisation of LDCs along the lines of static comparative advantages, offering less scope for technical progress, and without a significant impact on the general level of education, skill, way of life, inventiveness, habits, creation of new demands etc. *Thirdly*, factors that had significantly reduced the benefits of foreign trade-cum-investment to poor countries were the export specialisation on food and raw materials. The hypothesis of secular deterioration of terms of trade has been advanced to show how LDCs was constrained in the long run.

Another concern invoked in the late 1970s is the problem of transfer pricing by which MNCs transfer undisclosed remittances and profits so that the host countries do not gain significant economic benefits from FDI [Lall (1993)]. Further, transnational corporations (TNCs) due to their large size, reputation etc. gain easy access to local savings which may crowd out domestic investments [Hood and Young (1979)].

⁷For a comprehensive survey of literature see De Mello (1997) and World Bank (2001).

⁸In the new growth literature technology became an important pillar of economic growth [Grossman and Helpman (1991); Barro and Sala-i-Martin (1995)].

In contrast to the earlier periods, 1980s and 1990s saw a more liberal view about the role of MNCs in the process of development. An era of structural adjustment and competitive outward orientation among the LDCs marked by liberalisation of trade, FDI, exchange rate regimes, and acceleration of fiscal reforms, has put TNCs as leading international market actors into the centre of economic development [WIR (1992)].⁹ The role of FDI in has become very critical in the developing countries in the recent years because with the decline of official financing and the instability of private financial flows, FDI is seen as a solution to the problem of resource gap and external financing [TDR (1999)].¹⁰ Furthermore, the sources of growth are becoming less material-intensive and more skill, knowledge and technology-intensive, and FDI acts as a vehicle of international knowledge and technology.

In order to understand the link between FDI flows and economic growth, it is necessary to review the existing theories of investment and growth and then relate them to FDI inflows and translate their impacts on economic growth. The theoretical rationale of the FDI flows and growth is based on the Harrod-Domar, neoclassical and endogenous growth models. The pioneering growth model such as Harrod (1939) and Domar (1946) explained that capital formation raises the standards of living, which in turn results in higher growth. Harrod-Domar model basically compares the natural growth rate and warranted growth rate. It emphasises that natural growth rate as a result of increase in labour force in the absence of technological change as compared to the warranted growth rate, which depends on the savings and investment habits of households and firms. However, the Harrod-Domar model examines the long-run problems of the economy by using the short-run tools. Harrod-Domar model was criticised by the neoclassical economist Solow (1956) due to its assumption of fixed proportion of factors of production and substitutability between labour and capital. Solow argued that capital formation increases labour productivity in a dynamic process of investment growth. He accepts the assumptions of the Harrod-Domar model of long-run growth without any fixed proportion. Solow considers an economy that combines capital and labour to produce a single homogenous commodity through savings, which are proportional to income and labour productivity. Knowledge has been considered as an important input in the production process in the Solow model.

In traditional neoclassical Solow-type models of growth, with diminishing returns to physical capital, and exogenous technological change, FDI cannot affect the long-run growth rate. These theories predict that countries with the same preferences and technology will converge to identical levels of income and asymptotic growth rate subject to the absence of international capital mobility. Factor mobility enforces this prediction that capital always

⁹WIR stands for World Investment Report.

¹⁰TDR stands for Trade and Development Report.

flows from capital abundant countries to where it is scarce. This leads to long-run equilibrium with the equalisation of capital-labour ratio and factor prices.

However, the endogenous growth theories that emerged in the mid-1980s¹¹ expanded the role of capital to include knowledge as a central element of capital in addition to plant and equipment. Furthermore, unlike the neoclassical growth theories, the new growth theories focused on the creation of technological knowledge and its transmission: innovation and imitation efforts that respond to economic incentives are considered to be a major engine of growth; therefore, it emphasises the role of R&D, human capital accumulation, and externalities [Lucas (1988); Romer (1990)].

Regarding the international diffusion associated with the trade in goods, Helpman (1993) discussed the implications of international capital movements in the context of endogenous growth, focusing on how economies of scale interact with free capital movement. He observed that there may be agglomeration effects in capital accumulation where the externalities come from the capital stock. Technology transfer along with FDI is an explicit element in Helpman's discussion; he stressed the need for more thorough treatment of MNCs with respect to growth.

Wang (1990) builds a dynamic two-country model to examine the interaction between growth and international capital movement. He links perfect capital mobility into two regions. According to him, human capital plays a crucial role in determining the effective rate of return for physical capital which affects the direction and magnitude of international capital movements. The model predicts that the steady-state income gap is narrowed by an increase in the growth rate of human capital and the technology diffusion rate in the LDCs. Wang also argued that FDI facilitates technological change, and hence increases the rate of income growth.

Walz (1997) incorporates FDI into endogenous growth framework where MNCs play a critical role with respect to growth and specialisation patterns. He applied trade-related international knowledge spillovers in Grossman and Helpman's (1991) model to FDI and concluded that knowledge spillover of MNC's activities make innovations in the low wage country profitable. Furthermore, allowing for imitation in the LDC, the indirect transfer of technology through FDI stimulates active R&D and growth. Therefore, he predicts that policies promoting FDI will lead to faster growth.

Models using endogenous growth theory framework primarily focused on the transfer of technology from parent country to subsidiaries. Technology spillover is assumed to be proportional to the presence of FDI in the host country.

¹¹The endogenous growth theories have been developed by Romer (1986), Lucas (1988) and Rebelo (1991).

Studies in the literature emphasising the positive impact of FDI on growth suggest that FDI not only increases the domestic capital formation but also enhances economic growth by introducing new technologies, such as new production processes and techniques, managerial skills, ideas and new varieties of capital goods. However, economic growth in LDCs depends on their ability to adopt and implement new technologies, especially in the catching-up process.

New technologies may become available to LDCs through various sources such as domestic R&D activities, imports of capital goods and equipments, buying technologies through licensing or franchising or FDI. However, the developing countries are generally faced with many internal and external constraints that are not congenial to local R&D activities, including their usually pronounced institutional backwardness. For LDCs it is very difficult to procure technologies via external arms length transactions such as franchising and licensing as industrialised countries are increasingly reluctant to transfer their technology. Thus for developing countries FDI is the most important channel through which adoption and implementation of new technologies can take place.¹² Campos and Kinoshita (2002) examine the effect of FDI on growth in a set of developing countries and find that only when the FDI is in the form of pure transferred technology there exist positive and significant impact on growth. Balasubramanyam *et al.* (1996) examine whether the role of FDI in enhancing growth is affected by the trade policy regime in a country. They find that a country having an outward trade policy encourages competition from both the international trade and domestic sources and hence R&D and investment in human capital is consistent with the endogenous growth theory.

De Mello (1999) has pointed out that the impact of FDI on economic growth is expected to be twofold. *First*, growth is achieved through capital accumulation in the host country. The inflow of FDI may increase the stock of domestically available physical capital and thus the economic growth of the recipient country. In this case, the increase of physical capital through FDI might have only transitory impacts on the economic growth of the recipient country. FDI can also be growth enhancing by encouraging the adoption of new ideas and equipments, and also of foreign technologies in the production function of the recipient country [Borensztein, *et al.* (1998)]. However, it is important to note that this theoretical argument is based on the premise that FDI complements domestic investment. New technologies embodied in FDI might accelerate technological obsolescence of traditional technologies used in developing countries and thus crowd out domestic investment and decreases domestic savings. It can temporarily lower economic growth rate. In this context, Lipsey (2000) finds that inward FDI is negatively related to domestic

¹²FDI is also often a preferred mode of entry for foreign firms if they have firm-specific assets and try to internalise them through intra-firm transactions.

investment in the OECD countries. *Second*, FDI affects economic growth through knowledge transfers and augmentation of existing stock of knowledge in the recipients economy. It also affects growth through labour training and skill acquisition. The larger the accumulated knowledge, the faster the technological progress because the cost of innovation falls as the level of knowledge increases [Campos and Kinoshita (2002); Findlay (1978); Wang (1990)]. Balasubramanyam, *et al.* (1996) point out that new ideas and entrepreneurial skills embedded in FDI are diffused through the introduction of alternative management systems and organisational arrangements. FDI can also be expected to promote technological upgrading without any physical capital accumulation through start-up, marketing, and licensing agreements; management contracts; and joint ventures [De Mello (1999)].

It can also be argued that the absorptive capacity of the host country affects the volume and type of FDI inflows. The type of FDI depends on institutional factors, such as, the recipient country's trade regime, legislation, political stability and scale factors, such as balance of payment constraints and the size of the domestic market for goods produced through FDI.

Empirical findings of the relationship between the FDI and economic growth in the developing countries are of diverse in nature, though the relationship has received less than adequate attention until recently. Blomstrom, *et al.* (1992) conclude that the growth of income per capita in developing countries has a positive relationship with the average of the FDI inflows to GDP ratio. Borensztein, *et al.* (1998) find that FDI alone has a negative impact on the economic growth. The joint effect of FDI and human capital accumulation on growth is positive only when it is coupled with human capital accumulation as proxy for the absorptive capacity of developing host countries. They further argued that FDI might have higher productivity than domestic capital through positive spillover effects and thus crowding in domestic investment.

De Mello (1999) found less uniform impact of FDI on economic growth in a group of industrialised and developing countries. The study concluded that growth-enhancing effects of FDI depend on the relationship between FDI and the domestic investment.

Foreign Direct Investment and Domestic Financial Sector

Schumpeter (1911) recognised the importance of well-developed financial intermediaries in enhancing technological innovation, capital accumulation, and economic growth almost a century ago. It can be argued that well-functioning financial markets by lowering the costs of transactions, ensures that capital is allocated to the projects that yield the highest returns, and therefore enhances growth rate [Goldsmith (1969); MacKinnon (1973) and Shaw (1973)]. Furthermore, as MacKinnon stated that the development of financial markets is necessary and sufficient to foster the adoption of best-practice technologies and

learning by doing process. Limited access to credit markets restricts entrepreneurial development. If entrepreneur adopts new technologies made available by FDI, then the absence of well-developed financial markets limits the potential positive FDI externalities [Alfaro, *et al.* (2004)]. The empirical evidence on the theoretical framework of the interaction between financial markets and economic growth is ample. King and Levine (1993, 1993a) and Beck, *et al.* (2000) suggest that financial systems are important for both productivity and development. Levine and Zervos (1998) show that development of all financial institutions exerted positive influence on economic growth. Rajan and Zingales (1998) found that financial development reduces the cost of external finance to the firm, thereby promoting growth. Wurgler (2000) shows that even if financial development does not lead to higher levels of investment, it seems to allocate existing investment better and, hence, promote economic growth. The economies with well-developed financial markets are able to benefit more from FDI in promoting their economic growth. Alfaro, *et al.* (2004) has pointed out that an improvement in the efficiency of the domestic financial sector tends to reduce the threshold level of entrepreneurship. This implies that an improvement in the efficiency of the financial sector increases the social marginal product of FDI. Furthermore, the better financial markets can enhance the effects of FDI on output. In practice, financial markets affect both the financing of investment and day-to-day business activities. Hence, well-efficient domestic financial markets encourage entrepreneurial activities and output, and attract more FDI.

The recent work on endogenous growth model has focused the role of domestic financial sector as a mechanism in transferring the technology level between international capital inflows and economic growth [World Bank (1989); Levine (1997) and Liu (1998)]. A well-developed financial system may contribute to economic growth through two main channels. On the one hand, it mobilises savings, which may increase the volume of resources available to finance investment. On the other hand, it monitors investment projects, lowering information acquisition costs and increases the efficiency of on going projects [Greenwood and Jovanovic (1990); Levine (1991) and Saint-Paul (1992)].¹³ A well-developed financial system can help to mobilise savings and monitors investment projects, which in turn, contribute to higher economic growth.

The financial system in general and specific financial institutions in particular, may help to reduce risks associated to upgrade existing technology or adoption of new technologies introduced by the firms. Thus, the financial institutions positively affect the speed of technological innovation, thereby enhancing economic growth [Huang and Xu 1999)]. Further, the technological

¹³For detailed discussion, see Levine (1997).

spillover can take place when domestic firms are willing to invest in order to upgrade their own technology or adopting new technologies based on demonstration effect, competition effect, linkage effect or training effect. Hermes and Lensink (2003) argue that the development of the domestic financial system of the recipient country is an important precondition for FDI to have positive impact on economic growth. The financial system enhances the efficient allocation of resources and helps to improve the absorptive capacity of a country with respect to FDI inflows. A more developed financial system may contribute to the process of technological diffusion associated with FDI. Moreover, Alfaro, *et al.* (2004) and Choong, *et al.* (2004) argued that the economies with better-developed financial markets are able to benefit more from FDI to promote their economic growth. They further emphasise the role of financial institutions and argued that the lack of development of local financial markets can limit the ability of economy to take the advantage of potential FDI spillovers. Durham (2004) also observed that the deeper financial systems absorb capital inflows such as, equity foreign portfolio investment (EFPI), and even FDI more effectively especially in the case of fungible flows. Thus, we conclude that a well-functioning financial system promotes higher economic growth by absorbing the benefits embodied in the foreign capital flows, especially in the form of FDI [Hermes and Lensink (2003); Alfaro, *et al.* (2004); Choong, *et al.* (2004) and Durham (2004)].

4. AN OVERVIEW OF FDI INFLOWS IN PAKISTAN

The higher level of saving 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. In the case of Pakistan, domestic savings account for less than 20 percent of the GDP. This 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. To increase the level of foreign capital inflows, liberalisation of trade and investment regime by relaxing controls and offering financial and trade incentives like tax concessions and tariff reductions should be needed. Furthermore, host country should pursue active liberalisation 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. The domestic policies opted by the host countries have an important influence on the decisions of foreign investment. To attract FDI, the host country should adopt concrete and investor friendly policies, strong infrastructure are the pre-conditions 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 liberalisation 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)]. In the early 1990s, the government undertook a number of policy and regulatory measures¹⁴ to improve the business environment in order to attract foreign investment [Anwar (2002)]. In order to encourage FDI, restrictions on capital inflows and outflows were gradually lifted. Foreign investors were allowed to hold 100 percent of the equity of industrial project a repatriable basis without any prior approval. Furthermore, investment shares issued to non-residents 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 decentralising the management of foreign exchange and allowing market forces to play a greater role in exchange rate determination.

Pakistan's foreign investment regime mainly consists of three components. (i) regulatory, (ii) economic, and (iii) socio-political. Regarding privatisation 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 the Pakistan's regulatory regime are:¹⁵

¹⁴These 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) liberalising 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 July 1994, (g) liberalisation of import policy, and (h) opening up the sectors of agriculture, telecommunications, energy and insurance to FDI in 1997.

¹⁵For further detail, see Zaidi (2004).

- Freedom to bring, hold and take out foreign currency from Pakistan in any form.
- Privatisation of an enterprise is fully protected. Neither it can be re-nationalised, 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 sectors¹⁶ including services sector are open to FDI, foreign equity up to 100 percent is allowed in all sectors. However, foreign equity up to 80 percent is allowed in agriculture sector.
- There is no lower limit on the size of FDI in manufacturing sector. However, in services, infrastructure and social sectors the minimum amount of foreign equity investment is \$0.3 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 rationalised its tariff regime. Custom duty on import of most of the primary raw material is not more than 5 percent, while on the imported machinery is between 0 and 10 percent.
- Copyright law has been amended while laws regarding patents; industrial designs and trademarks have been re-enacted.
- There is no requirement for obtaining no objection certificate (NOC) from provincial governments for locating the project anywhere in the country except in areas that are notified as negative areas.

But due to the inconsistency of government policies, the level of FDI remained low as compared to other developing countries.

Pakistan has received comparatively higher amount of FDI over the past two decades due to its market-oriented investment policies and enabling environment for investment. FDI inflows to Pakistan can be explained in terms of its size and percentage of gross domestic product (GDP). Due to inconsistent policies, the flow of FDI was insignificant until 1991. However, the flow of FDI steadily increased in the post-liberalisation period. Actual inflows of FDI to Pakistan have increased from \$119.6 million in the 1975-79 to \$3299.8 millions

¹⁶Except for some sectors of strategic importance.

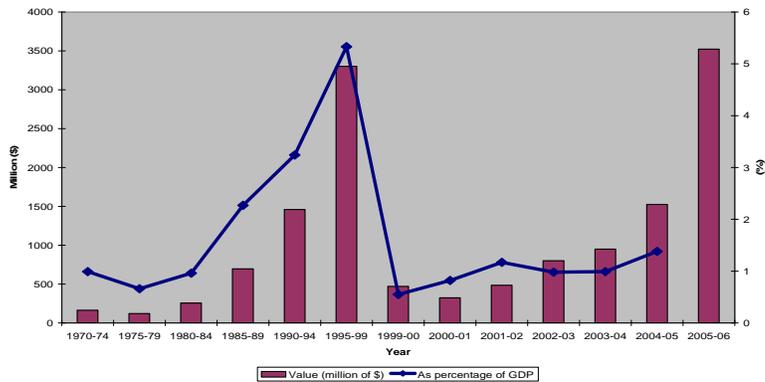
in the 1995-99 (Table 1 and Figure 2). The FDI inflow increased from \$469.9 million in 1999-2000 to \$798 million 2002-03 showing 65 percent increase and stood \$3521 million in 2005-06.

Table 1

<i>FDI Inflows in Pakistan 1970-2005 (in Million US\$)</i>			
Period	Value (Million of \$)	As Percentage of GDP	FDI per Capita (\$)
1970-74	163.8	0.99	1.65
1975-79	119.6	0.66	1.27
1980-84	254.1	0.96	3.49
1985-89	694.7	2.27	8.54
1990-94	1457.8	3.24	14.63
1995-99	3299.8	5.33	26.29
1999-00	469.9	0.55	2.37
2000-01	322.5	0.82	3.48
2001-02	484.7	1.17	5.59
2002-03	798.0	0.98	5.22
2003-04	949.4	0.99	6.34
2004-05	1524.0	1.38	9.99
2005-06	3521.0	—	—

Source: State Bank of Pakistan.

Fig. 2. Foreign Direct Investment in Pakistan



Since 2004, there has been a significant increase in the net inflows of capital. Capital inflows included mainly one-off inflows such as, \$354 million through privatisation and \$600 million through sovereign debt issued internationally and an increase in concessional long-term loans from the World Bank and Asian Development Bank. FDI reached to \$1.5 billion in 2005, 61

percent higher than in 2004. New FDI is concentrated in a few sectors such as telecommunications, finance and Oil and Gas exploration.

However, this increase becomes insignificant when we compare with the South Asian countries. The net private inflows to these countries were about \$106 billion in 1996 [Burki and Savitsky (2000)]. The reasons for low level of FDI inflows include the lack of political stability, slow bureaucratic process, inadequate infrastructure facilities, macroeconomic imbalances, inconsistent economic policies of successive governments, delays in the privatisation of state-owned enterprises, past disputes between foreign investors and the government, piracy of intellectual property, and arbitrary and non-transparent applications of government regulations.

4.1. Dimensions of FDI in Pakistan

The dimensions of the FDI flows into Pakistan can be explained in terms of its growth and size, sources and sectoral compositions. The growth of FDI in Pakistan was not significant until 1990 due to the regulatory policy framework. However, under the more liberal policy regime, it has played a more significant role in the development of Pakistan's economy as shown in Table 2. It shows that over the post-liberalisation era, there is a steady build up in the actual FDI inflows which have steadily increased from US\$ 216.2 million in 1990 to US\$ 1524 million in 2005, thus growing at the annual compound rate of 21.47 percent. The decline to US\$322.5 million in 2000-01 can be attributed to many factors including the US sanctions imposed in the aftermath of the nuclear tests, the East Asian financial crisis and political instability.

However, the flow of FDI picked up after 2001-02 due to the revival of closer US-Pak ties and the liberalised foreign investment environment and FDI grew at 212 percent since 2000. In the year 2004-05 FDI was \$1524 million. During the fiscal year 2005-06 Pakistan received \$3521 million as FDI. Since 2003, Pakistan has registered an increasing trend of FDI inflows and the FDI-GDP ratio (Figure 3).

Table 3 depicts the inflows of FDI by origin in Pakistan since 1989-90. The US, UK and UAE remain the major source of FDI inflows in Pakistan despite considerable fluctuations in their shares. The share of FDI from UAE fluctuated between 1.20 percent in 2000 to 24.1 percent in 2005-06, that of UK from 6.5 percent in 2002-03 to 36 percent and USA 21.4 percent to 67.3 percent.

Figure 4 indicates that over 80 percent of the FDI shares to Pakistan collectively originated from US, UK, UAE, Germany, France, Italy, Japan, and Netherlands since 1990. The top two investors during the year 2005-06 in Pakistan are UAE, which accounted for nearly 42.5 percent, and the US 14.7 percent. Saudi Arabia, UK, Switzerland and Norway accounted for 7.9, 6.9, 4.8 and 7.2 percent of FDI flows to Pakistan, while all other sources amounted to 18 percent (Table 3a). The inflows of FDI over the last four years were relatively broad-based, with almost all sectors witnessing an increasing trend (Table 4).

Table 2

FDI Inflows in Pakistan from 1989-90 to 2004-05

Year	FDI (in Million US\$)	Annual Growth Rate	FDI as % of GDP	Exchange Rate (Rs/US\$)
1989-90	216.2	–	0.54	21.45
1990-91	246.0	13.78	0.69	22.42
1991-92	335.1	36.22	0.60	24.84
1992-93	306.4	–8.56	0.68	25.96
1993-94	354.1	15.57	0.73	30.16
1994-95*	442.4	24.94	1.74	30.85
1995-96	1101.7	149.03	1.10	33.57
1996-97	682.1	–38.09	0.97	38.99
1997-98	601.3	–11.85	0.75	43.20
1998-99	472.3	–21.45	0.77	46.79
1999-00	469.9	–0.51	0.55	51.77
2000-01	322.5	–31.37	0.82	58.4
2001-02	484.7	50.29	1.17	61.43
2002-03	798.0	64.64	0.98	58.5
2003-04	949.4	18.97	0.99	57.57
2004-05	1524.0	60.52	1.38	59.36
2005-06	3521.0	131.0	–	–

Source: State Bank of Pakistan.

*Excluding 862.2 millions of PTC Vouchers.

Fig. 3. FDI as Percentage of GDP

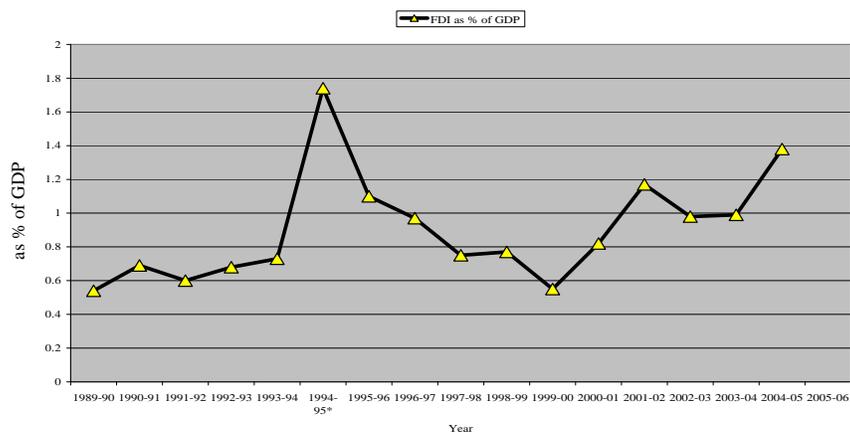
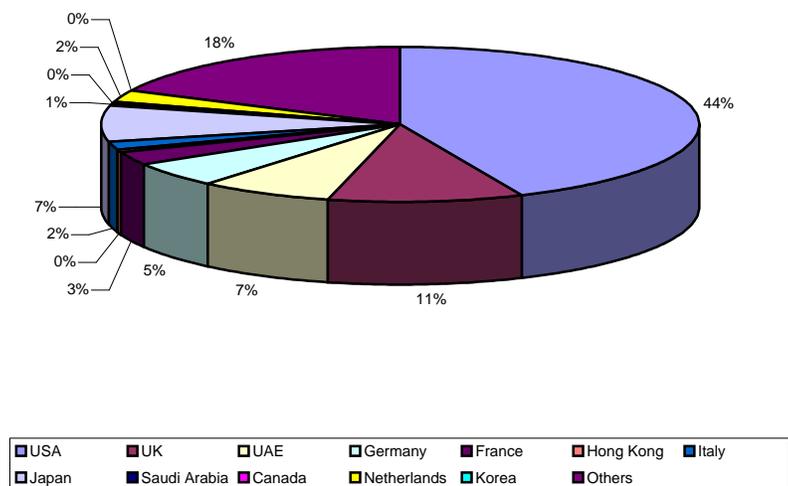


Table 3

Country-wise Shares of FDI Inflows in Pakistan (in %)

Year	1990- 91	1991- 92	1992- 93	1993- 94	1994- 95	1995- 96	1996- 97	1997- 98	1998- 99	1999- 00	2000- 01	2001- 02	2002- 03	2003- 04	2004- 05	2005- 06
USA	43.4	52.8	63.7	44.7	32.2	39.9	29.3	36.1	42.7	45.4	35.5	28.8	67.3	26.5	25.11	21.4
UK	10.5	13.7	6.1	8.4	9.0	8.7	29.1	35.2	22.5	18.9	36.0	28.1	6.3	27.5	6.84	11.9
UAE	7.3	3.7	3.1	3.1	2.1	10.6	4.8	8.0	3.2	1.5	1.2	1.6	4.4	15.0	14.18	24.1
Germany	5.2	5.1	6.4	11.8	2.6	4.0	2.4	2.6	4.0	4.2	2.2	4.8	2.3	0.5	0.74	0.90
France	2.77	2.88	2.53	1.98	3.13	3.05	1.28	1.5	0.8	2.10	0.3	0.2	-1.4	0.3	-0.59	-0.2
Hong Kong	0.42	1.34	-	4.05	0.34	0.49	3.11	1.1	0.3	0.6	0.2	1.0	0.6	0.7	0.66	2.1
Italy	1.75	1.18	0.59	0.19	0.08	0.06	0.04	0.26	0.1	0.00	0.1	0.4	0.00	0.00	0.2	0.0
Japan	7.45	10.65	5.28	7.18	8.38	3.68	7.52	5.37	3.0	12.5	3.8	3.0	1.3	1.8	1.59	3.0
Saudi Arabia	0.51	0.36	0.03	2.67	0.54	0.2	2.46	-2.49	0.2	4.8	6.10	17.60	0.3	5.5	0.76	1.2
Canada	0.42	0.77	0.9	0.09	0.34	0.09	0.07	0.25	0.1	0.1	0.00	0.00	0.7	0.1	0.05	0.1
Netherlands	2.45	0.93	0.24	1.83	-0.03	1.02	1.09	0.01	4.5	1.2	2.3	1.5	-1.1	0.4	1.48	2.4
Korea	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.1	0.1	0.00	0.1	0.1
Others	17.8	6.6	11.1	14.1	41.3	28.2	18.8	11.0	17.6	7.6	10.3	12.0	19.1	21.8	48.88	33.0

Source: State Bank of Pakistan, Board of Investment, Government of Pakistan.

Fig. 4. Country-wise Share of FDI Inflows, 1990–2005**Table 3a***Top Investing Countries in Pakistan from 2002-03 to 2005-06*

Country	2002-03		2003-04		2004-05		2005-06*	
	FDI (Million \$)	% of Total FDI	FDI (Million \$)	% of Total FDI	FDI (Million \$)	% of Total FDI	FDI (Million \$)	% of Total FDI
UAE	119.7	15.0	134.6	14.2	367.5	24.1	1424.5	40.5
USA	211.5	26.50	238.4	25.1	326.0	21.4	516.7	14.7
Saudi Arabia	43.5	5.5	–	–	–	–	277.8	7.9
Switzerland	–	–	205.3	21.6	137.5	9.0	170.6	4.8
UK	219.4	27.49	64.9	6.8	181.5	11.9	244.0	6.9
Netherlands	–	–	–	–	36.7	2.4	–	–
Japan	14.1	1.77	15.1	1.6	45.2	3.0	–	–
Norway	–	–	146.6	15.4	–	–	252.6	7.2
Others	189.8	23.78	144.1	15.2	429.7	28.2	634.8	18.0
Total	798.0	100.0	949.4	100.0	1524.0	100.0	3521.0	100.0

*Fiscal Year 2006 (from July–April 2006).

Table 3b

Sectors Receiving Maximum FDI during 2002-03 to 2005-06

Sector	2002-03		2003-04		2004-05		2005-06*	
	FDI (Million \$)	% age						
Financial Business	207.5	26.0	242.1	25.5	269.4	17.7	329.2	9.3
Oil & Gas and Petro.								
Ref.	186.8	23.41	273.3	28.8	217.5	14.3	312.7	8.9
Chemicals	86.2	10.80	–	–	51.0	3.3	–	–
Transport	87.4	10.95	–	–	–	–	–	–
Trade	39.1	4.90	35.4	3.7	52.1	3.4	118.0	3.4
Power	32.8	4.11	–	–	73.3	4.8	320.6	9.1
Communica- tion (IT & T)	–	–	221.9	23.4	517.6	34.0	1937.7	55.0
Textiles	–	–	35.4	3.7	–	–	–	–
Constructions	–	–	32.0	3.4	–	–	89.5	2.5
Others	158.2	19.82	109.1	11.5	343.1	22.5	413.3	11.1
Total	798.0	100.0	949.4	100.0	1524.0	100.0	3521.0	100.0

Source: Board of Investment, Government of Pakistan. * Fiscal Year 2006 (from July-April 2006).

Table 4

Inflow of FDI by Sector-wise (in Million US \$)

Economic Group	2001-02	2002-03	2003-04	2004-05	2005-06
a. Commodity Producing Sector	378.5	386.9	385.6	515.6	880.3
Food and Beverages	-6.0	7.0	4.0	16.1	60.0
Textiles	19.8	28.7	40.6	45.8	47.0
Chemicals	12.8	87.0	16.8	52.1	62.9
Mining and Quarrying	9.4	3.6	72.0	24.2	29.6
Oil and Gas Explorations	268.2	186.8	202.4	193.8	312.7
Pharmaceutical and OTC Products	7.2	6.2	13.2	38.0	27.4
Machinery	26.5	17.6	16.9	16.5	18.7
Power	36.4	32.8	-14.2	73.3	320.6
Construction	13.2	17.2	33.9	55.8	89.5
b. Services Sector	97.2	411.1	563.8	1008.4	2139.9
Transport	22.5	88.0	12.1	43.7	33.1
Trade and Tourism	34.3	39.2	35.7	52.1	118.0
Communications	12.7	24.3	221.9	517.6	1937.7
Financial Business	3.5	207.5	242.1	269.4	329.2
Services	10.3	19.7	16.4	24.7	51.2
c. Others	13.9	32.4	35.6	100.9	413.3
Total	484.7	798.0	949.4	1524.0	3521.0

Source: Board of Investment, Government of Pakistan.

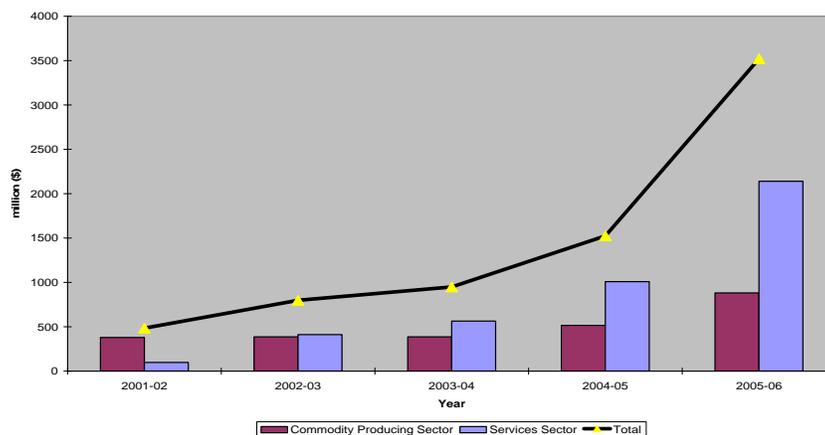
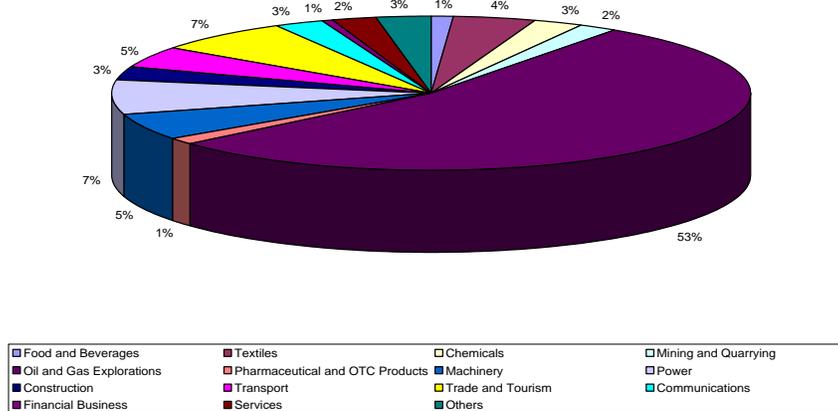
Fig. 5. Economic Group-wise FDI Inflows

Table 4 and Figure 5 indicate that the services sector attracted the major chunk of FDIs (Figure 6). The significant increase of FDI in services sector has enhanced its contribution towards GDP by 66 percent. Within services sector, Telecom sector remained the most dominant as depicted by an absolute increase of around \$1937.7 billion. During 2005-06 the contribution of Telecom in total FDI exceeded 55 percent.

Power generation is the second major area of interest followed by the communication sector in attracting FDI. This industry has immense potential for investment and the government is trying to attract more investment in this industry. The investment which dipped to negative \$14 million in 2003-04 is now increasing and touched to \$320.6 million in 2005-06.¹⁷ Other important sector is the Oil and Gas exploration. Pakistan has the fifth largest reservoir of coal (184 billion tons) in the Thar but only 4.5-5.0 million tons is mined annually, representing significant upside potential of the industry. The flow of FDI in this sector is continuously increasing and reached to \$312.7 million in 2005-06.

Besides telecommunication and power sectors, financial services have also attracted considerable FDI. More than 800 percent growth of FDI in the financial sector over the last four years is due to the financial sector reforms. Liberalization and privatisation of the financial sector appears to be the main factor responsible for a massive inflow of foreign capital. FDI inflows in this sector have increased up to \$329.2 million at the end of 2005-06 as compared to \$269.4 million in 2004-05.

¹⁷Though the major share of FDI in this industry is due to the privatisation proceeds of Karachi Electric Supply Corporation (KESC).

Fig. 6. Sector-wise Inflow of FDI

Trade group attracted \$118 million, construction \$89.5 million and others \$413.3 millions.

Pakistan has a lot of potential to attract foreign investment. Though, the rising trend of FDI reflects the success of the policy. However, FDI is considerably hindered due to institutional weaknesses, corruption, ineffective legal institutions, political uncertainty, poor law and order situation and low labour productivity.

5. THEORETICAL MODELLING OF FDI AND GROWTH

It can be argued that a well-developed domestic financial market is the pre-condition for attracting FDI. The speed of technological innovation and patterns of economic growth of a country are highly dependent on the evolution of the financial sector, which acts as a mechanism to channel financial resources between surplus and deficit units, as well as transferring technology embodied in FDI inflows [Choong, *et al.* (2004)]. Financial systems not only pool the savings of individuals but also have a profound affect on economic development. Besides the direct effects of savings on capital accumulation, savings mobilisation can improve resource allocation and boost technological innovation [Levine (1997)]. Hermes and Lensink (1999) and Baillui (2000) attempted to study the significance of foreign capital inflows and financial development as a channel for promoting economic growth. Both studies investigated the relationship between international capital inflows and economic growth through financial sector development channel, rather than simply focusing on the promotion of domestic investment rate spillover efficiency. They concluded

that capital inflows have positive spillover efficiency and a significant impact on economic growth, if the domestic financial sector has achieved a certain minimum level of development.

To determine the link between economic growth, FDI and domestic financial sector we basically follow the theoretical framework developed by Baro and Sala-i-Martin (1995) and the simple technological model proposed by Hermes and Lensik (1999, 2003). The model assumes that there are three types of agents—producers of final output, innovators and consumers. Firms rent a number of capital goods from innovators having monopoly rights over the production and sale of the capital goods and technologies.

The model starts with the following production function:

$$Y = A \cdot L^{1-\alpha} \cdot \sum_{j=1}^N (X_j)^\alpha \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

Where $0 < \alpha < 1$, Y is aggregate output, L is labour input, X_j is the capital good used by the j th firm, and A represents the exogenous state of technology. The production function assumes diminishing marginal productivity of each input L and X_j , and constant returns to scale in all inputs. Suppose that there are, N firms engaged in the production process of which n are domestic firms and $N - n$ foreign firms (i.e. MNCs).¹⁸ Further assume that technological progress takes the form of expansion in N , the number of firms undertaking production. Suppose the capital goods can be measured in common physical units and all are employed in the same quantity, $X_j = X_{j+1} = X$. The quantity of output is then given by

$$Y = A \cdot L^{1-\alpha} \cdot (NX)^\alpha \cdot N^{(1-\alpha)} \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Equation (2) implies that production exhibits constant returns to scale in L and NX , the total quantity of intermediate inputs. The term $N^{(1-\alpha)}$ indicates that Y increases with N . Assuming that the price of capital good is P_j , the price of L is normalised to one, and the producers operate in a competitive market.

Suppose that, each time the firm engages in production, it incurs one unit of output to use X_j . Then the present value of the future cash flows for the j th firm is:

$$V(t) = \sum_{j=1}^N (P_j - 1) X_j e^{-rt} \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

¹⁸Borensztein, *et al.* (1995) argued that the total number of varieties of capital goods, N , is produced by two type of firms i.e. domestic and foreign firms. The domestic firms produced, n , varieties out of total, N , and the foreign firms produced, n^* , varieties so that:

$$N = n + n^*$$

Where r is the steady-state rate of return of capital. Equation (3) shows that cost of production can be recouped only if the sale price P_j exceeds the marginal cost of production, 1, (i.e. $P_j > 1$).

Since the producers sets the price P_j at each time to maximise profit. The profit flow is given by

$$\pi_j = [(P_j - 1)] X_j, \text{ where}$$

$$X_j = \sum_j X_j = (A\alpha / P_j)^{1/(1-\alpha)} \cdot \sum_j L_j = L \cdot (A\alpha / P_j)^{1/(1-\alpha)} \quad \dots \quad (4)$$

This equation shows that quantity demand of X_j depends only on the price of P_j .

Borensztein, *et al* (1995) assume that the process of adaptation of new technology of production is costly and requires a fixed set-up cost $\varphi (N-n, N/N^*)$ before production of the new type of capital. They further assume that the fixed setup cost is inversely related to the number of foreign firms (MNCs) operating in the host country, and to the ratio of the number of goods produced in the developing economy to the number of goods produced in foreign economy. Now the profit function of the j th firm is given by

$$\Pi_j(t) = V(t) - \varphi(N - n, N / N^*)$$

The competitive firm will choose the quantity X_j to maximise $\Pi_j(t)$. Equation (4) indicates that the producer of X_j just selects P_j , to maximise the profit. The expression to maximise is therefore written as:

$$(P_j - 1) \cdot L \cdot (A\alpha / P_j)^{1/(1-\alpha)} \quad \dots \quad \dots \quad \dots \quad \dots \quad (5)$$

and the optimal solution to the maximisation problem is given by:

$$P_j = P = 1 / \alpha > 1 \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (6)$$

Hence, the price P_j is constant over time and is the same for all capital goods j . The monopoly price is the markup $1/\alpha$ on the marginal cost of production, 1. The price is also same for all goods j because the cost of production is the same for all goods, and each good enters symmetrically into the production function. Substituting Equation (6) into Equation (4) to determine the aggregate quantity produced of each capital good we arrive at Equation (7):

$$X_j = X = L \cdot A^{1/(1-\alpha)} \cdot \alpha^{2/(1-\alpha)} \quad \dots \quad \dots \quad \dots \quad (7)$$

The quantity X_j is the same for all goods at all points in time (if L is held constant). If we substitute for P_j and X_j in to Equation (3), then the investor's net present value will be:

$$V(t) = L.A^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \cdot \alpha^{2/(1-\alpha)} \sum_{j=1}^N e^{-r(v-t)} \quad \dots \quad \dots \quad (8)$$

Assuming free entry in the product market so that anyone can pay the R&D cost ϕ to secure the net present value, $V(t)$, shown in Equation (8). If $V(t)=\phi$ holds then Equation (8) takes the following form

$$\phi = L.A^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \cdot \alpha^{2/(1-\alpha)} \sum_{j=1}^N e^{-r(v-t)} \quad \dots \quad \dots \quad (9)$$

As N gets larger, the summation reduces to $1/r$ and hence, the zero profit condition $V(t) = \phi$ implies

$$r = (L/\phi) \cdot A^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \cdot \alpha^{2/(1-\alpha)} \quad \dots \quad \dots \quad \dots \quad (10)$$

The rate of return, r , is pegged by the underlying technology and the marginal productivity of capital. Barro and Sala-i-Martin (1995) assume constant rate of return, r which is given by:

$$r = (1/\phi) LA^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \alpha^{2/(1-\alpha)} \quad \dots \quad \dots \quad (11)$$

Where α measures the capital's share of income, A represents the level of technology, L is the labour input and ϕ is the cost of research and development (R&D). The model is based on the assumptions that innovators are free to enter into the market, fixed maintenance cost are equal to 1, and fixed set up costs (ϕ). With these assumptions, the link between FDI and R&D cost is established. Borensztein, *et al.* (1998) argued that the cost of R&D depends on FDI and more FDI leads to a decline in the costs of innovations. This reflects the idea that it is cheaper to imitate (technological diffusion resulting from FDI) than innovate, and the possibility to imitate increases if more goods are produced in other countries (i.e. when FDI is higher). Therefore, higher inflows of FDI incur lower innovation costs through spillover effects and imitation activity. Hence, the innovation cost depends on FDI, and can be modeled as:

$$\phi = f(FDI) \text{ where } \partial\phi/\partial FDI < 0 \quad \dots \quad \dots \quad \dots \quad (12)$$

It is well documented in the literature that the financial sector can play a vital role in enhancing economic growth through capital accumulation and technological innovations. So, A is a function of the development of the financial sector (FD) such that $A = g(FD)$, where $\partial FD/\partial A > 0$. This relationship is indicated by:

$$r = \left(\frac{L}{f(FDI)} \right) h(FD)^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \alpha^{2/(1-\alpha)} \dots \dots (13)$$

To develop the link between economic growth, financial development and FDI, we need to describe the process of capital accumulation, which is driven by saving behaviour. We assume that households maximise the following standard inter-temporal utility function:

$$U_t = \sum_{t=0}^{\infty} \left(\frac{C^\theta - 1}{1 - \theta} \right) e^{-\rho t} \dots \dots \dots (14)$$

where C denotes units of consumption of the final good Y , ρ is the subjective rate of time preference, and θ is the inverse of the inter-temporal elasticity of substitution. Given the rate of return equal to, r the optimal consumption path is given by the Euler condition:

$$gc = \frac{1}{\theta} (r - \rho) \dots \dots \dots (15)$$

In the steady-state equilibrium, the growth rate of consumption is equal to the growth rate of output, which is denoted by g .

Equation (15) indicates that in the steady-state equilibrium the growth rate of consumption is positively associated to the rate of return, and negatively related to the rate of time preference and the elasticity of substitution. Moreover, the number of firms N , and the level of output Y , will grow at the same rate of growth of consumption, gc .

Substituting Equation (13) into (15), we get the following expression for the growth rate of the economy.

$$g = \frac{1}{\theta} \left[f(FDI)^{-1} L g(FD)^{1/(1-\alpha)} \left(\frac{1-\alpha}{\alpha} \right) \alpha^{2/(1-\alpha)} - \rho \right] \dots (16)$$

The expression in (16) is valid only if the parameters are such that $g \geq 0$. The expression shows that the rate of growth of the economy (g) is an increasing function of L , FDI and FD , and decreasing function of ρ and θ . It also implies that an increase in FDI lowers set-up costs and raises the return on assets (r). This leads to an increase in savings, investment and consumption, which in turn accelerate economic growth. Furthermore, the higher the level of technology (well-established financial sector), the higher the economic growth will be in the country.

According to Levine (1997), capital accumulation and technological innovation are the two main channels through which the financial system affects economic growth. Following the capital accumulation channel, financial system mobilises savings, increases the volume of available resources to finance

investment, monitors investment projects, lowers information acquisition costs and increases the efficiency of the investment projects. All these factors will contribute to higher economic growth. Technological innovation and the financial institutions may help to reduce the risk related to the adoption of new technologies. Thus, financial institutions positively affect the speed of technological innovation, thereby enhancing economic growth [Huang and Xu (1999)]. This technological innovation may result from the channel of technological spillovers due to FDI. Hence, the rapid development in the financial sector leads to higher technological innovations, thereby promoting economic growth. Finally, the development of the domestic financial system determines to what extent the foreign firms will be able to borrow in order to extend their innovative activities in the host country. This would further increase the scope of the technological spillovers to domestic firms. Furthermore, the availability of well-developed financial markets may also influence FDI and its impact on the diffusion of technology in the host country. Hermes and Lensink (2003) pointed out that FDI and domestic financial markets are complementary for the enhancement of the process of technological diffusion, thereby increasing the pace of economic growth.

The effect of FDI on the growth rate of the economy is positively associated with the level of financial markets development, that is, greater the deepening of the financial markets in the host country, the higher will be the effect of FDI on the growth rate of the economy. This hypothesis is tested for Pakistan over the period 1976–2005 by using bound testing approach of cointegration. To test the model empirically, we estimate the following approximation of Equation (16):

$$\begin{aligned} LRGDPg_t = & \beta_0 + \beta_1 LRFDI_t + \beta_2 LFC_t + \beta_3 LRFD_t \\ & + \beta_4 (LRFDI_t \times LRFD_t) + \beta_5 LCAP_t + u_t \dots \dots (17) \end{aligned}$$

Where $RGDPg$ is real GDP growth, $RFDI$ is the ratio of foreign direct investment to GDP, FC is the labour, RFD is the ratio of financial sector development indicator to GDP, CAP is the physical capital, u_t is the error term and 'L' stands for the logarithms of respective variables.

6. DATA DESCRIPTION AND METHODOLOGY

6.1. Data Description

This study is based on 34 annual observations over the period 1972 to 2005. Following the previous literature such as, Mankiw, *et al.* (1992) and Khan and Senhadji (2000), economic growth is taken as the log-difference of real GDP at current prices ($LRGDPG$). Real GDP is calculated as the GDP at current prices divided by consumer price index (CPI). The ratio of foreign direct

investment to GDP (RFDI) is calculated as foreign direct investment (FDI) divided by real GDP. Logarithm of total labour force (LFC) is used as proxy for labour. Change in stocks is used as a proxy for capital (CAP). Data on these variables are taken from *Handbook of Pakistan Economy-2005* published by the State Bank of Pakistan and *Pakistan Economic Survey* (various issues). Data on private sector credit (PSC) and CPI are taken from IFS CD-ROM. The ratio of private sector credit to real GDP (RPSC) is used as an indicator of financial sector development. All the variables are expressed in logarithmic form.

The literature has widely acknowledged that FDI is a very crucial financial source of non-debt inflows and technological transfer [Bajpai and Sachs (2000)]. FDI would lead higher economic growth not only via capital accumulation and employment generation, but it also influences economic growth through positive spillover efficiency in the form of imitation of foreign technologies, increasing the competition of domestic firms, and improving linkages between domestic and foreign firms [Sjoholm (1999); Zhang (2001)]. The spillover efficiency and technological transfer do not automatically occur because these benefits of FDI depend on the absorptive capabilities of the recipient countries [Borensztein, *et al.* (1998)].

Financial development indicator is included in the model in order to examine the impact of financial development on economic growth. The literature suggests various indicators measuring the size, efficiency and the relative importance of the financial intermediations to the overall financial system such as, the ratio of M1 to GDP, M2 to GDP, ratio of private sector credit to GDP and stock market capitalisation. Following King and Levine (1993a, b), Levine (1999) and De Gregorio and Guidotti (1995), we used private sector credit to GDP (RPSC) as an indicator of financial development. This measure of financial development reflects more precisely the efficiency of banking institutions in providing credit to private sector. Furthermore, private sector credit is considered to be more efficient than the public sector credit in making investment decisions.

The interaction term between LRFDI and financial development (LRFDI*LRPSC) is included to investigate the impacts of FDI on economic growth through the channels of financial system development in creating technological diffusions. This term is included in the model to examine the validity of the hypotheses that financial sector and FDI is complementary in promoting economic growth through the process of spillover efficiency.

6.2. Bound Testing Approach

To examine the long-run relationship between growth rate of real GDP, ratio of FDI to real GDP, financial sector development, labour and physical capital, we apply bound testing approach to cointegration within the framework of Autoregressive Distributed Lag (ARDL) developed by Pesaran, *et al.* (2001).

There are several reasons for the use of bound test. *Firstly*, the bivariate cointegration test introduced by Engle and Granger (1987) and the multivariate cointegration technique proposed by Stock and Watson (1988), Johansen (1988, 1991) and Johansen and Juselius (1990) are more appropriate for large sample size. Hence, bound testing procedure of cointegration is more appropriate for a small sample size [Pesaran, *et al.* (2001); Tang (2001, 2002)]. *Secondly*, bound testing approach avoids the pre-testing of unit roots. *Thirdly*, the long run and short run parameters of the model are estimated simultaneously. Fourth, all the variables are assumed to be endogenous. *Finally*, this method does not require that the variables in a time series regression equation are integrated of order one. Bound test could be implemented regardless of whether the underlying variables are I (0), I (1), or fractionally integrated.

An ARDL representation of Equation (17) is formulated as:

$$\begin{aligned}
\Delta LRGDPG_t &= \beta_0 + \beta_1 LRGDPG_{t-1} + \beta_2 LRFDI_{t-1} + \beta_3 LFC_{t-1} \\
&+ \beta_4 LRPSC_{t-1} + \beta_5 LCAP_{t-1} + \beta_6 (LRFDI \times LRPSC)_{t-1} \\
&+ \sum_{i=1}^k \beta_7 \Delta LRGDPG_{t-i} + \sum_{i=0}^k \beta_8 \Delta LRFDI_{t-i} + \sum_{i=0}^k \beta_9 \Delta LFC_{t-i} \\
&+ \sum_{i=0}^k \beta_{10} \Delta LRPSC_{t-i} + \sum_{i=0}^k \beta_{11} \Delta LCAP_{t-i} \\
&+ \sum_{i=0}^k \beta_{12} \Delta (LFDI \times LFD)_{t-i} + \varepsilon_t \quad \dots \quad \dots \quad \dots \quad \dots \quad (18)
\end{aligned}$$

Where β_0 is an intercept term, representing the level of technology, Δ is difference operator, ε_t random terms. In Equation (18), all variables are expressed in logarithmic form. Equation (18) estimates the impact of FDI and financial market development on growth. We estimate Equation (18) with interaction terms between FDI and financial development indicator (LRFDI*LRPSC) to test the robustness of the hypothesis that both FDI and financial development is complementary with respect to enhancing the process of technological diffusion, thereby enhancing the economic performance [Hermes and Lensink (2003)].

Because of the limited number of observations, we choose lag length of 3 for each first differenced variable to estimate Equation (18). Following general-to-specific technique, we omitted all the insignificant parameter from the model. The accuracy and reliability of the estimated model will then be tested by implementing a battery of diagnostic tests.¹⁹

The long-run relationship between real GDP growth and its determinants given in Equations (18) is tested by means of bounds testing procedure proposed

¹⁹ Such as LM test for serial correlation, ARCH test for heteroscedasticity, RESET test for functional form and CUSUM and CUSUMSQ for structural stability.

by Pesaran, *et al.* (2001). To implement the bound test, the null hypothesis is tested by considering the unrestricted error correction model (UECM) for real GDP growth in Equations (18), and a joint significance test was performed as:

$$H_0 : \beta_0 = \beta_1 = \beta_2 = \dots = \beta_7 = 0 ,$$

$$H_1 : \beta_0 \neq \beta_1 \neq \beta_2 \neq \dots \neq \beta_7 \neq 0$$

The bounds testing procedure is based on the F -statistic. The asymptotic distribution of the F -statistic is non-standard under the null hypothesis of no cointegration between the examined variables, irrespective of whether the explanatory variables are purely $I(0)$ or $I(1)$. Pesaran, *et al.* computed two sets of critical values for a given significance level. One set assumes that all variables are $I(0)$ and other set assumes that they are all $I(1)$. If the computed F -statistic exceeds the upper critical bounds value, then the H_0 is rejected. If the F -statistic falls into the bounds then the test becomes inconclusive. If the F -statistic lies below the lower critical bounds value, it implies no cointegration.²⁰ In order to determine the order of integration of each variable, we implement Augmented Dickey-Fuller (ADF) unit root.

7. EMPIRICAL ANALYSIS

The purpose of empirical analysis is to examine the financial sector development channels through which FDI may be beneficial for growth. In particular, we examine whether FDI interacts with financial development to affect economic growth. Before going further, we check the order of integration of each variable by means of ADF unit root test [Dickey and Fuller (1979)]. The results of the ADF test are reported in Table 5. Based on the ADF unit root test (Table 5), except real GDP growth all other series are statistically insignificant at their log-level and significant at their log-first difference. The log-level of real GDP growth is statistically significant at the 1 percent level of significance, implying that growth of real GDP is integrated of order $I(0)$. Since growth of real GDP is integrated of order $I(0)$ and all other series are $I(1)$, hence an appropriate estimation technique will be the autoregressive distributed lag (ARDL).

In testing the long-run relationship between real GDP growth, FDI relative to GDP and financial sector development, OLS method is used to estimate Equations (18) and the results of UECM are presented in Table 6. The estimated UECM passed all the diagnostic checks as indicated in panel-B of Table 6. Moreover, the CUSUM and CUSUMSQ tests of stability indicate that parameters of the estimated model are stable over time. The results of CUSUM and CUSUMSQ are depicted in Figure 7.

²⁰This is similar to the Johansen and Juselius (1990) multivariate cointegration procedure, which has five alternative cases for long run.

Table 5
Results of the Unit Root Test

Series	Constant (C)/ Trend (T)	Log-level	Log-first Difference	Decision
LRGDPG	C	5.8776(0)*	-5.8321(0)**	I (0)
LFC	C	-0.4538(1)	-4.0578(1)*	I (1)
LFDIGDP	C	-1.3488(3)	-6.2719(2)**	I (1)
LRPSC	C	-0.4660(0)	-6.4014(0)*	I (1)
LCAP	C	-1.8698(1)	-3.5017(1)**	I (1)
LRDFI*LRPSC	C	-0.6410(0)	-6.5115(0)*	I (1)

Note: ADF test is based on the Mackinnon (1991) critical values. Number of lags is given in parentheses. AIC is used for lags selection. * and ** Indicate significant at the 1 percent and 5 percent level of significance, respectively.

Fig. 7. Plot of CUSUM and CUSUMSQ Test of Stability

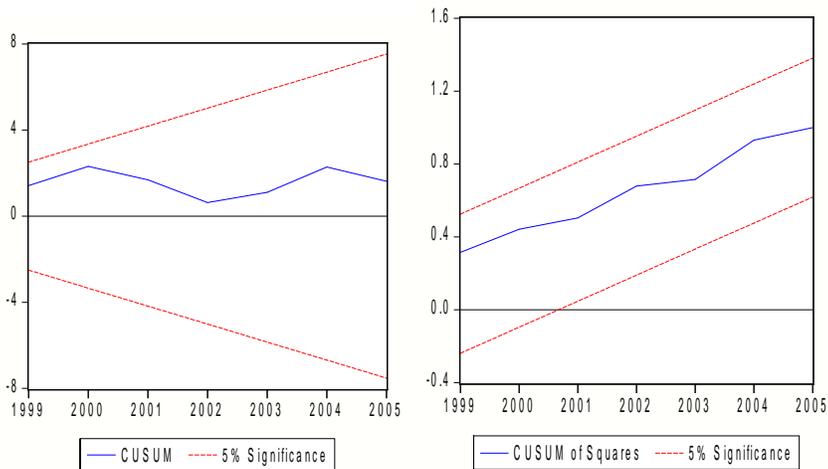


Table 6

FDI and Growth of Real GDP

Panel A. Dependent Variable: D(LRGDP2G)				
Method: Least Squares				
Sample (adjusted): 1975 2005				
Excluded observations: 4 after adjusting endpoints				
Newey-West HAC Standard Errors and Covariance (lag truncation=2)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDPG (-1)	-0.818393	0.092709	-8.827563	0.0000
LFC (-1)	1.188127	0.230911	5.145387	0.0013
LCAP (-1)	0.109127	0.020801	5.246205	0.0012
LFDIGDP (-1)	-0.221403	0.026670	-8.301664	0.0001
LRPSC (-1)	-0.514157	0.097510	-5.272880	0.0012
LFDIGDP*LRPSC (-1)	0.090717	0.012026	7.543232	0.0001
C	-3.989690	0.706693	-5.645575	0.0008
D (LRGDPG (-2))	-0.792399	0.140324	-5.646917	0.0008
D (LRGDPG (-3))	-0.206114	0.089608	-2.300162	0.0550
D (LFC (-2))	0.302817	0.165554	1.829112	0.1101
D (LFDIGDP)	-0.346047	0.058592	-5.906095	0.0006
D (LFDIGDP (-2))	-0.243625	0.037379	-6.517705	0.0003
D (LRPSC)	-0.299829	0.045846	-6.539845	0.0003
D (LRPSC (-1))	0.363758	0.069355	5.244874	0.0012
D (LRPSC (-2))	0.540087	0.110264	4.898108	0.0018
D (LFDIGDP*LRPSC)	0.113870	0.020652	5.513734	0.0009
D (LFDIGDP*LRPSC (-2))	0.117174	0.017757	6.598629	0.0003
D (LCAP)	-0.000815	0.011564	-0.070480	0.9458
D (LCAP (-1))	-0.148717	0.032968	-4.511005	0.0028
D (LCAP (-2))	-0.115037	0.022891	-5.025435	0.0015
R-squared	0.976813	Mean dependent var		0.002270
Adjusted R-squared	0.913878	S.D. dependent var		0.037890
S.E. of regression	0.011120	Akaike info criterion		-6.028677
Sum squared resid	0.000866	Schwarz criterion		-5.068798
Log likelihood	101.3871	F-statistic		15.52084
Durbin-Watson stat	1.752690	Prob(F-statistic)		0.000562

Panel B: Diagnostic Tests

Breusch-Godfrey Serial Correlation LMTest	0.3421[0.580]
ARCH Test	0.4756[0.497]
Ramsey RESET Test	0.0287[0.871]

Panel C: Coefficient Restrictions Test

F-statistic	98.2675 [0.0000]
-------------	------------------

Note: Lag length are given in () and p-values are stated in []. Breusch-Godfrey LM-test, ARCH test, and RESET test are based on F-statistics. While normality test is based on Chi-square test of order 2.

Applying the bound testing procedure, the long-run relationship between real GDP growth and its determinants is examined by imposing zero restrictions on the one period lagged-level variables. Based on the F-statistic, the null hypothesis of no long-run relationship is rejected at the 1 percent level of significance, because the computed F-static (98.27) is greater than the upper bound of the critical value (i.e. 4.43). This implies that there is long-run relationship between the variables included in Equation (18) in achieving the long-run equilibrium. The core objective of this study is to empirically investigate the hypothesis that FDI and domestic financial markets are complementary with respect to enhancing the process of technological diffusion, thereby increasing the rate of economic growth. Therefore, our attention has been focused only on the variables LFDI and the interactive term LFDI*LRPSC. The short-and long-run elasticities of economic growth with respect to Equation (18) are reported in Table 7.

It is evident that financial sector acts as a mechanism in transferring the benefits from FDI in promoting the domestic economic growth in the long-run. This can be shown by the negative coefficient of FDI. The interactive term LRFDI*LRPSC is positive and significantly related to the dependent variable *LRGDPG*, whereas, LRFDI alone is significantly negative. This result supports the hypothesis that FDI exerted positive effect on economic growth if and only if when the development of the domestic financial system has reached at a certain minimum level. Thus, we find preliminary support for the core hypothesis of the study.

Table 7

Short- and Long-run Elasticities of Economic Growth in Pakistan

Variable	Short-run Coefficients	Long-run Coefficients
Constant	–	–4.8750*
LFC	0.3028**	1.4518*
LFDIGDP	–0.5897*	–0.2705*
LRPSC	0.6040*	–0.6283*
LCAP	–0.2638*	0.8184*
(LFDIGDP*LRPSC)	0.2310*	0.1108*

Note: * and ** indicate significant at the 1 percent and 5 percent level of significance, respectively.

The long-run coefficients are derived via normalisation of coefficients of lagged level variables by dependent variable. Summing the significant values of the lagged differenced coefficients of each variable derives the short-run coefficients.

The long-run coefficient of FDI is –0.2705 and the long-run coefficient of the interaction term (LFDIGDP*LRPSC) is 0.1108. Based on these results, we are able to determine the threshold value of LRPSC above which LFDI starts to have positive impact on growth. The threshold value can be calculated by

differentiating Equation (17) with respect to LFDIGDP and put equal to zero [Durham (2004)]. The long-run estimated relationship will be:

$$\begin{aligned} LRGDPG &= -4.8750 + 1.4518LFC + 0.8184 LCAP - 0.2705 \\ &\quad LFDIGDP \\ &\quad -6283 LRPSC + 0.1108 LFDIGDP*LRPSC \\ \nabla LRGDPG / \nabla LFDIGDP &= -0.2705 + 0.1108 LRPSC = 0 \\ LRPSC &= 0.2705/0.1108 \\ LRPSC &= 2.4413 \end{aligned}$$

The short-run estimated relationship will be:

$$\begin{aligned} LRGDPG &= 0.3028 LFC - 0.2638 LCAP - 0.5897 LFDIGDP \\ &\quad + 0.6040 LRPSC + 0.2310 LFDIGDP*LRPSC \\ \nabla LRGDPG / \nabla LFDIGDP &= -0.5897 + 0.2310 LRPSC = 0 \\ LRPSC &= 0.5897/0.2310 \\ LRPSC &= 2.5528 \end{aligned}$$

The threshold levels for long-run and short-run are equal to 2.4413 and 2.5528, respectively. The result implies that FDI will have a positive impact on economic growth only when the private sector credit relative to real GDP is above 12.8432 percent and 11.4884 percent ²¹ in the short and long-run respectively. In other words, LRPSC should be larger than 13 percent and 11 percent for FDI to have positive effect on economic growth.

Our findings suggest that Pakistan will effectively transform the benefits embodied in FDI inflows, if the evolution of the domestic financial sector has attained a certain development level. The interaction term between FDI and financial development indicator is positive, while the coefficient on FDI is negative in the case of Pakistan. This suggests that FDI will have a positive impact on growth performance only if the domestic financial sector is well-developed and functioning efficiently, otherwise, the effect of FDI on economic growth will be negative. The findings further suggest that there is a U-shaped long-run pattern of FDI on economic growth, if we augment the impact of domestic financial sector evolution.

The results suggest negative relationship between financial market indicator and economic growth. This is little surprising, as financial development is known to help in the growth of the industrial and financial sector. A little more investigation is required to be able to definitely conclude that increasing financial development negatively affects the level of growth in Pakistan. One reason for this negative relationship between economic growth and financial development could be that expanding financial activities are not getting translated to increase economic activities as the funds are not being used

²¹ Antilog of 2.4413 is equal to 11.4884 and antilog of 2.5528 is equal to 12.8432.

for investment purposes. This is true for Pakistan because in the pre-reform period, one finds that commercial banks in Pakistan have been allocating funds to selective people and sponsors of leading political parties. Thus, credit to private sector is generally not based on economic consideration. As a consequence, the vested group has accumulated a huge amount of money which is termed as bad debt (non-performing loans) and more than 20 percent of non-performing loans still persist. Besides this, Pakistan is slowly withdrawing itself from the sphere of production and therefore, the funds are not being utilised for the purpose of investment. Similarly, it is quite possible that financial deepening has only meant an increase in the treasury operations of financial institutions rather than a rise in their lending activities. Furthermore, the negative effect of financial indicator on growth may be due to the inclusion of interaction term.²²

Al-Yousif (2002) provides two possible explanations to illustrate this phenomenon. *First*, the inverse sign between the variables is arises from the business cycle effect, rather than a representation of long-run steady-state equilibrium relationship. *Second*, the relationship is due to the inefficiency of the domestic financial system in allocating resources and operating in a weak regulatory environment. Because of the inefficiency of financial intermediaries, economic growth is therefore, slowed down. The inefficiency of the domestic financial system in channeling the source of FDI inflows into more productive sectors was one of the main causes of the East Asian financial crisis in mid-1997.²³ Krugman (1998) has pointed out that the domestic financial systems in most of the East Asian countries are weak, due to the poor regulatory framework, and the inconsistent and inappropriate sequencing of liberalisation measures. In Pakistan, due to the lack of investment opportunities, funds were directed towards the stock market and the property market. As a consequence, the presence of an external shock will easily jeopardise the fundamental strength of the financial sector, as well as the overall economy.

The findings do not necessarily imply that financial sector is not important, and can be ignored in discerning a linkage. These findings are capable of informing economic policy. For example, if there is an evidence of FDI-led growth, after including the influence exerted by the financial sector development, then it is incumbent on policy-makers to develop and improve the domestic financial sector, so that it can be more effective in channeling and transforming the advantages embodied in FDI inflows on economic growth. Our results suggest that a well-developed domestic financial system is capable to interact with all components of the economy such as, public sector, private

²²The inclusion of interaction term captures an important allocation function that the financial sector performs- having a well-development financial sectors to contribute economic growth.

²³It may also be possible that the funds from portfolio investment were diverted to financing long-term loan for productive purposes.

sector, banking system and the securities market. An improvement in the domestic financial sector will generate a positive impact on the economic performance of the country.

The main findings are summarised below:

- First, the interaction terms (LFDIGDP*LRPSC) in both short- and long-run are significant at the 1percent level of significant. The estimated coefficient of LFDIGDP is negative and statistically significant in both short- and long-run at the 1percent level. This means that the results provide a strong evidence to support the hypothesis that FDI has a positive effect on the economic growth in Pakistan only if private sector credit relative to real GDP is greater than 13 percent and 11 percent in both short- and long-run, respectively. Otherwise, the impact of FDI is negative.
- Labour force (LFC) has a positive impact on economic growth through spillover efficiency. However, it is believed that the spillover efficiency of FDI might have negative influence on the use of capital stock in the economy as the capital stock is positively correlated in the long-run, but is negatively correlated in the short-run.

8. CONCLUSIONS

Foreign direct investment (FDI) is now widely perceived as an important source for expediting industrial development of developing countries. Most of the developing countries have changed their attitude towards FDI because it is believed that FDI can contribute to the development efforts of a country through reducing saving-investment gap. A multinational firm's decision to extend production to another country is based on lower costs and higher efficiency consideration. The benefits of FDI are not restricted to improved use of its resources, but also stem from the introduction of new processes to the domestic market, learning-by-doing, networks, training of the labour force, and other spillover effects and externalities. Most of the LDCs including Pakistan have adopted proactive policies to attract FDI. Even though such policies can be very effective in attracting FDI, but local conditions can limit the potential benefits generated by FDI.

In this study, we focused mainly on the role of domestic financial system and the link between FDI and GDP growth. The findings of the study may contribute to three different areas of research. *First*, in the context of FDI and growth, this study provides fresh evidence. The presence of FDI inflows does not necessarily improve the technology level of host country through positive spillover efficiency. A recipient country enjoys the positive externalities embodied in FDI only if the efficiency and development of domestic financial sector at certain minimum level are attained. *Secondly*, the findings provides

supporting evidence that a well-developed financial sector can represent a source of comparative advantage for the country, having better ability to absorb the positive impact of FDI and promoting economic performance. *Thirdly*, developing countries like Pakistan are unable to reap the benefits of FDI inflows in the absence of development of domestic facilities such as infrastructure, financial system evolution, human capital development and macroeconomic stability cannot take place. *Finally*, a host country can influence the technological change through extending its absorptive capacity by further promoting financial sector reforms to gain sustainable economic growth and make productive use of FDI inflows. This implies that to take the advantage of positive interaction between FDI and growth, one should liberalise the economy particularly, stimulate financial sector development in the economy.

Our findings suggest that FDI plays an important role in contributing to economic growth. However, domestic financial sector development is crucial for positive effects to realise that has not been shown before. We also provide evidence that the link between FDI and growth is causal, where FDI promotes growth through financial sector development. Furthermore, the results suggest that better domestic financial conditions not only attract foreign companies but also allow host economy to maximise the benefits of foreign investments.

REFERENCES

- Ahmed, Eatzaz, and Anis Hamdani (2003) The Role of GFDI in Economic Growth. *Pakistan Economic and Social Review* ELI: 1 & 2, 29–43.
- Ahmed, Mohsin Hasnain, Shaista Alam, and Mohammad Sabihuddin But (2003) Foreign Direct Investment, Exports, and Domestic Output in Pakistan. *The Pakistan Development Review* 42: 4, 715–723.
- Alfaro, Laura, Areendam Chanda, Sebnem Kalemli-Ozcan, and Selin Sayek (2004) FDI and Economic Growth: The Role of Local Financial Markets. *Journal International Economics* 64, 89–112.
- Al-Yousif, Y. K. (2002) Financial Development and Economic Growth: Another Look at the Evidence from Developing Countries. *Review of Financial Economics* 11, 131–150.
- Antonelli, A. (1991) The Diffusion of Advanced Telecommunications in Developing Countries. Paris: Development Centre, Organisation for Economic Co-operation and Development.
- Anwar, Tillat (2002) Impact of Globalisation and Liberalisation on Growth, Employment and Poverty: A Case Study of Pakistan. United Nations University. (WIDER Discussion Paper No. WDP 2002/17.)
- Bailliu, J. N. (2000) Private Capital Flows, Financial Development and Economic Growth in Developing Countries. Bank of Canada. (Working Paper No. 2000/15).

- Bajpai, N., and J. D. Sachs (2000) Foreign Direct Investment in India: Issues and Problems. Harvard University. (Harvard University Development Discussion Paper No. 759).
- Balasuubramanyam, V. N, M. Salisu, and David Sapsford (1996) Foreign Direct Investment and Growth in EP and IS Countries. *The Economic Journal* 106, 92–105.
- Barro, R. and Sala-i-Martin (1995) *Economic Growth*. New York: McGraw Hill.
- Beck, T., Levine, R., and N. Loyaza (2000) Finance and the Sources of Growth. *Journal of Financial Economics* 58, 261–300.
- Bergten, C. F., T. Horst, and H. Moran (1978) American Multinationals and American Interests. Washington, D.C.: Brookings Institute.
- Blomstrom, M., A. Kokko, and M. Zejan (1992) Host Country Competition and Technology Transfer by Multinationals. (NBER Working Paper No. 4131.)
- Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee (1995) How Does Foreign Direct Investment Affect Economic Growth. National Bureau of Economic Research, Cambridge, MA. (NBER Working Paper Series No. 5057).
- Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee (1998) How Does Foreign Direct Investment Affect Economic Growth. *Journal of International Economics* 45, 115–135.
- Brewer, A. (1990) *Marxist Theories of Imperialism: A Critical Survey*. (2nd Edition). London and New York: Praeger.
- Bureau of Industry Economics (1995) Foreign Direct Investment in APEC: A Survey of the Issues, Report 95/21. Canberra: Australian Government Publishing Service, November.
- Burki, S. J., and J. J. Savitsky (2000) *Globalisation: An Agenda for Policy Analysis*. Washington, D.C.: EMP Financial Advisors, LLC.
- Campos, N., and Y. Kinoshita (2002) Foreign Direct Investment as Technology Transferred: Some Panel Evidence from the Transition Economies. *The Manchester School* 70:3, 398–419.
- Caves, R. (1982) *Multinational Enterprise and Economic Analysis*. New York: Cambridge University Press.
- Caves, R. E. (1971) International Corporations: The Industrial Economics of Foreign Investment. *Economica* 38, 1–27.
- Chakraborty, Chandana, and Parantap Basu (2002) Foreign Direct Investment and Growth in India: A Cointegration Approach. *Applied Economics* 34, 1061–1073.
- Choong, Chee-Keong, Zulkornain Yusop, and Siew-Choo Soo (1989) State Structure and Economic Adjustment of East Asian Newly Industrialised Countries. *International Organisation* 43, 647–672.

- Choong, Chee-Keong, Zulkornain Yusop, and Siew-Choo Soo (2004) Foreign Direct Investment, Economic Growth, and Financial Sector Development: A Comparative Analysis. *ASEAN Economic Bulletin* 21: 3, 278–289.
- Chu, You-Han (1974) Multinational Firms, Competition and Productivity in Host Country Markets. *Economica* 41, 176–93.
- Das, S. (1987) Externalities and Technology Transfer Through Multinational Corporations: A Theoretical Analysis. *Journal of International Economics* 123, 188–206.
- De Gregorio, J., and P. E. Guidotti (1995) Financial Development and Economic Growth. *World Development* 23:3, 433–448.
- De Mello, Luiz R and Jr. (1997) Foreign Direct Investment in Developing Countries and Growth: A Selective Survey. *The Journal of Development Studies* 34: 1, 1–34.
- De Mello, Luiz R and Jr. (1999) Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data. *Oxford Economic Paper* 51, 133–151.
- Dickey, D. A., and W. A. Fuller (1979) Distribution of the Estimator for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association* 74, 427–431.
- Domar, E. D. (1946) Capital Expansion, Rate of Growth, and Employment. *Econometrica* 14, 137–147.
- Dunning, John H. (1993) *Multinational Enterprise and the Global Economy*. Washington, D.C.: Berks: Addison-Wesley.
- Dunning, John H., and A.M. Rayman (1985) In Honor of Stephen Hymer, The First Quarter Century of the Theory of Foreign Direct Investment: The Influence of Hymer's Dissertation of the Theory of Foreign Direct Investment. *American Economic Association Proceedings* 75: 2, 228–232.
- Durham, J. B. (2004) Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth. *European Economic Review*. 48, 285–306.
- Engle, R. F., and C. W. J. Granger (1987) Cointegration and Error Correction: Representation, Estimation and Testing. *Econometrica* 55:2, 251–276.
- Fan, Emma Xiaoqin (2003) Technological Spillovers from Foreign Direct Investment—A Survey. *Asian Development Review* 20:1, 34–56.
- Findlay, R. (1978) Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model. *Quarterly Journal of Economics* 92, 1–16.
- Gao, Ting (2004) FDI, Openness and Income. *The Journal of International Trade and Economic Development*. 13: 3, 305–323.
- Gerschenkron, A. (1962) *Economic Backwardness in Historical Perspective*. Massachusetts: Belknap Press of Harvard.

- Ghosh, B. N. (2001) *Dependency Theory Revisited*. Aldershot: Burlington, and Sydney: Ashgate.
- Goldsmith, R.W. (1969) *Financial Structure and Development*. New Haven, C.T.: Yale University Press.
- Greenwood, J., and B. Jovanovic (1990) Financial Development, Growth and the Distribution of Income. *Journal of Political Economy* 98:5, 1076–1107.
- Grossman, G., and E. Helpman (1991) *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press.
- Haque, Nadeem Ul (1992) *Foreign Direct Investment: Evidence, Theory and Policy*. Sustainable Development Policy Institute, Islamabad. (SDPI Working Paper No. 6)
- Haque, Nadeem Ul (1992) *Human Capital Governance and the Transfer of Technology*. Sustainable Development Policy Institute, Islamabad. (SDPI Working Paper No. 4.)
- Harrod, R. F. (1939) An Essay in Dynamic Theory. *The Economic Journal* 49, 145–33.
- Hein, S. (1992) Trade Strategy and the Dependency Hypothesis: Comparison of Policy, Foreign Investment, and Economic Growth in Latin America and East Asia. *Economic Development and Cultural Change* 40: 3, 495–521.
- Helpman, E. (1993) Innovation, Imitation, and Intellectual Property Right. *Econometrica* 61, 1247–1280.
- Hermes, Niels, and Robert Lensink (1999) *Foreign Investment, Financial Development and Economic Growth*. University of Groningen: The Netherlands. (Mimeographed.)
- Hermes, Niels, and Robert Lensink (2003) Foreign Direct Investment, Financial Development and Economic Growth. *The Journal of Development Studies* 40:1, 142–163.
- Hood, N., and S. Young (1979) *The Economics of Multinational Enterprise*. London: Longman.
- Huang, H., and C. Xu (1999) Institutions, Innovations and Growth. *American Economic Review* 89:2, 438–443.
- Hymer, S. H. (1976) *The International Cooperation of National Firms: A Study of Foreign Direct Investment*. Cambridge, Mass: MIT Press.
- Johansen, S. and K. Juselius (1990) Maximum Likelihood Estimation and Inference on Cointegration—With Application to the Demand for Money. *Oxford Bulletin of Economics and Statistics* 52, 169–210.
- Johansen, S. (1988) Statistical Analysis of Cointegrating Vectors. *Journal of Economic Dynamics and Control* 12, 231–254.
- Johansen, S. (1991) Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models. *Econometrica* 59, 1551–1580.

- Kennedy, C. R. (1992) Relations between Transnational Corporations and Governments of Host Countries: A Look to the Future. *Transnational Corporations* 1:1, 67–91.
- Khan, Ashfique H. (1997) Foreign Direct Investment in Pakistan: Policies and Trends. *The Pakistan Development Review* 36:4, 959–985.
- Khan, S. M., and A. S. Senhadji (2000) Financial Development and Economic Growth: An Overview. International Monetary Fund, Washington, D.C. (IMF Working Paper 00/209)
- Kindleberger, C. P. (1984) *Multinational Excursions*. Cambridge: MIT Press.
- King, R. G., and R. Levine (1993) Finance and Growth: Schumpeter Might be Right. *Quarterly Journal of Economics* 108, 717–737.
- King, R. G., and R. Levine (1993b) Finance, Entrepreneurship and Growth. *Journal of Monetary Economics* 32, 30–71.
- Koizumi, T. and K. J. Kopecky (1977) Economic Growth, Capital Movements and the International Transfer of Technical Knowledge. *Journal of International Economics* 7, 45–65.
- Kojima, K. (1978) *Direct Foreign Investment: A Japanese Model of Multinational Business Operations*. London: Croom Helm.
- Krugman, P. (1998) What Happened in Asia? (Mimeograph.) Cambridge, MA: MIT Press. Available at www.web.mit.edu/krugman/www/DISINTER.html.
- Krugman, P. R. (1979) A Model of Innovation, Technology Transfer, and the World Distribution of Income. *Journal of Political Economy* 87, 253–263.
- Lall, Sanjaya (1993) Foreign Direct Investment in South Asia. *Asian Development Review* 11:1, 103–119.
- Levin, Andrew, and Lakshmi K. Raut (1997) Complementarities between Exports and Human Capital in Economic Growth: Evidence from the Semi-Industrial Countries. 155–174.
- Levine, R. (1991) Stock Markets, Growth, and Tax Policy. *Journal of Finance* 46:4, 1445–1465.
- Levine, R. (1997) Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature* 35, 688–726.
- Levine, R. (1999) Law, Finance and Economic Growth. *Journal of Financial Intermediation*. 8, 8–35.
- Levine, R., and S. Zervos (1998) Stock Markets, Banks and Economic Growth. *American Economic Review* 88, 537–558.
- Lipsey, R.E. (2000) Interpreting Developed Countries' Foreign Direct Investment. Cambridge, MA. (NBER Working Paper No. 7810).
- Liu, L. (1998) Financial Development and Economic Growth. Doctoral Thesis, University of Kentucky, Lexington, KY.
- Lucas, R. E. J. (1988) On the Mechanics of Economic Development. *Journal of Monetary Economics* 22, 3–42.

- MacKinnon, J. G. (1991) Critical Values for Cointegration Tests. Chapter 13, In R. F. Engle and C. W. J. Granger (eds.) *Long-run Economic Relationships: Readings in Cointegration*. Oxford University Press.
- MacKinnon, R. I. (1973) *Money and Capital in Economic Development*. Washington, D.C.: Brooking Institute.
- Mankiw, G. N., D. Romer, and D. N. Weil (1992) A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics* 107: 2, 407–437.
- Mencinger, Joze (2003) Does Foreign Direct Investment Always Enhance Economic Growth? *KYKLOS* 56: 4, 491–508.
- Meyer, K. E. (2003) FDI Spillovers in Emerging Markets: A Literature Review and New Prospectives. Copenhagen Business School (Mimographed.).
- Naveed, Anjum, and Ghulam Shabbir (2006) Trade Openness, FDI and Economic Growth. *Pakistan Economic and Social Review* 94:1, 137–154.
- Nunnenkamp, Peter, and Julius Spatz (2004) FDI and Economic Growth in Developing Economies: How Relevant are Host-Economy and Industry Characteristics? *Transactional Corporations* 13:3, 53–83.
- Pesaran, M. H., and B. Pesaran (1997) *Working with Microfit 4.0: An Interactive Approach*. Oxford: Oxford University Press.
- Pesaran, M. H., and Y. Shin (1995) Long-run Structural Modelling. Cambridge, Department of Applied Economics, University of Cambridge. (DAE Working Paper No. 9419.)
- Pesaran, M. H., Yongcheol Shin, and Richard J. Smith (1999) Bounds Testing Approaches to the Analysis of Long Run Relationships. (Working Paper).
- Pesaran, M. H., Yongcheol Shin, and Richard J. Smith (2001) Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics* 16, 289–326.
- Pradhan, Jayaprakash (2003) Foreign Direct Investment and Economic Growth in Developing Countries: Further Evidence from Panel Data. *Asian Economic Review*. 45: 2, 197–217.
- Rajan, R. J., and L. Zingales (1998) Financial Dependence and Growth. *American Economic Review* 88:3, 559–586.
- Rebelo, S. (1991) Long-Run Policy Analysis and Long-Run Growth. *Journal of Political Economy* 99, 500–521.
- Reuber, G. L. et al. (1973) *Private Foreign Investment in Development*. Oxford: Clarendon Press.
- Romer, P. (1986) Increasing Returns and Long Run Growth. *Journal of Political Economy* 94, 1002–1037.
- Romer, P. (1990) Endogenous Technological Change. *Journal of Political Economy* 98, S71–S102.
- Saint-Paul, G. (1992) Technical Choice, Financial Markets and Economic Development. *European Economic Review* 36:4, 763–781.

- Seid, Sherif H. (2002) *Global Regulations of Foreign Direct Investment*. Ashgate Publishing Company 131 Main Street Burlington, VT 05401-5600 USA.
- Shabbir, T., and A. Mahmood (1992) The Effect of Foreign Private Investment on Economic Growth in Pakistan. *The Pakistan Development Review* 31:4, 831–841.
- Shah, Zahir, and Qazi Masood Ahmed (2003) The Determinants of Foreign Direct Investment in Pakistan: An Empirical Investigation. *The Pakistan Development Review* 42:4, 697–714.
- Shaw, E. S. (1973) *Financial Deepening in Economic Development*. Cambridge, M.A. Harvard University Press
- Singer, H. (1950) The Distribution Gains Between Investing and Borrowing Countries. *American Economic Review* 90, 473–485.
- Sjoholm, F. (1999) Technology Gap, Competition and Spillovers from Direct Foreign Investment: Evidence from Establishment Data. *The Journal of Development Studies* 36, 53–73.
- Solow, R. M. (1956) A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics* 70, 65–94.
- Sornarajah, M. (1994) *The International Law on Foreign Investment*. Cambridge; New York: Cambridge University Press, Grotius Publications.
- Stock, J. H., and M.W. Watson (1988) Variable Trend in Economic Time Series. *Journal of Economic Prospective* 1, 147–174.
- Tang, Cheong Tuck (2001) Bank Lending and Inflation in Malaysia: Assessment from Unrestricted Error-Correction Models. *Asian Economic Journal* 15:3, 275–289.
- Tang, Cheong Tuck (2002) Demand for M3 and Expenditure Components in Malaysia: An Assessment from Bound Testing Approach. *Applied Economic Letters* 9, 721–725.
- Teece, D. J. (1985) Multinational Enterprise, Internal Governance, and Industrial Organisation. *American Economic Association Papers and Proceedings* 75:2.
- UNCTAD (1997) *World Investment Report: Transnational Corporations, Market Structure and Competition Policy*. New York: United Nations.
- UNCTAD (2000) *World Investment Report: Trends and Determinants*. New York and Geneva: United Nations.
- UNCTAD (2001) *World Investment Report: Promoting Linkages*. New York: United Nations.
- UNCTAD (2003) *World Investment Report: FDI Policies for Development: National and International Prospective*. New York: United Nations.
- UNCTAD (2006) *World Investment Report 2006*. Geneva.
- Walz, U. (1997) Innovation, Foreign Direct Investment and Growth. *Economica* 64, 63–79.

- Wang, J. Y., and M. Blomstrom (1992) Foreign Investment and Technology Transfer: A Simple Model. *European Economic Review* 36, 137–155.
- Wang, J.Y. (1990) Growth, Technology Transfer, and the Long-Run Theory of International Capital Movements. *Journal of International Economics* 29: 3-4, 255–271.
- World Bank (1989) *World Development Report*. New York: Oxford University Press.
- World Bank (2001) Global Development Finance Report. The World Bank Washington, D.C.
- Wurgler, J. (2000) Financial Markets and the Allocation of Capital. *Journal of Financial Economics* 58, 187–214.
- Yasmin, Bushra, Aamrah Hussain, and Muhammad Ali Chaudhary (2003) Analysis of Factors Affecting Foreign Direct Investment in Developing Countries. *Pakistan Economic and Social Review* 91: 1 & 2, 59–75.
- Zaidi, Hussain H. (2004) Snags in the Inflow of FDI. *Dawn*, the International Edition, 09 August. Also available from <http://DAWN.com>
- Zang, Kevin Honglin (2001) How Does Foreign Investment Affect Economic Growth in China? *Economics of Transition* 9: 3, 679–693.

PIDE Working Papers

- 2006: 1. *Remittances, Trade Liberalisation, and Poverty in Pakistan: The Role of Excluded Variables in Poverty Change Analysis* by Rizwana Siddiqui and A. R. Kemal (2006). 40pp.
- 2006: 2. *Poverty-reducing or Poverty-inducing? A CGE-based Analysis of Foreign Capital Inflows in Pakistan* by Rizwana Siddiqui and A. R. Kemal (2006). 43pp.
- 2006: 3. *Bureaucracy and Pro-poor Change* by Ali Cheema and Asad Sayeed (2006). 26pp.
- 2006: 4. *Civil Servants' Salary Structure* by Faiz Bilquees (2006). 21pp.
- 2006: 5. *Wheat Markets and Price Stabilisation in Pakistan: An Analysis of Policy Options* by Paul Dorosh and Abdul Salam (2006). 17pp.
- 2006: 6. *Stock Market Liberalisations in the South Asian Region* by Fazal Husain and Abdul Qayyum (2006). 19pp.
- 2006: 7. *Volatility Spillover between the Stock Market and the Foreign Exchange Market in Pakistan* by Abdul Qayyum and A. R. Kemal (2006). 15pp.
- 2006: 8. *A Significant Shift in Causal Relations of Money, Income, and Prices in Pakistan: The Price Hikes in the Early 1970s* by Fazal Husain and Abdul Rashid (2006). 18pp.
- 2006: 9. *A Social Accounting Matrix for Pakistan, 2001-02: Methodology and Results* by Paul Dorosh, Muhammad Khan Niazi, and Hina Nazli (2006). 31pp.
- 2006: 10. *Demographic Dividend or Demographic Threat in Pakistan* by Durr-e-Nayab (2006). 29pp.
- 2006: 11. *Awake the Sleeper Within: Releasing the Energy of Stifled Domestic Commerce!* by Nadeem Ul Haque (2006). 14pp.
- 2006: 12. *Myths and Realities of Long-run Development: A Look at Deeper Determinants* by Lubna Hasan (2006). 37pp.
- 2007: 13. *A Fresh Assessment of the Underground Economy and Tax Evasion in Pakistan: Causes, Consequences, and Linkages with the Formal Economy* by M. Ali Kemal (2007). 30pp.
- 2007: 14. *The Relationship between Corporate Governance Indicators and Firm Value: A Case Study of Karachi Stock Exchange* by Attiya Y. Javed and Robina Iqbal (2007). 22pp.

- 2007: 15. *Perfect Competition* by M. Ali Khan (2007). 21pp.
- 2007: 16. *The Harris-Todaro Hypothesis* by M. Ali Khan (2007). 11pp.
- 2007: 17. *Wage Differentials, Rate of Return to Education, and Occupational Wage Share in the Labour Market of Pakistan* by Asma Hyder (2007). 20pp.