

THE EMPIRICAL DETERMINANTS OF DIRECT FOREIGN INVESTMENT IN PAKISTAN

Mohammed Nishat and Anjum Aqeel
University of Karachi

1. Introduction

Pakistan like many developing countries actively seek capital and technology from advanced countries. The pattern of capital inflow was favourable during early 50's and 60's when Pakistan enjoyed a significant amount of foreign assistance and easy loans. Since mid-seventies most of the loans were matured and we faced a growing problem of debt servicing and access to mostly hard loans. The continuing heavy imports bill with exports of dominantly basic commodities had deteriorated the balance of payments throughout. However, after 1974 the remittances from Middle Eastern countries eased the situation to some extent (Nishat and Bilgrami, 1991) but as a character we still needed foreign capital to supplement and complement the resources for endeavour towards development. Also in recent years, most of the developed and exporting countries have started to channel their capital flows through private investment to developing countries due to economic and ideological reasons. These developing countries continue relying on foreign investment because it does not add to their burden, they get access to new technology, upgrades their managerial skills and it opens new marketing possibilities abroad. However, the developing countries are facing significant international competition to attract foreign investment.

Since early eighties, Pakistan government has initiated several incentives to attract foreign investments. These incentives included deregulation policies, one window facilities sanction for industrial investors, concessions and security to foreign private investors. Under these incentive schemes, foreign investors were allowed to remit profit and capital, exempt on burdensome taxes on income and relief from double taxation in case of specific countries. These policies were made even more attractive during 90's for foreign investors and also extended to non-resident Pakistanis (Economic Survey, Ministry of Finance, Government of Pakistan).

It is important to mention that besides these incentives and attractive policies foreign investors still look towards economic, social climate and political stability of the host country. In a recent survey about 67 percent of potential Pakistani migrant investors in Middle Eastern countries indicated the political unrestness as one of the crucial parameters for them to decide whether to invest in Pakistan or not (Nishat and Bilgrami, 1994).

To date only few studies are undertaken to investigate the determinants of foreign investment in Pakistan (Root and Ahmed, 1979; Lim, 1983; Hasan and Nishat, 1989). These studies are based mainly on cross-sectional analysis, while it is more relevant to do the time-series analysis as average of investment for the short periods may not reflect a country's long run economic development and not in growth of short periods (Lim, 1983).

This paper attempts to empirically identify the determinants of direct foreign investment flows in Pakistan. The study will also select economic, social and political parameters which are crucial to attract or unattract the private foreign investment in Pakistan. The paper is organised into five sections. Second section presents the theoretical background and model specification. Third section describes the data sources. The results are presented in section four followed by concluding remarks in section five.

2. Model Specification

In literature many demand and supply side determinants are identified by Root and Ahmed (1979) in their detailed study. Their model included thirty-eight variables to determine the direct foreign investment across various countries. The most significant variables which explained the direct foreign investment were per capita GDP, GDP, growth rate, economic integration, extent of urbanisation, regular executive transfers, commerce, transport and communications etc. Lim (1983) tested fiscal incentives, natural resources and level of economic development as determinants of foreign direct investment. He concluded that fiscal incentives were not sufficient condition to attract foreign direct investment. The other study by Hasan and Nishat (1989) identified that liberal policies adopted by Pakistan for MNC's activities appear to be successful in directing MNC's investment towards the large scale manufacturing investment. The use of simultaneous equation model relating both demand and supply side determinants is also recommended, in literature, but it is very difficult to estimate due to aggregation problem (Tsai, 1991). Due to data limitations we only consider the demand side variables which are selected to reflect the general investment climate in Pakistan.

On the basis of above discussion the model which will attempt to identify the determinants of foreign direct investment can be written as:

$$\text{FINVL}_t = f(\text{GDPL}_t, \text{GINDL}_t, \text{CLL}_t, \text{WTL}_t, \text{TCL}_t, \text{TTL}_t, \text{RDL}_t, \text{EDVL}_t, \text{EMML}_t, \text{DIL}_t, \text{XGGL}_t, D_t) \quad [1]$$

where

- FINVL_t = Total direct foreign investment
- GDPL_t = Gross Domestic Production
- GINDL_t = General Index of Share Prices
- CLL_t = Coal production, proxy for mineral resources

WTI_t	=	Value added in Wholesale and retail trade
TCL_t	=	Value added in transport and communications
$EMML_t$	=	Employment in mining and manufacturing
DIL_t	=	Number of industrial disputes/stoppage
$XGGL_t$	=	Ratio of exports to GDP
TTL_t	=	Number of telephone lines
RDL_t	=	Length of roads in kilometres
$EDVL_t$	=	Primary education enrolment
D_t	=	Dummy variable for structural change having value of zero before 1983 and 1 for 1984 and years after.

It is being hypothesised in the model that foreign investment is positively related to the growth rate of the economy. Foreign investors will find profitable to invest in countries which show a steady growth rate. The general index of share prices reflects the political stability. It is positively related to foreign investment. Mineral resources, growth in wholesale and retail trade sector indicating growth in financial and commercial activities and infrastructure facilities, all play a positive role in attracting investment from abroad. As foreign investment brings high technology and provide opportunity of capital goods production in host country. In our model the explanatory variable of employment is positively related with the dependent variable as inflow of technology and growing role of manufacturing sectors ensures largely employing technical and trained labour. The export is considered as engine of growth and increasing level of exports in domestic income ensures more development in economy and builds up the confidence and motivate the foreign investor positively.

Law and order situation influences the decision making of foreign investors. Labour disputes may have negative impact on foreign investment. The dummy variable is used as a proxy for denationalisation and financial structural changes after 1984.

3. Data

This study is based on published data for the period 1960-61 to 1993-94. The total foreign investment is in Rupees million. This data is published in "Assets, Liabilities and Foreign Investment" published by State Bank of Pakistan. The figures for GDP, exports, wholesale and retail trade are in Rupees million and published in Pakistan Economic Survey of Ministry of Finance, Government of Pakistan. The coal figures (in thousand tonnes), telephones (in thousand number), roads (in kilometres), all are from various

issues of Pakistan Economic Survey. The employment in manufacturing figures are in million and are from Statistical Year Book, published by Federal Bureau of Statistics, Government of Pakistan. The General Share price index is collected from Statistical Year Book and from various issues of Annual Reports of State Bank of Pakistan. The number of industrial disputes and stoppage are from various issues of Pakistan Labour Gazette published by Ministry of Labour, Manpower, and Overseas Pakistanis. The primary school enrolment is from various issues of Monthly Statistical Bulletin.

4. Estimation and Empirical Results

The model in equation 1 is estimated by log-linear OLS method. The results presented in Table 1 indicates that all the coefficients have the expected signs, except for transport and communications and the ratio of exports to GDP.

The coefficient of GDP is positively related but statistically insignificant. This may be due to a constant growth in the GDP at about 6 percent during the study period. The coefficient of General Share Price index is positive and highly significant pointing towards the importance of political stability in attracting foreign investment in Pakistan. The results also highlights the importance of human and non-human resources in decision making of foreign investors. The same is implied by our significant positive coefficient of coal and employment. An increase in employment in manufacturing sector, which absorb a good proportion of skilled and semi-skilled labours, has positive influence to attract foreign investment in Pakistan. The model indicates a significant negative effect on inflow of foreign direct investment if the industrial disputes and stoppage increases. The coefficient of export to GDP ratio turned out to be negative but it is insignificant. The infrastructure facilities variable indicated a negative and significant impact on foreign investment. The reason for this behaviour is due to the fact that if infrastructure facilities are available the gap is likely to book the domestic investment rather than direct foreign investment. The dummy variable coefficient which identifies the impact of structural changes has positive sign and is significant. It implies a positive effect of government policies in attracting foreign investment during study period.

To tackle with the negative and significant coefficient of transport and communication we tried to find some other proxies for infrastructural facilities like number of telephones kilometres of road and also we look one year lagged variable of value added in this sector. The coefficient of education reflecting human capital resource turned out to be positive as we expected but it is significant at only 85 percent significance level. Moreover, with the

inclusion of this variable in the model our coefficient for the GDP became insignificant indicating a strong relationship between economic growth and human resource

Table 1: Dependent Variable FINVL

Log-linear OLS

Model 1	
C	4.3317 (27.6939)
GDPL	1.4777 (5.9663)
GINDL	1.4277 (0.4709)*
CLL	4.1139 (1.6596)**
WTL	1.1833 (5.3619)
EMML	7.2008 (2.7617)
DIL	-0.2133 (0.2085)***
XGGL	-0.9014 (0.9386)***
TCL	-7.8268 (3.0624)**
TTL	-
RDL	-
TCL(-2)	-
EDVL	-
D	1.4197 (0.6764)**
R ²	0.949
R ² -adj	0.924
D.W	1.91
SER	0.458
F-statistics	37.450

The figures in parentheses are standard errors

* 99 percent significance level

** 95 percent significance level

*** 90 percent significance level

Table 2: Dependent Variable FINVL

Log-linear OLS Model	Model 2	Model 3	Model 4	Model 5
C	-3.7427 (29.5123)	21.7894 (27.6678)	-76.4701 (34.0285)**	-19.2922 (27.9475)
GDPL	1.8022 (6.0269)	1.2761 (5.9255)	5.1577 (5.8878)	-0.7470 (6.0951)
GINDL	1.3329 (0.4879)*	0.2335 (0.6258)	0.2883 (0.5789)	0.3922 (0.5948)
CLL	4.4331 (1.7153)**	3.4285 (1.5695)**	1.6548 (1.6107)***	4.0010 (1.6320)**
WTL	0.9691 (5.9769)	-8.9901 (5.5301)**	-9.8894 (5.4528)**	0.5359 (6.1760)
EMML	7.1997 (2.7841)**	3.4595 (2.6689)***	5.8050 (2.5167)**	8.9413 (3.0887)***
DIL	0.1879 (0.2123)***	0.1017 (0.1954)	0.1432 (0.1942)	-0.0466 (0.1934)
XGGL	1.0543 (0.9634)***	-1.9324 (0.9911)**	-1.4584 (0.9235)***	-1.0699 (0.9535)
TCL	-7.0043 (3.2374)**	-	-	-
TTL	-	4.2359 (1.8076)*	-	-
RDL	-	-	6.6489 (2.5699)**	-
TCL(-2)	-	-	-	5.9655 (2.6404)**
EDVL	1.8545 (2.1976)***	-1.8478 (2.1471)***	2.2614 (2.0434)**	4.9799 (2.2068)**
D	1.3247 (0.6912)**	0.2762 (0.5410)	0.2597 (0.5109)	0.0252 (0.5488)
R ²	0.951	0.953	0.955	0.952
R ² -adj	0.923	0.925	0.929	0.924
D.W.	1.94	1.86	1.96	1.94
SER	0.462	0.453	0.441	0.457
F-statistics	33.23	34.54	36.48	33.92

The figures in parentheses are standard errors

* 99 percent significance level

** 95 percent significance level

*** 90 percent significance level

development. By comparing these versions (see Table 2) of our model presented in table 1 gives the best and a robust model.

5. Concluding Remarks

This paper has identified various demand side determinants of direct foreign investment in Pakistan during 1961 to 1994. The model selected with nine macro level determinants have 94 percent explanatory power. It is evident from our findings that political stability, peaceful law and order situation, level of technical labour force and mineral resource exploitation do attract foreign investors. The existing liberal policies by the government during last decade have been successful in attracting the foreign direct investment in Pakistan.

References

1. Annual Report (various issues), State Bank of Pakistan.
2. Assets, Liabilities, and Foreign Investment, State Bank of Pakistan.
3. Hasan, A and M. Nishat (1989), "Determinants of Multinational Investments in Pakistan: An Exploratory Analysis", *Pakistan Economic and Social Review*, No. 1.
4. Lim, D. (1983), "Fiscal Incentives and Direct Foreign Investment in Less Developing Countries", *Journal of Development Studies*, vol. 19, No. 2.
5. Monthly Statistical Bulletin, Federal Bureau of Statistics, Government of Pakistan.
6. Nishat, M. and N. Bilgrami (1991), "The Impact of Migrant Worker's Remittances on Pakistan Economy", *Pakistan Economic and Social Review*, vol. 29, No. 1.
7. Nishat, M. and N. Bilgrami (1994), "Remittances Behaviour of Pakistani Migrants Living in Middle East", draft, AERC.
8. Pakistan Economic Survey, Ministry of Finance, Government of Pakistan.
9. Pakistan Labour Gazette, Ministry of Labour, Manpower, and Overseas Pakistanis, Government of Pakistan.
10. Root, F. and R. Ahmed (1979), "Empirical Determinants of Manufacturing Direct Investment in Less Developed Countries", *Economic Development and Cultural Change*, vol. 27, No. 4.
11. Statistical Year Book, Federal Bureau of Statistics, Government of Pakistan.
12. Tsai, Pan-Long (1991), "Determinants of foreign Direct Investment in Taiwan: An Alternative Approach with Time series Data", *World Development* vol. 19.

Abstract

There is an increasing role of foreign direct investment in the economies of many growing developing countries. Pakistan like many other developing countries faces significant international competition in attracting foreign private investment. This paper attempts to empirically identify the determinants of direct foreign investment in Pakistan during the period 1961 to 1994. The study selects many demand side economic, social and political parameters which reflect the general investment climate and are crucial to attract or unattract the private foreign investment. From our findings it is evident that political stability, peaceful law and order situation, level of technical labor force and mineral resource exploitation do attract foreign investors. The existing liberal policies by the government during last decade have been successful in attracting foreign direct investment in Pakistan.

LES CAUSES DÉTERMINANTES DES INVESTISSEMENTS ÉTRANGERS DIRECTS AU PAKISTAN

Résumé

Dans maintes pays en voie de développement, les investissements étrangers directs jouent un rôle de plus en plus important. Le Pakistan, comme beaucoup d'autres pays en voie de développement, doit faire face à une concurrence internationale importante quand il s'agit d'attirer ce type d'investissements. Cette étude se propose d'identifier de manière empirique les déterminantes des investissements étrangers directs au Pakistan dans la période 1961-1994. À cet effet, les auteurs ont choisi une série de paramètres économiques du côté de la demande, de paramètres sociaux et de paramètres politiques qui témoignent du climat d'investissement général du pays et qui sont d'importance cruciale quand il est question d'attirer ou de ne pas attirer les investissements étrangers privés. Les résultats de cette étude confirment que la stabilité politique, l'ordre public, le niveau technique de la main d'œuvre et l'exploitation des ressources minières sont des facteurs importants d'attraction des investisseurs étrangers et que les politiques libérales mises en place par le gouvernement dans la dernière décennie ont réussi à attirer les investissements étrangers directs au Pakistan.

INDIAN JOURNAL OF APPLIED ECONOMICS

INTERNATIONAL ECONOMIC QUARTERLY

IJAE's articles address all areas of applied economics and econometrics including their applications to social behaviour

Chief Editor: **K. Puttaswamaiah**

Founder Patron: **Late Jan Tinbergen, Nobel Laureate**

EDITORIAL ADVISORY BOARD

NOBEL LAUREATES

Paul A. Samuelson, MIT, Cambridge, U.S.A., **Wassily Leontief**, New York Univ., U.S.A.,

Franco Modigliani, MIT, Cambridge, U.S.A., **Robert M. Solow**, MIT, Cambridge, U.S.A.

Professors and Economists

M.S. Swaminathan, Agricultural Scientist, India, **Michael Lipton**, Sussex Univ., U.K., **Ashok Mathur**, J.N. Univ., India

M.P. Todaro, Population Council, U.S.A., **G.C. Harcourt**, Cambridge Univ., Cambridge, **Rati Ram**, Illinois State Univ.,

U.S.A., **S. Devarajan**, The World Bank, U.S.A., **Yash Mehra**, Federal Reserve Bank of Richmond, Virginia, **Padma**

Desai, Columbia Univ., U.S.A., **Keith Griffin**, California Univ., U.S.A., **Bala Batavia**, Depaul Univ., U.S.A., **Harold O**

Fried, Union College, New York, **James W. Dean**, Western Washington University, U.S.A., **M.I. Ansari**, Athabasca

Univ., Canada, **J.W. Neville** and **B.B. Rao**, NSW Univ., Australia, **Jocelyn Harne**, Macquarie Univ., Australia, **W.P.**

Hogan, Sydney Univ., Australia, **Kiyoshi Nakamura**, Waseda Univ. of Tokyo, Japan, **Claude Menard**, Acomaul

Université de Paris I, France, **Arnaldo Mauri**, Università di Milano, Italy

SPECIAL ISSUE ON

COST-BENEFIT ANALYSIS WITH REFERENCE TO ENVIRONMENT AND ECOLOGY CONTENTS

Volume 7 Nos. 1-3, Pages 1-420

IN THREE PARTS

(January-September 1998)

David M. Newbery, Spatial General Equilibrium and Cost-Benefit Analysis
Sardar M.N. Islam, Optimum Growth Theory and Social Time Preference: A Computerised Mathematical Modelling Exercise to Choose a Social Discount Rate

Giuseppe Munda, A Theoretical Inquiry on the Axiomatic Consistency of Distributional Weights used in Cost-Benefit Analysis

Parameswar Nandakumar, The Output Gap: Measurement, Related Concepts and Policy Implications

John C. Whitehead, A Methodological Comparison of Theoretical Approaches in Dichotomous Choice Contingent Valuation

Sarah Lumley, Cost-Benefit Analysis, Ethics and the Natural Environment

Todd Litman, Transport Cost Analysis: Applications in Developed and Developing Countries

David K. Lewis, Cost-Benefit Analysis and the Evaluation of New Technology and Policies in Natural Resources

Joseph N. Lekakis, Cost-Benefit Analysis and the Environment: A Critical Assessment

Sabine O'Hara and Susan Mesner, The Limits of Economic Rationality: Social and Environmental Impacts of Recreational Land Use

Peter Clough, Cost-Benefit Analysis and Wildlife Conservation: A Sustainable Application?

Sardar M.N. Islam, Jim Gigas and Peter Sheehan, Cost-Benefit Analysis of Climate Change: Towards an Operational Decision Making Rule for Climate Change Policy

Sardar M.N. Islam and Jim Gigas, The Effect of Social Time Preference on the Future of the Australian Economy and Environment: Findings from the Australian Dynamic Integrated Climate and Economy Model (ADICE)

David Pimentel and Madinah S. Ali, An Economic and Environmental Assessment of Herbicide-Resistant and Insect/Pest-Resistant Crops

Karl Steininger, Spatial Discounting and the Environment: An Empirical Investigation into Human Preferences

Fernando Perna and Vitor Santos, The Free-Riding Behaviour in Culatra Island Case Study: Detection and Correction
Peter Seidel, The Cost of Wealthy Modern Cities

Susan B. Kask, Jason F. Shogren and Todd L. Cherry, Valuing Multiple Health Risks from Long-Term Low Dosage Exposure to Hazardous Chemicals

Jan van der Straaten, Challenges and Pitfalls of Cost-Benefit Analysis in Environmental Issues

Jane V. Hall and Victor Brajer, Challenges in Valuation: The Health Benefits of Reducing Air Pollutants

Bernardo Aguilar and Thomas J. Semanchin, The Implications of Ecological Economic Theories of Value to Cost-Benefit Analysis: Importance of Alternative Valuation for Developing Nations with Special Emphasis on Central America

A special Issue in Reverential Memory of **Jan Tinbergen** was published in 1996 which was very well received

Annual Subscription Rates

	India	U.S.A.	U.K.	Other Countries
Institutions	Rs. 500/-	\$ 120	£ 80	Equivalent of U.S. \$
Individuals	Rs. 450/-	\$ 90	£ 65	

Copies of the Journal will be sent by Book Post to Indian Subscribers. If they desire to be sent by registered parcel, they should add Rs. 80/- per year. Similarly, to foreign subscribers, copies would be sent by surface mail. If they desire to be sent by registered air mail US \$ 20 may be added.

This Journal is being listed and abstracted in the Journal of Economic Literature of the

American Economic Association and is being covered in online

listed and abstracted in JEL and covered on line

Also abstracted in the International Development Abstracts Elsevier

All Correspondence regarding subscriptions, advertisements and other business matters may be made to the **Chief Editor or Publisher** of the Journal

Payments may be made to **Indian Journal of Applied Economics** by crossed Demand Draft only

335, 3rd Cross, 2nd Block, 3rd Stage, Basave Gowd Nagar,

Bangalore 560 079, India, Tel. (91)-080-3303198/3303484

Fax (91)-080-3303239

Email: ijae.kps@access.net.in

ISSN 0971-8281

No. R.N. 086/1109/1



While not implying acceptance, payment of fees, responsibility for loss or return, the Editor encourages the submission of manuscripts concerning money, financial intermediaries, financial techniques, and experiments in savings mobilization in developing countries. Manuscripts submitted for publication (two copies) should be in English or French, 4,000 - 10,000 words in length with a 200-400 word summary, typed on one side only of the sheet and double-spaced. Footnotes should be indicated by consecutive numbers throughout the paper. References in the text should be quoted by the author's last name and year of publication, e.g. Shaw (1973) or (Shaw, 1973). The title should be as compact as possible. Submission of the paper implies that it is an unpublished work, not yet submitted for publication elsewhere. Sections and subsections of the paper should be indicated in cardinal numbers (e.g. 1.; 1.1.; 1.2.; etc.). Mathematical formulas should be numbered consecutively as [1], [2] etc. Figures should be limited in number and submitted in a form ready for the printer. References at the end should be listed alphabetically and quoted as follows:

- for articles: Galbis Vicente, "Monetary and Related Policies in Ministates", *Savings and Development* Vol. VIII, No. 4, 1984, pp. 291-350;
- for books: McKinnon Ronald, *Money and Capital in Economic Development*, The Brookings Institution, Washington D.C., 1973. All communications should be sent to the Editor.

"GIORDANO DELL'AMORE" FOUNDATION

Via S. Vigilio, 10 - 20142 MILANO (Italy) - Tel. 8135341 - Telex 313223 - Fax 8137481

Signed articles do not necessarily reflect the opinion of Savings and Development or of its Editor and no responsibility is accepted for them.

Bien que cela ne signifie pas l'acceptation ou le paiement de frais, et que toute responsabilité soit déclinée pour la perte ou la restitution, la Rédaction souhaite l'envoi de manuscrits concernant la monnaie, l'intermédiation et les techniques financières, et les essais pour la mobilisation de l'épargne dans les pays en voie de développement. Les articles (deux copies) devraient être rédigés en Français ou en Anglais, d'une longueur de 4.000 à 10.000 mots avec un résumé de 200 - 400 mots. Toute communication devra être adressée à la Rédaction:

FONDAZIONE "GIORDANO DELL'AMORE"

Via S. Vigilio, 10 - 20142 MILANO (Italie) - Tel. 8135341 - Telex 313223 - Fax 8137481

Les articles portant signature ne reflètent pas nécessairement l'opinion de Savings and Development ou bien de la Rédaction et toute responsabilité est déclinée par ceux-ci.

RASSEGNA TRIMESTRALE

REGISTRATA PRESSO IL TRIBUNALE DI MILANO AL N. 102 DEL 27.3.1974

DIREZIONE, REDAZIONE, AMMINISTRAZIONE

FONDAZIONE "GIORDANO DELL'AMORE" - CARIPLO - VIA S. VIGILIO, 10 - 20142 MILANO

TEL. 8135341 - TELEX 313223 - FAX 8137481

Direttore Responsabile

FELICE TAMBUSI

Fotocomposizione

La Compone - San Giuliano Milanese (MI)

Stampa

Typolitho Five - Borghetto Lodigiano (LO)

Stampato su carta R 400 MATT SATIN delle Cartiere BURGO

E-mail: fond.gda@mail.caribusiness.it



ISSN 0393 - 4551