

ISSN 1811-5438

THE LAHORE JOURNAL OF ECONOMICS

Lahore School of Economics

Aurangzeb

**Exports, Productivity and
Economic Growth in
Pakistan:
A Time Series Analysis**

Humayun Khan

**NGOs and Gender
Development, the Case of
AKRSP in District Chitral,
NWFP, Pakistan**

*Bushra Yasmin, Zainab
Jehan and Muhammad Ali
Chaudhary*

**Trade Liberalization and
Economic Development:
Evidence from Pakistan**

Muhammad Javaid Iqbal
**Bonded Labor in the Brick
Kiln Industry of Pakistan**

*Nawaz A. Hakro and
Wadho Waqar Ahmed*
**IMF Stabilization Programs,
Policy Conduct and
Macroeconomic Outcomes: A
Case Study of Pakistan**

*Syed Adnan Haider Ali Shah
Bukhari, Muhammad Shahbaz
Akmal and Mohammad
Sabihuddin Butt*

**Impact of Exchange Market
Forces on Pak-Rupee
Exchange Rates during
Globalization Period: An
Empirical Analysis**

*Syed Tahir Hijazi and
Yasir Bin Tariq*
**Determinants of Capital
Structure: A Case for the
Pakistani Cement Industry**

Book Review:

Nina Gera
In Defense of Globalization

Volume 11, No.1

Jan-June, 2006

THE LAHORE JOURNAL OF ECONOMICS

Editors

Dr. Azam Chaudhry, Editor
Dr. Theresa Thompson Chaudhry, Editor
Ms. Nina Gera, Co-Editor

Editorial Advisory Board

Dr. A. R. Kemal	Dr. Moazam Mehmood	Dr. Salman Ahmad
Dr. Ajaz Hussain	Dr. Munir Ahmad	Dr. Sarfraz Qureshi
Dr. Akmal Husain	Dr. Nasim Hasan Shah	Dr. Sarwat Jahan
Dr. Ashish Narain	Dr. Naved Hamid	Dr. Shahid Amjad Chaudhry
Dr. Aslam Chaudhry	Dr. Nuzhat Ahmad	Dr. Shahrukh Rafi Khan
Dr. Gwendolyn A. Tedeschi	Dr. Pervez Tahir	Dr. Sohail Zafar
Dr. Inayat Ullah Mangla	Dr. Phillip Garner	Dr. Tariq Siddiqui
Dr. Kaiser Bengali	Dr. Rashid Amjad	Prof. Viqar Ahmed
Dr. Khalid Aftab	Dr. Saleem Khan	

Editorial Staff: Tele. No: 042 - 5874385

Telefax: 0092 - 42 - 5714936

E-mail: nina@lse.edu.pk

Publisher: Lahore School of Economics, Lahore, Pakistan.

Correspondence relating to subscriptions and changes of address should be sent to *The Lahore Journal of Economics*, 105-C-2, Gulberg III, Lahore - 54660 – Pakistan.

Instructions to authors can be found at the end of this issue. No responsibility for the views expressed by authors and reviewers in *The Lahore Journal of Economics* is assumed by the Editor, the Co-Editor and the Publishers.

Copyright by: **Lahore School of Economics**

112006

THE LAHORE JOURNAL OF ECONOMICS

Contents

Vol. 11, 2006

Exports, Productivity and Economic Growth in Pakistan: A Time Series Analysis <i>Aurangzeb</i>	1
Trade Liberalization and Economic Development: Evidence from Pakistan <i>Bushra Yasmin, Zainab Jehan and Muhammad Ali Chaudhary</i>	19
IMF Stabilization Programs, Policy Conduct and Macroeconomic Outcomes: A Case Study of Pakistan <i>Nawaz A. Hakro and Wadho Waqar Ahmed</i>	35
Determinants of Capital Structure: A Case for the Pakistani Cement Industry <i>Syed Tahir Hijazi and Yasir Bin Tariq</i>	63
NGOs and Gender Development, the Case of AKRSP in District Chitral, NWFP, Pakistan <i>Humayun Khan</i>	81
Bonded Labor in the Brick Kiln Industry of Pakistan <i>Muhammad Javaid Iqbal</i>	99
Impact of Exchange Market Forces on Pak-Rupee Exchange Rates during Globalization Period: An Empirical Analysis <i>Syed Adnan Haider Ali Shah Bukhari, Muhammad Shahbaz Akmal and Mohammad Sabihuddin Butt</i>	121

Book Review:

In Defense of Globalization
Nina Gera

141

Exports, Productivity and Economic Growth in Pakistan: A Time Series Analysis

Aurangzeb*

Abstract

This paper investigates the relationship between exports and economic growth in Pakistan by utilizing the analytical framework put forward by Feder (1983). The hypothesis that marginal factor productivities are not equal in export and non-export sectors of the Pakistan economy is tested by using time series from 1973 to 2005. The estimation results indicate that marginal factor productivities are significantly higher in the export sector. Moreover, the difference seems to derive, in part, from inter-sectoral positive externalities generated by the export sector. In broad terms, therefore, the results of this study are supportive of the export oriented, outward-looking approach to trade relations adopted by policymakers over the past decade.

JEL Codes: F1; F21; O53

Keywords: Pakistan; exports; growth; marginal factor productivities; externalities

I. Introduction

The role of exports in the economies of developing countries has been examined in a wide range of empirical and theoretical studies. It goes back to the classical economic theories of Adam Smith and David Ricardo, who argued that international trade plays an important role in economic growth and there are economic gains from specialization. It has been commonly viewed that being a component of GDP, exports contribute directly to national income growth and are among the most important sources of foreign exchange earnings that ease the pressure on the balance

* Economist, Social Policy and Development Centre (SPDC), Karachi, Pakistan.

of payments and generate employment opportunities. Moreover, it is also recognized that the exports sector contributes to GDP growth more than other sectors.

These indirect growth promoting effects of exports are discussed by a number of economists who have highlighted various beneficial aspects of exports, such as economies of scale, increased capacity utilization, productivity gains and greater product variety and the like. Furthermore, exposure to greater foreign competition generates improvements in exporters' performance, by eliminating organizational inefficiencies and raising growth either through learning from foreign rivals or through spillovers of technologies and knowledge. For instance, firms that participate in foreign markets are able to get access to technical expertise regarding product designs and production methods from their foreign buyers (see Clerides *et. al.* (1998), Egan and Mody (1992), Feder (1983), Krueger (1980), Balassa (1978), Bhagwati and Srinivasan (1978) and Keesing (1967, 1979)). The implication of the above discussion is that there are substantial differences in the export and non-export oriented industries, such that the former have higher factor productivity.

The existing empirical literature which tests the hypothesis that exports stimulate growth (the so-called export-led growth, ELG, hypothesis) is extensive. We have, therefore, limited our literature review by referring firstly to some of the highly influential studies that provide a useful framework for the analysis of the ELG hypothesis, secondly to the major studies for developing countries and thirdly to empirical studies.

There are several influential studies that provide a useful framework for analyzing the relationship between exports and economic growth, for example, Baldwin and Caves (1997), Rivera-Batiz and Romer (1991), Segerstrom, Anant and Dinopoulos (1990), and Grossman and Helpman (1990). The basic idea of these studies is that exports increase total factor productivity because of their impact on economies of scale and other externalities such as technology transfer, improving skills of workers, improving managerial skills, and increasing the productive capacity of the economy.

There are several studies, analyzing the role of exports in the economic growth for developing countries. Most of these studies conclude that there is a positive relationship between exports and economic growth, for example, Khalifa Al-Youssif (1997), Levin and Raut (1997), Balassa

(1978, 1985), Bahmani-Oskoei and Alse (1993), Bahmani-Oskoei, Mohtadi and Shabsigh (1991), Chow (1987), Jung and Marshall (1985) and Ram (1985, 1987). The key factors used in these studies to analyze the export-growth relationship are the effects due to economies of scale, increased capacity utilization, productivity gains, and greater product variety.

The empirical studies that confirm the strong association between exports and economic growth can be divided into two groups. The first group use cross-country analysis, of which key contributions are: Edwards (1992), Lopez (1991), Sheehy (1990), Kunst and Marin (1989), Ram (1985), Kavoussi (1984), Feder (1983), Tyler (1981) and Michaely (1977). Most of the cross-country studies tend to confirm the importance of exports for developing nations. The second group analyzes the country specific experiences. Most of these studies conclude that there is a positive and significant relationship between export expansion and economic growth.

None of the above studies empirically investigate the indirect effects of exports on growth, except that of Feder (1983). He is the first one who explicitly describes these indirect effects and develops an analytical framework to test the productivity differentials and externalities between exports and non-exports sector. In this paper we utilized this frame work for Pakistan. To our knowledge there is no such study which empirically investigates the indirect effects of exports for the case of Pakistan. All the existing studies consider the direct relationship between export expansion and economic growth, for instance, Aurangzeb (2003) and Khan, Malik and Hasan (1995).

The main intention of this paper is to analyze the direct and indirect impacts of exports on Pakistan's economic growth during 1973 to 2005 using the analytical framework developed by Feder (1983). The rest of the paper is organized as follows. In section 2 we discuss the theoretical framework used in this paper. Section 3 provides a brief description of the data used in the analysis. Section 4 provides the summary of the findings and section 5 provides some conclusions.

2. The Theoretical Framework

This section presents the theoretical framework developed by Feder (1983) in order to study the effects of exports on economic growth. Let

total production in the economy Y_t be composed of exports X_t and non-exports N_t . Hence, instead of an aggregate national production function, each of the two sectors' output is a function of the factors allocated to the sector (the characteristic that defines the division into sectors could be technological content or skill requirement, for details see the discussion in the introduction above). In addition, production in the non-export sector is affected by the volume of exports produced. This formulation represents the beneficial effects of exports on other sectors, such as the introduction of advanced production techniques, training of higher quality human resources suitable for sustained growth, development of efficient and internationally competitive management, etc. (for details see Keesing (1967)). These are referred to as external effects of exports on the non-exports sector, since they are not reflected in market prices.

The generic production function for the non-export sector including externality effects from the export sector is given as:

$$N = F(K_N, L_N, X) \quad (1)$$

where K_N and L_N are the stocks of capital and labor used in the non-export sector, respectively¹. Let the production function in the export sector be given as:

$$X = G(K_X, L_X) \quad (2)$$

where K_X and L_X are the stocks of capital and labor used in the export sector, respectively. Further assume that factor productivities differ between the export and non-export sector. We have already discussed the reasons for the productivity differential between the export and non-export sector.

Suppose that the ratio of respective marginal factor productivities in the two sectors deviate from unity by a factor δ i.e.

$$\frac{G_K}{F_K} = \frac{G_L}{F_L} = 1 + \delta \quad (3)$$

¹ The assumption of unidirectional externality effects needs to be imposed in order to allow for the identification of the parameters in the model. Thus, for simplicity the externalities of the domestic sector in the export sector are abstracted from the modeling.

where the subscripts denote partial derivatives:

In the light of the discussion in the previous section we assume that $\delta > 0$. However, the external effects of the export sector are not included in δ .

Differentiate equations (1) and (2) w.r.t. time we get.

$$\dot{N} = F_K \dot{K}_N + F_L \dot{L}_N + F_X \dot{X} \quad (4)$$

$$\dot{X} = G_K \dot{K}_X + G_L \dot{L}_X \quad (5)$$

where \dot{K}_N, \dot{K}_X and \dot{L}_N, \dot{L}_X are the sectoral changes in the stock of capital and labor respectively and F_X describes the marginal externality effect of exports on the output of non-exports.

If Y denotes the Gross Domestic Product then by definition $Y=N+X$, implies.

$$\dot{Y} = \dot{N} + \dot{X} \quad (6)$$

Using equations (4), (5) and (6) we get:

$$\dot{Y} = F_K \dot{K}_N + F_L \dot{L}_N + F_X \dot{X} + G_K \dot{K}_X + G_L \dot{L}_X \quad (7)$$

Equations (3) and (7) yield

$$\dot{Y} = (\dot{K}_N + \dot{K}_X)F_K + (\dot{L}_N + \dot{L}_X)F_L + \delta(F_K \dot{K}_X + F_L \dot{L}_X) + F_X \dot{X} \quad (8)$$

Define the total change in capital stock in the economy as $\dot{K} = \dot{K}_N + \dot{K}_X$ and the total change in labor $\dot{L} = \dot{L}_N + \dot{L}_X$ and using equations (3),(4) and (8) we get:

$$\dot{Y} = F_K \dot{K} + F_L \dot{L} + \left[\frac{\delta}{(1 + \delta)} + F_X \right] \dot{X} \quad (9)$$

Dividing equation (9) by Y and substituting $\alpha = F_K \left(\frac{K}{Y} \right)$, $\beta = F_L \left(\frac{L}{Y} \right)$

and $\gamma = \left[\frac{\delta}{(1 + \delta)} + F_X \right]$ we get the following reduced form equation:

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \gamma \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) \quad (10)$$

2.1. Computation of social marginal productivity of investment in exports (TMPK_x)

TMPK_x is defined as the total increment to GDP brought about by a marginal increase in capital allocated to the export sector i.e.

$$TMPK_X = \frac{dY}{dK_X} = \frac{\partial X}{\partial K_X} + \frac{\partial N}{\partial X} \frac{\partial X}{\partial K_X} \quad (11)$$

$$TMPK_X = G_K + F_X G_K \quad (12)$$

$$TMPK_X / G_K = 1 + F_X \quad (13)$$

Using equations (3) and (13) we get

$$(TMPK_X - F_K) / G_K = F_X + \delta / (1 + \delta) \quad (14)$$

The above equation measures the difference between the marginal contributions to GDP of production factors in the two sectors, relative to the marginal contributions of these factors to the export sector's output. Now equation (10) is interpreted as: the growth of GDP comprises the contribution of factor accumulation (i.e. growth of capital and labor) and the gains because of reallocation of factors from the low productivity sector (non-exports) to the high real productivity sector (exports).

2.2. Specifying the externality effect

So far we are not able to decompose the factor productivity differential γ into its components. In order to identify separately the inter-sectoral externality effect we assume that exports affect the production of non-exports with constant elasticity i.e.

$$N = F(K_N, L_N, X) = X^\theta \Phi(K_N, L_N), \quad (15)$$

where θ is a parameter. Differentiate equation (15) w.r.t. X we get:

$$F_x = \frac{\partial N}{\partial X} = \theta \frac{N}{X} \quad (16)$$

Equation (10) can now be written as:

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \left[\frac{\delta}{1+\delta} + \theta \frac{N}{X} \right] \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) \quad (17)$$

Also,

$$\theta \frac{N}{X} = \theta \frac{(1-X/Y)}{X/Y} = \frac{\theta}{X/Y} - \theta \quad (18)$$

Equations (17) and (18) will produce another reduced form equation:

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \left(\frac{\delta}{(1+\delta)} - \theta \right) \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) + \theta \left(\frac{\dot{X}_t}{X_t} \right) \quad (19)$$

Equations (10) and (19) are estimated for Pakistan using the OLS technique².

3. Data Description

The data has been acquired from the various issues of the *Economic Survey* of Pakistan and Statistical Supplements published by the Ministry of Finance. The data are annual series covering time period the 1973-2005. The time series includes total employed labor, real GDP, real gross fixed capital formation, real physical capital and real exports. Capital is constructed using the perpetual inventory method. We construct the base year capital stock using an infinite sum series of investment prior to the first year, assuming that the growth rates of investment during 1973-2005 are good proxy for investment prior to the first year (see Robert and Feenstra, 2004).

4. Empirical Findings

4.1. Empirical results without specifying externality

Given the analytical framework described in section 2 and without considering the functional form of the externality of the export sector we estimate equation (10) by regressing the rate of growth of GDP on the rate of growth of capital, rate of growth of labor and the

² For detailed derivation see Appendix-I

rate of growth of exports multiplied by exports share in GDP. Since most of the macroeconomic time series are non-stationary in levels, by using variables in growth form instead of levels we are also able to remove the problem of spurious regression that will arise from the presence of unit roots³. The results are reported in Table-1. The results provide strong support to the hypothesis that the marginal productivities in the export sector are higher than in the non-export sector, as the coefficient of $(\dot{X}_t/X_t)(X_t/Y_t)$ is positive and statistically significant. Furthermore, the capital share parameter α is statistically significant and exhibits the expected positive influence on growth. The results indicate that on average, exporters have significantly higher levels of productivity than non-exporters and exports contribute to growth mainly through increased productivity. This seems plausible and supports the view formalized by Grossman and Helpman (1990) that competitive pressure on international markets improves efficiency in production and management procedures.

Table-1: OLS results (dependent variable is \dot{Y}_t/Y_t)

Variables	Parameters	Coeff.	t-stats
Constant	c	0.017	2.07
\dot{K}_t/K_t	α	0.417	2.70
$(\dot{X}_t/X_t)(X_t/Y_t)$	γ	0.543	4.37
$R^2 = 0.17$			
$\bar{R}^2 = 0.11$			
DW = 1.6			
ARCH F - stats = 0.12 p - value = 0.73			

4.2. Empirical results after specifying externality

The estimate of the γ parameter obtained above provides the combined effect. In order to find the separate estimate for the inter-sectoral externality effect, we need to estimate equation (19). The OLS estimation of equation (19) is reported in Table-2(a). It is observed from the results in

³ For unit root tests results see Table-2 in Appendix-I.

Table-2(a) that the θ parameter is statistically insignificant. This result could be because of high collinearity between $(\dot{X}_t/X_t)(X_t/Y_t)$ and \dot{X}_t/X_t regressors. (See the correlation matrix reported in Table-1 in Appendix-I). Because of multicollinearity the standard errors of OLS estimators will become very large which results in insignificant t-ratios. Several methods have been developed as a remedy for multicollinearity. The one which is commonly used in the literature to solve the problem of multicollinearity is the *ridge regression* (RR) technique. In RR we estimate $\hat{\beta}_{RR} = [X^T X + \lambda I]^{-1} X^T Y$ instead of $\hat{\beta}_{OLS} = [X^T X]^{-1} X^T Y$ as in OLS. By adding a small number λ on the diagonal elements of the matrix to be inverted will yield an estimator having smaller mean square error than the ordinary least square estimators (for detail discussion about the RR estimator see Vinod (1977), Sundberg (1993). The results obtained from ridge regression (for $\lambda=0.012$) are reported in Table-2(b). The results indicate that the inter-sectoral externality parameter θ is statistically significant and the magnitude of the parameter is also quite substantial. If exports are growing by 10% without withdrawing resources from the non-export sector, the latter grows by approximately 0.6%. The other component of the productivity differential δ can be calculated by using the estimated values of θ and γ . The result $\delta \cong 0.45$ implies that there is a substantial productivity differential between the export and non-export sectors in addition to the differential due to externalities in the case of Pakistan. The coefficient of the capital share parameter is also statistically significant, is within the expected range and has the expected sign. The expected range for the capital share parameter using a narrow concept of physical capital (structures and equipments) is $\alpha \leq 1/3$ (see Maddison (1982) and Jorgenson *et. al.* (1987)).

The results in this study appear consistent with the studies on other developing economies, by obtaining a significant external effect of the export sector on non-export sector (measured by the θ parameter). International spillovers arising from exports expand the stock of ideas that can be used for research in the domestic economy. Successful R&D can then generate growth through expansion in the variety and quality of domestically produced goods and services. Moreover, they are also consistent with the argument that it is only the better performing firms that are able to enter international markets because they are the ones which are able to bear the more intense competitive pressure there (Tybout (2000)).

Table-2(a): OLS results (dependent variable is \dot{Y}_t/Y_t)

Variables	Parameters	Coeff.	t-stats
Constant	c	0.018	1.4
\dot{K}_t/K_t	α	0.411	2.3
$(\dot{X}_t/X_t)(X_t/Y_t)$	γ	0.562	2.0
\dot{X}_t/X_t	θ	-0.004	-0.1
$R^2 = 0.17$			
$\bar{R}^2 = 0.10$			
$DW = 1.6$			
ARCH $F - stats = 0.13$ $p - value = 0.71$			

Table-2(b): Ridge regression results (dependent variable is \dot{Y}_t/Y_t)

Variables	Parameters	Coeff.	t-stats
Constant	c	0.01	1.96
\dot{K}_t/K_t	α	0.32	2.72
$(\dot{X}_t/X_t)(X_t/Y_t)$	γ	0.25	1.75
\dot{X}_t/X_t	θ	0.06	1.65
$R^2 = 0.61$			
$\bar{R}^2 = 0.57$			
$DW = 1.9$			
ARCH $F - stats = 0.11$ $p - value = 0.73$			

4.3. Sources of growth:

Using the results reported in Table-2(b) and averages of the explanatory variables, the average rate of GDP growth over the period of 1973-2005 can be decomposed so as to identify the contribution of each factor. The computation and the results are reported in Table-3. The results indicate that the re-allocation of resources associated with export

expansion contributed approximately 0.9 percentage points to the overall growth of the economy (4.9%). This gain because of exports comprises two components: (i) gain due to beneficial externalities affecting the non-export sector and (ii) gain due to other factors such as higher productivity in the exports sector.

Table-3: Factors Contributing in Growth over the Period 1973-2005

Variables	Averages	Parameters	Coefficients	Contribution to Growth
	(1)		(2)	$[(1) \times (2)] \times 100$
\dot{K}_t/K_t	0.0651	α	0.32	2.083
$(\dot{X}_t/X_t)(X_t/Y_t)$	0.0228	γ	0.25	0.569
\dot{X}_t/X_t	0.0546	θ	0.06	0.328
\dot{L}_t/L_t	0.0249	$1-(\alpha + \gamma + \theta)$	0.37	0.920
Constant		c	0.01	1.000
GDP Growth \dot{Y}_t/Y_t	0.049			4.9

5. Conclusion

The purpose of this study was to test the applicability of the hypothesis that export expansion would increase economic growth using the framework developed by Feder (1983) for Pakistan during the period 1973 to 2005. Moreover, the empirical evidence presented in this paper allows us to draw some conclusions on the mechanism through which exports affect economic growth. In conclusion, we can say that in Pakistan gains from increased openness on the export side is primarily via improved resource allocation, which is itself an outcome of greater exposure to international competition. This efficient use of available resources increases the productivity in the export sector more than the non-export sector. Furthermore, learning effects and other positive externalities are also found to be influential for the performance of the non-export sector and thus, improve the overall level of welfare and growth of the economy.

The results are such that social marginal productivities are higher in the export sector, and an outward-looking strategy which shift resources into exports will result in higher growth than an inward-looking strategy. Hence, an export-oriented, outward-looking approach is required if

Pakistan wishes to pursue high rates of economic growth, which can also be observed in the success story of export-led economies such as Korea.

Appendix I**Feder's (1982) Approach:**

$$N = F(K_n, L_n, X) \quad (1)$$

$$X = G(K_x, L_x) \quad (2)$$

$$Y = N + X \quad (3)$$

where,

$N = \text{Non - exports}$

$X = \text{Exports}$

Assumption:

$$G_K/F_K = G_L/F_L = 1 + \delta \quad (4)$$

Eq.(1),(2),(3) \Rightarrow

$$\dot{Y} = F_K \dot{K}_n + F_L \dot{L}_n + F_x \dot{X} + G_K \dot{K}_x + G_L \dot{L}_x \quad (5)$$

Eq.(4) \Rightarrow

$$G_K = (1 + \delta)F_K; G_L = (1 + \delta)F_L \quad (6)$$

(5)and(6) \Rightarrow

$$\dot{Y} = (\dot{K}_n + \dot{K}_x)F_K + (\dot{L}_n + \dot{L}_x)F_L + g(F_K \dot{K}_x + F_L \dot{L}_x) + F_x \dot{X} \quad (7)$$

Also,

$$F_L = \frac{1}{(1 + \delta)} G_L; F_K = \frac{1}{(1 + \delta)} G_K \quad (8)$$

$$\dot{X} = G_K \dot{K}_x + G_L \dot{L}_x \quad (9)$$

Eq.(7),(8),(9) \Rightarrow

$$\dot{Y} = F_K \dot{K} + F_L \dot{L} + \left[\frac{\delta}{(1 + \delta)} \right] \dot{X} + F_x \dot{X} \quad (10)$$

$$\dot{Y} = F_K \dot{K} + F_L \dot{L} + \left[\frac{\delta}{(1 + \delta)} + F_x \right] \dot{X} \quad (11)$$

Hence the reduced form Equation is given as

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \gamma \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) \quad (12)$$

Where,

$$\gamma = \left[\frac{\delta}{(1+\delta)} + F_x \right] \quad (13)$$

Computation of social marginal productivity of investment in Exports (TMPK_x)

$$TMPK_x = \frac{dY}{dK_x} = \frac{\partial X}{\partial K_x} + \frac{\partial N}{\partial X} \frac{\partial X}{\partial K_x} \quad (13)$$

$$TMPK_x = G_K + F_x G_K \quad (14)$$

$$TMPK_x / G_K = 1 + F_x \quad (15)$$

Recall Eq

$$G_K / F_K = 1 + \delta$$

Hence,

$$1 - F_K / G_K = \delta / (1 + \delta) \quad (16)$$

(15) and (16) \Rightarrow

$$TMPK_x / G_K + 1 - F_K / G_K = 1 + F_x + \delta / (1 + \delta)$$

$$(TMPK_x - F_K) / G_K = F_x + \delta / (1 + \delta) \quad (17)$$

External effect of export on non-export sector (F_x)

$$N = F(K_n, L_n, X) = X^\theta \Phi(K_n, L_n)$$

$$F_x = \frac{\partial N}{\partial X} = \theta \frac{N}{X}$$

Aside

$$\theta \frac{N}{X} = \theta \left(\frac{N/Y}{X/Y} \right)$$

where

$$N/Y = 1 - X/Y$$

⇒

$$\theta \frac{N}{X} = \theta \frac{(1 - X/Y)}{X/Y} = \frac{\theta}{X/Y} - \theta \quad (18)$$

Eq(12), (18) ⇒ another reduced form Equation

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \left(\frac{\delta}{(1 + \delta)} - \theta \right) \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) + \theta \left(\frac{\dot{X}_t}{X_t} \right) \quad (19)$$

Hence;

$$TMPK_x = F_K \left[1 + \theta \left(\frac{1-x}{x} \right) \right] (1 + \delta)$$

$$TMPK_x = \alpha \left[1 + \theta \left(\frac{1-x}{x} \right) \right] (1 + \delta) \quad (20)$$

Where x = share of exports in GDP

Reduced from equations

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \gamma \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) \quad (12)$$

$$\frac{\dot{Y}_t}{Y_t} = \alpha \frac{\dot{K}_t}{K_t} + \beta \frac{\dot{L}_t}{L_t} + \left(\frac{\delta}{(1 + \delta)} - \theta \right) \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) + \theta \left(\frac{\dot{X}_t}{X_t} \right) \quad (19)$$

The above equations are estimated by using OLS

$$\frac{\dot{Y}_t}{Y_t} = \hat{\alpha} \frac{\dot{K}_t}{K_t} + \hat{\beta} \frac{\dot{L}_t}{L_t} + \hat{\gamma} \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) + \varepsilon_t$$

$$\frac{\dot{Y}_t}{Y_t} = \hat{\alpha} \frac{\dot{K}_t}{K_t} + \hat{\beta} \frac{\dot{L}_t}{L_t} + \hat{\xi} \left(\frac{\dot{X}_t}{X_t} \right) \left(\frac{X_t}{Y_t} \right) + \hat{\theta} \left(\frac{\dot{X}_t}{X_t} \right) + \nu_t$$

Where,

$$\hat{\zeta}_r = \left(\frac{\delta}{(1+\delta)} - \theta \right)$$

Table-1: Correlation Matrix

	\dot{K}_t/K_t	$(\dot{X}_t/X_t)(X_t/Y_t)$	\dot{X}_t/X_t
\dot{K}_t/K_t	1	0.58	0.26
$(\dot{X}_t/X_t)(X_t/Y_t)$		1	0.81
\dot{X}_t/X_t			1

Table-2: Unit root tests results

Variable s	ADF		PP		KPSS	
	Level	First Difference	Level	First Difference	Level	First Difference
y_t^r	-1.56	-3.70	-1.30	-3.71	0.66	0.27
k_t^r	-0.49	-2.80	9.02	-3.68	0.21	0.08
x_t^r	0.21	-5.49	0.17	-5.49	0.64	0.13

Notes: Critical values for Augmented Dicky-Fuller (ADF) and Phillips-Perron (PP) tests are -2.96 and -2.61 at 5% and 10% significance level respectively. Critical values for Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test are 0.46 and 0.35 at 5% and 10% significance level respectively.

References

- Aurangzeb, 2003, "Trade, Investment and Growth Nexus in Pakistan: an Application of Co-integration and Multivariate Causality Test", *The Lahore Journal of Economics*, Vol. 8(1).
- Balassa, B., 1978, "Exports and Economic Growth: Further Evidence" *Journal of Development Economics*, Vol. 5.
- Balassa, B., 1985, "Exports Policy Choices and Economic Growth in Developing Countries after the 1973 Oil Shocks", *Journal of Development Economics*, Vol. 18.
- Baldwin, J. and Caves, R., 1997, "International competition and industrial performance: allocative efficiency, productive efficiency and turbulence", *Harvard Economics Discussion Paper* No. 1809.
- Bahmani-Oskoe M., H. Mohtadi and G. Shabsigh, 1991, "Exports, Growth and Causality in LDCs: A Re-examination", *Journal of Development Economics*, Vol. 36.
- Bahmani-Oskoe, M and J. Alse, 1993, "Export Growth and Economic Growth: An Application of Cointegration and Error-Correction Modelling", *Journal of Development Areas*, Vol. 27.
- Bhagwati J.N. and T.N. Srinivasan, 1978, "Trade Policy and Development, in: Rudiger Dornbusch and Jacob A. Frenkel, eds., International Economic Policy: Theory and Evidence ch. 1, John Hopkins University Press, Baltimore, MD.
- Chow, P.C. Y., 1987, "Causality between Export Growth and Industrial Development", *Journal of Development Economics*, Vol. 26.
- Clerides, S.K., Laul, S. and Tybout, J.R., 1998, "Is learning by exporting important? Micro-dynamic evidence from Columbia, Mexico and Morocco", *Quarterly Journal of Economics*, Vol. CXIII.
- Economic Survey*, various issues, Ministry of Finance, Pakistan.
- Edwards, S., 1992, "Trade Liberalization and Growth in Developing Countries" *Journal of Development Economics*, Vol. 39.

- Egan, M.L. and Mody, A., 1992, "Buyer-seller links in export development", *World Development*, Vol. 20.
- Feder, G., 1983, "On Exports and Economic Growth", *Journal of Development Economics*, Vol. 12.
- Grossman, G.M. and E. Helpman, 1990, "Comparative Advantage and Long Run Growth", *American Economic Review*, Vol. 80.
- Jung, W.S. and P.J. Marshall, 1985, "Exports, Growth and Causality in Developing Countries", *Journal of Development Economics*, Vol. 18.
- Jorgensen, D.W., Frank, M.G. and Barbara, M.F., 1987, Productivity and U.S. Economic growth, Harvard University Press, Cambridge MA.
- Khalifa Al-Youssif Y., 1997, "Exports and Growth: Some Empirical Evidence from the Arab Gulf States", *Applied Economics*, Vol. 29.
- Kavoussi, R.M., 1984, "Export Expansion and Economic Growth: Further Empirical Evidence", *Journal of Development Economics*, Vol. 14.
- Khan, A.H. Malik, A. and Hasan, L., 1995, "Exports, Growth and Causality: An Application of Co-Integration and Error-Correction Modeling", *Pakistan Development Review*, Vol. 34(4).
- Kunst, R.M. and Marin, D., 1989, "On Exports and Productivity: A Causal Analysis", *Review of Economics and Statistics*, Vol. 71.
- Kruger, A.O., 1980, "Trade Policy as an Input to Development", *American Economic Review*, Vol. 70(2).
- Keesing D.B., 1967, "Outward-Looking Policies and Economic Development", *Economic Journal*, Vol. 77(36).
- Keesing D.B., 1979, "Trade Policy for Developing Countries", *World Bank Staff Working Paper*, No. 353.
- Levin, A. and L.K. Raut, 1997, "Complementarities between Exports and Human Capital: Evidence from the Semi-Industrialized Countries", *Economic Development and Cultural Change*, Vol. 46.

- Lopez, R., 1991, "How Trade and Macroeconomic Policies Affect Economic Growth and Capital Accumulation in Developing Countries", *Policy Research Working Paper*, No. 625, Washington, DC: World Bank.
- Maddison, A., 1982, Phases of Capitalist Development, Oxford University Press, Oxford.
- Michaely, M., 1977, "Exports and Growth: An Empirical Investigation", *Journal of Development Economics*, Vol. 4.
- Rivera-Batiz, L.A. and P.M. Romer, 1991, "Economic Integration and Endogenous Growth", *Quarterly Journal of Economics*, Vol. 206.
- Ram, R., 1985, "Exports and Economic Growth: Some Additional Evidence" *Economic Development and Cultural Change*, Vol. 33.
- Ram, R., 1987, "Exports and Economic Growth: Evidence from Time-Series and Cross-Section Data", *Economic Development and Cultural Change*, Vol. 36.
- Robert, C. and H.L.K. Feenstra, 2004, "Export Variety and Country Productivity", National Bureau of Economic Research, Working Paper No. 10830.
- Segerstrom, P.C., T.C.A. Anant; and E. Dinopoulos, 1990, "A Schumpeterian Model of the Product Life Cycle", *American Economic Review*, Vol. 80: 1077-1091.
- Sheehey, E., 1990, "Exports and Growth: A Flawed Framework", *Journal of Development Studies*, Vol. 27: 111-116.
- Srinivasan, T.N. and J. Bhagwati, 2001, "Outward Orientation and Development: Are Revisionist Right?" in D. Lai and H. Snape (eds), Trade, Development and Political Economy (Essays in Honor of Anne O. Krueger), New York: Palgrave Publishers.
- Sundberg, R., 1993, "Continuum Regression and Ridge Regression", *Journal of Statistical Society*, Vol. 55.
- Tybout, J., 2000, "Manufacturing Firms In Developing Countries: How Well Do They Do And Why?", *Journal of Economic Literature*, Vol. XXXVIII.

Tyler W.G., 1981, "Growth and Export Expansion in Developing Countries: Some Empirical Evidence", *Journal of Development Economics*, Vol. 9.

Vinod H.D., 1978, "A Survey of Ridge Regression and Related Techniques for Improvements over Ordinary Least Squares", *Review of Economics and Statistics* Vol. 60.

Trade Liberalization and Economic Development: Evidence from Pakistan

Bushra Yasmin, Zainab Jehan, Muhammad Ali Chaudhary*

Abstract

Unrestricted trade stimulates economic growth and bridges socio-economic gaps existing in different countries of the world. Pakistan has adopted trade liberalization policies since the late 1980s with the same expectations. This study has empirically analyzed how trade liberalization has affected economic development in the country. Its effects have been examined with respect to four measures of economic development: per capita GDP, income inequality, poverty and employment over the period from 1960-2003. The main analysis is based on a simultaneous equation model. Keeping in view the simultaneity of the chosen development measures, the model is estimated with the 2SLS technique of regression analysis. The analysis shows that, over the study period, trade liberalization has not affected all the chosen indicators of development uniformly. It has affected employment positively but per capita GDP and income distribution negatively. However, it has not affected poverty in any way. The obvious message is that trade liberalization has not affected all the indicators of development favorably in Pakistan. It thus implies the need of a cautious move towards liberalization. The focus of trade liberalization should be to bring about improvement in the performance of mediating factors and to focus exports on labor-intensive products.

JEL Classification: F41

Keywords: Trade Liberalization, Economic Development, Poverty

I. Introduction

* The authors are Lecturers in Economics and Professor of Economics, Fatima Jinnah Women University, Rawalpindi, respectively.

The world is rapidly transforming into a global village. Trade has contributed to this transformation more significantly than any other factor. In fact, the high economic, social, cultural, political, human and intellectual integration witnessed in the world in the recent past is due primarily, though not exclusively, to trade among its different countries. Further, trade has contributed much more to the development of the world economies than any other factor. It is because different nations interact with each other through trade that it tends to bring about the desired change through the exchange of goods, services, skills, knowledge and expertise. In the process, trade increases the availability of choices, improves the level and distribution of income, increases opportunities for enhancement of technical capacities and finally motivates people to accelerate the process of change in their countries. This desired process of change signifies development. Development, in turn, is manifested in the enhanced work capacity of the people, augmented empowerment of individuals and thereby, high rates of participation in productive activities. Thus, trade and development go hand in hand and therefore the strategies adopted in the case of the former have a strong bearing on the latter.

A number of market-oriented moves have surged during the last couple of decades in the world. In the wake of these moves, the global trend has also witnessed the liberalization of the capital account, foreign exchange, credit, domestic consumption and trade in different countries. However, the area which has received unprecedented emphasis in various economies is trade liberalization. Trade liberalization denote the reduction in barriers to the movement of goods and services in international trade. In the words of Bhagwati and Krueger, “any policy which reduces the anti-export bias will lead towards liberalization of trade” and reduction in the import license premium is the fundamental step towards a liberalized trade regime.¹ A new explanation by Edwards (1993) describes a liberal trade regime as one in which all trade distortions including import tariffs and export subsidies are completely eliminated.

The new growth theory argues that trade liberalization expands the market, induces an increase in research and development, reallocates employment to more innovative activities that require more human capital and increases knowledge flow among countries. Other than benefits, some costs are also associated with trade liberalization. A substantial problem arising from reducing trade barriers in the wake of trade liberalization is the

¹ c. f., Edwards (1993)

loss in tariff revenue that accounts for 10-20 percent of government revenue in developing countries. If tariffs are reduced or eliminated, these countries will have to impose large increases in other taxes in order to keep their budgets in line, causing some economic distortions. The move to trade liberalization is also likely to lead to large disruptions in agriculture. If barriers to agricultural imports are removed too quickly, it can lead to large-scale displacement of the rural population. Standard economic models implicitly assume that these people are re-employed in other sectors of the economy, but rapid liberalization can lead to substantial unemployment and underemployment, as well as dangerous levels of social and economic instability. This may also lead to an uneven distribution of gains and pains, where the gains are distributed across the economy, while the burdens of adjustments are borne mainly by a particular group as put forward by the Human Development Report (2003).

In fact, trade liberalization has become the key element of any development policy since the late 1970s when economic policy at the global level underwent certain fundamental changes. The formation of the World Trade Organization (WTO) in 1995 provided an impetus to the process of trade liberalization. It provides a platform for negotiating trade related disputes among different countries of the world. The basic purpose of this organization is to facilitate the process of liberalizing trade and other trade related aspects at the international level.

As expected, different countries use different approaches for acquiring gains from trade liberalization. For example, East Asian countries moved towards an outward development strategy of import substitution and government control by the mid 1960s.² This change in development strategies enabled these countries not only to improve their gross domestic product growth rate, exports and living standards but also enabled them to sustain their development during the years of the oil shock in the 1970s as well as in the debt and recession years of the early 1980s. Consequently, their per capita income was four to five times higher in the 1990s than in the 1960s. More specifically, the per capita incomes of Hong Kong, Korea, Singapore and Taiwan rose at an annual rate of 6.2 percent, 7.1 percent,

² From the mid 1950s, Taiwan provides various incentives to its export sector for the encouragement of exports. Hong Kong was a virtual laissez-faire economy. Korea applied an export-oriented regime in the early sixties, and Singapore started her impressive growth breaking away from Malaya in the mid sixties

6.5 percent, and 8.1 percent respectively, in the period 1965-1990 (Behrman and Srinivasan, 1995).

A vast body of literature provides ample evidence of significant contributions, either positive or negative, of trade liberalization to the development of the world. For instance, Greenaway *et. al.* (2002) conducted a study to analyze the relationship between trade liberalization and the growth rate of GDP for 73 developing countries. This cross-country analysis was based on three different measurements of liberalization: First through non-tariff barriers, average tariff, black market exchange rate premium, whether the economy is socialist or not, and whether state monopoly exists over major exports; Secondly, through level of quotas, tariff, and export impediments and promoters and exchange rate misalignment; Lastly, with a dummy variable for the structural adjustment program, a World Bank (WB) indicator.

Empirical results of this study were obtained by using the ordinary least squares (OLS) technique with three different time periods for three different indicators. Results obtained for the short run from the first two indicators showed the positive and significant impact of trade liberalization on growth while the WB indicator showed an insignificant impact of trade liberalization on growth. Moreover results from all indicators showed that liberalization affects the growth rate of GDP with a lag in the long run.

Similarly, Kemal *et. al.*, (2002) empirically tested the macro economic determinants of growth in Pakistan by taking into account the variables supposed to have the most significant impact on the growth rate such as investment in physical capital, population growth, government consumption, inflation and trade liberalization. The OLS technique of estimation was used for the time period 1959-60 to 2000-01. Empirical results showed that openness appeared to have an insignificant impact on economic growth due to inconsistent and unavailable data on many other important variables, and a variety of political, institutional and infrastructure problems faced by Pakistan. A common argument of both these studies discussed above is that trade liberalization affects different aspects of economic development differently due to different government policies and institutional factors. The specifications of models and techniques of their estimation also show different effects of trade liberalization. This conclusion is also supported by some other studies as well.

The study of Irwin *et. al.*, (2002) investigating the relationship between trade liberalization and income growth for countries engaged in bilateral trade for different time periods, demonstrated that more open economies enjoy a higher level of per capita income. This study used the instrumental variable (IV) technique of estimation. Mohsin *et. al.* (2001) aimed to explain the impact of openness on the poverty level in Pakistan for the time period 1963-64 to 1993-94. The study demonstrates that poverty has declined with trade liberalization in Pakistan using the head count index method for measuring poverty and the sum of imports and exports as a percentage of GDP for openness. Similarly, Yang and Huang (1997) suggest that a decline in the economy wide tariff leads towards more equitable distribution of income in China using a Computable General Equilibrium (CGE) model.

Moreover, Waczaig (2001) carried out an empirical investigation for the indirect linkages between trade liberalization and growth by first checking the impact of the former on six different channels of growth and then the effect of these channels on the latter for 57 countries during the time period 1970-1989.³ Using the simultaneous equations technique the parameters were jointly estimated through three stage least squares. Results of the study demonstrated that trade openness has a positive impact on growth through five determinants, namely the black market premium, manufactured exports, investment rate, foreign direct investment, macro policy quality, while it has a negative but insignificant impact on growth through government size (measured by government consumption). Investment appears to be the most significant channel through which trade liberalization affects growth.

Most of the studies reviewed so far have analyzed the impact on different indicators of development separately. Mainly economic growth is considered as the main indicator of development ignoring all other aspects or dimensions of development. The positive relationship between trade liberalization and economic growth is a necessary but not a sufficient condition for development, and several other factors must be taken into consideration to find out the impact of trade liberalization on economic development.

This study has tried to take into account the most crucial elements of development such as per capita GDP, income inequality measured by the

³ Black market premium, manufactured exports, investment rate, foreign direct investment, macro policy quality, and government size.

Gini coefficient, the poverty level, and employment over the period from 1960-2003 for Pakistan. This study provides recent evidence for the impact of trade liberalization on the economy of Pakistan using a simultaneous equations model keeping in view the simultaneity of various factors.

The rest of the study is organized as follows: Trade policies announced so far in Pakistan with reference to liberalization are discussed in detail in the second part of the study. The third part presents the model specification and estimation procedure. In the fourth part, data and construction of different variables are discussed. Empirical results are explained in the fifth part. The final section concludes the study and lists certain policy implications.

II. Historical Review of Trade Liberalization in Pakistan

The early years of Pakistan's economy can be characterized by a weak industrial base, dominance of the agriculture sector, lack of well-organized infrastructure, and above all eco-political instability. The main objective of the policies of those years was to strengthen the industrial base. To this end, Pakistan adopted a restricted trade regime and protected its domestic industries with high tariff and non-tariff barriers.

The period of the sixties was the period in which the industrial base was laid and in which rapid expansion of large scale manufacturing industries started in the country. While the highly protected trade regime remained effective in this period, some additional policies were introduced to encourage industrial exports from the country: an overvalued exchange rate, export bonuses, preferential credit access to industries with export potential and automatic renewal of import licenses. Consequently, both industrial production and exports registered a reasonable increase during the 1960s. However, industrial expansion did not continue at the same rate in the next decade. In fact, it suffered a setback in the next decade due to the nationalization of industries. Although the government nationalized different types of industries in the country, it took three additional trade liberalization measures to encourage exports during this period: devaluation of the Pakistani Rupee by 57% in 1972, elimination of the export bonus scheme, and the discontinuation of restrictive licensing scheme. These steps stimulated exports especially of manufactured products.

Although trade policies were modified continuously in Pakistan, changes of particular significance were made after the formulation of the

new trade policy in 1987. After the incorporation of the other changes, the trade policy led, inter alia, to a reduction in tariff slabs from 17 to 10 and introduction of a uniform tax in place of commodity based sales taxes. In fact, the government focused in this decade mainly on enhancing the role of private sector in the economy, increasing the competitiveness and efficiency of the domestic industrial sector, and promoting exports. The specific measures that the government took in pursuance of these objectives related to the provision of different fiscal incentives such as tax holidays, tariff cuts and other profit augmenting opportunities to the exporters. More specifically, the maximum tariff was reduced from 225 percent in 1986-87 to 70 percent in 1994-95. Similarly, the number of custom duty slabs were reduced from 13 to 5. Further, the flexible exchange rate system introduced earlier was kept in effect during this decade.

The years 2000-2003 have witnessed the introduction of such policies as promotion of liberalization, deregulation, and reduction in the cost of doing business; these policies have laid equal emphasis on encouraging a stable macro economic framework in terms of inflation, interest rate and exchange rate. Further, they have also concentrated on the promotion of export of services, which had not received proportional attention in the past. In fact, they have made the promotion of services an integral component of the overall trade policy of the country, so much so that the government has set export and import targets of US \$ 12.1 and 12.8 billion for the current year. The achievement of these targets will reduce the trade deficit of the country to less than US\$ 1.0 billion (GOP, 2004).

III. Model Specification and Estimation Procedure

The effect of trade liberalization on the economic development of Pakistan is to be measured as mentioned before, by its effects on the level of per capita gross domestic product, poverty, inequality of income distribution and employment. These indicators are taken from the definition of development presented by Dudley Seers in 1972.

Theoretically, these indicators of development are assumed to affect and to be affected by each other. For example, employment level and per capita GDP are mutually dependent on each other. Similarly, per capita GDP and the Gini coefficient, according to Kuznet's hypothesis, are interdependent. In econometric terms such interdependence among the

endogenous variables gives rise to the problem of simultaneity across them. As such, simultaneity among the chosen variables necessitates the formulation of the model and its estimation in a way that the analysis yields valid results. To this end, we have specified a simultaneous equations model, as shown below, and estimated by using the 2SLS regression technique.

$$LP_t = \alpha_0 + \alpha_1 LG_t + \alpha_2 LPGDP_t + \alpha_3 LEMP_t + \alpha_4 LTL_t + \varepsilon_t \quad (1)$$

$$LG_t = \beta_0 + \beta_1 LPGDP_t + \beta_2 LCPI_t + \beta_3 LTL_t + \varepsilon_t \quad (2)$$

$$LPGDP_t = \gamma_0 + \gamma_1 LEMP_t + \gamma_2 LHK_t + \gamma_3 LINV_t + \gamma_4 LTL_t + \gamma_5 TG + \varepsilon_t \quad (3)$$

$$LEMP_t = \lambda_0 + \lambda_1 LPGDP_t + \lambda_2 LW_t + \lambda_3 LINV_t + \lambda_4 TG + \lambda_5 LTL_t + \varepsilon_t \quad (4)$$

Where P denotes poverty, G household Gini coefficient, $PGDP$ per capita gross domestic product, EMP employed labor force, inflation is measured by the CPI index, HK human capital, W real wages, INV ratio of domestic investment to GDP , TG type of government represented by dummy variable with 1 for political government and 0 otherwise, and TL trade liberalization. Equation 1 depicts the effect of trade liberalization on the poverty level in Pakistan. Similarly, equation 2 shows the impact of trade liberalization on the distribution of income. The next equation determines the impact of trade liberalization on $PGDP$. Finally, the last equation of the model examines the impact of trade liberalization on the level of employment in Pakistan.

As is obvious, the model specified for this analysis comprises four mutually dependent equations. The dependent variables of these equations, which are endogenous variables of the model, are poverty, the Gini coefficient, per capita income, and the employment level. The explanatory exogenous variables are inflation, human capital, ratio of investment to GDP , type of government, real wages and lagged value of $PGDP$ and trade liberalization index.

How the variables included in the model are formulated is explained below.

Variables	Description
Per capita Gross Domestic Product	GDP is the value of all the final goods and services produced in Pakistan during a year. PGDP is determined by dividing the GDP by population of the country.

Poverty	Poverty for the purpose of this study is measured by Head Count Ratio Index.
Employment Level	Employed labor force is that portion of the total labor force which is employed in paid jobs and self-employed.
Gini coefficient	The Gini coefficient measures income inequality. It is based on the percentage share of income received by different proportions of the population.
Type of Government	It is represented by dummy variables with $D = 1$ for Political Government and 0, otherwise.
Human Capital	Human capital is measured and represented by primary level enrollment rates (in thousands) for the whole economy.
Inflation	Inflation is defined as the annual rate of increase in prices and is represented by the Consumer Price Index.
Real wages	Real wages are the payment made by the employers to their employees for the work done. Real wages were constructed by dividing the annual nominal wages by the corresponding real CPI.
Gross Investment GDP ratio	It accounts for both the public and private investment that has taken place in the economy over the study period.
Trade Liberalization	Two measures are used to measure trade liberalization. First, the trade-GDP ratio that is obtained by dividing the sum of exports and imports by GDP. Second, import duties as percentage of total imports.

The analysis is based on the national time series data for the time period from 1959-60 to 2002-03. All the variables used in the study are measured in millions of rupees at constant market prices with 1990-91 as the base year. For some of the years, data was missing for poverty and the Gini coefficient and was filled by interpolation. The data is collected from different sources. The *Pakistan Economic Survey* (various issues) was used for data collection on poverty, Gini coefficient, GDP, population, Consumer Price Index, human capital, employed labor force, imports, exports and GDP deflator. Data on wages is collected from the *Pakistan*

Labor Force Survey (various issues). The data on import duties is collected from the CBR Yearbook published by the Central Board of Revenue (CBR).

Justification of Variables

Poverty as one of the measures of economic development of an economy is expected to be reduced in response to a rise in PGDP and EMP. As such, poverty is *a priori* expected to be negatively related to PGDP and EMP. Trade liberalization is expected to reduce poverty by virtue of it increasing the inflows of goods and services in the economy. Excess supply of goods and services, in turn, is expected to cause a decline in prices and thus increase the standard of living of the people of the country.

Next, distribution of income as a measure of income inequality in the economy is expected to be affected by PGDP, inflation and trade liberalization. Specifically, PGDP can increase or decrease the value of the Gini coefficient in accordance with the Kuznets hypothesis of interdependence, which assumes a U-shaped relationship between PGDP and the Gini coefficient. High inflation is theoretically expected to show a positive relationship with the Gini coefficient. As far as trade liberalization is concerned, its effect on income distribution is difficult to predict. It may have worsened or alleviated the distribution of income in Pakistan.

The level of per capita GDP, which is included as another dependent variable indicates the degree of development of a country. In general, high and rising PGDP indicates that development is taking place in the economy. Trade liberalization, EMP and human capital are expected to affect PGDP positively. The investment level is also included in the model for the same reason that it can increase PGDP through the multiplier effect. The type of government that existed in the country over different periods of time is represented in the model by a dummy variable to capture the effect of political and institutional factors on the development of the economy. A democratic government is expected to have a positive and a military regime a negative effect on development.

Lastly, labor force employment is expected to be positively affected by PGDP positively. The type of government also has a similarly important bearing on employment. Also, the employment level is expected to be positively affected by trade liberalization for it increases the access to cheap

raw material and capital machinery, which promote development opportunities in a country.

Estimation Technique

The model under consideration is constrained to be over identified. Therefore, it is estimated with the two-stage least square (2SLS) method. The basic idea behind 2SLS is to replace the endogenous explanatory variable by a linear combination of the predetermined variables in the model and use them as explanatory variables instead of the original endogenous variables. The 2SLS method thus resembles the instrumental variable method of estimation in that the linear combination of the predetermined variables serves as an instrument, or a proxy for the endogenous variables. This technique completes the analysis in two stages. In the first stage, it computes the structural equations by regressing endogenous variables on all the predetermined variables in the system in which interdependence among variables is removed, because structural equations are those in which endogenous variables are expressed solely in terms of the predetermined variables and stochastic disturbances. As such, the application of the OLS technique to the reduced form equation gives the structural or reduced form coefficients. These structural form coefficients are substituted in primary equations. The estimation of those equations again by OLS technique completes the second stage of the estimation and yields unbiased and consistent coefficients.

The required regression analysis is performed in terms of two models with one using an openness index and the second the share of import duties in total imports as a reflection of trade liberalization. However, the results for the former measure are quoted, being more precise. For the estimated model, logs of the variables were used. The values of the variables included were expressed in their logarithms.

IV. Empirical Results and Interpretation

Empirical results of the model, in which the openness index (sum of export and import as a percentage of GDP) is used to represent trade liberalization, are reported in Table 1.⁴

⁴ Since the results for openness as a trade liberalization measure appeared to be more comprehensive, the results for openness are discussed in detail while the results for import duties as a percentage of total imports as a trade liberalization measure are provided in the appendix for reference.

Table-1: Estimates of Simultaneous Equation Model

Variables	Eq. 1 (L P)	Eq. 2 (LG)	Eq. 3 (LPGDP)	Eq.4 (LEMP)
C	-0.656 (-0.0477)	0.550** (2.110)	0.679* (3.612)	-0.401* (-5.531)
LGINI	0.0923 (0.318)	-	-	-
LPGDP	-1.749* (-2.331)	-0.804* (-4.459)	-	0.908* (19.025)
LEMP	-3.982* (-5.210)	-	1.581* (3.651)	-
LCPI	-	0.237* (4.342)	-	-
LHK	-	-	-0.205 (-1.174)	-
LINV	-	-	0.0425 (0.549)	-0.046 (-0.828)
TG	-	-	0.0584* (2.222)	-0.029* (-2.407)
W	-	-	-	-0.052 (-1.263)
TL	-0.119 (-1.498)	0.085** (2.010)	- 0.175*** (-1.797)	0.108* (2.596)
R ²	0.88	0.61	0.96	0.98
D.W	1.046	1.445	1.184	1.001
AR (2)	1.011 (75.50)	0.291 (2.23)	0.235 (1.23)	0.303 (1.47)

Note: 1) t-values are in parentheses.

2) *, ** and *** indicate significance at 1%, 5 % and 10 % level of significance, respectively.

In Table-1 the first column provides the list of variables. The second column provides the estimates obtained from 1st equation of the model with dependent variable log of poverty already specified. The third column reports the results of the 2nd equation with log of income inequality as the dependent, the fourth column reports the 3rd equation's result with log of GDP per capita as the dependent variable and the last column provides the estimates of the 4th equation with log of employment as dependent one. Table-1 indicates that the number of theoretically compatible and satisfactory results in terms of signs and size of coefficients exceed that of incompatible results. The adjusted R² values are also reasonably high. More specifically, the adjusted R² values are 0.88, 0.61, 0.96 and 0.98 respectively for the four equations. The problem of auto-correlation, where detected in the model through the Durbin Watson test, was removed by applying auto regressive scheme two, AR (2).⁵

What has been the impact of trade liberalization on different indicators of development is important to know for different academic and practical policy purposes. It is clear from Table 1 that trade liberalization has not been able to reduce poverty in the country. It means that poverty has continued to increase regardless of the effort at trade liberalization. However, PGDP appears to have had a significant negative effect on poverty. Specifically, a one percent increase in PGDP has led to 1.7 percent decrease in the level of poverty in the country, showing more than unitary elastic relationship between poverty and PGDP. Earlier, Mohsin *et. al.* (2001) obtained similar results regarding the reduction in poverty with increase in PGDP. Employment, which is assumed at least theoretically to be an important factor in the reduction of the poverty level, has been found to be negative and statistically significant at the 1-percent level of significance. In fact, a one percent increase in employment opportunities has reduced poverty in the country by nearly 4 per cent. As such, employment has turned out to be the most important factor in the reduction of poverty and thereby in the promotion of development in the country. In fact, this analysis shows that trade liberalization has not reduced poverty in the country due perhaps to weak institutional framework, political instability and macro economic instability. Actually, trade liberalization the policy is not adopted with the motive of poverty elimination.

In the case of the second development indicator, distribution of income, trade liberalization appears to be statistically positively significant

⁵ AR (2) was used, as AR (1) could not solve the problem of auto-correlation.

at the 5-percent level of significance, increasing income inequality by 0.08 %. Results are according to expectation and satisfactory. Due to liberalization, the proportion of labor in production has declined while capital has increased. Thus their returns have also changed with distribution of income getting concentrated more in favor of capital owners. PGDP appears to significantly reduce inequality of income distribution in the country. Specifically expressed, a 1 percent increase in PGDP has been found to be associated with 0.8 percent decline in income inequality. However, inflation, as expected, has influenced distribution of income very adversely. Unlike PGDP, which has decreased income inequality, inflation has increased inequality in Pakistan during the study period. The effect of inflation on income distribution observed in this analysis is in agreement with what is shown by Fischer (1993).⁶

The effect of trade liberalization on PGDP, as reflected in the third regression equation is interesting. Increase in liberalization has tended to decrease PGDP. This is in conflict with prior expectations. It may be due to the introduction of certain policies concerning investment and import substitution, which could not lead to higher economic growth and increased level of PGDP on liberalization of trade. Another possible reason could be the increasing use of such technologies which encourage capital intensive rather than labor-intensive methods of production. Since a large proportion of the national labor force is semi-skilled or unskilled, its productivity under the use of high tech capital method of production did not increase significantly. As to the effect of employment on PGDP, it has affected PGDP positively. Specifically, a one-percent increase in employment has been found to be associated with a 1.6 percent increase in PGDP. Similarly, the type of government also appears to be affecting PGDP highly positively.

The case of the effect of trade liberalization on employment has been found to be different from that on other development indicators. Employment has been affected significantly and positively by trade liberalization due principally to increases in imports and availability, and generation of resources, which led to increased production and employment level in the country. Increases in exports stimulates demand not only for imported inputs but also for labor, leading ultimately to an increase in the employment level in the economy. PGDP has also affected

⁶ c.f., Kemal *et. al.* (2002).

employment significantly positively. Specifically, a 1 percent increase in PGDP has been found to increase employment by 0.9 percent.

V. Conclusion and Policy Implication

While trade liberalization is regarded as encouraging development by affecting development indicators in a desirable manner, it has not influenced the chosen indicators of poverty, income distribution, PGDP and employment in Pakistan as expected during the period of study. It affected employment positively but PGDP negatively in the country. Increased imports, availability of cheap raw material and machinery under conditions of unrestricted trade on the one hand enhances production, while exports of manufactured goods on the other hand, led to the creation of additional employment opportunities in the country due mainly to increase in demand for domestic goods. The reason behind trade liberalization affecting PGDP adversely may be that although imported products are expected to be cheaper than local products, it has not been the case for Pakistan. Imported products served as one of the factors which increased the prices of local goods with adverse effects on their demand and production and thereby on PGDP.

As far as poverty and Gini coefficients are concerned, trade liberalization has contributed to the accentuation of income inequality in the country, although it left poverty unchanged. This may be attributed to the poor performance of mediating factors in Pakistan. It may thus be argued that trade liberalization has not affected development favorably in Pakistan. It may not be the fault of just liberalization policies themselves but also of the mediating factors of our economy.

The study has the following policy implications.

- Since Pakistan is a labor abundant country, it should give priority to the production and export of labor-intensive products, such as textiles.
- For poverty alleviation the productivity-oriented approaches, with the potential to increase the income of the poor by increasing their productivity, should be encouraged.
- Political stability which is one of the most effective factors of development, should be promoted in the country. Improved

political stability has favorable implications. In the last fifty years Pakistan has faced several changes in government and consequently changes in economic policies. To improve economic performance, the country should improve political stability.

- Pakistan should improve the performance of its mediating factors for trade liberalization to be effective in promoting growth and development.

*Appendix***Table A-1: Estimates of Simultaneous Equation Model
(Import Duties as Trade liberalization index)**

Variables	Eq. 1 (L P)	Eq. 2 (LG)	Eq. 3 (LPGDP)	Eq.4 (LEMP)
C	0.5617 (0.861)	0.666** (2.22)	0.43* (4.04)	-0.382* (-6.07)
LGINI	1.6118 (1.398)	-	-	-
LPGDP	-3.25*** (-1.628)	-0.835* (-3.918)	-	.863* (13.75)
LEMP	-5.76** (-2.132)	-	1.055* (5.185)	-
LCPI	-	0.258* (4.09)	-	-
LHK	-	-	-0.003 (-0.03)	-
LINV	-	-	-	-
TG	-	-	0.045* (2.97)	-0.055* (-3.49)
LW	-	-	-	0.088 (1.439)
TL	-0.334** (-2.24)	-0.036 (-0.79)	0.106** (2.11)	-0.171* (-2.69)
R ²	0.66	0.61	0.97	0.97
D.W	1.44	1.36	1.07	1.29
AR (2)	-0.025 (-0.132)	0.378 (2.89)	0.286 (1.42)	0.133 (0.67)

Note: 1) t-values are in parentheses.

2) *, ** and *** indicate significance at 1%, 5 % and 10 % level of significance, respectively.

References

- Abbas, Q., 2001, "Endogenous Growth and Human Capital: A Comparative study of Pakistan and Sri Lanka", *Pakistan Development Review*, 40:4, 987-1007.
- Behrman, J. and Srinivasan T.N., 1995, "HandBook of Development Economics"; Elsevier Science: The Netherlands.
- Chenery, H. and Srinivasan T.N., 1989, "HandBook of Development Economics"; Elsevier Science: The Netherlands.
- Edwards, S., 1993, "Openness, Trade Liberalisation, and Growth in Developing Countries", *Journal of Economic Literature*, 31:3. 1358-1393
- Mahbub ul Haq Human Development Centre, 2003, "*Human Development in South Asia 2003*", Oxford University Press, Islamabad.
- Govt. of Pakistan, 2003, *Economic Survey*, (Various Issues) FBS, Islamabad.
- Govt. of Pakistan, 2003, Trade policies (Various Issues), Ministry of Commerce, Islamabad.
- Greenway, D., M., Wyn. and Wright, P., 2002, "Trade Liberalisation and Economic Growth in Developing Countries", *Journal of Development Economics*, 67:1. 229-244.
- Hunt, D., 1989, "Economic Theories of Development: An analysis of competing paradigm", Harvester Wheatsheaf: USA.
- Irwin, A. Douglas and Tervio, M., 2002, "Does trade raise income? Evidence from the twentieth century", *Journal of Development Economics*, 58:1.1-18.
- Kemal, A.R., Din, Musleh-ud., and Qadir, U., 2002, "Global research Project: Pakistan Country Report on Sources of Economic Growth", Pakistan Institute of Development Economics: Islamabad.

- Mohsin, M. H., Kemal, A. M., and Qadir, U., 2001, "Impact of Trade Reforms on Poverty", Pakistan Institute of Development Economics, Sixteenth Annual General Meeting: Islamabad.
- Wacziarg, R., 1998, "Measuring the dynamic gains from trade", World Bank Policy Research Working Papers 2001.
- Yang, Y. and Haung Y., 1997, "Impact of Trade Liberalisation on Income Distribution in China". Economic Division Working Papers No. 1.

IMF Stabilization Programs, Policy Conduct and Macroeconomic Outcomes: A Case Study of Pakistan

Nawaz A. Hakro* and Wadho Waqar Ahmed**

Abstract

This study is designed to assess the macroeconomic performance of fund-supported programs, and the sequencing and ordering of macroeconomic policies in the context of the Pakistan economy. The generalized evaluation estimator technique has been used to assess the macroeconomic impacts of the IMF supported programs. GDP growth, inflation rate, current account balance, fiscal balance and unemployment are used as the target variables in order to gauge economic performance during the program years. The vector of policy variables (that might have been adopted in the absence of programs) and the vector of foreign exogenous variables are also taken as explanatory variables in the model, so that the individual effect of the IMF supported programs could be assessed. The result suggests that as the IMF prescriptions were applied, the current account balance has worsened, the unemployment rate has significantly increased, and the inflation rate has increased during the years of fund-supported programs. Only the budget balance has shown signs of improvement. Furthermore an inadequate sequencing of reforms has contributed to the further worsening of the economic scenario during the program period.

Introduction

Stabilization policy can be defined as the policy response to correct macroeconomic imbalances when an economy is off track from its potential growth. The general goals of stabilization policy are: a) stable growth rate b) stable price level and c) high level of employment (low unemployment). There are no conflicts over the goals of the stabilization policy but conflicts

* Dr. Ahmed Nawaz Hakro is Assistant Professor Economics, Quaid-e-Azam University, Islamabad.

** Management Officer, Bank Alfalah Limited.

arise over the ways these objectives are achieved. The International Monetary Fund provides funds to the member country when it faces balance of payments problems that cause severe macroeconomic disequilibrium in the economy. Besides, as provided in Article V of the Articles of Agreement of the IMF, it can also impose “adequate safeguards”. These “adequate safeguards” take the form of policy packages as conditionalities to the loan. In their practical application over time, these policies produced a three-pronged approach to confront balance of payments problems: (i) securing sustainable external finance (ii) adoption of demand-restraining measures and (iii) implementation of structural reforms. IMF adjustment programs are of two orientations: a) short-term, in which the macroeconomic disequilibrium is thought to be reversible in one or two years, and b) medium-term in which the macroeconomic disequilibrium is caused by structural impediments to growth or a heavy external debt burden. The Standby Arrangement (SBA) is an example of the IMF short-term program. The priority course of action in SBAs is expenditure reduction. IMF medium-term programs aim to correct a serious external payments disequilibrium due to structural impediments to growth and debt overhang. The program involves a strategy that keeps expenditures in line with output and increases growth. Examples of these programs are the Structural Adjustment Facility (SAF), Extended Structural Adjustment Facility (ESAF) and Poverty Reduction and Growth Facility (PRGF).

Pakistan accepted fund supported adjustment programs in the 1980's¹ and has become a prolonged borrower with more than 15 years of borrowing with “Adequate Safeguards”. We do not find many studies analyzing the impacts of these “Adequate Safeguards” on the Pakistan economy. Yet there are a few; as Kemal (1994) has shown the employment situation further worsened due to privatization, and structural adjustment has been accompanied with rising inequalities and poverty. “Stabilization and growth are not mutually exclusive and any policy has to incorporate both elements. However, the manner in which the policy has been implemented in Pakistan has tended to pursue stabilization at the expense of growth” is the conclusion of Bengali and Ahmed (2001). Pakistan has

¹ Pakistan has had a long association with the IMF; it joined the IMF on July 11, 1950. The first time when the Government of Pakistan asked for a loan was 1958. As the IMF's funding amount and pattern changed after the 1970's, right after a couple of shocks of oil price and debt crises of 1980's, it was 1988 when Pakistan accepted policy packages suggested by the IMF.

been unable to sustain high economic growth with equally impressive reductions in poverty (Khan, 2002). Real output declined, the inflation rate increased, and the exports of goods remained insignificant during the adjustment period 1988 to 1991 but the findings show that adjustment lending enhanced investment and increased the government's current consumption (Iqbal, 1994).

Consequently, this paper is an attempt to analyze the macroeconomic outcomes of the fund-supported programs in the context of the Pakistan economy. The generalized evaluation estimator technique has been used, which is considered to be a better technique than the available ones in the literature of the fund-supported programs (see Methodology), and is a first attempt of its kind in Pakistan. Along with the macroeconomic outcomes due consideration has been given to the sequencing and ordering of the policy conduct that is very important to assure the effectiveness of any program. The success of the programs is measured in terms of the macroeconomic outcomes, but it is not a straightforward task to define the effectiveness of the adjustment programs. It is very easy to check the implementation of those policy changes on which both parties (IMF and country) are mutually agreed upon. But it is much more difficult to know whether these changes will lead to the desired macroeconomic targets at least for two reasons. First, from a theoretical point of view, the fund supported program is the composite of the complex policy packages that include monetary and exchange rate policies, fiscal measures, policies to improve efficiency, trade liberalization, price and wage reforms, privatization and financial sector reforms. The theory underlying the dynamic linkages among such policy packages combining demand management policies with supply enhancing policies and a set of multiple macroeconomic targets is not well established. As Baqir, Ramcharan and Sahay (2003) found by regressing the deviation between the programmed and actual growth on the deviation between programmed and the actual values of the current account, better performance in the current account is accompanied by worse performance in terms of growth. Second, the fund-supported program is only one of the exogenous shocks that hit the economy of the typical country. Other external shocks include changes in the terms of trade, changes in the cost of debt servicing, droughts, famines etc. The Afghan crisis, the incidence of September Eleven, nuclear tests of 1998 and the Iraq war have greater implications on the Pakistan economy.

The paper is organized as Section-I Introduction; Section-II Literature Review; Section-III Methodology and model, Section-IV Results and discussion, Section-V Summary and conclusion.

Literature Review

Being an old addict of fund-supported programs, the Pakistan economy presents a very good case study for analyzing the impact of fund-supported programs. There is not much literature available for the assessment of the fund-supported program of a typical economy. Quite a few studies are available but they also need to be modified in terms of the assessment of the macroeconomic outcomes. There is even more of a lack of literature about the sequencing and ordering of the policy reforms. Certainly this would be a novelty to bring the sequencing and ordering into the picture while assessing the outcomes of the fund-supported programs and analyzing the macroeconomic impacts of the programs on the Pakistan economy.

Economists of different schools of thought have analyzed the stabilization policy and structural adjustment programs and their impacts on the balance of payments in different ways. Conflict over the results of these fund-supported programs on the macroeconomic variables, especially on balance of payments is there from the very beginning of these programs. Few studies found that these policy reforms work in terms of improving the balance of payments position. As Bagci and Perraudin (1997) found by using a generalized evaluation technique, fund-supported adjustment programs improve the overall balance of payments performance of the countries involved in the programs. Schadler *et.al.* (1993) get the same results using the before after technique and Khan and Knight (1981), (1985) obtain similar conclusions. On the other hand Loxeley (1984), Connors (1979), and Moran (1989) have found that the fund-supported programs have no significant impact on the balance of payments position of those economies that accepted the fund-supported adjustment programs.

Pakistan, like other developing countries, experienced balance of payments deficits throughout the 1980's. Iqbal (1994) finds that in the case of Pakistan output declined due to fund supported programs, the inflation rate increased and exports remained insignificant. "The evaluation of the three-year program shows that the application of the short-term policies to the long-term adjustment problems resulted in a number of policy conflicts. The factor behind the sharp acceleration of the credit and money supply

shows that the policy of credit restraint is in direct conflict with the objective of price stabilization in a less developed economy, even when its output constraint is overcome in any period. Similarly, the objective of improving the balance of payments by encouraging exports remained unfulfilled, and the inflationary situation has worsened," Bilquees (1987).

Another important macroeconomic target under consideration is economic growth. Economic growth is a very crucial macroeconomic variable to gauge the economic performance of any country. Do fund supported programs lead to improvement and sustainability in economic growth? This has been a central question in discussing the performance of fund-supported programs. Kiguel and Livatian (1992) find that the programs that use the exchange rate as a main nominal anchor are often associated with a business cycle that begins with boom and ends with recession. While the programs that use money supply as the main nominal anchor generally induce the usual Philips curve result, lower inflation is accompanied by recession after the program is implemented. Bruno (1992) concludes that recent experiences of IMF-supported programs in Hungary, Poland, Czechoslovakia, Bulgaria and Romania ended with output collapse. Cukierman and Liviatan (1992) show that when the difference in the ability of "strong" and "weak" policy makers to control inflation is large, unexpected inflation may be persistently negative for quite a while, thus causing reduced economic activity and indicating that credibility is low. Uribe (1999) found that exchange rate based (ERB) and money based with initial reliquefaction (MBR) programs induce an initial expansion in the economy while the money based (MB) programs are initially contractionary. Balassa (1982) concludes that countries that applied an outward oriented strategy had favorable growth experience after 1973. "If the government adopts public sector price increase combined with tough layoff policy, there is a strong presumption that real output will be higher and inflation would be lower in the overall time horizon," Buffie (1992). The conclusion from Khan and Knight (1981) is that programs designed to achieve quick results on the balance of payments via sharp deflation are likely to have significant and undesirable impacts on output and employment, particularly in the short run. Ball and Sheridan (2003) have concluded that there is no evidence that inflation targeting improves the performance of the economy with regard to output growth. Hutchison (2001), using 461 IMF-stabilization programs and 160 currency crises, found that currency crises, even after controlling for macroeconomic developments, political and regional factors significantly reduced output by

1 to 2 percentage points. Loxley (1984) and Connors (1979) found contractionary effects on output. Baqir *et. al.* (2003) have reported results from regressing the deviation between programmed and actual growth on the deviation between programmed and actual values of the other program objectives that there is a negative and statistically significant relationship between growth and current account objectives. Stiglitz (2000) concludes that IMF economic remedies often make things worse, turning slowdowns into recessions and recessions into depressions.

The Pakistan economy unlike other developing countries enjoyed healthy economic growth during the 80's, averaging above 5% per annum. But after the adoption of fund-supported programs, economic growth started to decline rapidly. As Bengali and Ahmad (2001) have concluded "Stabilization and growth are not mutually exclusive and any policy has to incorporate both the elements. However, the manner in which the policy has been implemented in Pakistan has tended to pursue stabilization at the expense of growth. It has dampened investment and curtailed purchasing power, leading to a recessionary situation. It has contributed directly to the increase in unemployment and poverty". Monetary growth in Pakistan is to some extent anticipated. There was no evidence that only unanticipated policy has a real output effect, as discussed by Khilji and Leon (1989). Growth contributes more to poverty reduction when it increases employment, productivity and the wages of poor people, and when public resources are spent on human development and physical infrastructure. Pakistan has been unable to sustain high economic growth with equally impressive reductions in poverty, as discussed by Khan (2002).

After the shocks of the 1970's, most developing countries were running fiscal deficits, and their eradication took the focus of attention in adjustment programs. Excess of expenditure over revenues is considered to be the cause of worsening balance of payments deficits and inflation. Bulir and Moon (2003) show that the overall fiscal balance of sampled countries improved in most cases in the 1990's but the impact of IMF supported programs was not statistically significant. Franco (1990) also found that balance of the budget itself is not sufficient to establish that these reforms effectively took place, since inflation affects the budget deficits in various respects, so the influence of price stability on deficits might very well be an important part of the explanation of these sudden budget improvements. In the context of the Pakistan economy, Ahmad (1998) has found that the experience of implementing fund supported reforms reveals that non-fiscal policies have mostly conflicted with fiscal policies in achieving fiscal

discipline. At the cost of painful tradeoffs, the fiscal deficit has come down from 7% of GDP in the 1980's to 5.4% of GDP in 1997-98. This reduction in the fiscal deficit seems to have slowed down the growth tempo, which in turn has reduced revenue potentials.

Sequencing of reforms is the order in which either macroeconomic policy actions or specific reforms are introduced. It involves the order in which reforms are undertaken across the different sectors. A distinction in sequences of different reforms is needed among the economies because of the initial differences. In developing countries fiscal, institutional and monetary reforms should be taken first rather than trade reforms, financial reforms and capital account liberalization (Nsouli, Rached and Funke (2002)). Ivanova (2003) concludes that implementation of the program primarily depends upon the borrowing country's political economy. Political instability, strong interest groups, inefficient bureaucracies, lack of political cohesion, and ethno-linguistic divisions weaken program implementation. Mundell (1962) concluded that the countries where employment and balance of payments policies are restricted to monetary policy and fiscal instruments, monetary policy should be reserved for attaining the desired level of balance of payments, and fiscal policy for preserving internal balances. The opposite system would lead to progressively worsening unemployment and balance of payments situations. "All of the IMF blunders are merely due to committing mistakes in sequencing and pacing. Forcing liberalization before safety nets were put in place, before any adequate regulatory framework and forcing policies that led to job destruction before the essentials for job creation were placed. Forcing privatization before there was adequate competition" is the conclusion by Stiglitz (2002). Alesina and Drazen (1991) found that when stabilization has significant distributional implications (e.g., tax increase to eliminate a large budget deficit), socioeconomic groups might attempt to shift the burden of stabilization on to other groups, resulting in delay in the reforms. Lack of political support can also be a reason for the delay in stabilization (Werner, 1999). Especially when stabilization is a two-stage policy, the government does not know the size of adjustment in the second stage, as discussed by De Gregorio (1993). Though there were mounting problems of indebtedness, macroeconomic imbalances, micro distortions, lack of employment creation, and the need for poverty alleviation, the reforms in Egypt were delayed or not properly implemented due to the interest groups (Richards, 1991).

Adverse external developments and slow implementation of the adjustment measures have left Pakistan's economy short of achieving the original targets and the objectives of the program formulated at the end of 1988. The expected stabilization of key macroeconomic variables has proved difficult to achieve, as shown by Naik (1993). Zaidi (2000) concludes that repercussions have been severe for poverty, employment, wages, and inequality due to fund-supported programs in Pakistan. Moreover, some outcomes of the structural adjustment programs, such as higher growth and lower inflation, have not manifested themselves in Pakistan, with growth considerably low and inflation high. Kemal (1994) has shown that despite containing the employment cost through limiting the wage rate and reducing employment by about 15%, the non development expenditure and fiscal deficit have continued to increase, the employment situation has further worsened due to privatization, and structural adjustment has been accompanied with rising inequalities and poverty in the Pakistan economy. The Gini coefficient increased from 0.34 to 0.41 and the proportion of the poor has increased from 13% in 1987-88 to 14% in 1990-91. Amjad (2004) has concluded that the disaster in terms of economic decision-making during the reform period in Pakistan characterized the financial reform program adopted in the late 1980's. By drastically raising the interest rates to market prices on government borrowing, it increased many fold the interest payment burden of the government.

Methodology

In the literature, five types of approaches for the assessment of the macroeconomic outcomes of fund-supported programs are found as very common:

- **The before-after approach**

It compares the macroeconomic performance of an economy before and after the adoption of fund supported programs².

² This is the most popular approach in the early literature of the fund-supported program. The first study to use this was by Riechman and Stillson (1978). It compares the macroeconomic performance before and after the adoption of a fund-supported program, assuming all other things constant. It has the advantage of ease of calculation but whenever the other factors that are assumed constant by this approach affect the macroeconomic position of the economy, it fails. This is because the fund-supported program is one of those exogenous shocks that hit

- **The with-without approach**

It compares the macroeconomic outcomes of fund-supported programs by differentiating the program and non-program countries³.

- **The comparison of simulation approach**

It relies on the simulations of econometric models to infer the hypothetical performance of the policies included in fund supported programs and alternative policy packages⁴.

- **Actual versus targeted approach**

It compares actual outcomes for certain key macroeconomic variables to their respective targets, for such variables specified by the authorities and the fund at the inception of the program⁵.

the economic variables. So if there are other factors like terms of trade, industrial growth, movements in the interest rates etc., along with the fund-supported program that affects the economic variables of the country, it produces biased results.

³ This is another counterfactual approach, which tried to overcome the drawback of the before-after approach. As this takes the panel of the program and non-program countries and assumes that both the program and non-program countries have the same non-program determinants. Ball and Sheridan (2003) and Fisher (1988) use this approach. Though it overcomes the problem of the before-after approach, it also has a few inherent problems. The assumption of the same non-program determinants between the program and non-program countries is quite unrealistic. Because the countries selected are not taken randomly, in fact they are selected for having a poor economic performance prior to the program. This implies that the program countries had a weaker position prior to the program than non-program countries. So macroeconomic determinants between these two groups of countries would not be the same, in this position the with-without approach would produce biased results.

⁴ This approach differs from the other three in that it does not consider the actual outcomes of the program but it relies on the econometric model to incorporate the impacts of the fund-supported program. Khan and Knight (1981) and Khan and Knight (1985) have gauged the macroeconomic impacts of the fund-supported program. But this approach carries a famous Lucas critique that the actual effects can turn out quite different from the simulated ones. Second, due to credibility factors, the effect of the policy can be different when it is implemented inside and outside the fund-supported program.

⁵ This is not one of those approaches that are frequently used in the literature of the fund-supported programs. It compares the targets set by the programs for certain variables of interest to the actual outcomes of the program. The drawback of this is that the targets are mostly not available to the public. It is also deficient because targets may be overly ambitious so that failure to achieve them does not necessarily imply that the

- **The generalized evaluation estimator approach**

It compares the macroeconomic performance of the program and non-program countries, adjusting for the initial differences and condition among the countries and controlling for exogenous influences.

The recognition of the inherent biases in with-without and before-after approaches led to the creation of the generalized evaluation estimator approach. It modifies the with-without approach in two ways. First, it accepts the non-random selection of the countries, and identifies the specific differences between the program and non-program countries in the pre-program period. Second, it attempts to capture the effect of policy, exogenous shocks and other variables on the macroeconomic outcomes, taking into account how policies would have evolved in the absence of the program. The reaction function captures the effect of the policy. The reaction function brings those policies into consideration that might have been adopted in the absence of the program. The reasoning behind the counterfactual approaches is that either they compare the before and after situation in the economy or compare the sample of the program countries with the sample of those countries that are not involved in the program.

At the same time the country cannot be in both situations (program and non-program). Therefore, the reaction function is estimated by taking the difference of the vector of desired values of target variables with the vector of actual values of the target variables in the last period. Second, by taking the exogenous shock as an explanatory variable in the model, it provides a good measure for analyzing their impact on the target variables. While applying it to the case study it also overcomes the two well known limitations, selection of random countries, and the problem of the degree of program implementation, i.e. the willingness of governments to implement certain programs. Second, technically the methodology used in this study overcomes the problems associated with the with-without, before after and the other above discussed techniques, so the IMF estimator estimated with this technique would not provide biased results. That is why it is known as the comparatively better technique to evaluate the fund-supported programs.

adjustment program was not effective. Conversely, the targets could be under ambitious so that exceeding them does not always mean that the program was effective.

This technique is capable of serving the objectives set by this study. First by taking economic growth, current account balance, inflation rate, budget deficit, and unemployment as the target variables, we can estimate the impact of the fund-supported programs on the macroeconomic scenario of the Pakistan economy. Second, by including the reaction function in the model it also deals with the difference between the targeted and actual outcomes and it concentrates on the effect of the other policy options that are not included in the program design by taking the vector of the policies which might have been adopted in the absence of the programs. Third, including the vector for the exogenous variables, their effect on the target variable is also incorporated.

The Model

Suppose that the target variable is determined according to:

$$Y_i = \beta_1 + \beta_2 x_i + \beta_3 w_i + \beta^{MF} d + \varepsilon \quad (1)$$

Where Y_i is the target variable (i = Current account balance, economic growth, inflation rate, fiscal deficit, unemployment and foreign exchange reserves respectively), x_i is a vector of policy instruments (i.e. the exchange rate, fiscal deficit, domestic credit, inflation rate), w are foreign exogenous variables (eg. Terms of trade, international interest rate), d is a dummy variable and ε is a random shock. The dummy variable takes on the value 1 if the fund-supported program is in effect during the period in question and zero otherwise. The parameter β^{MF} measures the effect of the program during this period on variable y .

It is important to note that the definition of β means the x_i refers to the policies that would have been adopted in the absence of a program. The vector x_i is therefore directly observable only if there is a fund-supported program; for non-program x_i must be estimated. One way in which x_i can be estimated is via the simple reaction function:

$$\Delta x_i = \gamma [y_i^d - (y_i)_{-1}] + \eta \quad (2)$$

Where y_i is a vector of target variables, y_i^d is the vector of their desired values, γ is an adjustment parameter, η_i is a vector of random shocks, and Δ is first-difference operator. Equation (2) basically says that the change in the country's macroeconomic policy instruments between the current and

previous period will be the function of the difference between desired values of the target variables this period and their actual values last period.

The model can be employed to examine the statistical properties of the before–after and with-without approaches to an estimation of the program effects. The before-after estimator β^{BA} is:

$$\beta^{BA} = \Delta y_i \text{ for } i \in P \quad (3)$$

Where P denotes the set of program countries during the current period. The expected value of this estimator conditional on observed values of the foreign exogenous variables is:

$$E(\beta^{BA} | i \in P, \Delta w) = \beta^{MF} + \beta_3 \Delta w + E(\beta_2 \Delta x_i + \Delta \varepsilon | i \in P, \Delta w) \quad (4)$$

Which is equal to the true value of β^{MF} only if:

$$E(\beta_2 \Delta x_i + \Delta \varepsilon | i \in P, \Delta w) = -\beta_3 \Delta w \quad (5)$$

The before-after estimator is unbiased if one expects that the non-program determinants of y_i would have behaved in a way to leave the y_i unchanged, on average, between the program and the non-program periods. In other words any change in the external market, innovation in policies, and other unobserved variables cancel each other out.

The with-without estimator β^{ww} is given by:

$$\beta^{ww} = \Delta y_{ij} - \Delta y_{nj} \quad (6)$$

Where Δy_{nj} is the average value of the Δy_{ij} over some set N of non-program countries. Since we can observe Δx and $\Delta \varepsilon_{ij}$ for all $i \in N$, the information set, defined as Ω , now consists of:

$$\Omega = \{(\Delta x_i, \Delta \varepsilon_{ij} \text{ for } i \in N), \Delta w\}$$

Taking expectations of β^{ww} conditional on $i \in P$ and Ω we have:

$$E(\beta^{ww} | i \in P, \Omega) = \beta^{MF} + E(\beta_2 \Delta x_i + \Delta \varepsilon_{ij} | i \in P, \Omega) - (\beta_2 \Delta x_n + \Delta \varepsilon_{nj}) \quad (7)$$

The with-without estimator will be unbiased if:

$$E(\beta_2 \Delta x_i + \Delta \varepsilon_{ij} \mid i \in P, \Omega) = \beta_2 \Delta x_n + \Delta \varepsilon_{nj} \quad (8)$$

In other words, if it can be expected that in the absence of the program, the country would have behaved just like the average member of the non-program reference group, then the estimator will be unbiased.

An alternative to the before-after and with-without approach can be derived by using equation (2) to substitute out the unobservable policy changes that would occur in the absence of a fund program (i.e. for x_i) from equation (1). The generalized evaluation estimator is:

$$\Delta y_i = \beta_{oi} - (y_i)_{-1} (\gamma \beta_2 + I) + (x_i)_{-1} \beta_2 + \beta_3 w + \beta^{IMF} d + (\varepsilon + \beta_2 \eta) \quad (9)$$

Where y_i^d is subsumed into the constant such that $\beta_{oi} = \beta_1 + \beta_2 y_i^d$.

Econometric estimation of equation (9) produces an estimate of the β^{IMF} that is not subject to the criticism leveled at the before-after and the with-without estimators. This equation takes care of estimation of the counterfactual by controlling for the factors that are systematically related to the policies that would have been followed in the country without the program, which is to include the lag values of the target variables and the policy instruments in the specification. The equation would be estimated by OLS estimation.

Results and discussion

The model is nested as to test the simultaneous effect of, a) the IMF programs, b) policy shocks, and c) foreign exogenous variables. It serves our objective of diagnosing the impact of fund-supported programs, while taking into account the effect of other policy options that might have been adopted in the absence of the programs and foreign exogenous variables. The model takes the IMF programs, other policy responses and the foreign exogenous variables as different explanatory variables, which makes it easier to gauge the net effect of the fund-supported programs on the target variables. The targeted macroeconomic variables are the current account balance, unemployment, GDP growth, inflation rate and the

budgetary balance⁶. The annual data from World Bank data sources for Pakistan have been taken from 1973 to 2000.

Equation (9) is estimated for all five-target variables, discussed above. As we deal with time series data, the Augmented Dickey-Fuller Unit Root Test is used to check for stationarity. The results suggested that the data is stationary for all the target variables. The statistical parameters for the overall significance are represented in Table-1. The R^2 is quite high for all equations. That is .85, .79, .77, .64 and .74 for the equations of the current account balance, unemployment, GDP growth, budgetary balance and the inflation rate, respectively. These results show that in all equations except the budgetary balance more than 75 percent of variation in target variables is defined by the explanatory variables. The F statistics are 18.7, 12.27, 13.9, 7.3 and 11.7 for all equations of current account balance, unemployment, GDP growth, budgetary balance and the inflation rate, respectively. It is highly significant for all equations, which clearly tells us that all parameters of the explanatory variables are non-zero. The Q statistic is used for the detection of autocorrelation or partial autocorrelation. The final results find no auto or partial autocorrelation, while the White-Hetroskedasticity test shows no evidence of of hetroskedasticity.

(1) The current account balance

The regression results for the current account balance show that the parameter of the IMF dummy indicates a negative impact on the current account balance, which is statistically significant at 1 percent level of significance, and the t statistic is -2.67, which is quite high. The inflation rate (CPI) policy variable has also worsened the current account variable and the result is significant at the 5 percent level. Another policy variable,

⁶ The selection of the target variables to gauge the macroeconomic performance of the typical fund supported program is very crucial, in this study five target variables are taken, namely: GDP growth, Inflation Rate, Unemployment, Fiscal Deficit, and Current Account Deficit. The rationale behind the target selection is very simple as discussed in the introduction earlier that the general goals of any stabilization policy are; stable growth, low and stable rate of inflation and high level of employment (lower unemployment). For this reason GDP growth, inflation rate and unemployment have been taken as the target variables so as to see how much these programs are successful in attaining their basic goals. The rationale behind the selection of the current account balances and fiscal deficit is that the prime responsibility of the IMF is to assist the member country when it faces a balance of payments problem and according to their approach, fiscal imbalance is the main culprit behind the balance of payments problem.

net capital account (NCA) has shown positive significance, and indicates that the net capital account has caused an improvement in the current account balance. Though its parameter is significant at the 5 percent level of significance, the magnitude of the parameter is very small. The structural dummy has been taken as the foreign exogenous variable, which has also a positive significant impact over the current account position at the 5 percent level of significance. The parameter of current account's own lag taken as an explanatory variable shows that the current account is positively related to its own lag. The average effect of all the other variables that are not included in the model (represented by constant C) is negative.

The results indicate that due to IMF supported programs Pakistan's current account situation has further deteriorated. Continuous attempts to correct balance of payments imbalances through liberalization of the economy probably leading to an immediate and undifferentiated reduction in import tariffs, which has not given national industries adequate time to improve their competitiveness with foreign firms. The other reason is that the Pakistan economy does not have a diversified portfolio of exports, and it mostly relies on the export of textile family products and a few agricultural products. Continuous depreciation of the rupee has not shown any positive signs in terms of expanding the demand for Pakistani exports and has not shown any satisfactory results in terms of diminishing the demand for foreign goods that are quite price inelastic in Pakistan, because most of Pakistan's imports consist of capital goods that are used as an input in domestic industry.

The other policy variable, net capital account (NCA) plays an accommodating role in terms of compensating the current account deficits and leaving the balance of payments in better condition. At the same time, the inflation rate (CPI) has worsened the current account balance situation in Pakistan. Though it has not significantly increased the prices of exports, the prime cause is that during the entire last decade the Pakistan economy has experienced imported inflation in terms of increases in the prices of imports due to devaluation. The foreign exogenous variable that is taken as the dummy for the structural variable, which is positive and significant might have directly affected the current account balance.

(2) Unemployment:

As presented in Table 1 the regression results indicate a very low level of significance and the parameter is as high as 1.8 that the IMF supported programs in Pakistan have worsened the unemployment situation in the country. In other words the IMF has a positive impact over the rate of unemployment. The policy variable total expenditure as percentage of GDP (EXPTGDP) has a significant effect at the 1% level of significance on unemployment. The sign of the parameter is negative which shows that an increase in the total expenditure reduces the unemployment rate. The other policy variable inflation also has a negative coefficient, which implies that the inflationary pressures have helped to lower the unemployment level. The foreign exogenous variable terms of trade (TOT) has shown a negative impact on unemployment which is significant at the 10 percent level of significance. The results further show that unemployment is positively affected by one period lagged unemployment that is significant at the 1 percent level of significance. And the average effect of all the other variables that are not included in the model is also positive at the 1 percent level of significance.

IMF supported programs have worsened the unemployment situation in the economy, which was 1.7% of the total labor force in 1970 and has worsened to 7.8% of the total labor force in 2000. Reduction in public expenditure is one of the main conditionalities of the IMF in all these programs. The reduction in public expenditure can be achieved either by restricting the acquisition of the commodities or limiting the employment cost through reduction in employment or limiting the increase in the nominal wages below the inflation rate. The decline in the employment cost has been brought about by containing the increase in the nominal wages of government employees and even imposing a complete ban on recruitments and encouraging early retirement. Privatization has also inversely affected the level of employment; the new owners have laid off workers employed in the public sector. The continuous contractionary policies have caused little expansion of the economy which has been unable to employ the growing labor force in the country. During the programs the Pakistani economy witnessed not only complete bans on recruitment but also schemes such as the “golden hand shake” that were introduced to encourage early retirement and on the other hand a continuous decrease in development expenditures has also caused worsened the employment situation in the country.

The policy variables that might have been adopted in the absence of the program have a significant negative effect on unemployment. Increases in expenditure expand the productive activities in the economy that provide opportunities for employment and hence reduce unemployment. As it does not show much increase after the involvement in the fund-supported programs, it did not play a compensatory role in reducing unemployment. But surely any expansion reveals an increase in the level of employment. The price level shows the well known Phillips curve relationship in the case of Pakistan. Any increase in the price level increases the profitability of the industry that causes its further expansion, or inflation is caused by any expansionary policy and both have the same implication in terms of raising the demand for labor and thereby reducing the rate of unemployment. Though the inflation rate was in double digits almost in all the years of IMF programs since 1988, except for the last three years, this was not sufficient to compensate for the unemployment created by introducing IMF supported programs. The foreign exogenous variable terms of trade (TOT) have a negative effect on unemployment and continuous deterioration in the terms of trade has caused a substantial increase in the number of unemployed people.

(3) GDP growth:

The results of GDP growth indicate that the IMF programs have lowered economic growth. Its coefficient has a negative sign, the t statistic is greater than 1, but the results are not statistically significant. The policy variables exchange rate and the inflation rate both have negative parameters and both are significant at the 5 percent level of significance. So the results show that these are the policy shocks that might have a negative significant effect over GDP growth. The foreign exogenous variables have no significant effect over growth. It is positively influenced by its own lag, whose effect is statically significant at the 1 percent level of significance. The average effect of all the other variables not included in the model is positive and significant at the 1 percent level.

The regression results point out that the IMF programs may have slowed down the pace of economic growth that the Pakistan economy was enjoying before the adoption of the fund-supported programs. That is the main critique of the fund-supported programs-that the contractionary policy to diminish the budget deficits and stabilize the prices have been achieved at the expense of growth. But the negative effect of the IMF programs over the Pakistan economy is not statistically significant. There

are other policy variables that are responsible for the slowing down of the growth rate of GDP. One is exchange rate devaluation of the Pak rupee which has made imports more expensive, and since major imports are used as an input in the domestic industry, devaluation has lowered the productive activities in the economy. It has worsened the situation both ways, one by diminishing the productive activities and second by increasing the cost of production for the domestic industries that further caused the domestic prices to increase. So inflation has also negatively hit the economic growth of the country by making the domestic products expensive and the demand for imported goods to rise. The overall effect that the Pakistan economy has faced in terms of GDP growth after the involvement in the fund-supported programs may possibly be a contraction in the growth rate.

Table-1: Results

	ΔCA	ΔUE	ΔGDP	ΔCPI	ΔBB
D^{IMF}	-0.94 (-2.67)*	1.81 (4.36)*	-0.54 (-1.33)	5.92 (4.50)*	1.01 (2.03)**
D^{98}	3.07 (2.28)**	-	-	-	-
TOT	-	-2.74E-11 (-1.86)***	-	-	5.69E-11 (2.84)*
(ER) ₋₁	-	-	-0.06 (-2.02)**	0.74 (2.50)**	-
(M2) ₋₁	-	-	-	1.57E-11 (2.10)**	-
(BRT) ₋₁	-	-	-	-	1.17 (2.27)**
(EXPTGDP) ₋₁	-	-0.35 (-3.72)*	-	-	-
(CPI) ₋₁	-0.14 (-2.50)**	-0.04 (-2.34)**	-0.11 (-2.09)**	-0.46 (-7.00)*	-
(NCA) ₋₁	3.48E-09 (2.10)**	-	-	-	-
(UE) ₋₁	-	-0.23 (-2.94)*	-	-	-
(GDP) ₋₁	-	-	-0.72 (-3.79)*	-	-

(BB) ₋₁	-	-	-	-	-0.29 (-1.79)***
C	-3.15 (-3.00)*	7.49 (3.78)*	6.53 (3.46)*	9.62 (3.37)*	-13.64 (-2.34)**
(CA) ₋₁	-0.79 (-5.00)*				
R ²	0.85	0.79	0.77	0.64	0.74
F statistics	18.70	12.27	13.90	7.30	11.70

Note: (i) The values in brackets are t statistics.

(ii) The *, **, *** shows the 1%, 5% and 10% level of significance, respectively.

(iii) No * indicates insignificant results.

(iv) All the F statistics are significant at very high level of significance

(4) Budgetary balance:

The results derived from the budgetary balance equation suggest that the parameter of the IMF programs has a positive sign and is statistically significant at the 5 percent level. As depicted in the table the IMF programs have improved the budgetary balance. They have reduced the budget deficit, which is a chronic disease for the economy. The bank rate policy variable has also a positive coefficient that is significant at the 5 percent level of significance. So the bank rate has also contributed to the reduction of the budget deficit. The foreign exogenous variable terms of trade has a positive parameter at 1 percent level of significance but it has worsened over the last twenty years and contributed to the increase in the fiscal deficit. The own lag of the budgetary balance is significant at the 10 percent level with a negative sign. The constant term has a negative impact over the budgetary balance, showing the average effect of all the other variables excluding those presented in the model which is negative and significant at the 5 percent level of significance.

This is the only area where the Pakistan economy has been slightly better off due to fund supported programs. The parameter of the IMF dummy shows a positive sign that indicates that due to IMF supported programs the fiscal deficit, which was the major imbalance in the economy,

has been reduced. The fiscal deficit has come down from 8 percent of GDP in 1987 to 5 percent of GDP in 2000. The conditionality posed by the IMF to reduce the public expenditure and increase tax collection has contributed to the reduction of the budget deficit. Pakistan has cut the public expenditure from the very beginning of the programs though the share of tax collection to GDP does not show much improvement. Second, increasing the autonomous power of the central bank and financial reforms set by the fund has increased the cost of domestic financing of the government. From 1991 the government started the full-fledged system of auctioning of government debt and allowed the rate of return on the treasury bills to rise from the unrealistic 6 percent where it was earlier, to a more realistic 13 percent. All these financial improvements introduced competition in government borrowing from the public, and caused the increase in the cost of borrowing in terms of offering higher rates of return on treasury bills and other government securities.

Bengali and Ahmed (2001) have diagnosed the reduction in the fiscal deficit in terms of the different distributional implications and this is quite important to note here. For example, raising revenue or reduction in expenditure can lower the budget deficit. Revenues can be generated through direct or indirect taxes: the former impacts the rich while the latter impacts the poor. In the same way expenditure can be contained by reductions in the current expenditure or reduction in development expenditure. The former impacts on existing employment while the latter impacts on future employment creation. The data highlight that revenue shortfalls, current account overruns and cuts in development expenditure are the norm. That is what is indicated above in the results discussion of the unemployment estimator, that the IMF programs have reduced the level of employment in the country.

The other policy variable that caused improvement in the budget deficit is the bank rate (BRT). The economic logic behind the response of the government to the increase in the interest rate is very basic: that the increase in the domestic interest rate forces the Treasury bill rate to increase in order to increase the domestic debt portfolio. In other words the increase in the rate of interest has increased the cost of borrowing of the government from the public.

(5) Consumer Price Index (CPI):

The inflation estimator provides the result that IMF programs have contributed to the increase in the rate of inflation in the economy. The very high parameter of the IMF dummy (5.9), with the positive sign and significant at 1 percent, shows that IMF programs have brought a considerable increase in the rate of inflation. The other policy variables, money supply and the exchange rate, are also contributors to the increase in the rate of inflation. Money supply has a very small parameter estimate significant at the 5 percent level. The exchange rate has also a significant parameter at 5 percent. Foreign exogenous variables have no significant impact on the inflation rate. The parameter of its own lag has a negative sign and significant at 1 percent indicating that it is positively related to its own lag. The effect of all other variables not included in the model is positive and significant at the 1 percent level of significance for the inflation equation.

The large and positive parameter estimate on the dummy of the IMF implies that the involvement in the fund-supported programs has increased the rate of inflation in the economy. It was in double digits except for the last three years. Though most of the policies by the fund-supported programs are contractionary in their nature, the main policy regarding trade is the depreciation of the currency, because IMF and other financial institutions believe that currencies in most developing countries are over valued so they must be rationalized. After the Bretton Woods system in which the rupee was pegged to the dollar, the Pakistan economy is operating under the managed floating exchange rate. The depreciation of the Pak Rupee increased the prices of machinery and crude oil. Both are the basic inputs in domestic industry, and the rise in their prices increased the pressure of cost-push inflation, the main source of inflation in Pakistan. But for the last three years the rate of inflation has come down due to the continuous contractionary policies on both counts in terms of fiscal policy by reducing public expenditure, and by monetary policy by reducing the growth of the money supply. But price stability has been achieved at the expense of GDP growth, increasing unemployment and increasing poverty.

There is no significant effect of the foreign exogenous variable on the CPI. The other policy variables, the exchange rate and money supply (M2), have also contributed to the increase in the rate of inflation in the Pakistan economy. The logic for the exchange rate parameter is the same as what has been discussed above by forcing cost-push inflation in the economy. Increases in money supply contribute to an increase in domestic

demand for goods and causes prices to rise, which is known as demand-pull inflation. But the coefficient of M2 is so small that its effect can be ignored. So the regression results suggest that inflation in Pakistan is caused by the increase in input prices, or in other words cost-push inflation is dominant in this case.

The sequencing of reforms:

There has been much discussion regarding the sequencing of the reforms. Results of macroeconomic outcomes discussed earlier show that the IMF programs have increased the unemployment rate, increased the inflation rate, worsened the current account deficits and contributed to slowing down the pace of the economy. Besides the other reasons, inadequate sequencing of economic reforms is also a contributor to these results. The first indicator of the implementation of reforms can be the completeness of the arrangements settled with the IMF, as these arrangements are based on the conditionalities set by the IMF. Inability to meet the minimum requirements causes the termination of disbursement of a loan before the expiration date and completing the approved amount. After 1988, Pakistan has only once in 2000-01 has been able to draw the full amount of the approved arrangement. It shows Pakistan has been unable to meet the target requirements set by the IMF. That clearly shows inadequate sequencing of reforms.

First on the agenda of these economic reforms was macroeconomic stability consisting of three ingredients: budgetary balance, balance of payments improvement and reduction in inflation. Fiscal and monetary policy reforms and devaluation have mainly aimed at achieving this (Ahmad, 1998). The normal sequencing of the fund reforms is first to improve the budgetary surplus and to reduce the price level. In the case of Pakistan, financial sector reforms were adopted in the very beginning of the reform packages that increased the competitiveness of the government to generate funds from the public and resulted in an increase in the rate of return on treasury bills and other government securities. This increase in the interest rate increased debt servicing of the government by many fold. Clearly the adoption of financial sector reforms was not a suitable strategy, which not only increased government expenditure but also reduced development expenditure, and contributed to the slowing pace of the economy and poverty that was reduced in the 1980's then again went up very rapidly.

It is important to restructure state enterprises, and privatization is often an effective way to do so. But moving a person from low productivity jobs in state enterprises to unemployment does not increase the country's income, and it certainly does not increase the welfare of the workers. Sufficient effort was not made to increase employment in order to counteract unemployment created by privatization and contractionary policies. As Stiglitz (2002) pointed out, macroeconomic stabilization is on the agenda of the IMF supported programs but job creation is missing. The objective of the reduction in fiscal deficit by reducing the expenditure posed some serious costs in terms of worsening the development indicators, as the development expenditure shows a declining trend throughout the reform period. And the government still fails to provide safety nets to compensate for the reduction in development expenditure that on the one hand increases unemployment, and the number of the poor on the other hand. The sequencing of fiscal deficit cuts might have been beneficial if the development expenditure had been further considered in the designing of the programs prior to the reduction in the budget deficit.

Trade liberalization is supposed to enhance the country's income by forcing resources to move from less productive uses to more productive uses. But moving resources from low productivity uses to zero productivity does not enrich the country, and this is what happened all too often under IMF programs. It is easy to destroy jobs, and this is often the immediate impact of trade liberalization, as inefficient industries close down under pressure from international competition (Stiglitz, 2002). The immediate reduction in tariff rates and reduction in the non-tariff barriers before taking adequate measures to enable domestic firms to compete with foreign firms, resulted in the shutting down of domestic units and deterioration in the current account balance. Another pitfall in the sequencing of tariff reforms and changes in the tax structure is the reliance on the regressive tax structure. Indirect taxes (Value Added Tax) have increased the burden of taxes on the poor and are an important contributor to income inequality in the 1990's (Kemal, 2003). The major flaw in the sequencing of IMF supported reforms is that the consideration of fairness is totally ignored. The Washington Consensus policies believe in trickle-down economics, which implies that the best way to help the poor is to make the economy grow. What actually happened in Pakistan is that due to inadequate consideration of poverty in the reforms, poverty increased very rapidly in the whole decade of the 1990's causing a chronic problem for the Pakistan economy to deal with.

Summary and Conclusion

Pakistan is one of the prolonged users of IMF supported programs, after initiating it in 1988. Fifteen years of history with these programs certainly calls for the evaluation of programs. In most parts of the world, the evaluation of the macroeconomic outcomes has been used as a prime measure to analyze the performance of fund-supported programs. It applies the counterfactual approach to assess the macroeconomic outcomes of the program, which is to compare the macroeconomic performance of the set of countries with programs to the set of countries without programs or comparing the pre reform macroeconomic performance with post reform.

The Generalized Evaluation Estimator technique is used in order to measure the impact of the IMF supported programs over the targeted macroeconomic variables. The technique used here takes care of the foreign exogenous factors, and the other policy options than the IMF suggested that may affect the performance of target variables, by taking the exogenous variables along with the IMF dummy. The other policy variables are directly observable in the absence of the programs but cannot be observed during the program years, so to overcome this problem reaction functions are estimated.

The study suggests that IMF supported programs have worsened the current account balance of Pakistan during the program years. Immediate liberalization of trade has caused many domestic units to be shut down. Continuous devaluation of the rupee against the dollar has pushed up the prices of crude oil and machinery, which are the major inputs of domestic industry and are imported from foreign countries. This increase in the cost of the domestic firms has made them unable to compete with other foreign firms. Economic reforms have posed a huge cost in the form of rapid increases in unemployment. Privatization, reductions in public expenditure combined with contractionary monetary policy all have contributed to growing unemployment in the country.

IMF supported programs are also the cause of the increase in the price level during the last twelve years. Though on the demand side all of the program policies were mainly contractionary, in order to bring price stability, the supply side (cost push inflation) has come into the picture during program years, which is mainly due to devaluation and liberalization of trade that has increased the cost of the domestic industries by pushing up the prices of inputs used in these industries. Though the effect of fund-

supported programs on economic growth is negative, it is not statistically significant. But the IMF programs have succeeded in bringing a slight reduction of the budget deficit during the last twelve years. Public expenditure cuts and increases in tax revenue are among the main conditionalities of the IMF economic reform packages, but in the case of Pakistan the share of revenue to GDP has not shown much improvement. However development expenditure shows a continuous declining trend, bringing improvements in the budget surplus at the cost of increasing unemployment and rapid increase in poverty.

Countries' adoption of gradual stabilization policies plays a major role in the success of reform programs. Pakistan initiated financial reforms during the early years of the programs. The sequencing of financial reforms has been critical in the sense that these reforms were undertaken before the reduction in the budget deficit. Financial reforms increased the competitiveness of the government in generating funds from the public, resulting in an increase in treasury rates. Increases in the interest rate on the treasury bills and other government securities caused the debt servicing of the government to accelerate. As the government faced the conditionality of reducing public expenditure an increase in debt servicing put pressure on the government to reduce development expenditure, which resulted in a rapid increase of poverty incidence.

Privatization was adopted, but prior to the adoption no safety nets were formed for those workers who would be laid off after the privatization. This wrong sequencing of privatization has led to chronic unemployment that is still increasing. In the trade regime, immediate openness to trade and reductions in tariffs and other quantitative and non-quantitative measures in order to enhance efficiency and competitiveness have caused many domestic units to be closed, and during these reforms around 3000 units have been shut down (Amjad, 2004). The shift in the tax structure from tariff to regressive taxes has further widened the inequality gap in the country.

References

- Ahmad, Mushtaq, 1998, "Fiscal adjustment: trade-offs of macro-economic goals and recent policy reforms in Pakistan". *The Pakistan Development Review*, 37:4.

- Alesina, Alberto and Drazen, Allan, 1991, "Why are stabilizations delayed?" *The American Economic Review*, Vol. 81, No. 5.
- Amjad, Rashid, 2004, "Solving Pakistan's poverty puzzle: who should we believe? What should we do?" Paper proceedings of the 19th Annual general meeting and conference, Jan.2004. Pakistan Institute of Development Economics, Islamabad.
- Anderson, M. Torben and Risager, Ole, 1988, "Stabilization policies, credibility, and interest rate determination in a small open economy". *European Economic Review*, 33.
- Bagci, P., and W. Peraudin, 1997, "Do IMF Programs Work?" Global Economic Institutions (Working Paper, 1997).
- Balassa, Bella, 1982, "Structural adjustment policies in developing economies". *World Development*, Vol. 10, No. 1.
- Ball, Laurence and Sheridan, Niamh, 2003, "Does inflation targeting matters?" International Monetary Fund (Working Paper/2003/129).
- Baqir, Reza, Ramcharan, Rodney and Sahay, Ratna, 2003, "IMF program design and growth: what is the link?" International Monetary Fund (Working Paper).
- Bengali, Qaiser and Ahmed, Qazi, Mashood, 2001, "Stabilization policy vs. Growth-oriented policy: implication for the Pakistan economy". *The Pakistan Development Review*, 40:4.
- Bhatia, Rattan J., 1975, "Fiscal and monetary policy for internal and external stabilization under fixed and floating rates in the presence of capital movements". *The Pakistan Development Review*.
- Bilquees, Faiz, 1987, "The IMF stabilization package and Pakistan's stabilization experience". *The Pakistan Development Review*, Vol. 26, No. 4.
- Branson, H. William and Jayarjah, Carl, 1994, "A framework for evaluating policy adjustment programs: lessons from cross-country evaluation." Proceedings of the World Bank Conference on evaluation and development.

- Bruno, Michael, 1992, "Stabilization and reforms in Eastern Europe: A preliminary evaluation". *International Monetary Fund Staff Papers*, Vol. 39, No. 4.
- Buffie, Edward F., 1992, "Stabilization policy and public sector prices". *Journal of Monetary Economics*.
- Bulir, Ales and Moon, Soojin, 2003, "Do IMF-supported programs help make fiscal adjustment more durable?" *International Monetary Fund (Working Paper/2003/38)*.
- Connor, T., 1979, "The apparent effects of recent IMF stabilization programs". *International Finance Discussion Paper 135*, Board of Governors of Federal Reserve System.
- Conway, P., 1994, "IMF lending programs: Participation and Impact", *Journal of Development Economics* 45, December 1994.
- Cukierman, Alex and Liviatan, Nissan, 1992, "The dynamics of optimal gradual stabilization". *The World Bank Economic Review*, Vol. 6, No. 3.
- De Gregorio J., 1993, "Inflation, taxation and long run growth". *Journal of Monetary Economics*, 31(3).
- Dornbush, Rudiger, 1991, "Credibility and stabilization". *Quarterly Journal of Economics*, Aug.
- Drazen, Allan and Helpman, Elhanan, 1987, "Stabilization with exchange rate management". *The Quarterly Journal of Economics*, November.
- Drazen, Allan and Helpman, Elhanan, 1988, "The effects of policy anticipations on stabilization programs". *European Economic Review*, 32.
- Franko, H.B., Gustavo, 1990, "Fiscal reforms and stabilization: four hyperinflation cases examined". *The Economic Journal*, 100 (March).

- Haq, Ul Nadeem and Khan, Mohsin S., 1998, "Do IMF-supported programs work? A survey of the cross-country empirical evidence". International Monetary Fund (Working Paper/98/169).
- Helpman, Elhanan and Razin, Assaf, 1987, "Exchange rate management: inter temporal tradeoffs". *The American Economic Review*, Vol. 77, No. 1.
- Hutchison, Michel M., 2001, "A cure worse than a disease? Currency crises and the output cost of the IMF adjustment programs". Department of Economics, Social sciences 1, University of California, Santa Cruz.
- Iqbal, Zafar, 1994, "Macroeconomic effects of adjustment lending in Pakistan". *The Pakistan Development Review*, 33:4.
- Ivanova, Anna, Mayer, Wolfgang, Mourmouras, Alex and Anayiots, George, 2003, "What determines the implementation of IMF-supported programs?" International Monetary Fund (Working paper 2003/08).
- Jahjah, Samir and Montiel, Peter, 2003, "Exchange rate policy and debt crises in emerging economies". International Monetary Fund (Working Paper/2003/60).
- Jha, Raghendra, 2003, Macroeconomics for Developing Countries. 2nd edition. Routledge, London and New York.
- Kemal, A.R., 1994, "Structural adjustment, employment, income distribution and poverty". *The Pakistan Development Review*, 33:4.
- Kemal, A.R., 2003, "Structural adjustment and poverty in Pakistan". MIMAP Technical Paper Series No. 14. Pakistan Institute of Development Economics, Islamabad.
- Khan, Mahmood Hasan, 2000, "When is economic growth pro-poor? Experiences in Malaysia and Pakistan". International Monetary Fund (Working Paper/ 2002/ 85).
- Khan, Mohsin S. and Knight, Malcolm, 1985, "Fund-supported programs and economic growth". International Monetary Fund, Occasional Paper 41.

- Khan, Mohsin S. and Knight, Malcolm D., 1981, "Stabilization programs in developing countries: A formal framework". International Monetary Fund Staff Papers.
- Khan, Mohsin S. and Senhadji, S. Abdelhak, 2000, "Threshold effect in the relationships between inflation rate and growth". International Monetary Fund (Working Paper/2000/110).
- Khan, Mohsin S. and Sharma, Sunil, 2001, "IMF conditionality and country ownership of programs". International Monetary Fund (Working Paper/2001/142).
- Khan, Mohsin S., 1986, "Macroeconomic adjustment in developing countries: A Policy Perspective". World Bank Discussion Paper-Development Policy Issues Series.
- Khan, Mohsin S., 1990, "The macroeconomic effects of fund-supported adjustment programs". International Monetary Fund Staff Papers, June.
- Khilji, Nasir M. and Leon, Jean Claude, 1989, "Output effects of stabilization policies: the case of Pakistan". *The Pakistan Development Review*, 28:4.
- Kiguel, Miguel A. and Liviatan, Nissan, 1992, "The business cycle associated with exchange rate based stabilizations". *The World Bank Economic Review*, Vol. 6, No. 2.
- Killick, T., M. Malik and M. Manuel, 1995, "What Can We Know About the effects of IMF Programmes?" *World Economy* 15, September 1995.
- Lizondo, Saul J. and Montiel, Peter J., 1989, "Contractionary devaluation in developing countries". International Monetary Fund Staff Papers.
- Loxley, J., 1984, The IMF and poorest countries, Ottawa, Canada: North-South Institute.
- Moran, Christian, 1989, "Economic stabilization and structural transformation: lessons from the Chilean experience, 1973-87". *World Development*, Vol. 17, No. 4.

- Mundell, A. Robert, 1962, "The appropriate use of the monetary and fiscal policy for internal and external stability." IMF Staff Papers.
- Naik, Ahmed Ejaz, 1993, Pakistan economic situation and future prospects. Pakistan Institute of Development Economics (Islamabad).
- Nsouli, M. Saleh, Rached. Mounir and Funke. Norbert, 2002, "The speed of adjustment and sequencing of economic reforms: issues and guidelines for policy makers". International Monetary Fund (Working Paper/2002/132).
- Pakistan, Government of (Various Issues), *Economic Survey*.
- Richard, Alan, 1991, "The political economy of dilatory reform: Egypt in 1980's". *World Development*, Vol. 19, No. 12.
- Schadler, S. et.al., 1993, "Economic adjustment in low income countries-experience under the enhanced structural adjustment facility". International Monetary Fund. Occasional paper 106.
- Singer, H.W., 1995, "Are the structural adjustment programs successful?" *Pakistan Journal of Developments Economics*, Vol. 11.
- State Bank of Pakistan, (Various Issues), *Annual Report*, Karachi
- Stiglitz, Joseph, 2000, "Capital market liberalization, economic growth and instability". *World Development*.
- Stiglitz, Joseph, 2002, Globalization and its discontents, Penguin Books, London.
- Uribe, Martin, 1999, "Comparing the welfare costs and initial dynamics of alternative inflation stabilization policies". *Journal of Development Economics*, Vol. 59.
- Werner, Alejandro M., 1999, "Building consensus for stabilization". *Journal of Development Economics*, Vol. 59.
- Zaidi, S. Akbar, 2000, Issues in Pakistan's Economy: Oxford University Press (Karachi).

Determinants of Capital Structure: A Case for the Pakistani Cement Industry

Syed Tahir Hijazi* Yasir Bin Tariq**

Abstract

This paper attempts to determine the capital structure of listed firms in the cement industry of Pakistan. The study finds that a specific industry's capital structure exhibits unique attributes which are usually not apparent in the combined analysis of many sectors as done by Shah & Hijazi (2005). The study took 16 of 22 firms in the cement sector, listed at the Karachi Stock Exchange for the period 1997-2001 and analyzed the data by using pooled regression in a panel data analysis. Following the model developed by Rajan & Zingale (1995) it has chosen four independent variables i.e. firm size (measured by natural log of sales), tangibility of assets, profitability and growth and further analyzed the effects on leverage. The results, except for firm size, were found to be highly significant.

I. Introduction

The firm can choose a mix of financing options to finance its assets so that its overall value can be maximized and this is known as the capital structure of the firm. The seminal work of Miller & Modigliani (1958) showed that the market value of a firm is determined by its earning power and the risk of its underlying assets, and is independent of the way it chooses to finance its investments or distribute dividends. Remember, a firm can choose between three methods of financing: issuing shares, borrowing or spending profits (as opposed to dispersing them to shareholders as dividends). The theorem gets much more complicated, but the basic idea is that under certain assumptions, it makes no difference whether a firm finances itself with debt or equity.

* Dean, Muhammad Ali Jinnah University, Islamabad.

** PhD student, Muhammad Ali Jinnah University, Islamabad.

Although this theory is based on many unrealistic assumptions, it provides the basic theoretical background for further research. After MM a lot of research has been done on optimal capital structure and determinants of capital structure. During this period, among others, three main theories emerged which explain the behavior of the firm in choosing its capital structure. These are Static Tradeoff Theory, Pecking Order Theory and the Signaling Theory.

This study focuses on firms of the cement industry of Pakistan and the purpose is two fold. One is to see whether the determinants identified by Rajan & Zingales (1996) provide an explanation for the choice of capital structure of firms in the Pakistani cement sector. Second, we attempt and to see whether each industry exhibits some unique attributes which are not apparent in the combined analysis of firms from different industries. Therefore, we also compare our results with Shah & Hijazi (2005) who analyzed 445 non-financial firms listed on the Karachi Stock Exchange representing different industries. We have found that our results differ from Shah & Hijazi (2005) in terms of growth and size. Also, we have chosen the cement industry because it is a capital-intensive industry and requires a much bigger commitment of funds to setup a new business and to expand its capacity further.

The remainder of this paper is divided into four main sections. Section 2 presents the theoretical basis for the analysis presented in this paper. Section 3 then provides a detailed description of the methodology, operational definitions of the variables and model used. Section 4 then details the results of this analysis, comparing the results with the past findings. Finally, section 5 summarizes and concludes.

2. Theoretical Framework

2.1. Static Trade off Theory

Myers (1984) divides the contemporary thinking on capital structure into two theoretical currents. The first one is the Static Tradeoff Theory (STT), which explains that a firm follows a target debt-equity ratio and then behaves accordingly. The benefits and costs associated with the debt option sets this target ratio. These include taxes, cost of financial distress and agency cost.

- (1) As the interest payments are a tax-deductible expense, they decrease the tax liability thus providing cash savings. Therefore

firms will use a higher lever of debt to take the advantage of tax benefits if the tax rates are higher. If the firms incur losses, this tax benefit will fade away. So if the operating earnings are enough to meet the interest expense then firms will get the benefit of tax deductibility of interest expenses.

- (2) The chance of default increases as the level of debt increases. So there exists an optimal level of debt. If the firm goes beyond this optimal point, it is more likely that the firm will default on the repayment of the loan; as a consequence the control of the firm will be shifted from shareholders to bondholders who will try to recover their investments by liquidating the firm. Because of this threat a firm may face two types of bankruptcy costs. These are direct and indirect costs. Direct costs include the administrative costs of the bankruptcy process. If the firm is large in size, these costs constitute only a small percentage for the firm. However, for a small firm, these fixed costs constitute a higher percentage and are considered an active variable in deciding the level of debt. The indirect costs arise because of change in investment policies of the firm in case the firm foresees possible financial distress. To avoid possible bankruptcy, the firm will cut down expenditures on research and development, training and education of employees, advertisements etc. As a result, the customer begins to doubt the firm's ability to maintain the same level of quality in goods and services. This doubt appears in the form of a drop in sales and eventually results in a drop of the market share price of the firm. This implies that the potential benefits from leverage are shadowed by the potential costs of bankruptcy (Correia *et al* 2000).

2.2. Pecking Order Theory

The second theory, the Pecking Order Theory (POT) put forward by Myers (1984) and Myers and Majluf (1984), states that firms follow a hierarchy of financial decisions when establishing its capital structure. Initially, firms prefer to finance their projects through internal financing i.e. retained earnings. In case they need external financing, first they apply for a bank loan then for public debt. As a last resort, the firm will issue equity to finance its project. Thus according to POT the profitable firms are less likely to incur debt for new projects because they have the available internal funds for this purpose. The reason firms are reluctant to issue equity is because of asymmetric information between the management and the new

stockholders. Myers and Majluf (1984) pointed out under pricing would be the result of less information held by potential investors vis-à-vis management with respect to the expected cash flows from the firm's assets, both current and future. Considering this information asymmetry investors would infer that the management would issue stock only when it is overpriced. Thus the newly issued equity might be sold at a discount. This would be regarded as a wealth transfer from existing investors to the new ones. This problem could be avoided if the firms use internally generated resources, such as retained earnings.

Moreover, the Pecking Order Theory has a more important effect on capital structures for firms that are managed in the interests of equity holders, rather than the combined interests of debt and equity holders. However, when financial distress costs are high, equity-maximizing and value-maximizing firms make similar capital structure choices (Titman & Tsyplakov 2005).

Myers (1977) suggests that firms acting to maximize the interest of equity holders will be reluctant to issue equity because of the wealth transfer to debt holders, Myers and Majluf (1984) suggest that firms are reluctant to issue equity because of an adverse selection problem, and Almazan, Suarez and Titman (2003) suggest that firms may be reluctant to issue equity because of the costs associated with being scrutinized. Finally, issuing equity involves substantial transaction costs.

These theories are not mutually exclusive. Firms can choose target ratios that reflect the benefits and costs of debt financing put forth in the tradeoff literature, but may deviate from their targets for the reasons described in the pecking order literature.

2.3. Signaling theory

This approach, originally developed by Ross (1977), explains that debt is considered as a way to highlight investors' trust in the company, that is if a company issues the debt it provides a signal to the markets that the firm is expecting positive cash flows in the future, as the principal and interest payments on debt are a fixed contractual obligation which a firm has to pay out of its cash flows. Thus the higher level of debt shows the manager's confidence in future cash flows.

Another impact of the signaling factor as we have already discussed it in the Pecking Order Theory is the problem of the underpricing of equity.

If a firm issues equity instead of debt for financing its new projects, investors will interpret the signal negatively: since managers have superior information about the firm than investors, they might issue equity when it is overpriced.

Among other explanations about a firm's behavior in choosing its capital structure is the agency theory. Jensen and Meckling (1976) identify the possible conflict between shareholders and a manager's interests because the manager's share is less than 100% in the firm. Furthermore, acting as an agent to shareholders, the manager tries to appropriate wealth from bondholders to shareholders by incurring more debt and investing in risky projects.

This is consistent with the work of Myers (1977) who argues that, due to information asymmetries, companies with high gearing would have a tendency to pass up positive NPV (net present value) investment opportunities (under investment problems). Myers therefore argues that companies with large amounts of investment opportunities (also known as growth options) would tend to have low gearing ratios.

A manager having a less than 100% stake in the business may try to use these free cash flows sub-optimally or use it to their own advantage rather than use it to increase the value of the firm. Jensen (1986) suggests that this problem can be somehow controlled by increasing the stake of the manager in the business or by increasing debt in the capital structure, thereby reducing the amount of "free" cash available to managers to engage in their own pursuits (Jensen, 1986, Stulz, 1990). Here the reduction in the cash flow because of debt financing is considered to be a benefit.

Stutz (1990) suggests that the agency problem can be solved to some extent if the management stake is increased or the proportion of debt in the capital structure is increased.

3. Methodology

This section provides information about the source of data, sample size, measurement of the variables and discussion of different measures of the variables.

3.1. Source of Data

This study is based on the financial data of sample firms from 1997-2001 and has been taken from the State Bank of Pakistan Publications "Balance Sheet Analysis of Joint Stock Companies Listed on the Karachi Stock Exchange Volume-II 1996-2001". We wished to use the latest data up to 2005, but the data for the period 2002 onward have not yet been published by the State Bank of Pakistan.

3.2. The Sample

As this study has focused on the Cement Sector, initially all the 22 firms (which are listed on the Karachi Stock Exchange) in the cement sector (whose published data was available) were selected. Then after screening the firms with incomplete data, we were left with only 16 firms. So we have 80 firm-years for panel data analysis.

3.3. Explanation of Variables:

In their cross-sectional study of the determinants of capital structure, Rajan and Zingales (1995) examine the extent to which, at the level of the individual firm, leverage may be explained by four key factors, namely, market-to-book (growth), size, profitability and tangibility. Their analysis is performed on a firm-level sample from each of the G-7 countries, and although the results of their regression analysis differ slightly across countries, they appear to uncover some fairly strong conclusions.

This study follows the framework of Rajan & Zingales (1995) and Shah & Hijazi (2005) that use tangibility of assets, firm size, growth and profitability of the firm as explanatory variables to determine the degree of leverage (the response variable). In this section we present the description of these variables, how they are measured and what empirical evidence was found by previous studies.

3.3.1. Leverage (LG) (Dependent Variable)

Leverage refers to the percentage of assets financed by debt. Previous research studies have used different measures of leverage. Frank and Goyal (2003b) state that the difference between a debt ratio based on market value and one based on book values is that the former tends to regard the firm's future situation whereas the latter reflects the past situation. Fama and French (2002) point out some inconsistencies arising from the use of two different debt ratios. According to them, both theories

(Pecking Order and Static Tradeoff) apply to the debt book value, and there are doubts if the predictions may be extended to the debt market value.

Consistent with a previous study on non-financial Pakistani listed firms by Shah & Hijazi (2005) we used the book value measure of leverage. The main benefit of debt is that the interest payments are tax-deductible and thus provides cash savings. These tax shield benefits are not changed by the market value of the debt once it is issued (Banerjee, S. *et. al.* 2000). So the market value of the debt is irrelevant for our study.

On the other hand, the primary cost of borrowing is the increased chance of bankruptcy. If a firm falls in financial distress and goes into bankruptcy, then the relevant value of the debt is the book value of the debt not the market value of the debt (Shah & Hijazi 2005).

Another consideration in deciding the appropriate measure of leverage is to take total debt or only long term debt as a percentage of total assets. Though capital structure theories consider long term debt as a proxy for financial leverage, we use the measure of total debt because in Pakistan firms have mostly short-term financing as the average firm size is small. This makes access to the capital market difficult in terms of cost and technical difficulties (Shah & Hijazi 2005). In Pakistan, firms usually prefer short-term borrowing, the reason being that commercial banks are the major lenders and they do not encourage long-term loans. Up to 1994 firms did not rely on market based debt; in mid 1994 the government amended the Company Law to permit companies to raise debt directly from the market in the form of TFCs (Term Finance Certificates).

Booth *et. al.* (1999) also pointed out in their study on determinants of capital structure in developing countries including Pakistan that the use of short term financing is greater than long term financing in developing countries.

3.4. Independent Variables

3.4.1. Tangibility of Assets (TG)

A firm having a large amount of fixed assets can easily raise debt at cheaper rates because of the collateral value of those fixed assets. The companies with a higher ratio of tangible assets have an incentive to

borrow more because loans are available to them at a relatively cheaper rate. Therefore we expect a positive relationship between tangibility of assets and leverage.

According to the static tradeoff approach, firms with higher ratio of fixed assets serve as collateral for new loans, favoring debt. However, the Pecking Order Theory is of the view, as argued by Harris and Raviv (1991), that firms with low levels of fixed assets would have more problems of asymmetric information, making them issue more debt, since equity issues would only be possible by under pricing them. On the other hand, firms with higher levels of asset tangibility are generally larger firms, that can issue equity at fair prices, so they do not need to issue debt to finance new investment. According to them, the expected relationship between asset tangibility and debt should then be negative.

Tangibility of assets is measured in this study as the ratio of fixed assets to total assets. We take the total gross amount of fixed assets as the numerator. Using total gross fixed assets rather than net depreciated value of assets makes sense as (i) different firms may possibly use different depreciation methods that may create unevenness in the data (ii) a firm can pledge an asset having a market value even if it has been fully depreciated. Calculating tangibility this way, the ratio was above one in some cases suggesting that total gross fixed assets were more than total assets (Shah & Hijazi 2005).

Therefore our first *hypothesis is that a firm with higher percentage of fixed assets will have higher debt ratio.*

3.4.2. Size (SZ)

For the Static Tradeoff approach, the larger the firm, the greater the possibility it has of issuing debt, resulting in a positive relationship between debt and size. One of the reasons for this is that the larger the firm the lower is the risk of bankruptcy. Large firms do not consider the direct bankruptcy costs as an active variable in deciding the level of leverage as these costs are fixed by the Constitution and constitute a smaller proportion of the total firm's value and also because larger firms, being more diversified, have less chances of bankruptcy (Titman and Wessels 1988).

With respect to the Pecking Order Theory, Frank and Goyal (2003a), and Rajan and Zingales (1995) argued that this relationship could be negative. There is less asymmetrical information about the larger firms, reducing the chances of undervaluation of the new equity issue, encouraging large firms to use equity financing. This means that there is a negative relationship between size and leverage of the firm. Following Rajan and Zingales (1995), we expect a negative relationship between size and leverage of the firm. The natural log of sales is generally used to proxy firm size. The use of the log of sales instead of sales is justified by the non-linearity between sales and size from some point onwards. For Titman and Wessels (1989), the rationale for this is that if there is a size effect to debt, it will be higher for small firms.

We measure size (SZ) of the firm by the taking the natural log of the sales as this measure smoothens the variation over the periods considered.

Therefore our second hypothesis is that there is a negative relationship between size and leverage of the firm i.e. the bigger the firm, the lower will be the leverage level.

3.4.3. Growths (GT)

For growth, different measures have been used in the past. The market-to-book ratio is used by Rajan and Zingales as a proxy for the level of growth opportunities available to the enterprise. This is in common with most studies, which tend to apply proxies, rather than valuation models to estimate growth opportunities (Danbolt *et. al.* (1999)). Rajan and Zingales suggest that one would expect a negative relation between growth opportunities and the level of gearing. This is consistent with the theoretical predictions of Jensen and Mekling (1976) based on agency theory, and the work of Myers (1977), who argues that, due to information asymmetries, companies with high gearing would have a tendency to pass up positive NPV (net present value) investment opportunities. Myers therefore argues that companies with large amounts of investment opportunities (also known as growth options) would tend to have low gearing ratios.

Moreover, as growth opportunities do not yet provide revenue, companies may be reluctant to take on large amounts of contractual liabilities at this stage. Similarly, as growth opportunities are largely

intangible, they may provide limited collateral value or liquidation value (in a similar spirit to the discussion of tangibility below). Companies with growth options may thus not wish to incur — nor necessarily be offered — additional debt financing (Bevan & Danbolt 2000).

However, the empirical evidence regarding the relationship between gearing and growth opportunities is rather mixed. Titman and Wessels (1988), Chung (1993) and Barclay *et. al.* (1995) Rajan and Zingales (1995) and Shah and Hijazi (2005) find a negative correlation, whereas Kester (1986) does not find any support for the predicted negative relationship between growth opportunities and gearing. This is therefore consistent with the hypotheses of Jensen and Mekling (1976) and Myers (1977), and lends weight to the notion that companies with high levels of growth opportunities can be expected to have low levels of gearing.

For the POT, there are two possibilities for the sign of this variable: one the one hand, firms with high growth opportunities would tend to keep their debt ratios at low levels so as to preserve their credit capacity when it becomes necessary (negative impact), and on the other hand, this growth requires investments which are usually made with the issue of new debt (positive impact). Fama and French (2002) named these two possibilities as the complex and simple versions of the POT, respectively.

Different research studies have used different measures of growth; like market to book value of equity, research expenditure to total sales measure and annual percentage increase in total assets (Titman and Wessels, 1988). Given the structure of data we measure growth (GT) as a percentage increase in total assets, as the data was taken from the State Bank of Pakistan publication which does not have information on annual stock prices an research expenditure of the listed firms (Shah and Hijazi 2005).

Thus we expect a positive coefficient for growth. Our third hypothesis is that *firms with higher growth rate will have higher leverage.*

3.4.4. Profitability (PF)

Profitability is a strong point of dissent between the two theories i.e. Pecking Order Theory (POT) and Static Tradeoff Theory (STT). For the STT, the higher the profitability of the firm, the more reasons it will have to issue debt, reducing its tax burden. On the other hand, the POT

presupposes that larger earnings lead to the increase of the main source firms choose to cover their financial deficit: retained earnings. Therefore, the STT expects a positive relationship between profitability and leverage, whereas the POT expects exactly the opposite.

In previous studies, the measure of profitability used was operating earnings before interest payments and income tax (EBIT). But following Shah and Hijazi (2005) we measure profitability (PF) as the ratio of net income before taxes divided by total assets because the data taken from the State Bank of Pakistan publication does not permit us to calculate EBIT.

Thus our fourth hypothesis is that *firms with higher profitability will have less leverage.*

Thus our four hypotheses that we will test are:

Hypothesis 1: *A firm with a higher percentage of fixed assets will have a higher debt ratio (positive relationship).*

Hypothesis 2: *There negative relationship between size and leverage of the firm i.e. the bigger the firm; the lower will be the leverage level.*

Hypothesis 3: *Firms with a higher growth rate will have higher leverage (positive relationship).*

Hypothesis 4: *Firms with higher profitability will have less leverage (negative relationship).*

3.5. The Regression Model

This study uses panel regression analysis. Panel data analysis facilitates analysis of cross-sectional and time series data. We use the pooled regression type of panel data analysis. The pooled regression, also called the Constant Coefficients model, is one where both intercepts and slopes are assumed constant. The cross section company data and time series data are pooled together in a single column assuming that there is no significant cross section or inter temporal effects.

Therefore the equation for our regression model will be:

$$LG = \beta_0 + \beta_1 (TG) + \beta_2 (SZ) + \beta_3 (GT) + \beta_4 (PF) + \varepsilon$$

Where

LG = Leverage

TG = Tangibility of assets

SZ = Firm Size measure by Log of sales

GT = Growth

PF = Profitability

ε = the error term

4. Analysis & Results

This sections contains the results of the descriptive and regression analysis. Table 1 shows the summary of descriptive statistics for the variable values in the sample.

Table-1: Descriptive Statistics (5-year summary)

	N	Minimum	Maximum	Mean	Std. Deviation
Leverage	80	0.18	2.51 ¹	0.7079	0.47634
Size	80	2.53	8.43	6.9520	1.35107
Profitability	80	-0.45	0.28	-0.0582	0.11573
Tangibility	80	0.70	2.84 ²	1.2580 ¹	0.42007
Growth	80	-0.32	0.40	-0.0172	0.09998

¹Theoretically, total debt/total assets ratio should be less than one or one at maximum. However, we find many firms have negative equity that explains why this ratio is greater than one.

² Theoretically speaking, fixed assets/total assets too should be lower than one. However, we use gross fixed assets/ total assets ratio as a measure of tangibility. Tangibility ratio of above one indicates that the firm has a sufficient number of depreciated yet indisposed-of assets so that the gross value of all these assets is fairly higher than the total present depreciated value of all assets (Shah and Hijazi, 2005).

³ A mean value of higher than one shows that in the cement industry the average firm has a sufficient number of depreciated but not disposed off assets.

To check for the presence of multicollinearity among predictor variables we check the Spearman’s Correlation among them which is given in table 2 below.

Table-2: Spearman’s Correlation Coefficient between predictor variables (A check for multicollinearity)

	Size	Profitability	Tangibility	Growth
Size	1	0.058	0.176	-0.037
Profitability	0.058	1	-0.529	0.393
Tangibility	0.176	-0.529	1	-0.548
Growth	-0.036	0.393	-0.548	1

From Table-2 it can be seen that the highest correlation value between two variables is -0.548 which shows that a multicollinearity problem is not present among the selected independent variables.

From Table-2 we can see that tangibility is negatively correlated with profitability and growth, and positively correlated with the size of the firm. The negative correlation between growth and firm size shows that in the cement sector the increase in assets is negligible. There, growth happened marginally i.e. by installing new plants for increasing production. Unless a new plant is installed the growth in terms of assets remains stagnant. On the other hand by increasing capacity utilization production and sales increase and the asset’s value decreases due to depreciation. That is why we found a negative correlation between growth and size.

4.1. Regression Analysis Results

The following tables present the results of pooled regression analysis.

Table-3.1: Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.860	0.739	0.725	.24988

Table-3.2: ANOVA (b)

	Sum of Squares	DF	Mean Square	F	Sig.
Regression	13.242	4	3.310	53.018	.000(a)
Residual	4.683	75	0.062		
Total	17.925	79			

a -Predictors: (Constant), Growth, Size, Profitability, Tangibility

b- Dependent Variable: Leverage

Table-3.3: Regression Coefficients & their significance

	Un-standardized Coefficients		Standardized Coefficients	t-statistic	Sig.
	Beta	Std. Error	Beta		
(Constant)	-0.093	0.164		-0.564	0.574
Size	-0.014	0.022	-0.039	-0.641	0.524
Profitability	-2.345	0.294	-0.570	-7.979	0.000
Tangibility	0.622	0.090	0.549	6.888	0.000
Growth	1.340	0.340	0.281	3.940	0.000

The above tables show the results of the regression analysis. The value of R-square ($R^2=0.739$; Table 3.1) shows that the four variables i.e. growth, size, profitability and tangibility explain nearly 74% of variation in the response variable leverage. This means that the choice of capital structure is mainly defined by these four variables in the cement sector. The Adjusted R-square is slightly below the R^2 . From the value of the F-statistic we can see that the model is significant at the 1% level of significance.

Table-4 Expected & Observed Relationships

Determinant	Measure (proxy)	Expected relationship with leverage	Observed relationship
Size	Log of Sales	Negative	Negative ¹

Profitability	EBT/Total Assets	Negative	Negative
Tangibility	Total Gross Fixed Assets/Total Assets	Positive	Positive
Growth	Annual Percentage Change in Total Assets.	Positive	Positive

¹-The relationship is statistically insignificant.

From Table-4 we see that all the variables exhibit the same relationship as expected at the 1% level of significance. Other than size (log of sales) all the coefficients are statistically significant at the 1% level of significance.

The size of the firms is negatively correlated with leverage ($\beta_1 = -0.14$; Table 3.3). However the regression coefficient is not statistically significant. Although the sign of the coefficient confirms the direction of our relationship of size with the degree of indebtedness i.e. leverage, the statistical significance does not support our hypothesis. Therefore we reject our first hypothesis.

The results are not consistent with the Rajan and Zingales (1995) view of less asymmetric information about large firms suggesting that new equity issues will not be underpriced and thus large firms will issue more equity. Also Shah and Hijazi (2005) found a positive relationship between size and leverage therefore suggesting that in Pakistan on average larger firms prefer to incur more debt.

Profitability is negatively correlated with leverage ($\beta_2 = -2.345$; Table 3.3). This suggests that profitable firms in the Pakistani cement sector use more equity and less debt. Thus the conclusion might be that higher profitability keeps firms away from debt instead of encouraging it, exactly as foreseen by the POT. Therefore we will accept our second hypothesis at the 1% level of significance. The same results were observed by Shah and Hijazi (2005).

Asset tangibility is positively correlated with leverage ($\beta_3 = 0.622$; Table 3.3). The results thus favor the Meckling's (1976) and Myers' (1977) version of the trade-off theory that debt level should increase with more fixed tangible assets on the balance sheet. Therefore we will accept our third hypothesis at the 1% level of significance.

Finally growth was found to be positively correlated with leverage ($\beta_4=1.340$; Table 3.3). This suggests that growing firms in the Pakistani cement industry use more debt than equity to finance the new projects. One possible reason for this is: in order to grow in the cement sector huge cash flows are needed, which a growing firm may not be able to meet through internal sources only and therefore they have to rely on debt. This confirms our earlier hypothesis about growth opportunities. On the other hand Shah and Hijazi (2005) found a negative relationship between growth and leverage.

Our results do not support the simple version of the Pecking Order Theory that suggests growing firms will resort first to internally generated funds to fulfill their financing needs. But it supports the extended version of the Pecking Order Theory that suggests that internally generated funds may not be sufficient for growing firms and the next option for such a firm would be to use debt financing. The results are statistically significant at the 1% level of significance.

5. Conclusion:

In this study we analyzed a sample of 16 firms in the cement sector by using a pooled regression model to measure the determinants of capital structure of the firms in the cement industry.

The results were found to be as expected. Also, we find an inverse relationship between size and growth. This shows firms in the cement sector show different behavior than was found to be the case in previous studies. Firm size is negatively correlated with leverage thus suggesting that the bigger the firm size the less debt they will use. Thus the results reject the Static Tradeoff Theory, which expects a positive relationship between firm size and leverage.

Table-5: Comparisons with Static Tradeoff Theory & Pecking Order Theory

Determinant	Measure(proxy)	Observed relationship	Expected relationship in STT	Expected relationship in POT
Size	Log of Sale	Negative	Positive	Positive
Profitability	EBT/Total Assets	Negative	Positive	Negative

Tangibility	Total Gross Fixed Assets/Total Assets	Positive	Positive	Negative
Growth	Annual Percentage Change in Total Assets.	Positive	Negative	Negative

Profitability and leverage were found to be negatively correlated. Thus the results support the Pecking Order Approach and reject the Static Tradeoff approach.

The results show also that assets tangibility is positively correlated with debt. This is consistent with the previous empirical studies by Titman and Wessels (1988), Rajan and Zingales (1995) and Fama and French (2000), which say that tangibility should be an important determinant of leverage.

Growth measured by the annual percentage change in total assets is positively correlated with leverage supporting the extended version of the Pecking Order Theory that suggests that internally generated funds may not be sufficient for growing firms and the next option for such firms would be to use debt financing.

References

- “Balance Sheet Analysis of Joint Stock Companies Listed on The Karachi Stock Exchange Volume II” (2001), State Bank of Bank of Pakistan.
- Bevan, A. and Danbolt, J., 2000, “Capital Structure & its Determinants in the United Kingdom: A Decompositional Analysis” SSRN Working Paper Series, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=233550 (Published by the Department of Accounting & Finance, University of Glasgow. ISBN 0 85261 632 5).
- Booth, L., V. Aivazian, A. Demircuc-Kunt and V. Maksimovic, 2001, Capital structures in developing countries, *Journal of Finance* 56, 87-130.
- Fama, E., 1980, “Agency Problems and Theory of the Firm”, *Journal of Political Economy*, Vol. 88, No. 2.
- Frank, M.Z. and Goyal, V.K., 2003a, “Testing the pecking order theory of capital structure”. *Journal of Financial Economics*, Vol. 67.
- Harris, M. and A. Raviv, 1990, Capital structure and the informational role of debt, *Journal of Finance* 45, 321-349.
- Modigliani, F. and Miller, M.H., 1958, “The Cost of Capital, Corporation Finance and the Theory of Investment”, *The American Economic Review*, Vol. 48, No. 3.
- Modigliani, F. and Miller, M.H., 1963, “Corporate Income Taxes and the Cost of Capital: A Correction”, *The American Economic Review*, Vol. 48, No. 3.
- Myers, S., and N. Majluf, 1984, Corporate Financing and Investment Decisions When Firms Have Information Investors Do Not Have, *Journal of Financial Economics* 13, 187-222.
- Myers, S.C., 1977, “Determinants of Corporate Borrowing”, *Journal of Financial Economics*, Vol. 5.

- Rajan, R. and Zingales, L., 1995, "What Do We Know about Capital Structure? Some Evidence from International Data", *Journal of Finance*, Vol. 50.
- Ross, S.A., 1977, "The determination of financial structure: the incentive signaling approach", *Bell Journal of Economics* 23-40.
- Scott, J.H., 1977, "Bankruptcy, Secured Debt and Optimal Capital Structure", *Journal of Finance*, Vol. 32.
- Shah, Atta, and Hijazi S., 2005, "The Determinants of Capital Structure in Pakistani Listed Non-Financial Firms", presented at 20th AGM & Conference of Pak Society of Development Economics (Jan. 11, 2005).
- Stultz, R., 1990, "Managerial Discretion and Optimal Financing Policies", *Journal of Financial Economics*, Vol. 26.
- Titman, S. and Tsyplakov, S., 2005, "A Dynamic Model Capital Structure"
SSRN Working Paper Series
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=332042.
- Titman, S. and Wessels, R., 1988, "The Determinants of Capital Structure Choice", *Journal of Finance*, Vol. 43.

NGOs and Gender Development, the Case of AKRSP¹ in District Chitral, NWFP, Pakistan

Humayun Khan*

Abstract

The empowerment of women and improvement of their socio-economic status are essential ingredients of economic, political and social development. To achieve these objectives, the Government and NGOs have launched a number of programs in various parts of the country. The Aga Khan Rural Support Program (AKRSP) is working on the same agenda in Northern districts of North West Frontier Province (NWFP). The aim of the present research was to study the gender related interventions introduced by the AKRSP in District Chitral. The study findings show that the gender related interventions introduced by AKRSP have played a key role in the development of rural women in the area under reference. In addition to the provision of water supply schemes, health and credit facilities, training has also been imparted to the local women in different sectors of the rural economy including: agriculture, livestock management, vocational and enterprise development. This training has had a positive effect on economic activities performed by rural women and has enhanced the income of the respondents from various economic activities in their respective fields in the research area. Another major effect of the AKRSP interventions was the saving of time of rural women that had been spent on fetching water before these interventions. Though these interventions have improved the socio-

¹ The Aga Khan Rural Support Program is a private, non-commercial and non-profit organization established in 1982 by the Aga Khan Foundation with the mandate to improve the socio economic conditions of the rural communities in collaboration with the government departments. Major programs areas of AKRSP's include Social Organization, Women Development, Natural Resource Development, Enterprise Promotion, and Credit and Saving Services.

* Professor, Institute of Development Studies, NWFP Agricultural University, Peshawar, Pakistan.

economic conditions of women to a greater extent in the area, their sustainability requires regular monitoring and follow-up of training.

Introduction

Throughout the world there is an increasing recognition that gender equity is not only a fundamental human right and a means to improve women's lives, but also a precondition for effective and sustainable development. In general, development requires the full and active participation of healthy and educated women, with adequate access to facilities and opportunities to empower them in decision making in their households, communities and businesses.

The empowerment of women and improvement of their status are essential ingredients for realizing the full potential of economic, political and social development and ensuring sustainable development. Empowerment enables women to meet both their practical and strategic needs. The process of empowerment increases women's access to economic opportunities and resources; increases women's political power; raises women's consciousness about the symptoms and causes of oppression; and strengthens women's self confidence (Acharya 1995). Policy makers need to take into account gender issues while formulating policies for development (Quisumbing, *et al.*, 1998, Haq 1995). Gender concerns have moved to the top of the global agenda. This has been made possible due to the advocates of women's interests during the past 20 years. History shows that when women were given the opportunity they set up thousands of vibrant organizations of their own, which have considerable success in influencing the policy of governments, international financial institutions, and development agencies.

In the developed countries of the world, such as the USA, Germany and UK, men and women today are equal partners in working towards sustainable development. The literacy rate is very high, women are aware of their legal rights and they are protected by state laws. But still gender differences are apparent in many developed countries of the world (Zohra 1996). Realizing this fact, the United Nations Development Fund for Women (UNIFEM) has established a number of committees which are trying to create a world where women can live free from poverty, violence, and inequality. UNIFEM/USA is one of these committees which makes a direct contribution to women's empowerment and rights around the world (<http://www.unifemusa.org/> May 10, 2006).

The situation is worse in developing countries (Beales 2000, and Daly 2001). Especially in South Asia, where although female literacy rates are generally on the rise and have almost reached the universal level in more developed parts of the region, illiteracy rates are still alarmingly high in some countries including Bangladesh, India and Pakistan. The women are often denied status in their families, authority in their enterprises and full participation in their communities. They are often deprived of the benefits of their own work (Guindy 2000). In spite of the fact that women in most developing countries have been known to participate in almost all spheres of economic activity making significant contributions to the economy, their contribution is usually not reflected in the official statistics.

Pakistani women face a highly disadvantageous situation as compared to that of women in many other developing countries of the region (Mohammad 1992, Aga Khan Foundation 2001). The Government admits this fact and it has prepared a National Policy for Development and Empowerment of Women² (Govt. of Pakistan 2002). The well being of a large majority of Pakistani women is undermined by heavy work loads, limited mobility, and limited access to education, health care, and a limited role in decision making at all levels (Khawar and Farida 1987). Rural women in particular face further constraints in terms of limited access to potable water and adequate sanitation. Violence against women is on the rise and the prevalence of discriminatory laws denies women legal and social justice.

Until recently there was extremely limited representation of women as decision makers in domestic and economic matters and at all levels of the government (Sweetman 2000). According to UNDP's gender related development index, which considers gender differentials in life expectancy, educational attainment and income, Pakistan was ranked 135 out of 177 (UNDP 2005)³. However, it is encouraging that the status of women is now changing politically, economically and educationally (Masuda 1980, Fareeha, 1980, Roy 1998). With the beginning of the new millennium, the government is emphasizing the involvement of women in national development. In this regard a number of programs have been initiated for

² The Ministry of Women Development, Social Welfare and Special Education, Islamabad, has taken many steps for social, economic and political empowerment of women. The most important among these is the formulation of the National Policy for Development and Empowerment of Women.

³ UNDP, *Human Development Report* 2005. Table-25 p.299.

the development of women. This includes the establishment of vocational centers and training programs, seminars, and workshops in women's fields. Financial support, in the form of micro credit schemes, have been started to involve women in the economic uplift of their families.

Government and non governmental organizations are concentrating on evolving better and more effective social welfare schemes for the benefit of women. Non government organizations are playing an important and meaningful role for the cause of women's empowerment and development (Jilani 1982, World Bank, 1996, Pangare, *et. al.*, 1998). There are a number of NGOs working throughout Pakistan, including the Northern Areas and Chitral, rendering remarkable services for the empowerment of the people.

AKRSP is the major NGO working in District Chitral, NWFP. Its women specific interventions include infrastructure projects such as water delivery to reduce the work load of women, training in enhancement of handicrafts, farm related and income earning skills; improved technology items such as brush carders and butter churners, seeds and forest plants; functional and literacy centers and skills training in *patti* production. The broad objective of the present research is to examine the role of NGOs in gender development. As AKRSP is actively involved in gender development activities in Chitral, its role was studied in the promotion of women's development. The following objectives were set out for this purpose.

Objectives of the Study

1. To identify the gender related interventions of the AKRSP in District Chitral.
2. To study the impact of these interventions on the socio-economic conditions of rural women in the study area.
3. To suggest policy measures regarding gender development in the region.

Research Methodology

Inspiration for the research was gained from voluminous literature on the subject under reference. Before launching the actual survey,

discussions were held with a number of NGO personnel working in NWFP in July 2004⁴. After these discussions, AKRSP was selected on the criteria that this NGO had been working since 1984 in District Chitral and was a pioneer of the gender development program in the area. The universe of the study was confined to district Chitral. Keeping in view the resource constraint Tehsil Lotkoh was selected as a sample tehsil. Four villages namely; Upper Mogh, Lower Mogh, Bespoon and Neej were randomly selected from Garam Chashma valley for the study.

A list of those households whose women were members of the Women Organizations (WOs) was obtained from the AKRSP office. The selection of respondents was made purposively. Only those women were included in the study sample who were beneficiaries of the intervention introduced by AKRSP. The survey was conducted during August/September 2004. A total of 60 respondents representing 50% of the total membership of WOs were selected for the purpose of data collection. A detailed description is given in Table-1.

Table-1: Village wise membership of WOs and Sample respondents

Name of Village	Total No. of Households	Membership of WOs	Sample respondents
Mogh 1	340	36	18
Mogh 2	280	28	14
Neej	210	32	16
Bespoon	90	24	12
All	920	120	60

Source: AKRSP Office 2004.

An interview schedule was used for the collection of primary data. The data was collected through face to face interviews. The secondary data was obtained from relevant published materials as well as from the unpublished records of the AKRSP office. The questionnaire was pre-tested in the field. Some minor corrections were made after pre-testing and finally the survey was launched.

⁴ The data were purposively collected in summer because most of the people come back to their homes from the plains for the pleasant summer season in Chitral.

Empirical Evidence

In order to give a brief overview of the socio-economic conditions of the research area, first some information on the general characteristics is presented. These are given in summarized form in Table-2.

Those women who joined the WO were mainly from the age group 21 - 30 years. They were 61 percent of the total. It is worth mentioning here that 58 percent of the respondents were literate. Because the area is remote and the number of female educational institutions imparting secondary or higher levels education are almost non-existent, 25 percent of the women had secondary or higher levels of education, while the rest had either basic education or were illiterate. Those who were educated had government jobs in the education and health departments in their respective villages.

Before launching any developmental program it is important to gain the confidence of the local community of the area so that it may sustain the project. For this purpose the AKRSP forms WOs. As mentioned previously the women's empowerment program had been initiated in 1984 and the formation of WOs had been started since then in the area.

Table-2: General Characteristics of the sample respondents

S.No.	Description	Percentage distribution
1.	Age Groups of Respondents	
	21-30 years	28
	31-40 years	61
	41-50 years & above	11
2.	Joining Year of Women Organization	
	1985-90	68
	1991-95	22
	1996-97	10
3.	Literacy Rate (%age)	
	Literate	58
	Illiterate	42
4.	Occupational Distribution	
	Housewives	75

	Government Jobs	25
5.	Marital status	
	Married	84
	Unmarried	16
6.	Family Type	
	Nuclear	18
	Joint	82
7.	Average Family size	6.8
8.	Main Source of Income of Household	
	Farming	15
	Non farm	25
	Both of the above	60

Source: Based on Field Survey (2004).

In sample villages 68 percent of the respondents joined the WOs between 1984 and 1990 followed by 22 percent who joined these organizations during 1991-95. The rest of the respondents (10 percent) became members of WOs in 1996-97. A significant majority of the respondents were married living in a joint family system. The average size of the household was 6.8 people. People of the area were generally poor, though almost all the respondents had their own land. Though farming was the predominant occupation, farmers did not rely on this occupation because of a single cropping season. In order to support their families they had adopted other occupations in addition to farming. In the study area 60 percent of the respondents had resorted to both farm and non-farm sources of income. Unlike other parts of the province the women of this area do not observe strict purdah and freely move about in the surrounding areas.

AKRSP's Interventions for Women's Empowerment

AKRSP has introduced a number of developmental activities in the region. These include formation of WOs, imparting of various types of training, providing credit to women for the purchase of farm and other inputs used in income generating activities in the area. What follows is the details of these interventions introduced for the empowerment of women.

Civil Institutions Building

Civil society institutions may step in as people's primary points of access to social, material, and natural resources (Hyden 1997). As these institutions draw primarily on the collective will of constituent groups AKRSP believes in building these institutions. Before launching any developmental program, the AKRSP first creates awareness among the people. The field staff make frequent visits to the community and arrange a number of meetings with the concerned people. During these meetings the objectives of the program are explained. In the study area in each village the AKRSP has formed male and female organizations and runs its development programs through these organizations including the women empowerment program. The institution of WOs has a strong role in the developmental activities carried at the village level and are fully involved in each and every step in the development process.

Capacity Building

For capacity building the AKRSP provides training to people in different disciplines including agriculture, livestock, poultry, nursery raising, bread preparation, food processing, *patti* production, and vocational training⁵. This training is imparted on the basis of a needs assessment. The aim of this training is to exploit the potential of the community and to enable them to contribute to household income by starting new income generating activities or by improving/expanding the existing ones. In addition to this the AKRSP tries to improve the standard of living of the people of the area. As the focus of the study is on the activities carried out for women's empowerment, only that training will be taken into account that was imparted to women by AKRSP. Details of different training received by women is given in Table-3.

Table-3: Distribution of Sample Respondents by Type of Training Received

S. No.	Type of training received	Percentage distribution
1.	Livestock management	85
2.	Poultry farming	100
3.	Nursery raising	48

⁵ For an overview of the AKRSP's development programs in District Chitral, see various annual reports of the Aga Khan Foundation.

4.	Dehydration/Marketing of fruits	100
5.	<i>Patti</i> * production	90
6.	Food processing	80
7.	Rug* making	90
8.	Vocational training	100

*It is a type of local woollen cloth made from the wool of sheep used for making coats, waistcoats, caps, hand purses etc.

* Rug is a type of small carpet of the size 4 X 6 feet made from the wool of goats and Yaks.

Source: Based on Field Survey (2004).

Chitral's economy is characterized by a mixture of economic activities. Though it is mainly agrarian but because of a single cropping season farming it is not the main source of income of the people. Most of the people resort to other sources to supplement their incomes. During the winter season the area receives heavy snow fall due to which activities outside home are minimal, especially for women⁶. This factor leads women of the area to run income generating activities inside their homes in the winter. The data presented in Table-3 supports this argument which shows that most of the members of WOs have training in such activities that can be performed easily inside their homes. By looking at the data it seems that though the AKRSP had imparted training to women in a number of activities, its focus was on those economic activities that could be performed easily inside homes.

An important finding of the research is that the male members of their family willingly allowed them to obtain training in their field of interest. The AKRSP imparted eight types of training in the project area. The data show that vocational training, dehydration of fruit, marketing of fruits and rearing of poultry were the most popular activities among the sample respondents. Almost all the respondents had received training in

⁶ In most of the Northern Areas and Chitral temperature falls below 0°C in the winter season and people of these areas store foodstuffs for themselves and fodder for their livestock for the whole season. The male members leave in search of employment in other parts of the country while females remain at home and are engaged in performing different income generating activities inside their homes.

these activities. Next in importance were *patti* production and rug making in which 90 percent of the respondents were trained. Due to the mountainous nature of the area almost all the households keep livestock for household consumption requirements as well as to meet the market demand. Most of the activities pertaining to livestock are performed by women both inside and outside the house. In this regard 85 percent of the respondents reported having been trained in livestock management. The area is very rich in terms of fruit production. Almost all the households had fruit trees at their homes as well as on their farms. The trend of preservation and processing of fruits was on the rise and was developing into a commercial enterprise. Eighty percent of the sample respondents reported to have had training in food processing. As the topography of the area under reference is such that self grown trees are in abundance, nursery raising was not very common among the sample respondents. In this activity only 48 percent of the respondents had received training.

Adoption of Training

An encouraging finding of the research is that those who had received training in different disciplines applied these in their respective fields of interest. All the respondents were engaged in these activities but after the introduction of the AKRSP's training they started running these businesses along more scientific lines. For example some of the people even now carry out dehydration of fruit on the traditional pattern for their own consumption. Similarly those who had not participated in this training still practice traditional techniques for *patti*, and rug making. Those who had enhanced their skills were encouraged to commercialize the economic activities performed by them at home as well as outside of the home.

Table-4: Distribution of Sample Respondents by Adoption of Training

S. No.	Type of training	Percentage distribution
1.	Livestock management	100
2.	Poultry farming	90
3.	Nursery raising	20
4.	Dehydration/Marketing of fruits	100
5.	Patti production	100

6.	Food processing	50
7.	Rug making	100
8.	Vocational training	80

Source: Based on Field Survey. (2004).

With the exception of nursery raising and to some extent the food processing businesses, the adoption of the rest of the training mentioned above were found to be very encouraging. Those women who obtained training in livestock management, dehydration/marketing of fruit, *patti* making, and rug making applied their training totally in their respective fields. Poultry farming and vocational training were next in this order. Nursery raising was the least common activity among the sample respondents followed by food processing. The reason for this type of response could be less attractive markets for these activities. It is quite natural that where the market for a product exists the entrepreneurs take interest in that business. Where a good market for the product was found, the respondents adopted the training they received for those economic activities. It can be seen in the following discussion that the AKRSP also facilitates the marketing of products manufactured at home by the sample respondents.

Sources of Finance for Adoption of Training in Economic Activities

Finance is the basic input for running an economic activity. Information about the source of this input was obtained from the sample respondents. The results show that AKRSP's package includes credit as well. The majority of the respondents reported to have obtained finance from the AKRSP for the adoption of their training. Though part of the finance was also met from own sources, the largest share was provided by the AKRSP to the respondents. This finding negates the results of other similar studies where it is claimed that rural development projects do not provide financial support for the adoption of the training due to which the required results are not achieved. However our results support the evidence that people are reluctant to obtain loans from formal sources due

to malpractices and delays in the processing of loans owing to unnecessary formalities⁷.

Table-5: Distribution of Sample Respondents by Sources of Finance for the Adoption of Training

S.No.	Adoption of training	Sources of Finance (Percentage)		
		Own	AKRSP	Both
1.	Livestock management	10	70	20
2.	Poultry farming	-	100	-
3.	Nursery raising	-	100	-
4.	Dehydration/Marketing of fruits	-	100	-
5.	Patti production	30	70	-
6.	Food processing	20	50	30
7.	Rug making	-	80	20
8.	Vocational training	-	100	-

Source: Field Survey (2004).

The results show that in the cases of poultry farming, nursery raising, dehydration/marketing of fruit, and vocational activities, AKRSP was the sole source of finance, while for other economic activities found in the study area both AKRSP and own sources were utilized for running the businesses. Details can be seen in Table-5. It seems that the people in this area are poor and can not afford to fund the training they received from their own resources. One question that remained unanswered regarded other sources of credit available in the research area. The answer is that both institutional and non institutional sources were available. The respondent did not approach these sources due to a number of formalities involved for obtaining credit from institutional sources i.e. commercial banks. As far as a loan from non institutional sources is concerned, this was available on a reciprocal basis and depended on the social relations of the

⁷ Narayan. D, *et.al* (2000) have reported a high level of corruption in Orissa, India (as high as 20 percent to 50 percent of the borrowed amount is believed to be lost in greasing the palms of bank officials for getting a loan sanctioned).

respondent. If a person has good personal relationships he/she can obtain credit from the non institutional credit market. This means that whenever in future the present lender needs credit or another type of favour from the present borrower, the latter is socially bound to do a favour for the former.

Marketable Surplus

As already mentioned, the training received by the sample respondents had imparted the required skills. Now the question is what is the impact of this training on their businesses or to what extent had they commercialized their economic activities. All the respondents reported that they were producing a variety of products and supplied them to various markets. Before training they were not fully involved in the activities mentioned in Table-6 and those who were involved were producing these products mostly for home consumption. However, some of the respondents were supplying about 10 to 20 percent of their product to the market. Now they had commercialized their businesses and about 70 percent to 100 percent of their products were marketed and a small quantity, where necessary, were kept for home consumption.

Rearing of livestock was the major subsidiary occupation of most families in the study area. Part of the products of these animals including milk, fur/wool was kept for household consumption and the rest was supplied to the market. These products were sold at the village market. Similarly 90 percent of poultry birds and nursery plants were sold at the village market. The rest of the products were either supplied to the *tehsil* market or were sold at the district market in Chitral town. It was also observed during the survey that those women who had received formal training from the AKRSP had transmitted the knowledge acquired to other members of their families and as a result their businesses had expanded. Now they were supplying these products to the market in a reasonable quantity⁸. Women involved in *patti* production used their own animals' wool as well as purchased wool from the village market for *patti* making. Those who did not have livestock purchased wool required for *patti* production. The sample respondents who were involved in handicrafts usually sold outside the village at higher prices.

⁸ The study area is very rich in terms of fruit production including apples, apricots, and pears but due to lack of facilities of preservation techniques these were either wasted or were sold at a very low price at the local market. The AKRSP had introduced new techniques of dehydration of these fruits and now people of the area are earning a handsome amount of money from the sale of these fruits.

Table-6: Distribution of Sample Respondents by Place of Sale of Marketable Surplus

S. No.	Name of Product	Products for sale (Percentage)		Place of Sale of products		
		Before adoption	After adoption	Village market	Tehsil Market	District market
1.	Milk production	-	80	100	-	-
2.	Poultry birds	10	90	20	80	-
3.	Nursery plants	-	100	20	80	-
4.	Dry fruits		70	-	70	30
5.	<i>Patti</i>	20	80	-	0	100
6.	Jam/Pickles		70	-	-	100
7.	Rugs	-	100	-	-	100
8.	Handicrafts	-	95	-	40	60

Source: Field Survey (2004).

The AKRSP also assisted the people of the area in marketing their products by not only providing a credit facility but also providing them information about the demand for their products in other markets of the province. It is important to mention here that marketing of these products was the responsibility of the male members of the family.

Income from Sale of Products

Before the introduction of the AKRSP interventions, almost all of the products mentioned above were either not produced or were produced only on a limited scale for home consumption mainly due to two reasons. Firstly, due to lack of finance the people could not start businesses and secondly as a result of lack of training they were reluctant to take the initiative. After these interventions, the capabilities of the sample respondents were enhanced which enabled them to produce for the market and contribute to the income of the household economy. The size of the contribution made to the household from the sale of these products by the sample respondents is given in Table-7.

By comparing the income earned from the sale of the products made by women before and after the interventions of the AKRSP it was found that the income has increased more than seven fold. After these interventions, on the average people were earning Rs.4145 per month or an increase in income of 829 percent of the sample respondents. The sale of milk showed the greatest percentage increase as compared with other products. The AKRSP has provided improved breeds of livestock as well as poultry in the study area. The respondents had one or other type of livestock. Most common among these were sheep, goats, and cows. Due to easy access to AKRSP's credit and profit margin in the livestock business the number of livestock kept by the sample respondents had shown an increase of 75 percent in the project area. The number of poultry had also shown a change of 34% after an improved breed was introduced by the AKRSP. The improved breed of poultry birds given to the sample respondents were utilized for business. Through the sale of eggs and meat of these birds they were earning money.

Table-7: Distribution of Sample Respondents by Average Monthly Income from Sale of products

S. No.	Name of Product	Income from sale of products (Rs.)		Percentage change
		Before adoption	After adoption	
1.	Milk production	-	1645	1645
2.	Poultry birds	200	800	400
3.	Nursery plants	-	100	100
4.	Dry fruits	-	500	500
5.	<i>Patti</i>	200	500	250
6.	Jam/Pickles	-	-	-
7.	Rugs	50	400	800
8.	Handicrafts	50	200	400
	Total	500	4145	829

Source: Field Survey (2004).

It was observed that before the AKRSP interventions the sample respondents were using traditional treatments for the care of their

livestock. AKRSP has trained village specialists in livestock who take care of the livestock of the concerned villages. Timely treatment has thus reduced the mortality rate of livestock in the village.

The AKRSP interventions had reduced the work load of the rural people. For example through water supply schemes the time which women used to spend on water collection has been saved. Similarly by provision of power connections (electricity) women were able to perform economic activities during the night which they could previously only do in the presence of traditional lamps.

Conclusion

NGOs can make valuable contributions to the empowerment of women in terms of strengthening women's organizations, awareness about women's potential, and development of human resources which in turn enhances their capabilities. Due to the efforts of the AKRSP the women of the area under study have become important contributors to household income. This can partly be attributed to capacity building of the respondents and financial support in terms of credit supplied by AKRSP in the region and partly by the enthusiasm of the women for contributing to their households. The members of the WOs commercialized their economic activities in which they were engaged in and as a result income from these activities increased many fold. This increased income was at the disposal of the women and they were allowed to spend it at their own will. Before the introduction of these interventions, they had to make a request for each and every need from the male members of the family. But now the activities initiated by them have enabled them to fulfill their demands from their own earnings. Moreover, saving and consumption patterns have improved considerably. Nevertheless gender disparities are widespread and require more effort in all sectors of the economy to ensure equitable development.

Recommendations

Gender development is a long process which requires continuous and systematic efforts. To achieve this goal awareness among women is the most important thing. Though the AKRSP is trying to create awareness among the masses, the process is very slow. In order to expedite the gender development process door to door awareness campaigns should be started so that the lessons learned can be disseminated.

The results of the study show that participation of women is not up to the mark. It seems that most of the male members of the community are not allowing women in their household to participate in the training. In order to attract a greater number of women, male members of the community should be persuaded so that the women are able to take advantage of training offered by these NGOs.

Similarly the training imparted by the AKRSP is restricted to some specific sectors. There is a need to expand its activities to all sectors of the village economy so that maximum number of women benefit from these interventions.

Follow up training and refresher courses should be given from time to time and their duration should be according to the capabilities of the trainees.

Market information regarding price, place of sale of products and quality required in the market should be provided well in time so that trainees may obtain maximum profit.

References

- Aga Khan Foundation Pakistan, 2002, Gender Policy.
- Aga Khan Foundation Pakistan, 2001, Gender Equity Strategy of the Aga Khan Foundation.
- Acharya, M., 1995, Twenty years of WID and Rural Women in Nepal. *Asia Pacific Journal of Rural Development*. 5(1): 59-77.
- Beales, S, 2000, Why we should invest in older women and men: The experience of Help Age International. *Gender and Development*. 8:2.
- Daly, J.L., 2001, Gender equality rights versus traditional practices: struggles for control and change in Swaziland. *Development Southern Africa*. 18:1.
- Fareeha, R., 1980, "Backgrounds of Vocational Education for Girls." The National Conference on Critical Issues Concerning Women in Education. March 29 to April 03, 1980. Women Division, Government of Pakistan, Islamabad.
- Govt. of Pakistan, 2002, National Policy for Development and Empowerment of Women. Ministry of Women Development, Social Welfare and Special Education, Islamabad.
- Guindy. E.L.S., 2000, Social and gender issues related to management. 6th International Micro Irrigation Congress Micro 2000, Cape Town, South Africa, 22-27-October-2000.
- Haq, K, 1995, Poverty has a women's face. *Our Planet*. 7(2):15-17.
- UNIFEM/USA, 2006, <http://www.unifemusa.org/>
- Hyden, Goran, 1997, "Civil society, Social Capital, and Development: Dissection of a Complex Discourse." *Studies in Comparative International Development* 32: 3-30.

- Jillani. H., 1982, Provision of legal assistance to women through non government organizations. Papers on the National Conference of non government women's Organization, Vol. 1.
- Khawar, M. and Farida Shaheed, 1987, Women of Pakistan, Two Steps Forward and One Step Back. Vanguard Book Pvt. Ltd. 45 The Mall Lahore.
- Narayan, D. Raj, P. Kai, S. Anne, R. and Sara K., 2000, Voices of the Poor, Can Anyone Hear Us? Washington, D.C.: World Bank.
- Pangare, V.L., M.D. Souza and M. Souza, 1998, Gender issues in watershed development and management in India. Watershed development - creating space for women. Network Paper *Agricultural Research and Extension Network*. No. 88, IV + 15.
- Quisumbing, A.R., L.R. Brown, L. Haddad, D.R. Meinzen and E. Lutz, 1998, the importance of gender issues for environmentally and socially sustainable rural development. Agriculture and the environment: perspectives on sustainable rural development. A World Bank Report.
- Roy. R., 1998, Socio Economic Development of Women. The Oxfam handbook of development and relief, Volume 1.
- Sweetman, C., 2000, Gender and Development. Women and leadership. *Gender and Development*, 8:3.
- UNDP, 2005, Human Development Report, New York, USA.
- World Bank, 1996, The Aga Khan Rural Support Program: A Third Evaluation, XIX.
- Zohra, U., 1996, Women's Concerns in Development. Planning for Women in Development. A Program Action. Paper No. 4.

Bonded Labor in the Brick Kiln Industry of Pakistan

Muhammad Javaid Iqbal*

Abstract

Bonded labor is a dominant feature of the brick kiln industry of the country. Apparently an outcome of poverty, it is closely linked to the socio-cultural fabric of society. The vicious cycle of bondage subjugates the families physically and economically so that they are unable to break out of the trap despite putting in hard labor. The issue has a number of socioeconomic implications and its solution lies in a multi pronged strategy; economic uplift, social involvement and educational breakthrough of the bonded families. The paper explores the nature and extent of bonded labor in the brick kiln sector and analyzes its repercussions on children and women of the bonded families. It also examines the available legal infrastructure tackling bonded labor. Finally the paper proposes a comprehensive scheme to ameliorate the concerns of bonded families and ways to eradicate the menace from the industry.

I. Introduction

Brick making is one of the most ancient industries, the craft is as old as that of the Indus Valley Civilization (2500-1500 BC). Fired bricks were also used by the ancient people of the civilizations of Egypt and Mesopotamia for building tombs and temples. Although the design, shape and weight of bricks have undergone numerous historical changes, the production technology has experienced very limited changes. Bricks are prepared, processed and baked at the brick kiln. Being situated in the remote country side, the brick kiln industry portrays a unique model of industrial relations¹. The organization of work is highly influenced by

* The author is Joint Director, Labor Welfare in the Labor and Human Resource Department, Government of the Punjab. The views expressed in the article are his own and do not necessarily represent those of the Department.

¹ Bipartism and Tripartism are two main models of industrial relations. In Bipartism workers and management are two major actors whereas Tripartism also involves a third

socio-cultural factors. Migrants in general and traditional “low-caste” family labor in particular, continue to characterize labor in the brick kilns. Even though Muslims make up a majority of the workforce, Christians also supply a significant proportion of “*pathera*”² family labor, especially in the Punjab. Generally poor in nature, all categories of kiln labor, both salaried workers such as “*jalai walas*”³ and piece-rated labor take substantial advances, both at the time of joining a kiln as well as subsequently. Advances (*peshgi*)⁴ taken amount to loans because of high interest charges, manipulation of books and low wages. The families become virtual prisoners of the owner and are subject to physical, economic and social exploitation. The clutches of debt are so severe that the families can not get themselves out of the debt for generations in spite of the hard work they put in by even engaging their women and children.

The “*peshgi*” system of debt bondage is hundreds of years old in Pakistan. Rooted in the feudal relationship of landlords and peasants it blends some of the worker-owner relations of feudalism with the economics of modern capitalism to create a kind of bondage, halfway between the old and the new. Along with the brick kilns, the system is generally in vogue in agriculture, fisheries, mining, glass bangle-making, and carpet weaving. The present government in collaboration with the ILO is pooling significant resources for the elimination and rehabilitation of bonded labor from all those sectors. Various NGOs are also active in exploring their role. The issue has a number of socio-economic implications and its solution does not lie in any single strategy but in economic uplift, social involvement and educational breakthrough of the bonded families. The need therefore is to devise a comprehensive strategy which should not only cover all aspects of the problem but would also have a sustainable solution. Relying on secondary sources, this paper is an effort to explore the nature and extent of bonded labor, its socio-economic implications and

party i.e., the government. However, the Traditional Model of industrial relations in the brick kilns comprises four major actors i.e., owner, *jamadar*, *pathera* and government. The workers are weak, fragmented and disorganized. Sociocultural forces play a dominating role in the Traditional Model.

² Patheras are piece-rate workers involved in brick making. They constitute the ‘junk’ of the brick kiln labor force. They are migratory in nature, receive advances and are victims of the Bonded Labor System and thus are the focus of the present study.

³ Jalaiwala is a brick kiln worker involved in the control of fire in the kiln. He is also called a ‘mistari’.

⁴ Peshgi is advance received by the brick kiln workers before he actually starts his work. Advances are also taken afterwards.

repercussions on children and women. The available legal remedial measures for tackling the issue of bonded labor are examined in Section 5. The role of trade unions and NGOs has also been highlighted. In the end, the paper proposes a 'model' for eradication of the menace of bonded labor from the brick kiln industry.

2. Conceptualization of Bonded Labor

The term "bonded labor" refers to workers who render services under conditions of bondage arising from economic considerations, notably through a loan or advance. Where debt is the root cause of bondage, the implication is that the worker (and their dependants or heirs) is tied to a particular creditor for a specified or unspecified period until the loan is repaid (ILO, 2001:32). It is a systemized feature prevailing in certain sectors of society wherein advances are common and no work can be done without advance or "*Peshgi*". The Bonded Labor (Abolition) Act, 1992 puts it in the following way:

The "Bonded Labor System" implies the system of forced, or partly forced labor under which a debtor enters or has, or is presumed to have, entered into an agreement with the creditor to the effect that, --

- a) in consideration of advance (peshgi) obtained by him or by any of the members of his family (whether or not such advance (peshgi) is evidenced by any document) and in consideration of the interest, if any, due on such advance (peshgi), or*
- b) in pursuance of any customary or social obligations, or*
- c) for any economic consideration received by him or any of the members of his family;*

he would

- (1) render, by himself or through any member of his family, or any person dependent on him, labor or service to the creditor, or for the benefit of the creditor, for a specified period or for an unspecified period, either without wages or nominal wages, or*
- (2) forfeit the freedom of employment or adopt other means of livelihood for a specified period or for an unspecified period, or*

- (3) *forfeit the right to move freely from place to place, or*
- (4) *forfeit the right to appropriate and to sell at market value any of his property or product of his labor or the labor of members of his family or any person dependent on him, and includes the system of forced, or partly forced labor under which a surety for a debtor enters, or has or is presumed to have, entered, into an agreement with the creditor to the effect that, in the event of the failure of the debtor to repay the debt, he would render the bonded labor on behalf of the debtor.*⁵

3. In Search of Literature

The incidence of bonded labor in brick kilns has been highlighted by many writers. Thomas (1995) while identifying urban and rural labor market segmentation has pointed out bonded labor as a main characteristic of rural labor markets. He termed it as an extreme form of labor exploitation in South Asia. Ercelawn (2004), Hussain (1990), Hamid (1993), Mitha *et. al.* (1989), ILO (2001), Bales (1998), Kemal (1994); all pointed out the existence of advances, “*peshgi*”, indebtedness and bondage in the brick kiln sector of Pakistan. The ILO (1998), through a survey confirms that 93% of the brick kiln workers received advances before they started working. The studies conclude that large family size is an important factor contributing to loans. The debt usually piled up and could not be paid by the indebted families, thus carried over to generations as ‘eternal’ debt⁶. There is also no dispute regarding the involvement and exploitation of women and children at the workplace. Sexual abuse, torture and beating at the brick kilns have also been reported⁷. To the ILO (1998), large family size, mounting financial constraints and lack of educational facilities at or near the brick kilns induce the parents to use children as help during brick making. Too much work by the children at the brick kilns poses a great threat to their physical, mental, intellectual, moral and psychological

⁵ It is contained in the Preamble of the Bonded Labor System (Abolition), Act 1992.

⁶ The meager amount of debt in the bonded labor system pile up due to high interest rate and wrong accounting and thus cannot be paid by the families even by putting in generations of labor.

⁷ Human Rights Commission of Pakistan in its report “State of Human Rights in 2004” has pointed out occurrences of such incidences at the brick kilns. Some other writers like Ercelawn have also indicated such an abuse but, according to him, it is very difficult to come by information on sexual abuse during surveys due to socio-cultural implications unless it is highlighted in the press.

growth. To Bale, “if the conditions of work are not bad enough, the system of working in the brick kilns presents other dangers and hardships. Virtually all of the families making bricks are working against a debt owed to the owner of the kiln. These debts pose a special danger to the children. Sometimes, when a kiln owner suspects that a family will try to run away and not pay off their debt, a child might be taken hostage to force the family to stay and work” (Bales, 1998). Mitha *et. al.* (1989) pointed out that women work even during pregnancy, and ‘they work till they actually go into labor’.

Poverty is emphasized as being the root cause for accepting advances by the families of brick kiln workers and trapping themselves into bondage. It is also contended that contracts of bondage are accepted due to uncertainty, lack of stability in employment and absence of any social safety nets in Pakistan. To Bales “slavery is hidden behind contracts; and slavery flourishes in communities under stress. It does not thrive in western countries where people have a reasonable standard of living and financial security. Slavery grows best in extreme poverty” (Bales, 1998). He further stresses that if there were security of employment in Pakistan, or some provision for a living wage, no family would have chosen to work in the “*peshgi*” system. Another important aspect about the advances is that they are not only taken at the start but continue in a systemized manner, since laborers need it due to emergencies, illness, marriages etc⁸; as owners prefer to term subsequent “friendly loans” (Ercelawn, 2004). False accounting and high interest on the loans aggravate the situation and the families find it difficult to pay off the debt even after putting in hard labor.

As far as the origin of the bonded labor system is concerned, some analysts associate bonded labor with traditional patterns of land-ownership, including the caste-based or personally bonded labor which is secured by debt, and which can frequently extend across generations. Others argue that bonded labor has also been a feature of recent trends in commercial agriculture, of both small and large scale, involving the debt-based attachment of casual and migrant workers. The brick-making labor comprises few castes such as, “*Masalies*”⁹, “*Odd*”¹⁰, Christian and

⁸ Rites, customs, births, deaths, engagements, and marriages are celebrated in the traditional manner by spending lavishly both time as well as money. Labor has to take more advances for such functions. The loans mount and become eternal debt.

⁹ *Masalies* are new Muslims, belonging to low status caste in the central and southern Punjab.

¹⁰ *Odd* are nomads or gypsies.

Afghani; they are all poor and have low status in society. The bonded labor system can also be linked to socio-cultural division of labor (professions) prevalent in the Sub-Continent for centuries. Migratory in nature, the labor retain unique features. Ercelawn (2004) referred to it as “footloose” labor¹¹. The institution of “*jamadar*”, as contended by Hamid (1993), Mitha *et. al.* (1989), ILO (2001), Bales (1998), Kemal (1994), and Ercelawn (2004), plays a pivotal role in the “*peshgi*” system. *Jamadars* do not only provide a link between labor and the brick kiln owners, as explained by Mitha *et. al.*, but are also the main source of bonded labor by acting as guarantor “*zamin*” for the bonded laborer.

As far as the tackling of the issue of bonded labor is concerned, affordable credit, according to many, would weaken the linkage between debt and labor. Such a strategy may be useful in agriculture, fisheries, carpet weaving or bangle making where the worker can start an independent business. According to Ercelawn and Mitha mere enforcement of existing labor laws particularly the Minimum Wage Ordinance, Bonded Labor System (Abolition) Act and Factories Act, will have mitigating effects. They, however, stress the need for organizing bonded labor and recommend an active role of the NGOs in the efforts for abolition and rehabilitation of bonded labor. The Brick Kiln Owners Association, on the other hand, is seriously thinking about the introduction of molding machines to replace brick making workers¹².

4. Nature and Extent of Bonded Labor in the Brick Kilns

The network of brick kilns is widespread to the extent that all the urban and rural areas have brick kilns. About 90% of brick kilns function in rural locations. The obvious reason is availability of cheap land, proximity of roads for the transportation of fuel and bricks, proximity of markets for bricks and low paid workforce. The PILER¹³ identified that as many as

¹¹ The term “Footloose Labor” might have been taken from Johns Breman, who used it in his work on migratory agriculture labor in Southern India. The brick kiln workers in a Bonded Labor System are not “loose”. They on the other hand cannot move due to debt bondage, the term therefore does not seem proper for brick kiln workers.

¹² Modern brick making machine work is ten times faster than the present system and even a smaller kiln can make 40,000 bricks in a day, i.e. almost double than that of the present system. The cost of the machinery is high thus beyond the reach of Pakistani kiln owners. It also does not suit the labor abundant economy of Pakistan.

¹³ Pakistan Institute of Education and Research, Karachi.

5000¹⁴ brick kilns are concentrated in the province of the Punjab and around 6000 in the country. On the other hand, Bale (1998), estimated that there are approximately 7000 brick kilns in the country. Large population, widespread prosperity, continuing high public investment in infrastructure, plentiful clay, fine sand and water, and a large pool of landless labor according to Ercelawn (2004) are important features and account for the concentration of brick kilns in the Punjab. On the basis of 15 families at each brick kiln with 6 to 8 persons average family size¹⁵, they roughly estimated that 150,000 to 200,000 families and around 750,000 to 900,000 person workforce is engaged directly in the brick kiln sector.

Brick making is a simple process, the soil is mixed with water and kneaded into dough which is cast into moulds and shaped as bricks which are dried in the open place and finally are stalked into the kiln. The sun-dried bricks are converted to red bricks in the kiln. Brick making is labor intensive work requiring little skill. The semi-skilled workers (*patheras*) involved for the purpose are characterized as contractual family labor working under the bonded labor system. Recruitment is indirect, through a contractor or subcontractor (*jammadar*), who receives commission from the workers. The contractor also channel advances, and is responsible for the laborer's work and debt-servicing. Most of the time he is a co-worker and sometimes is also a relative of the labor. The brick kiln workers are offered advances (*peshgi*) through contractors before the work is actually commenced. An informal contract is made between the head of the family (who usually is male) with the brick kiln owner and also is witnessed by the contractor. The head of the family involves most of his family members including males, adolescents, children and women for the preparation of the bricks. Working hours are flexible and families work from dawn to sunset. Brick making is piece rated work, thus the workers are paid on the basis of the number of bricks they or their family prepared¹⁶. Payment is made on a weekly basis i.e., on every Thursday through the contractor who also deducts his 5% commission. Deductions in connection with loans and

¹⁴ Whereas according to the Labor Department, 2449 brick kilns in the province have so far been reported by 31st August 2005, and of these 1132 have been registered under the Factories Act, 1934.

¹⁵ Normal family size is high amongst the brick kilns workers. A team of ILO experts visited a brick kiln near Lahore during 2000. The writer also accompanied the team. The team met with an individual who had 22 children from his two wives. He was illiterate and was even unable to remember the names of all his children.

¹⁶ The minimum wage rate for each one thousand bricks, as notified by the government is Rs.184.

advances are also made at the same time. Fresh loans are also offered during the course of work and the cycle continues till the workers are completely trapped. It is very difficult for the families to get rid of the debt. Only a few families can manage to get ahead of the game and reduce their debt. This is most likely in a year when a family's children are old enough (12 to 15 years) to work as hard as the adults; the weather is good, and no accidents or illnesses occur. Illness can be a catastrophe. Life events, like weddings, funerals, arrest of a relative, an accident, heavy rains, or anything else that brings extra expenses increase the family debt.

Brick making is a semi-skilled and monotonous job. The craft like other professions¹⁷ travels through generations within the families. Children of the bonded families learn the craft from their parents and continue the profession of their ancestors as their means of livelihood. They actually have to remain in the same profession as they will have to pay off the 'eternal debt' owed by their family due to their parents or parents of their parents. Limited horizontal mobility exists due to migration, however hardly any vertical mobility was seen due to debt and socio-cultural circumstances¹⁸.

The labor resides at the kiln in the houses constructed and owned by the owner. These localities lack basic amenities of life such as drinking water, sanitation etc. There hardly exists any schools near those vicinities. The workers live in isolation from the local population with their own culture, traditions and customs. Isolation from the local populace gives rise to crimes such as theft and gambling which are common. Family size is large and the dependency ratio is very high. The low earnings are not enough to meet the requirements of large families. The families are caught in the vicious cycle of poverty and cannot afford even elementary education for their young ones. They lack initiatives and have no potential to migrate to urban areas for higher rewards due to indebtedness and socio-cultural norms. Children and women, being the most vulnerable segment, have to bear the brunt of the burden.

4.1. Child Labor

¹⁷ It is just like societal division of professions in the sub-continent i.e., cobblers, weavers, water carriers, blacksmiths, hair dressers etc.

¹⁸ Vertically it is not possible to break the boundaries of the bonded system due to non availability of alternative work and absence of educational opportunities for the children of the brick kiln workers.

The children of the working community have no choice but to work alongside their families. They are usually assigned lighter tasks such as helping in the kneading of mud, carrying of pieces of mud to the adult workers, spreading sand on the wet side and assisting in watering the soil for mud making. They also bring food and drinking water to the adult workers.

Estimates made by UNICEF show that at least 250,000 children work in brick kilns. It is also estimated that two-fifths to two-thirds of the total working children are in the brick kiln industry and most of them are bonded (Kemal, 1994:16). Poverty, in general, and non availability of schooling facilities at or near the brick kilns, in particular, is the major reason for low literacy rate amongst the children of brick kiln workers. Unfortunately, if schools exist in the vicinity and the children of the brick kiln workers are enrolled, they cannot continue studies due to the migration of their parents.

Large family size is an important factor contributing to loans and sustaining child labor in the brick kiln sector. Child rearing and child caring are missing due to poverty. The parents generally believe (Mitah *et. al.*, 1989) that “the children of the poor grow up by themselves”. The indebtedness occurring through the “*pesghi*” system locks the working families into a dependency relationship and children being the most vulnerable always suffer more. In the virtual imprisonment of the ‘owner’ as well as of their parents the children have to work in very harsh weather, for insignificant economic gains and for extremely long working hours¹⁹.

4.2. Conditions of Female Workers

Women make a significant contribution through family kiln labor across Pakistan²⁰. They are usually found in the brick fields involved in the making of mud bricks. As advances are binding on the entire family, women being the most vulnerable are the worst affected. They have to work even during pregnancy. Alongside putting in this hard labor they have

¹⁹ Summer is considered to be the most favorable time for brick making, because, firstly, the days from May to July are comparatively longer which suit both the labor and the drying of bricks. Secondly, it is followed by the rainy monsoon season during which demand as well as price of bricks rise, so this is a peak time for the brick kiln owner to extract maximum surplus from all the members of the bonded family.

²⁰ Unfortunately, women like children and adolescents are rarely, if ever, directly acknowledged as labor i.e. to receive advances and compensation.

to do family chores, like preparing food for all the family, collect wood for the fire, bringing water, washing clothes and arranging fodder for the buffaloes or cows, goats etc. They also have to take care of the sick and elderly of the family²¹. Women are even exposed to sexual harassment if their male head of family runs away from the brick kiln.

5. Available Legal Infrastructure

This section examines the available legal framework for tackling the issue of bonded labor in the brick kiln sector.

5.1. International Commitments

“No one shall be held in slavery or servitude.”

(Universal Declaration of Human Rights Article- 4)

All work or service which is exacted from any person under the menace of any penalty and for which the person has not offered her or himself voluntarily is compulsory or forced labor and has been covered under the ILO Forced Labor Convention, 29 (1930) and Abolition of Forced Labor Convention, 105 (1957). The ratifying States are bound to eradicate forced labor in all its forms including bonded labor.

5.2. The Constitution of the Islamic Republic of Pakistan

The Constitution of the Islamic Republic of Pakistan prohibits all forms of exploitation of its citizens.

“The State shall ensure the elimination of all forms of exploitation and the gradual fulfillment of the fundamental principle, from each according to his ability, to each according to his work” (Article-3).

There is no place for Bondage; *“slavery is non-existent and forbidden and no law shall permit or facilitate its introduction to Pakistan in any form. All forms of forced labor and traffic in human beings are prohibited. No child below the age of 14 years shall be engaged in any factory or mine or any other hazardous employment” (Article 11 (1-3)).*

5.3. Bonded Labor System (Abolition) Act 1992

²¹ On average every bonded family has at least one old or sick person.

Bonded Labor System (Abolition) Act, 1992 is a special law dealing with bonded labor. The law prohibits all forms of advances or “*peshgi*” and forced and bonded labor resulting there under.

*“And whereas it is necessary to provide for abolition of bonded labor system with a view to preventing the economic and physical exploitation of the labor class in the country and for matters connected therewith or incidental thereto,”*²²

The Bonded Labor System (Abolition) Rules, 1995 entail the constitution of vigilance committees. The Vigilance Committees are headed by the District Nazim and consist of elected representatives of the area, representatives of the district administration, Bar Associations, Press, Recognized social service and Labor Department of the Federal and Provincial Governments. The functions of the Vigilance Committee as explained in Section 15 of the Act are as under:

- (a) to advise the District Administration on matters relating to effective implementation of the law and to ensure its implementation in a proper manner,*
- (b) to help in rehabilitation of the freed bonded laborers,*
- (c) to keep an eye on the working of the law; and*
- (d) to provide the bonded laborer such assistance as may be necessary to achieve the objectives of the law.*

The Rules (4) also provide for the establishment of a free bonded labor Rehabilitation Fund to finance the projects connected with the training of the workers, to provide legal and financial assistance to the freed bonded laborer, and to extend welfare measures for the bonded labor.

5.4. Labor Laws Applicable to the Brick Kilns

The major labor laws applicable to brick kilns indirectly relevant to the issue of bonded labor are as under:

- i) Factories Act 1934; the law relating to working conditions and health and safety of the workers at the workplace.

²² Preamble of the Bonded Labor System (Abolition) Act, 1992.

- ii) Minimum Wages Ordinance; dealing with the fixation and implementation of minimum wages for different categories of skilled and semi-skilled workers including the brick kiln workers.
- iii) Payment of Wages Act 1936; deals with the payment of wages, time period of payment and mode of payment of wages to the workers.
- iv) Industrial & Commercial Establishments (Standing Orders) Ordinance 1968; relates to terms of employment, bonus, gratuity and group insurance of the employees.
- v) Workmen Compensation Act 1923; relates to payment of compensation to the workers in case of injury or death.
- vi) Industrial Relations Ordinance 2002; deals with registration of trade unions, CBA, collective bargaining, conciliation and labor judiciary.
- vii) Employment of Children Act 1991; regulates the employment of children in the factories and brick kilns.
- viii) Employees Social Security Ordinance which provides medical coverage to the workers.
- ix) Employees Old Age Benefits Act which deals with old age pension.

5.5. Implementation Status of the Laws Applicable to the Brick Kilns

The Bonded Labor System (Abolition) Act 1992 is a special law to deal with the issue of bonded labor. Home Departments in the provinces with the help of the district governments are responsible for the administration of the law. The law at the district level is implemented through District Vigilance Committees. The committees are represented by concerned government functionaries, representatives of the bar, Press, NGOs, employers and workers at the district level (Annexed-A). Ironically Vigilance Committees have not been notified in most of the districts. These committees are practically non functional even where notified. The performance of the Committees can be gauged from the fact that not a

single case of bonded labor has been detected in any district²³. Only those few cases of bonded labor however are highlighted in the Press, where High Courts or the Supreme Court take direct action. The Human Rights Commission of Pakistan identified that there was no evidence of a decrease in the bonded labor problem across the country, and the Bonded Labor System (Abolition) Act, 1992 as such remained largely un-enforced during the year 2004. Likewise, no rehabilitation effort as required under Rule (4) has been initiated by any of the districts so far. The National Fund created by the Federal Government for rehabilitation, awareness raising and for education of the children of the brick kiln workers has also not been utilized in any of the districts.

By contrast, the situation in nearby India is quite encouraging. As pointed out by the ILO, up to March 1999, 290,340 bonded labor were identified, amongst these 243,375 had been released and rehabilitated, 20,000 had either died or migrated to other places and 17,000 were in the process of rehabilitation. Action in India has often been taken under the Bonded Labor System (Abolition) Act, 1976 and Supreme Court directives. Yet the difficulty of collecting reliable statistics of bonded labor has been openly recognized by the Government of India²⁴.

Minimum Wages Ordinance, 1961 is the other major law applicable to the brick kilns. Under the law, minimum wage rates for the skilled and semi-skilled²⁵ workers of different categories are fixed by the Provincial Governments through their respective Minimum Wages Boards. Responsibility of implementation of these minimum rates lies with the Provincial Labor Department. The rates so fixed for the making of 1000 bricks are reflected in Table-1.

Table-1: Fixation of Minimum Wages for the Brick Kilns Labor (PATHERAS)

Year	Minimum Wage
-------------	---------------------

²³ This does not imply that advances are not accepted and bonded labor is not exploited at the brick kiln.

²⁴ Please see Stopping Forced Labor; Global Report under the Follow-up to the ILO Declaration on Fundamental Principle and Rights at Work, ILO Conference 89th Session 200 I.

²⁵ Brick kiln workers fall in the category of semi-skilled workers.

1995	Rs. 125/- Per Thousand Bricks
1998	Rs. 143/- Per Thousand Bricks
2002	Rs. 184/- Per Thousand Bricks ²⁶

Source: Punjab Minimum Wages Board

Details of the performance under Factories Act 1934, Payment of Wages Act 1936, Industrial and Commercial Establishments (Standing Orders) Ordinance 1969 and Minimum Wages Ordinance during the year 1999 to 2002 in the Province of Punjab is shown in Table-2.

Table-2: Performance of Inspection Machinery of the Directorate of Labor Welfare Punjab on the Implementation of Various Labor Laws Applicable to Brick Kilns

Year	No. of registered Brick kilns	No. of Inspections	No. of prosecutions	Fine (in millions)
1999	495	498	4375	0.098
2000	575	572	5450	0.112
2001	692	693	6605	0.133
2002	926	728	5756	0.164

Source: Directorate of Labor Welfare Punjab.

The Table highlights inspection figures of inspection carried out by the field formation of the Directorate of Labor Welfare Punjab under various labor laws applied to the brick kilns. Inspections as well as prosecutions do not reflect a healthy performance by the field offices. The number of inspections during the year 2002 was less than the total brick kilns registered. Registration of kilns under the Factories Act is also not satisfactory.

²⁶ The bricks for the purpose of remuneration have been categorized for the first time and separate rates for each category have been fixed; i.e. Rs.184 per thousand for ordinary bricks, Rs.218 per thousand for special bricks and *Gutaka* bricks and Rs. 46 per thousand were fixed for Tiles.

Remoteness, lack of transportation, lack of protection of the inspection staff and traditional labor management relations in the industry are the most commonly cited reasons for this slackness. The situation has been further aggravated with the launching of the New Industrial Policy by the Government of the Punjab during the year 2003, under which inspections under various labor laws have been withheld since July 2003²⁷. The deterrence of inspection, therefore, has been eliminated²⁸ and the brick kiln workers are left at the mercy of the owners and the contractors. Similarly, coverage of Employees Old Age Benefits Act and Employees Social Security Ordinance for the brick kiln workers is also very limited.

5.6. Limitations of the Law

The Bonded Labor System (Abolition) Act 1992, a special law to deal with the bonded labor situation, has two weaknesses. Firstly, the law is criticized on the ground that it is a replica of the Indian Act. Secondly, it involves various governmental and non governmental agencies to act and interact on the platform of the Vigilance Committees at the district level which in practice seems very difficult. This is probably the most critical reason for non-implementation of the law.

The Factories Act 1934 is the basic law applicable to premises employing 10 or more workers involved in manufacturing. Implementation of the law in the brick kiln industry has always been debatable. For instance, no premises of brick kilns meet with the requirements of Section- 33 read with Rule-95(1) of the Punjab Factories Rule, 1978. Secondly, it is hard to define the premises as the making of raw bricks shifts from one place to another, depending upon the quality of land and ancillary factors. Thirdly, due to weather conditions and the nature of the job the working hours of those workers cannot be calculated as required under the law. Fourthly, migratory workers complicate the situation further and create difficulties in the implementation of the law. Due to these difficulties the registration of 1112

²⁷ Under the Policy all labor inspections of factories have been stopped and declaration forms have been introduced. All occupiers covered under the policy are required to submit declaration forms once a year. The inspection is carried out through the District Human Resource Board (5 %) on submission of the declaration by all occupiers. The Policy has been a failure and the workers are being affected seriously.

²⁸ It is through this deterrence that most of the problems of the workers regarding payment of wages, less payment, delayed payment, non payment, working conditions, and employment conditions were resolved on the spot through simple interference of the functionary.

brick kilns by the Province of Punjab by 31st August 2005 could not bring about the desired results and brick kiln workers continue to be deprived of the benefits accrued from the schemes of the Workers Welfare Board²⁹.

The Minimum Wage Ordinance has its own problems; the minimum rates fixed under the law do not suit all the areas due to variation in the cost of living, quality of bricks and price of the bricks. The minimum wage rates should be made more realistic by taking into account all such factors. Different rates can be fixed for different regions in the same province. Minimum wages should be fixed after in depth research and keeping in view the basic needs of the brick kiln workers³⁰. Non maintenance of records and the informal mode of payment of wages, on the other hand, make the implementation of Payment of Wages Act more difficult.

The Employment of Children Act 1991 is also not applied to families engaging their children in brick-making. Health facilities of Social Security Scheme, pension of Employees Old Age Benefit Act and the welfare schemes of the Workers Welfare Board have limited scope as far as the brick kiln workers are concerned.

The preceding analysis indicates that the laws are not only complicated, but that some of them also do not correspond with the traditional model of labor relations prevailing in the brick kilns. Inspection machinery is also handicapped, particularly after the recent political devolution and introduction of the New Industrial Policy of the provincial government.

6. Trade Unions and Bonded Labor

It is argued that trade unions by creating awareness among their members about the severe effects of advances could be torch bearers in highlighting the issue of bonded labor. Such a role can only be possible by the unions if they are strong, democratic and represented by the workers at

²⁹ It is practically difficult to implement the law at the brick kilns. That is why the registration of brick kilns under the Factories Act could not yield the desired results. Brick kiln workers have not been recognized and owned by the occupier (owner) as workers. The workers resultantly could not obtain benefits from the schemes of Workers Welfare Board enjoyed by their fellow workers in the factories.

³⁰ The food basket approach involves basic necessities of the workers, his cost of living, average family size, inflation etc. Although it is time consuming and requires a lot of research before the wages are actually fixed, it is the most realistic approach for the fixation of minimum wages.

the grassroot level. Unfortunately, trade unions in the brick kiln sector are weak, fragmented, and have no footing at the workplace. The labor movement lacks genuine leadership. There are only three trade unions in the brick kiln sector which are registered at the provincial level and their membership does not even exceed 333³¹. The labor organizations are managed either by contractors or some ex- brick kiln workers. Unions are more common at the brick kilns near Lahore, have the recognition of the employer and bargain for working conditions and implementation of minimum wage notifications (Mitha *et. al.*, 1998). According to them, trade union activities are restricted to male workers, and only four women were found as office bearers of the union³².

Trade unions have played a very limited role as far as the issue of bonded labor is concerned. The Brick Kilns Owners Associations are more organized and effective than the labor organizations. There is a strong need for sensitizing the mainstream labor movement over the issue of bonded labor. They should also mobilize their allies in the brick kiln sector with the assurance that without strong labor organizations the suffering of bonded labor could neither be highlighted nor addressed. As advocated by Ercelawn (2002) ‘whatever Government does by way of improving the situation of bonded labor, success will come largely through mobilization of labor. The government is required to remove all legal and administrative hurdles to the formation of labor associations and collective bargaining, as required by the ILO core conventions’ (Ercelawn and Ali, 2002).

7. Role of NGOs

The efforts of NGOs in addressing the issue of bonded labor have been significant. The Bonded Labor Liberation Front (BLLF) with the help of the Human Rights Commission of Pakistan launched rallies, seminars and symposia to create awareness by highlighting the atrocities of bonded labor during the late 80s. Both also coordinated in fighting a legal battle that went to the Supreme Court of Pakistan. BLLF was instrumental in pressuring the government to promulgate the Bonded Labor System (Abolition) Act 1992. The BLLF also ran around 200 Apna Schools for the children of the brick kiln workers³³. The spade work of the BLLF made the

³¹ Directorate of Labor Welfare, Punjab.

³² See Mitha *et. al.*; Solid Foundations Solid Contributions, Women in the Brick Kiln Industry ASR, Lahore.

³³ BLLF leader Ahsanullah was very popular amongst the brick kiln workers during the early 90s. The NGO could not gain that momentum after its leader left for Switzerland.

task easier for late comers such as PILER and the Human Rights Commission of Pakistan. At present a few NGOs can be found working in the field of bonded labor. However, it is difficult to find any in the brick kiln sector.

8. Recommendations

The foregoing analysis highlights that a number of agencies are involved in the efforts for the eradication of bonded labor from the brick kiln sector. All work in isolation of each other; the role of trade unions is negligible, NGOs need more involvement and the working of government departments, such as Labor, Home Department, Police, Social Security, Employees Old Age Institutions etc. need redirection, overhauling and strengthening.

The complexity of the issue and its socio-economic repercussions imply that no single strategy can address the issue extensively. Compartmentalization of the issue may lead to chaos in the end. It is only through a comprehensive plan of action, and multi-pronged strategy that the menace of bonded labor can be eradicated. The plan must be a model focusing simultaneously on all aspects of bonded labor. It should involve **economic recovery**, through increase in real wages, micro credit, independence from advances / loans and clutches of the owner, extension of Workers Welfare Board schemes to the brick kiln workers, Social Security Coverage, medical coverage, pension coverage under Employees Old Age Benefits Act; **educational breakthrough**, through free and compulsory elementary education to the children of the brick kiln workers. It should include training during off season, technical and vocational training of the children of the brick kiln workers, special emphasis on female education, adult education programs, and informal education; **social uplift**, through community organization and development, enhanced social motivation, promotion of workers participation in local governance, organizing trade unions and owners associations, general awareness about rites and customs and the negative effects of advances, etc.

The brick kilns are usually located in clusters. The district governments within their district limits should require formal notification for the establishment of brick kilns. Brick kilns should only be allowed to be established in clusters. A cluster should have a reasonable number of brick kilns (20-25) and be like an industrial estate. Keeping in view the migratory nature of the business, the government should also decide where

the cluster has to move after ten years when most of the suitable soil will be utilized and no soil will be available in the nearby area. There should be an independent authority in the district at each cluster, handling all the affairs, i.e., technical, administrative, financial, legal, and educational issues relating to labor and socio-cultural development. Representatives of all inline departments such as police, labor, health, education, banks, and infrastructure development etc., should be at the disposal of the authority. One Window facility at each cluster should be provided to both the owners as well as to the workers and their families. The issue of advances will automatically be resolved with the implementation of the scheme because in the presence of all the relevant government functionaries, NGOs and representatives of civil society, it would be hard for the system to prevail. All labor laws, particularly laws relating to monetary benefits for the workers such as Minimum Wage, Payment of Wages Act, Social Security Laws, EOBI, and Workers Welfare Schemes of Workers Welfare Board and Bonded Labor System (Abolition) Act should be consolidated into a single enactment meant exclusively for the brick kilns. The real wages and the income of the workers would be rationalized through effective implementation of the law. Micro credit should be available through scheduled banks at their door steps. Free and compulsory basic education should be provided at each cluster and the children of the brick kiln workers should be provided technical, vocational, and higher education in the nearby educational institutions of the Workers Welfare Board, TEVTA and education department free of cost. The community should be mobilized through organizing owners and workers. Special Career Counseling should be offered to the workers, their children and the owners as well. Apparently, the plan looks overambitious but in reality no additional funds are required to implement the plan. Rather, the plan will require the reorganization and streamlining of various governmental and non governmental agencies already working in the field by the pooling of resources, accurate management and extending educational, health, training, pension and banking facilities for the bonded labor. Only in this way can the conditions of bonded families be improved.

9. Conclusion

Bonded labor is a dominant feature of the brick kiln industry of Pakistan. The bondage forfeits the workers' right to move freely and sell their labor. The clutches of bondage involve physical, economic and psychological exploitation of the bonded families. The implementation of

the Bonded Labor law met with great criticism. Rehabilitation efforts lack coordination and special efforts therefore are required on the part of all concerned working in the field of bonded labor. The proposed model provides a blueprint for the streamlining, consolidation and coordination of efforts in the right direction with an overall objective of the eradication of bonded labor from the brick kiln sector.

ANNEXURE-A

Office of the District Coordination Officer, Faisalabad

ORDER

In pursuance of Home Department's letter No SO(Judl-11)2-13/(P-4), dated 6.9.2001 and 20.8.2002, the District Nazim Faisalabad has been pleased to constitute the District Vigilance Committee under Rule -6 of Bonded Labor System (Abolition) Rules 1995, consisting of the following members:

Sr. No.	Name of Member	Designation of the Committee
1.	District Nazim	Chairman
2.	District Coordination Officer	Member
3.	District Police Officer	Member
4.	President District Bar Association	Member
5.	District Officer Labor	Member/Secretary
6.	District Officer Education Elementary	Member
7.	District Officer Agriculture Extension	Member
8.	District Officer Health	Member
9.	District Officer Social Welfare	Member
10.	Dr. Bashir Ahmad Chaudary, President Mother and Child Welfare Association	Member
11.	Seth Abdul Hamid President Brick Kilns Association	Member
12.	Mr. Ghulam Farid Fateh Workers Union, Nishat Mills, Faisalabad	Member
13.	Mrs. Hamid Saeed, All Pakistan Women Association, 720-P, Batala Colony, Faisalabad	Member
14.	Mr. Shahid Baig Member District Assembly	Member
15.	Mr. Kamal Nazami Journalist, Daily Nawa-i-Waqat	Member
16.	Ch. Muhammad Tai Retired District and Session Judge	Member
17.	Mr. Abdul Wahid Butt, Anjuman-i-Islamia, Tariqabad	Member
18.	Mr. Tasawar Hussain Naqvi, Director SOS.	Member

The District Vigilance Committee will perform and achieve the objectives as laid down under Section 15 of the Bonded Labor System (Abolition) Act 1992 and Rule 7, 8, 9 of the Bonded Labor System (Abolition) Rules 1995.

By Order of the District Nazim
Faisalabad

No. 3(100)/SG/DCO/381 - 400

Dated: 21-1-2003

A copy is forwarded to:

1. The Under Secretary (Jud-II), Government of the Punjab, Home Department, Lahore.
2. All the members of the Committee.
3. The PSO to District Nazim Faisalabad.

-Sd-

Senior Administration Officer
For District Nazim, Faisalabad

References

- Bales, Kevin, 1998, Disposable People, New Slavery in the Global Economy, University of California Press Berkeley / Los Angeles / London.
- Ercelawn, A. and A. Karamat, 2002, Bonded Labor in Pakistan: Impacts of Policy, Law and Economy, *The Journal*, NIPA, Karachi, March 2002, Vol. 7, No. 1.
- Ercelawn, A. and Nauman M., 2002, Bonded labor in Pakistan: An Overview A Study for ILO, by Pakistan Institute of Labor Education and Research, Karachi, *The Journal*, NIPA Karachi, March 2002, Vol. 7, No. 1.
- Government of Pakistan, 1934, Factories Act.
- Government of Pakistan, 1936, Payment of Wages Act.
- Government of Pakistan, 1961, Minimum Wage Ordinance.
- Government of Pakistan, 1968, West Pakistan Industrial and Commercial Establishments (Standing Orders) Ordinance.
- Government of Pakistan, 2002, Industrial Relations Ordinance.
- Government of Pakistan, 2002, Labor Policy.
- Government of Pakistan, 1992, Bonded Labor System (Abolition) Act.

Government of Pakistan, 1995, Bonded Labor System (Abolition) Rules.

Government of the Punjab, 1995, 1998, 2002, Notifications for Skilled and Unskilled Workers by the Punjab Minimum Wages Board.

Government of the Punjab, 2002, Performance under Various Labor Laws applicable to Brick Kilns and Details of registered Brick Kilns: Annual Reports.

Hamid, A. Narmeen, 1993, Health and Industrial Status of Working Children in Brick Kilns, Carpet Weaving Industry and Garages, A medical study conducted in Lahore and in collaboration with the Islamic Welfare Society, Lahore and UNICEF.

Human Rights Commission of Pakistan, 2001 and 2004, State of Human Rights, published by Human Rights Commission of Pakistan, Lahore.

Hussain, Akmal, 1990, Child Workers in Construction and Related Industries in Pakistan: Paper submitted to ILO, Geneva.

ILO, 2004, Rapid Assessment Studies of Bonded Labor in Different Sectors; Ministry of Labor, Manpower and Overseas Pakistanis.

ILO, 1998, Child Labor in the Brick Kilns: District Sialkot, A Survey Report. The Survey was conducted as a part of an International Program on the Elimination of Child Labor (IPEC) by Labor and Manpower Department Government of the Punjab.

ILO, 2001, Stopping Forced Labor; Global Report under the Follow-up to ILO Declaration on Fundamental Principles and Rights at Work.

Mitha, Y. Anwar, M. Said Nighat, Javed, A., 1989, Solid Foundations Solid Contributions; Women in the Brick Kiln Industry, ASR, Lahore.

Thomas, Henk, (Ed), 1995, Globalization and Third World Trade Unions: The Challenges of Rapid Economic Change; Zed Books London and New Jersey.

Impact of Exchange Market Forces on Pak-Rupee Exchange Rates during Globalization Period: An Empirical Analysis

Syed Adnan Haider Ali Shah Bukhari^{*}, Muhammad Shahbaz Akmal^{}, Mohammad Sabihuddin Butt^{***}**

Abstract

This paper analyzes the impact of exchange market forces on Pak-Rupee/US dollar exchange rates during the 1965-1971 globalization period. The main findings are that a) the behavior of Pakistan's fundamentals relative to those of the USA help to explain exchange market forces against the Pak-Rupee; b) during the run up to devaluation in the globalization period the monetary authorities in Pakistan were acting to reduce domestic credit; but that c) additional pressure was brought against the Pak-Rupee from speculative sources. These findings relate to current thinking on the choice of the exchange rate regime as even well behaved fundamentals may not be sufficient to sustain a currency on its peg.

JEL Classification: C53, E58, F31, F33.

Keywords: Exchange market forces, pegged exchange rates, realignment expectations.

I. Introduction

This paper offers an investigation of exchange market forces on the Pak-Rupee during the 1965-1971 globalization period, when the Pak-Rupee was pegged to the US dollar through links to real assets. We believe

^{*} Corresponding Author: Senior Research Fellow, Faculty of Computer Sciences and I.T. Department of Computer Sciences, FUUAST, Karachi, Pakistan.

^{**} Research Scholar, Associate Professor/Senior Research Economist, Applied Economics Research Centre, Karachi University, Pakistan.

^{***} Associate Professor/Senior Research Economist, Applied Economics Research Centre, Karachi University, Pakistan.

that this investigation is relevant today for what it tells us about the viability of exchange rate pegging.

In the “unholy trinity” of a pegged exchange rate, open capital markets and independent monetary policy, the latter must be largely given up if the former two are to be viable.

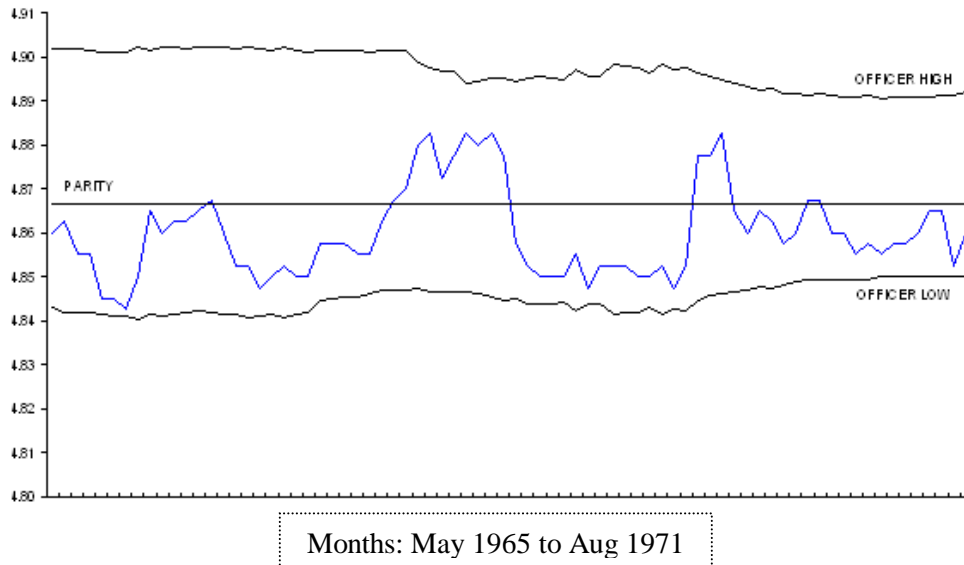
It is found that, even though the State Bank of Pakistan seemed to responsibly manage the money base within the confines of the latitude offered by the exchange rate band between the gold points¹, the Pak-Rupee was still subjected to speculative capital outflows – especially in the four months before it was knocked off its peg during the period of globalization. If this interpretation of our findings is correct, the viability of open capital markets along with pegging is questionable even when the authorities behave responsibly. The issue is whether the State Bank of Pakistan played by the ‘rules of the game’, by which is usually meant that changes in the money base were strictly determined by the balance of payments. Eichengreen, *et. al.*, (1985) from their empirical evidence argued that the rules were not strictly adhered to as interest rates were sometimes managed, being influenced by the business conditions in the developing countries, and for most of the period under consideration were depressed. The State Bank of Pakistan would cut interest rates in order to stimulate the economy only to have to raise them again to protect the balance of payments and the Pak-Rupee’s peg to real assets. In fact, some latitude was afforded to the State Bank of Pakistan by the Pak-Rupee’s fluctuation band between the gold points. Lower interest rates could be sustained so long as the exchange rate moved only within the band and did not threaten to breach it.

Figure 1 shows that the Pak-Rupee-dollar exchange rate did indeed fluctuate between estimates of the gold points. This analysis, which estimates an exchange market pressure model, finds that when the State Bank of Pakistan increased the rate of domestic credit expansion, exchange market pressure on the Pak-Rupee-dollar exchange rate would also

¹ The estimated gold points shown in Figure 1 are those of Officer (1993). The gold points were determined by the cost of moving gold across the Atlantic Ocean, and as interest costs were incurred in doing so, the gold points were not constant but fluctuated with interest rates. According to Officer’s calculations the gold points averaged about 0.6% either side of parity.

increase. That is, the exchange rate depreciated within the fluctuation band and foreign exchange reserves fell.

Figure 1: Pak-Rupee spot exchange rate and estimated gold points



However, we think that the State Bank of Pakistan's monetary policy during this period was in fact well behaved because the peg to gold and the dollar was maintained for more than six years in very difficult world economic circumstances and with an open capital account. Indeed, the experience of the Pak-Rupee during this period was far superior to that of the members of the International Monetary System during the 1990s when currency realignments were very frequent even though exchange rate fluctuation bands were relatively wide and capital accounts were not necessarily fully open. Another strand of evidence that supports the view that the State Bank of Pakistan was conservative in its management of the money base comes from our calculation of the Pak-Rupee-dollar realignment expectations in the foreign exchange market. We show that between the Pak-Rupee's return to the gold standard in this period the market did not expect the Pak-Rupee to be devalued. Our empirical evidence is based on the target zone model of Krugman (1988 and 1991) as extended by Svensson (1991, 1993) and Bertola and Svensson (1993) and is described in Section 2 below. However, in the globalization period, devaluation expectations turned strongly against the Pak-Rupee, in the sense that they became statistically significant and larger than at any other time during the previous years. But why did this run on the Pak-Rupee occur when it did? We found that over the period as a whole, exchange rate expectations did affect current Pak-Rupee-dollar exchange rate movements within the band, and that in the last three months of the regime

the markets were expecting a devaluation of the central parity. However, on the evidence that we are able to present we do not assume that this speculative attack against the Pak-Rupee was by any means entirely provoked by the State Bank of Pakistan's management of the money base. Indeed, the money base had increased by only four percent in the first six months of the year – hardly a runaway rate of expansion and, as is shown below, during the seven months before the globalization-period devaluation of the Pak-Rupee, the State Bank of Pakistan's management of domestic credit was helping to reduce exchange market pressure on the Pak-Rupee.

The paper proceeds as follows: in Section 1 a model is developed to explain exchange market forces against the Pak-Rupee. Section 2 discusses how the Krugman (1988, 1991) target zone model, as extended by Svensson (1991 and 1993) and Bertola and Svensson (1993), can be used to reveal realignment expectations during Pakistan's gold standard pegging episode of the pre-globalization period. These realignment expectations are used in section 3 as an independent variable and are shown to contribute to exchange market pressure against the Pak-Rupee along with the macroeconomic and monetary variables derived from the exchange market pressure model. Conclusions are drawn in Section 4.

2. Exchange market forces and the Pak-Rupee

The exchange market pressure model is a natural development out of the monetary approach to the balance of payments and the monetary approach to the exchange rate. The two fundamental assumptions of these models are that agents have desired levels of real money balances, and that while the balance of payments is made up of three sub-accounts – goods, capital and money – which sum to zero, the analytical emphasis is on the monetary account. The two central equations of these models are pairs of money demand and money supply functions, one for each country in a two-country world. Money demand is a standard function of real income, prices and nominal interest rates, and the domestic money supply is backed by domestic assets and gold and foreign exchange acquired over time through central bank foreign exchange intervention.²

² We choose not to use the Eichengreen, Rose and Wyplosz (1996) measure of exchange market forces because questions have been raised about its theoretical basis. These questions concern the (non-unitary) weights used in their calculation of an index of exchange market pressure. Weymark (1998) says that their index is not satisfactory because it lacks a rigorous theoretical basis, and it “cannot be interpreted as a cardinal

What Girton and Roper (1977) did in their seminal paper on exchange market pressure (and extended by Weymark, 1995, 1998) combined the monetary approaches to the balance of payments and to the exchange rate into a single model. Thus, if an exchange rate is allowed to move within a fluctuation band (or, target zone), taken separately, neither the movement of the exchange rate nor the movement of foreign exchange reserves will necessarily give an accurate measure of exchange market pressure. For example, the exchange rate could be steady or even appreciating, while foreign exchange reserves were falling rapidly. However, taken together, movements in rates and reserves can be used to indicate exchange market pressure.

The *Girton and Roper* model of foreign exchange market flow equilibrium can be expressed in logarithmic changes as:

$$\Delta m_t^s = \Delta d_t + \Delta f_t \quad \Delta m_t^{*s} = \Delta d_t^* + \Delta f_t^* \quad (1)$$

$$\Delta m_t^d = \Delta p_t + \beta \Delta y_t - \alpha \Delta i_t \quad \Delta m_t^{*d} = \Delta p_t^* + \beta \Delta y_t^* - \alpha \Delta i_t^* \quad (2)$$

$$\Delta p_t = \Delta p_t^* + \Delta s_t + \theta_t \quad (3)$$

$$\Delta i_t = \Delta i_t^* + \delta_t \quad (4)$$

Variables with an asterisk signify US variables and those without an asterisk, domestic country variables. Equation (1) sets the growth in the supply of base money (Δm_t^s) equal to the sum of domestic credit expansion (Δd_t) and the growth of foreign exchange reserves (Δf_t). Equation (2) describes the growth of demand for nominal domestic money balances (Δm_t^d) in terms of growth in domestic prices (Δp_t), real income (Δy_t) and an appropriate index of nominal interest rates (Δi_t). Equivalent money supply and demand relationships hold for the USA. The income elasticity of demand for money is β , and the interest semi-elasticity of demand for money is α . Equation (3) allows relative purchasing power parity to hold

(or even ordinal) measure of speculative pressure” (p 118). Spolander calls their measure “*ad hoc*” (1999, p 17), and Peltonen says that their weights are “arbitrarily chosen” (2002, p 12). In this paper, as in Girton and Roper (1977) and as recently as Tanner (2001), the weights applied to the left-hand-side variables in equation (5) below are indeed unity. Tanner (2001, p 315, footnote 15) says that this is acceptable if, as here, a standard monetary model is used. Tanner (2001) also notes that Eichengreen, Rose and Wyplosz (1996) do not use a standard monetary model.

continuously if the real exchange rate, θ_t , is forced equal to zero. However, variations of the real exchange rate from zero means that purchasing power parity does not hold exactly. Note that the nominal exchange rate (the price of the dollar in terms of Pak-Rupee) is defined such that a positive value of Δs_t represents the rate of depreciation of the Pak-Rupee. Equation (4) simply sets δ_t equal to the change in the interest rate differential.³ Svensson (1993, page 766) pointed out that the interest differential may combine both exchange rate expectations and a risk premium – an increase in the differential indicating some combination of (a) increased expectations of depreciation and (b) a greater premium attached to that risk. In common with most papers in this area we will continue to regard the interest differential as indicating just expectations of future exchange rate changes because whichever component increases, pressure on a currency will increase as investors readjust their portfolios against it.

An issue is how to measure exchange market pressure (EMP) against a currency. Weymark (1998) develops a model-independent formula to calculate exchange market pressure that could be applicable to virtually any exchange rate model, such as the monetary-asset approach being used in this paper. EMP defined as the total excess demand for a currency and can be measured by the exchange rate change which would have been required to remove the excess demand in the absence of money or foreign exchange market intervention, given that expectations are generated by the exchange policy actually implemented. However, since this definition of EMP is unobservable (because the authorities usually do intervene in the markets, particularly in the period under examination here), it needs to be made operational, and that requires a model.

Weymark (1998) argues that model-specific measures of EMP should conform to her model-independent definition. In general, this independent measure is stated as the expected change in the exchange rate plus the weighted change in foreign exchange reserves.⁴ The magnitude of

³ Weymark (1998) discusses the role of exchange rate expectations in the derivation of model-consistent exchange market pressure indices. Thus, static exchange rate expectations would mean δ^t represents changes in the risk premium implicit in domestic interest rates.

⁴ This assumes that changes in domestic credit are not an instrument of exchange rate policy.

the weight may have to be econometrically estimated from a structural model of a macro-economy.⁵

Some manipulation of equations (1)-(4) yields:

$$\Delta f_t - \Delta f_t^* - \Delta s_t = -\Delta d_t + \Delta d_t^* + \beta(\Delta y_t - \Delta y_t^*) + \theta_t - \alpha \delta_t \quad (5)$$

The composite dependent variable in equation (5) is the Girton-Roper model-specific measure of exchange market pressure (where the weight on reserve changes is unity). A lower numerical value of this EMP measure signifies greater pressure against the State Bank of Pakistan because there is some combination of a decline in the rate of growth of Pakistan foreign exchange reserves relative to reserve growth in the USA and a rise in the rate of the Pak-Rupee's depreciation (a rise in Δs_t). According to the model, EMP against the Pak-Rupee increases with an increase in Pakistan's rate of domestic credit expansion, or its rate of interest (i.e. δ_t increases), or with a decrease in the real exchange rate. Pressure diminishes with an increase in the rate of growth of Pakistani real income relative to that of the USA. Weymark (1998) showed that the Girton and Roper (1977) model-specific formula for exchange market pressure that we employed does conform to her model-independent formula. Tanner (2001) is in agreement with this.

3. Revealing realignment expectations

If an exchange rate is to be confined to a target zone, financial markets need to believe that the authorities are willing to defend that zone otherwise international capital flows will destroy the peg. Thus, monetary policy must be used to defend the parity. The exchange rate is determined as:

$$s_t = m_t^s + v_t + \alpha E_t [ds_t] / dt \quad (6)$$

As earlier, in natural logarithms, s_t is the domestic currency price of foreign exchange, m_t^s is the money supply, and α is the semi-elasticity of demand for money. The term v is a general purpose term that includes anything else that impacts the demand or supply for money (e.g. changes in real income). Most simply, v is taken to be the cumulative value of velocity (Miller and Weller, 1991). Shocks to velocity are assumed to be random

⁵ Spolander (1999) includes a very detailed discussion of this process.

with zero mean, and to be normally distributed such that the cumulative value of v follows a continuous-time random walk. The term $E_t[ds_t]/dt$, is the instantaneous rationally expected rate of change of the exchange rate.

To maintain credibility, an exogenous shock to fundamentals such as a fall in real economic activity that would otherwise push the exchange rate outside the target zone must be offset by a monetary contraction – for instance, by open market sales of domestic securities or a rise in the discount rate. At the edges of the target zone monetary policy must be geared exclusively to the exchange rate and not, say, towards influencing business conditions. But when the exchange rate is in the interior of the zone the monetary authorities do have some freedom of action. The domestic interest rate can differ from the foreign interest rate provided that the indicated exchange rate expectation is not forced outside the intervention points.

A measure of realignment expectations has been developed in Svensson (1991, 1993), and Bertola and Svensson (1993). Thus, in natural logarithms at time t the nominal exchange rate, s_t , is:

$$s_t = x_t + c_t \tag{7}$$

where c_t is the central parity and x_t is the proportionate deviation from parity. Taking time derivatives:

$$E_t [ds_t]/dt = E_t [dx_t]/dt + E_t [dc_t]/dt \tag{8}$$

Equation (8) says that the rationally expected rate of change of the exchange rate can be divided into the expected movement ‘within the band’, $E_t[dx_t]/dt$, plus the expected rate of depreciation of the central parity, $E_t[dc_t]/dt$. Furthermore, for any given x_t , movement within the band is bounded by the lower (“strong”) gold import point and upper (“weak”) gold export point.

$$(x_t^l - x_t)/dt \leq E_t [dx_t]/dt \leq (x_t^u - x_t)/dt \tag{9}$$

where x_t^l is the lower bound of s_t , and x_t^u , the upper bound.

On using equations (8) and (9) the confidence interval for realignment expectations is:

$$(i_t - i_t^*) - (x_t^u - x_t) / dt \leq E_t [dc_t] / dt \leq (i_t - i_t^*) - (x_t^l - x_t) / dt \quad (10)$$

where as, i_t is the home country's interest rate and i_t^* is a comparable interest rate in the foreign country. The term $(i_t - i_t^*)$ has been substituted for $E_t[ds_t]/dt$ because we are assuming that uncovered interest parity holds. Thus, equation (10) defines the minimum and maximum bounds of the market's rationally expected rate of realignment of the central parity (a 100% confidence interval, assuming the gold points are known with certainty).

Rearranging equation (8) obtains a statement of the rationally expected realignment expectation as:

$$E_t [dc_t] / dt = E_t [ds_t] / dt - E_t [dx_t] / dt \quad (11)$$

This realignment expectation can be calculated if the two terms on the right hand side are known. The total expected change in the exchange rate, $E_t[ds_t]/dt$, is known from the interest differential. Svensson (1993) details a simple but robust method for calculating the expected movement of the exchange rate within the band. He takes this to be a linear function of the current deviation of the exchange rate from the central parity, x_t , such that the expected movement of the exchange rate within the band is empirically estimated as the fitted value from the following regression:

$$x_{t+m} - x_t = a_0 + a_1 x_t + u_t \quad (12)$$

In this unit root test, mean reversion is occurring if a_1 is significantly less than zero.⁶

⁶ The percentage value of a realignment expectation at any time, t , is equal to the product of the probability of devaluation and the size of the devaluation. Our exchange market pressure economic model attempts to explain this product, not either component of it. Svensson's drift adjustment method used here assumes that the probability of devaluation is exogenous to the model. Further development of target zone theory by Mizrahi (1995) shows that as the probability of devaluation can be recovered from the data there is no need to make the restrictive exogeneity assumption. Indeed, following Hallwood, MacDonald and Marsh (2000) we have done just this – recovered endogenous dollar-Rupee devaluation probabilities. However, for this paper the criticism of exogeneity is not relevant because we are trying to explain realignment expectations as a whole. Furthermore, models that use the exogenous probability of devaluation assumption have an excellent record in correctly forecasting devaluation events (see

Implementing equation (12) using the Pak-Rupee-dollar exchange rate data for the globalization period, we found evidence, reported in Table-1, of mean reversion within the band of the Pak-Rupee-dollar exchange rate. The regression is conducted with m set equal to three months to match the maturity of the forward rate contracts used later in this paper. This choice of m induces second order serial correlation in the equation so all statistics are computed using Newey-West generalized method of moments estimators (see Sarno and Taylor, 2002).

It is perhaps not surprising to find mean reversion in an exchange rate that in fact remained within its band for as long as six years. However, it could be noted that mean reversion is not inevitable. A currency could move to an intervention point and then just bump along there without reverting to the center of its band. Rather, the finding of mean reversion indicates that the market indeed had confidence in the Pak-Rupee. Certainly, a lower relative Pakistan price level might have eased the State Bank of Pakistan's job of keeping the Pak-Rupee on gold by giving it greater freedom to reduce interest rates, thereby allowing some stimulus to the depressed Pakistan economy. However, the fact of the matter is that notwithstanding the depressed Pakistan economy, the State Bank of Pakistan was prepared to manage interest rates to keep the Pak-Rupee on gold.

The final step in implementing equation (11) is to take the 95% confidence intervals for mean reversion calculated using equation (12), and to combine them with the interest rate differential data, which proxy for $E_t[ds_t]/dt$, to calculate 95% confidence intervals for realignment expectations.

We reproduce our calculations of monthly realignment expectations for the Pak-Rupee-dollar exchange rate May 1965 to August 1971 in Figure 2. When the upper and lower bounds for realignment expectations are on different sides of the zero line (or x-axis) realignment expectations are not statistically significant. That is, there is no strong evidence of speculation against the Pak-Rupee. However, things were very different in the summer of 1971 when realignment expectations turned strongly against

Svensson, 1993), and this is also true in this paper for "predicting" the September 1971 devaluation of the Pak-Rupee. Moreover, in the work of Darvas (1998) Monte Carlo simulations show that the drift adjustment method performs well in reproducing the stylized facts of exchange rate behavior in a target zone.

the Pak-Rupee (the upper and lower bounds of realignment expectations were both positive). This provoked capital outflows from Pakistan, exerting exchange market pressure against it, so much so that the Pak-Rupee was to be bumped off its gold-dollar peg.

4. Empirical results revealing exchange market pressure

But what was the cause of exchange market pressure against the Pak-Rupee? To investigate this question we implemented equation (5) which shows that exchange market pressure is being determined by macroeconomic variables and a monetary variable, the rate of domestic credit expansion that was under the direct control of the State Bank of Pakistan.

Equation (5) is tested using monthly data for the 1965-1971 period. Since reliable contemporaneous quotations of interest rates of the same maturity are hard to find for this period we assume covered interest parity holds and use the forward premium/discount as our measure of the interest differential.⁷

The equations presented in Table-3 were estimated using the McCallum-Wickens instrumental variables technique.⁸ In each case the dependent variable is exchange market pressure and the exchange rate is the Pak-Rupee-dollar rate. The instrument set is the dependent and each explanatory variable lagged by two and three periods, together with a constant and a time trend. The figures in parentheses under the coefficient estimates are *t*-statistics computed with Newey-West GMM standard errors, robust to serial correlation and heteroskedasticity.

⁷ Covered interest parity holds when $i = i^* + (F-S)/S$ where *i* is a short-term rate of interest, *S* is the spot exchange rate, *F* the forward exchange rate of the same maturity as *i* and the asterisk signifies the foreign country. In a liquid foreign exchange market $F = S^e$ where S^e is the expected future spot exchange rate. When this condition holds S^e can be substituted for *F* - i.e. uncovered interest parity and covered interest parity hold simultaneously. Whether covered interest parity held during the inter-war period has been tested by Peel and Taylor (2002) who find a larger 'neutral' zone (i.e. profit opportunities that are not arbitrated) than is common today. Their preferred explanation for this is that markets were not inefficient but that the opportunity costs of arbitrage were higher then than they are today.

⁸ An estimator is used with the instruments carefully chosen so as not to introduce a moving average error process into the residuals.

Column A of Table-3 details the results of the most rigid interpretation of equation (5). The coefficient on Pakistan domestic credit growth is statistically significant, correctly signed and not far from its theoretical value of minus unity (a test of this restriction cannot be rejected – see $H1^9$). US domestic credit growth and relative income growth rates are both insignificant (though correctly signed). The coefficient on the real exchange rate term is negative and therefore carries the wrong sign.¹⁰ Finally, the coefficient on the change in our proxy for the interest differential, δ , is also significant and correctly signed. Column B of Table-3 loosens the restriction that the income elasticity of demand for money is equal in the two countries.¹¹ Here the coefficient on US (Pakistan) income growth is significantly positive (insignificantly negative).

In columns C and D we decompose changes in the interest rate differential proxy into changes in the expected movement of the exchange rate within the band, $\Delta E[dx_t]/dt$, and changes in the expected rate of devaluation of the Pak-Rupee, $\Delta E[dc_t]/dt$, based on equation (8). Both these factors are expected to affect exchange market pressure on the State Bank of Pakistan, though perhaps not equally. With equal and opposite signs imposed on income growth in the two countries (column C), the two new terms are both negative and statistically significant while the other coefficient estimates are essentially unchanged from the baseline regression in column A.

Removing the restriction on income growth we obtain the results in column D. The adjusted coefficient of determination is highest in this version of the model while the standard error of the equation is the lowest, suggesting this to be the statistically preferred specification. Coefficient estimates are little changed from the regression in column B. Thus, an increase in Pakistan's rate of domestic credit expansion, Δd_t , increases

⁹ Possibly because they are measured with error, more so than the other variables.

¹⁰ The negative sign on the real exchange rate has an interesting theoretical implication. In the monetary model used here a rise in Pakistan's price level, thereby raising the value of the real exchange rate, increases the demand for money in Pakistan which is satisfied by an increase in foreign exchange reserves. This explains the $+\theta$ in equation 5. However, this money market stock adjustment mechanism could be dominated by the adverse affect of a higher Pakistan price level on Pakistan's current account that would increase exchange market pressure against the Pak-Rupee.

¹¹ We would have also liked to relax the assumption that the interest semi-elasticities are equal in the two countries, however since we do not have reliable interest rate data and are instead using the forward premium to measure the spread, this is not possible.

exchange market pressure, as does faster economic growth in the US. The rate of US domestic credit expansion has the correct sign but is insignificant in every specification of the regression. Perhaps this is due to the well known fact that during the period the USA was not playing by the rules of the game since it was sterilizing the effect of its payments surpluses on its money base.

What is most interesting about this last regression is the correct and significant signs on $\Delta E[dx_t]/dt$ and $\Delta E[dc_t]/dt$. Significantly, an increase in realignment expectations, $\Delta E[dc_t]/dt$, increased pressure against the Pak-Rupee. This pressure, according to the definition of EMP, takes the form of depreciation of the Pak-Rupee within the band, or a reduction in foreign exchange reserves to protect the Pak-Rupee, or both. What is happening is that a rise in $E[dc_t]/dt$ – an increase in either the probability or the magnitude of the expected devaluation of the Pak-Rupee – is encouraging capital outflows which in turn put pressure on the State Bank of Pakistan to intervene. Importantly, this speculative pressure is additional to the pressure exerted by the fundamental variables in the regression equation; the rates of domestic credit expansion and real income growth in Pakistan and the USA, and the real exchange rate.

Figure 3 plots the contributions to exchange market pressure from the significant terms in the final specification of our estimation (column D). The solid line shows the dependent variable, EMP. The pressure on the Pak-Rupee in that period was such that EMP took four of its five lowest values. Focusing on the period after globalization several points are noticeable. First, domestic credit growth in Pakistan and the US were always acting to reduce exchange market pressure on the Pak-Rupee (the relevant bars are always positive in the final twenty months of the peg). Conversely, the real exchange rate is always adding to the pressure. The remaining two terms – changes in the expected reversion within the band and changes in the expected devaluation – regularly switch signs. Most significantly, however, in the critical final two months of the peg devaluation expectations were adding hugely to the pressure on the Pak-Rupee. Indeed, if we exclude the effect of changes in devaluation expectations, pressure would have turned positive on it and been only slightly negative after it.

4. Conclusions

Our main finding is that exchange market forces against the Pak-Rupee while it was operating a peg to gold and through it to the US dollar during the 1965-1971 period is quite well explained by the models that we used. Furthermore, we found that devaluation expectations had statistically and economically significant explanatory power in addition to the behavior of the fundamentals of the Pakistan economy. The main implication of this latter finding is that disciplined management of fundamentals even over a minimum period of time may not be enough to maintain a currency peg. As capital outflows from Pakistan during this period were not necessarily driven by fundamentals, perhaps the peg could have been saved by the imposition of capital controls. Put differently, we found that the “unholy” trinity of a pegged exchange rate, open capital markets and an independent monetary policy may not be viable even when monetary policy appears to be disciplined. Therefore, such an unfortunate experience is relevant to the choice of an exchange rate regime for a country like Pakistan.

*Appendix-A***Table-1: Expected change of the exchange rate within globalization period**

Constant	0.854 (1.860)
X	-0.622 (3.53)
R ²	0.810
Standard error	0.00197

Notes: Monthly data. Figures in parentheses are t statistics computed with GMM standard errors to account for serial correlation induced by the overlapping observations. The Dickey-Fuller test is of the hypothesis that $\alpha = 0$. As the DF 5% significance critical value is 2.076 we accept that α is negative.

Table-2: Descriptive Statistics

Series	Mean	Min	Max
Change in Pakistan reserves	0.03%	-0.39%	0.47%
Change in US Reserves	1.88%	-15.14%	17.29%
Change in Pakistan domestic credit	-1.03%	-4.10%	7.27%
Change in US domestic credit	-1.59%	-38.03%	62.07%
Change in Pakistan industrial prod	-5.03%	-236.82%	260.19%
Change in US industrial prod	-2.39%	-26.18%	21.14%
Pakistan inflation	-5.83%	-21.87%	5.99%
US inflation	-2.27%	-6.78%	0.91%

Notes: All values given in annualized percentage form.

Data collected from:

Various Survey Reports, State Bank of Pakistan

Pakistan Economics Survey Reports, Ministry of Finance,
Government of the Pakistan, Various annual Issues International
Financial Statistics, various issues

Table-3: Exchange market forces on the Pak-Rupee-dollar exchange rate in Globalization Period

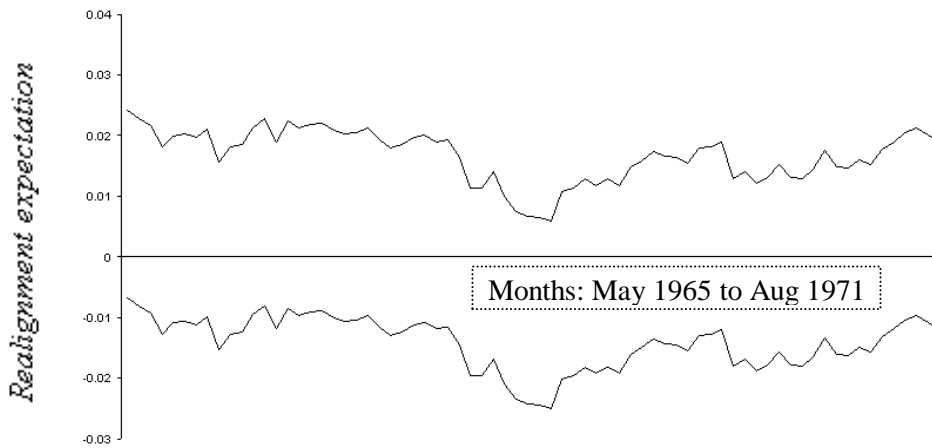
	(A)	(B)	(C)	(D)
Constant	-0.001 (1.177)	-0.0001 (0.132)	-0.001 (1.256)	-0.0002 (0.327)
Δd	-1.240 (2.195)*	-1.366 (2.408)* *	-1.398 (2.431)* *	-1.460 (2.822)* *
Δd^*	0.083 (0.716)	0.069 (0.538)	0.095 (0.798)	0.101 (1.001)
$\Delta y - \Delta y^*$	0.001 (0.032)		-0.003 (0.798)	
Δy		0.009 (0.351)		0.002 (0.117)
Δy^*		-0.306 (1.996)*		-0.272 (1.980)*
Θ	-0.416 (2.883)* *	-0.824 (3.404)* *	-0.501 (3.466)	-0.849 (4.157)* *
Δ	-9.086 (3.524)* *	-9.477 (3.692)* *		
$\Delta E[dx]/dt$			-2.300 (4.542)* *	-2.087 (5.375)* *
$\Delta E[dc]/dt$			-1.690 (2.472)* *	-1.797 (2.445)* *
Adj-R ²	0.053	0.002	0.192	0.304
Standard error	0.0055	0.0057	0.0051	0.0047

Q-statistic	22.61	17.18	29.40	23.64
P-value	0.26	0.58	0.06	0.21
$H1 \Delta d = -1$	0.67	0.52	0.49	0.37
$H2 \Delta d = -1$ and $\Delta d^* = 1$	0.00	0.00	0.00	0.00

Notes: Δd denotes the growth of domestic credit (domestic credit defined as base money less reserves), and Δy denotes the growth in income as proxied by industrial production. An asterisk denotes a foreign (US) variable. θ is Pakistan's real exchange rate, and δ denotes the growth in the interest rate differential as proxied by the forward premium. $\Delta E[dx_t]/dt$ and $\Delta E[dc_t]/dt$ denote respectively changes in the expected movement of the exchange rate within the band and changes in devaluation expectations. The figures in parentheses beneath the parameter estimates are t -statistics derived using GMM standard errors robust to serial correlation and heteroskedasticity* significant at the 5% level.** significant at the 1% level. Some descriptive and diagnostic statistics are reported beneath the parameter estimates. Adj- R^2 gives the adjusted coefficient of determination. The next row gives the standard error of the estimated equation. Q-statistic denotes the Q-test for serial correlation of up to 19 lags, and the P-value statistic gives the significance level of the Q-statistic. The figures $H1$ - $H2$ denote the significance of chi-squared tests of coefficient restrictions. $H1$ imposes the constraint that the coefficient on the growth of domestic credit is -1 . $H2$ imposes the restrictions that the coefficients on Pakistan and US domestic credit growth are equal to -1 and $+1$ respectively.

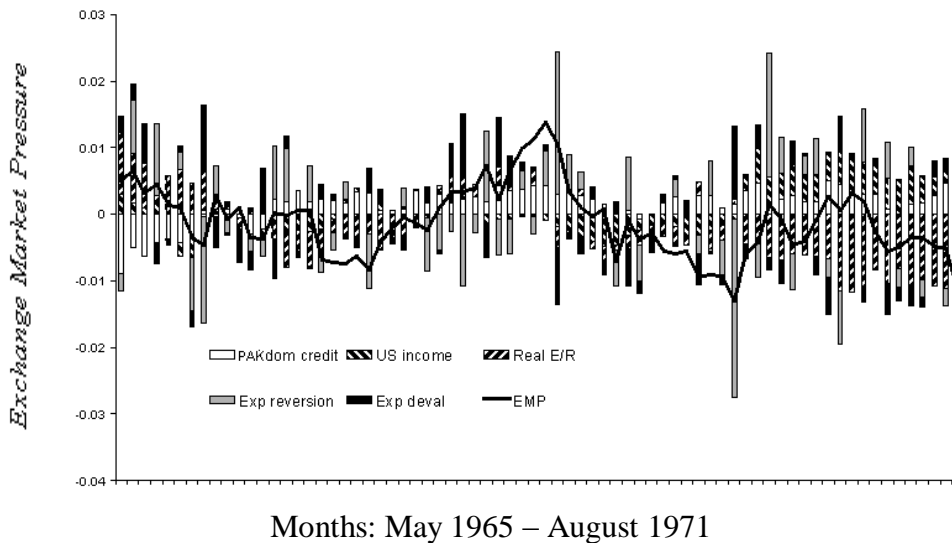
Appendix-B

Figure 2: Estimated realignment expectation 95 percent confidence intervals



Note: Vertical axis: Calculated realignment expectation - multiply by 100 to obtain in percentage terms. Realignment expectation = size of exchange rate change multiplied by the probability of occurrence.

Figure-3: Contributions to exchange market forces



Note: see equation 5

References

- Alam, S. Butt, M. S. and Iqbal, A. 2002, "The Long-Run Relationship between Real Exchange Rate and Interest Rate in Asian Countries: An Application of Panel Cointegration", *Pakistan Development Review*, 40:4, Part II, 577-602.
- Bertola, G. and Svensson, L.E.O. 1993, "Stochastic Devaluation Risk and the Empirical Fit of Target-Zone Models", *Review of Economic Studies*, 60, 689-712.
- Capie, F. and Webber, A. 1985, A Monetary History of the United Kingdom, 1870-1982, volume 1, Data Sources, and Methods, London, Allen and Unwin.
- Cairncross, A. and Eichengreen, B. 1983, Sterling in Decline: the devaluations of 1931, 1949 and 1967, Blackwell, Oxford.
- Darvas, Z. 1998, "Spurious Correlation in Exchange Rate Target Zone Modeling: Testing the Drift Adjustment Method on the US Dollar, Random Walk and Chaos", *CEPR*, Discussion Paper 1890.
- Eichengreen, B. Rose, A. and Wyplosz C. 1996, "Speculative Attacks on Pegged Exchange Rates: an Empirical Exploration with Special Reference to the European Monetary System", in M.B. Canzoneri, W.J. Eithier and V. Grilli (eds), The New Transatlantic Economy, Cambridge University Press, Cambridge.
- Eichengreen, B. 1992, Golden Fetters: The Gold Standard and the Great Depression, 1919-1939, Oxford University Press, Oxford.
- Einzig, P. 1937, The Theory of Forward Exchange, MacMillan, London.
- Federal Reserve Board, Board of Governors of the 1943, *Banking and Monetary Statistics, 1914-1941*, Washington D.C.
- Hallwood, P. MacDonald, R. and Marsh, I.W. 2000, "Realignment Expectations and the US Dollar: Was there a Peso Problem?" *Journal of Monetary Economics*, 46, 605-620.

- Krugman, P. R. 1988, "Target Zones and Exchange Rate Dynamics", *NBER Working Paper 2481*, Cambridge MA.
- Krugman, P.R. 1991, "Target Zones and Exchange Rate Dynamics", *Quarterly Journal of Economics*, CVI (3), 669-682.
- Miller, M. and Weller, P. 1991, "Currency Bands, Target Zones and Price Flexibility", *IMF Staff Papers*, 38, 184-215.
- Mizrach, B. 1995, "Target Zone Models with Stochastic Realignment: An Econometric Evaluation", *Journal of International Money and Finance*, 14 (5), 641-57.
- Officer, L. 1993, "Gold-Point Arbitrage and Uncovered Interest Arbitrage Under the 1925-31 Dollar-Sterling Gold Standard", *Explorations in Economic History*, 30, 98-127.
- Peel, D.A. and Taylor, M.P. 2002, "Covered Interest Rate Arbitrage in the Interwar Period and the Keynes-Einzig Conjecture", *Journal of Money and Credit and Banking*, 34(1), 51-75.
- Sarno, L. and Taylor, M. 2002, The Economics of Exchange Rates, Cambridge University Press, Cambridge.
- Spolander, M. 1999 "Measuring Exchange Market Pressure and Central Bank Intervention", *Bank of Finland Studies E:17*.
- Svensson, L.E.O. 1991, "The Simplest Test of Target Zone Credibility", *IMF Staff Papers*, 38, 655-65.
- Svensson, L.E.O. 1993, "Assessing Target Zone Credibility: Mean Reversion and Devaluation Expectations in the ERM: 1979-1992", *European Economic Review*, 37, 763-802.
- Tanner, E. 2001, "Exchange Market Pressure and Monetary Policy: Asia and Latin America in the 1990s", *IMF Staff Papers*, 47 (3), 311-333.
- Weymark, D.N. 1995, "Estimating Exchange Market Pressure and the Degree of Exchange Market Intervention for Canada", *Journal of International Economics*, 39, 249-72.

Weymark, D.N. 1998, "A General Approach to Measuring Exchange Market Pressure", *Oxford Economic Papers*, 50, 106-21.

Book Review

Bhagwati, Jagdish, *In Defense of Globalization*, Oxford University Press, New York, 2005, pp 308, Price US \$ 15.95.

The style is lucid in this provocative book and the author captures the reader's attention throughout. Yet anyone anywhere including Jagdish Bhagwati who claims that extreme inequality is benign and good for the poor simply cannot by any means be taken too seriously, 'evidence' and analysis notwithstanding. Bhagwati, a Columbia University economics professor and author of many books on trade, has a brilliant intellect no doubt, but his thinking and ideas to my mind seem somewhat misdirected.

Globalization is a buzzword that has no exact definition. It reflects several meanings, and has its ardent supporters and fervent detractors. Indeed the term is so nebulous and vague that it is possible to be both for and against the phenomenon simultaneously.

The book under review focuses on its economic dimension, defined by the author as 'diverse forms of international integration such as foreign trade, multinational direct foreign investment, movements of 'short term' portfolio funds, technological diffusion, and cross-border migration.' His main contention is that economic globalization is an unambiguously good thing, with the rare downside that thought and effort can lessen. His next theme is that globalization does not need to be given a 'human face', in fact it already has one, he claims. He attempts to prove this point but is not that convincing in the final analysis.

Opposition to globalization is the first thing he tackles and it begins very defensively. The first chapter is entitled 'Anti globalization: Why?' The author defends his approach by saying that without understanding why globalization has raised the heckles of so many, we cannot seek to defend, sustain and deepen globalization. Rather than focusing on the arguments of critics, he tends to talk about how it manifests itself in the main.

The book takes up cudgels against a host of charges against globalization: that it increases poverty, child labor, is harmful for women,

jeopardizes democracy, threatens culture, lowers wages, is detrimental to labor standards, leads to environmental degradation and gives a pink ticket to predatory corporations. He in no uncertain terms maintains that the benefits of globalization outweigh the costs without exception. Bhagwati also talks about capital market liberalization and international migration and then sets out to attempt to provide solutions to globalization's weak points: improving governance, hastening social agendas and controlling the speed of transitions. He concedes a few points to globalization's critics, but tries to argue against most of the allegations. The author however doesn't say 'I think' or 'I believe' but instead 'I would argue', and then doesn't. He seems to lack understanding of what it means to argue a point and hence does not win over critics from the other side of the camp.

Bhagwati for the sake of clarity and convenience, divides critics of globalization into two fundamental categories. The first are those die hard antagonists of market capitalism, anti establishment and according to the author, not open to serious argument. The other consists of what he terms well-meaning but poorly informed critics. It is to the latter that he addresses his book and gives the semblance of taking their charges seriously.

To this end he provides an analysis of the role of nongovernmental organizations (NGOs) in international decision making. Western NGOs and NGOs in the developing world often have diametrically opposing views on matters of economic interest such as the extension of WTO authority to global labor and environmental requirements. Yet because of their financial clout and better funding wealthy NGOs more often than not have the final word when it comes to policy formulation.

To the criticism that globalization increases poverty, Bhagwati dismisses it with one word 'rubbish'. The 'argument' he presents to support his case no way detracts from the harsh reality and is not persuasive in the least. The other related criticism is that globalization brings a flood of cheap imports into developed countries, thus reducing the relative wages of unskilled workers who are overnight compelled to compete with inexpensive labor in the developing world. Bhagwati counters this by saying that globalization delivers new capital and technology to developing countries and it may actually raise wages and shift production away from labor intensive goods. He however is less enthusiastic about the free movement of capital across national borders.

A little too often the author insists the problem lies with the policies which are at fault. Albeit certain of his arguments can be considered as persuasive, he is less successful in his efforts to offer feasible policy alternatives that have the potential of improving existing conditions. Another ‘flaw’ in the book is his use of frivolous and trivial comparisons such as the ludicrous example of anti globalization critics blaming a romantic break up on globalization. Anti globalization critics need to be taken more seriously as they have valid, sound arguments for their stand point. Such comparisons, interspersed throughout the book, although an attempt to be ‘humorous’ simply dilutes the seriousness and weightiness of the issues at hand. Also, Bhagwati does not give readers the space to judge for themselves. He thinks he deserves the benefit of all doubts.

In sum, one gets the impression that so taken up by being pro-globalization is the author, that he readily provides alibis for each and every flaw and weakness of the phenomenon. Alibis unfortunately which fail to convince.

**Lahore School of Economics
Lahore**

Nina Gera

Notes for Authors

1. Manuscripts will be accepted for consideration on the understanding that they are original contributions to the existing knowledge in the fields of Economics, Banking, Current Affairs, Finance, Political Economy, Sociology, and Economic History.
2. Manuscripts of research articles, research notes, review articles, comments, rejoinders and book reviews – in English only – should be sent in duplicate to the Editor, *The Lahore Journal of Economics*, 105, C-2, Gulberg-III, Lahore-54660 – Pakistan. **Electronic copies of the article in Microsoft word format should also be submitted as an email attachment to: nina@lse.edu.pk.**
3. The first page of the manuscript should have the title of the paper, the names(s) of author(s), and a footnote giving the current affiliation of the author(s) and any acknowledgments.
4. **Articles submitted to the *Lahore Journal* must include an abstract of about 100 words that summarizes the contents.**
5. The *Lahore Journal* will publish empirical papers only if the data used in the analyses are clearly and precisely documented and are readily available to the journal reviewer for purposes of replication. At the time of submission of papers that have empirical work, authors must provide to the *Lahore Journal*, the data in Microsoft EXCEL format required for the replication of results.
6. Detailed derivations of any main mathematical results reported in the text should be submitted separately along with the articles.
7. Each manuscript should be typed and should carry a margin of an inch and a half on the left-hand side and an inch on the right hand side of the typed page.
8. The graphic format for each mathematical formula, diagram, figure or chart should be in text mode for further editing.
9. Tables for the main text and each of its appendices should be numbered sequentially and separately. The title of each table should clearly

describe the contents. The source of the table should be given in a footnote immediately below the line at the bottom of the table.

10. Footnotes should be numbered sequentially.
11. All references used in the text should be listed in alphabetical order of the authors' surnames at the end of the text. References in the text should include the name(s) of author(s) with the year of publication in parentheses, and all references should conform to the style of the Journal. Further information on questions of style may be obtained from the Co-Editor, *The Lahore Journal of Economics*, Lahore – Pakistan.
12. Book Reviews should give a description of the contents and a critical evaluation of the book. It should not exceed 5 or 6 typewritten pages.
13. Each author will receive two complimentary copies of *The Lahore Journal of Economics*.

THE LAHORE JOURNAL OF ECONOMICS

Lahore School of Economics

105-C-2, GULBERG III LAHORE, PAKISTAN. TEL: 5714936 FAX: 5714936

SUBSCRIPTION FOR PUBLICATIONS

1. Kindly enter a subscription for the following publication of the Lahore School of Economics:

Publication	Yearly subscription (within Pakistan) Payment	Yearly subscription (outside Pakistan)	Period (No. of years)	Total
1. The Lahore Journal of Economics	Rs. 600.00	US \$ 50	

2. The subscription is to be in the following name and address:

Name:

Address:

.....

.....

3. A crossed cheque/demand draft for the sum of Pakistan Rupees/US \$ _____ is enclosed made out in the name of The Lahore School of Economics to cover the above subscription.
4. Please address your order to: Nina Gera, Publications, Lahore School of Economics, 105-C-2, Gulberg III, Lahore 54660, Pakistan.

Signature:-----

Name:-----

Date:-----

The Lahore School of Economics

The Lahore School of Economics (established 1993) is one of Pakistan's leading centres of learning for teaching and research in economics, finance and business administration. The Lahore School of Economics' objectives include: (i) The training of young Pakistanis as professional economists, finance managers, accountants, financial analysts, bankers and business executives, and (ii) Undertaking research in economics, management, finance and banking to further deepen the understanding of major economic facts, issues and policies.

The Lahore School was granted a Charter in January, 1997 by an Act of the Provincial Assembly of the Punjab: The Lahore School of Economics Act 1997 (Act II of 1997). The Charter vests the powers of an independent degree granting institution to The Lahore School.

The Lahore School has both undergraduate and graduate programs in economics, business administration and finance. Its postgraduate program leading to the MPhil and PhD degree is administered through the Lahore School's Centre for Research in Economics and Business (CEREB). The student body and faculty are both national and international.

The Lahore School's publication program comprises The Lahore Journal of Economics (a bi-annual publication), a Seminar Paper Series and a Text Book Series. The Program encourages both in-house and external contributors.

For further information, please call (Pakistan 92-42-) 5874385 or visit the Web page: www.lse.edu.pk

Printed by Lahore School of Economics Press