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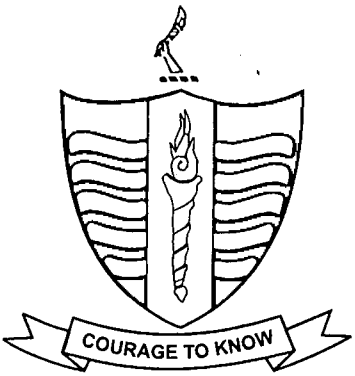

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DEMAND FOR MONEY: TESTING OF MILTON FRIEDMAN'S HYPOTHESIS (CASE STUDY OF PAKISTAN)

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ABSTRACT

This paper aimed at testing of Milton Friedman's hypothesis. For this purpose money demand function has been estimated for the period 1972 to 1995. It has been found that both the estimated coefficients of real income (Yt) and interest rate are statistically significant in linear form as well as log – linear form. The real income is positively related while the interest rate has negative relation with the money demand. This paper further proved that the real income elasticity is greater than one, while interest elasticity is less than one.

I. INTRODUCTION

The demand for money function plays vital role in most theories of aggregate economic activities, particularly in the formulation and execution of effective monetary policy. Economic theory supports the notion that money demand is likely to be a stable function of income (Y), interest rate (i) and price (p), provided that the stability is predicted on an unchanging institutional environment. But financial liberalization is one of the major factors that affects the institutional environment and is thus likely to influence the stability of money demand relationship both in the long run and short run.

The stability of the money demand function is a pre-requisite for pursuing an effective monetary policy. A stable money demand function can predict accurately the impact of changes in money supply on real output. It has generally been argued that the financial liberalization alters the relationships between money, incomes, interest rates and prices and creates potential for instability in the money demand function. It is, therefore, crucial to study the impact of such reforms on the stability and predictability of the money demand function that has a close link with the effective conduct of monetary policy.

In Pakistan, during the decade of 1980 many changes in the area of banking practices and exchange rate regime were witnessed. The transition from fixed exchange rate to managed floating exchange rate and introduction of Profit and Loss Sharing (PLS) has reformed the financial sector with a shift from direct to indirect monetary controls and

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liberalization of interest rate. In the past, monetary policy in Pakistan relied on the rationing of credit, thereby directly affecting the availability of the credit. With liberalization, credit rationing has been relaxed and the rule of market forces in the allocation of credit flows has been enhanced. Thus the channels through which monetary policy affects the domestic economy have tended to shift from direct controls to market based instruments. How, then, changes and reforms have affected the stability of the demand for money in Pakistan? Is a long run stable equilibrium relationship between money, income, interest rate and prices still existing? What are the implications of financial reforms for the conduct and effectiveness of monetary policy? The main purpose of this study is to provide answers to these questions. Because a stable and predictable relationship between the targeted monetary aggregate and income is essential for a successful monetary policy. However, institutional changes in the financial sector may alter the interest and income elasticity of the demand for money.

The structure of the paper is as follows: Section 1 deals with the introduction while section 2 discusses the review of literature Section 3 of this paper explains research methodology and section 4 comprises of the estimation of the equations. Similarly, section 5 discusses policy implications of this paper and in last section summary and conclusions are given.

2. LITERATURE REVIEW

The role of monetary sector in determining the level of key macro economic variables like income, employment and prices is well established in the economics literature. The importance of monetary economics has inspired many economists to under take research in this field. A considerable empirical work in this area has been carried out on estimating and testing of the money demand function. A detailed survey of empirical studies on money demand is amply documented in Boorman's work (1976). In this study main issues involved in the estimation of the demand for money function with special reference to Pakistan have been discussed. Accordingly the money demand definition is important because it is related with the effective pursuit of monetary policy in the sense that the stability of the money demand function is closely linked to the degree of substitutability that exists between money, as defined in that function, and other financial assets (Boorman, 1976). If the improvement in the financial structure provides substitutes for currency and demand deposits, then, the demand for money, so defined, would reflect instability.

In the empirical studies on demand for money, the choice of narrow (M_1) or broad (M_2) money as dependent variable is controversial. Means of exchange play a major role in some theories of the demand for money i.e. individuals hold currency at low or zero interest rate, demand deposits in significant amount at higher rate to fulfill their transaction motives. While in other theories the demand for money is determined by asset motives. It is observed that individual holds assets in order to bridge the gap between receiving and making of payments and there are a variety of assets that could be used for this purpose. Thus money can be defined as that asset or set of assets which is best adopted for this purpose as it is easy to store, cheap to realize and relatively less risky as far as its market value is concerned. The degree of substitutability that exists between money and other financial assets, therefore, settles the issue of appropriate and generally acceptable definition of money. It is assumed that currency and demand deposits are sufficiently close substitutes and thus the degree of substitutability between demand and time deposits is an empirical issue. In Pakistan, it was found that the degree of substitution exists between M_1 and the time deposits, and therefore, M_2 can also be used as a dependent variable. However, the use of M_2 involves certain problems like the M_2 definition of money includes components as different as currency and time deposits, so its change cannot possibly be explained by the same set of factors. Moreover, such monetary aggregates are more difficult to control. In order to avoid controversy between demand for narrow money and broad money, majority of the studies have used both M_1 and M_2 as the dependent variable (Akhtar, 1974, Abe et al., 1975 and others).

It is argued that the monetary authorities determine the nominal stock of money on the supply side of the market, while the real money demand is determined on the demand side (Boorman, 1976). In most of the econometric studies on money demand function, the nominal money demand is deflated either by the price level or population or both. This is done to isolate the effect of changes in the demand for money balances resulting from changes in the price level or population (Abe et al., 1975). When the monetary aggregates are defined in real terms, it is assumed that the price elasticity of nominal money balances is unity, that is the demand for money function is homogeneous of degree zero in general prices. The implication of this assumption is that price level changes alone will cause no change in the demand for real balances or alternatively the demand for nominal money balance is proportional to the price level. It also implies that public is free of money illusion in its demand for real balances.

The money demand function has been widely used in both developed as well as developing countries. However, the choice of an appropriate scale variable as an argument of the demand function is still controversial. The level of income is often thought to be the relevant proxy for the volume of transaction in the economy, and therefore, plays an important role in empirical tests of transaction based theories of the demand for money. Sometimes consumer expenditure has been used as a transaction proxy. However, when money is used as a productive asset or a durable consumer good, a wealth measure is generally proposed as the relevant explanatory variable in the demand for money function. In statistical work, the permanent income is employed as proxy for wealth concept that includes the present value of the expected future income. It has been accepted in the developed economies (Boorman, 1976), while in developing countries this argument remains inconclusive.

Next we observe whether the rate of interest is an important opportunity cost variable or not. If yes, then which measure should be used as an opportunity cost variable. There are different opportunity cost variables that are included in the demand for money function such as yields on assets other than money, the yield on money itself and the expected rate of inflation. In developed countries, the interest rate elasticity have been found significant (Bahmani Oskooee, 1991), therefore, the issue is related with determining which interest rate represents true opportunity cost of holding money. By contrast, it has been argued that in developing economies because of the relative thin and controlled money markets, where returns are not determined by the free play of the market, rate of return does not represent the true opportunity cost of holding money.

The importance of the rate of interest in the money demand function is evident from the empirical work cited above. However, there is still disagreement as to which empirical measure should be used to represent the nominal yield to be earned on holding assets other than money. A comparison of the empirical studies determining the best interest rate to be included in the money demand function is rather difficult as these studies comply data from different time periods, specify different dependent variables and include dissimilar constraints within the function. The fact is that theory provides little guidance on this issue. It has been usually argued that the long term interest rate represents the average rate of return on capital in the economy at any time and therefore, it is a good indicator of the general opportunity cost of holding money, whereas the short term maturity instruments are close substitutes for money than long term bonds, so that the yield on them is particularly

relevant among the alternatives foregone by holding cash (Boorman, 1976).

In Pakistan, Ahmad and Khan (1990) have suggested that the inter bank call money rate is a more relevant opportunity cost variable with the M_1 specification as it lends stability to the function, whereas time deposits rate appears to be the relevant opportunity cost variable with M_2 specification. Also, the use of multiple interest rates provide stability to the demand for money function. Akhtar (1974) found inter-bank call money rate an important variable in explaining variation in the demand for money. Abe et al (1975) found significant impact of inter bank call money rate only for M_1 specification.

The other related issue is the measurement of the expected inflation. Usually it is measured as an exponentially declining weighted average of the current and past values of the actual inflation rate. In Pakistan, influence of the expected inflation rate on the demand for money has been studied by using various measures. The actual inflation rate as a proxy for expected rate of inflation has been used by Akhtar (1974) and Abe et al. (1975). Akhtar (1974) found that the impact of the actual rate of inflation was insignificant for the period upto 1971, because the rate of inflation was low. But its impact was significant for the post 1971 period when the inflation rate was well above 10 percent. It can therefore be concluded that the inflation rate is an appropriate argument in the money demand function during the high inflationary period. Abe et al (1975) have also estimated the expected inflation rate on the demand for money function for the pre-1971 period. It is, however, surprising that the result is contrary to earlier studies.

3. RESEARCH METHODOLOGY

Using Milton Friedman's approach, the following five factors determine the demand for money.

i) Utility of money balances,
ii) Price level
iii) Level of real income
iv) Rate of interest, and
v) Rate of change in the price level.

These factors can be written in the following function form;
$Md = f(U, P, y, i, dP)$
U = Utility of money balances
P = Price level

Y = Level of real income
i = Rate of interest

From the above function two factors such as utility (U) and the rate of change in the price level (dP) could be dropped for two simple reasons. First, it may generally be assumed that the utility of money balances (U) is stable. Second, the evidence suggests that the rate of change in the price level (dP) must be very large and prolonged before it appreciably affects the demand for money. Making these two adjustments the money demand function will become as:

$Md = f(y, i, p)$ OR
$Md = a_1 + a_1y + a_2i + a_2p + U$

When we write the above function in a specific equation form, it clearly becomes a hypothesis that may be subjected to empirical investigation i.e. it may be tested with the tools of regression analysis.

Next, we divided both sides of the above equation by the price level (P), which gives:

$$M/P = a_3 + a_1Y/P + a_2i/P$$

Note that the term on the left hand side of the equation is the real money balances. Treating real money balances as a single variable, we can then take log at both sides of the equation, which gives:

$$\text{Log } M/P = \text{Log } a_3 + a_4\text{Log } (y) + a_5\text{Log } (i)$$

This equation is the basic form assumed by most of the empirical studies of the money demand function. In this equation each of the variable M/P, y and i is an observable real world phenomenon for which we have data. It is only necessary to calculate these variables in log form and then apply the standard technique of regression analysis. The results of regression analysis will then give us the estimated value of a_1, a_2 and a_3. These values and the usual regression concepts such as R^2 and tests of significance will then be either consistent or inconsistent with Milton Friedman's hypothesis "the nature of the demand for cash balances."

It is necessary to note two properties of logarithms that make them particularly useful for empirical work in economics. Firstly, many relationships in economics are better described by a curve than a straight line. A demand function, for example, which relates price and quantity demanded will be curved typically. Since the type of regression equation

most easily fitted to data is a straight line, the difficulty lies in trying to estimate a curve with regression analysis. One way around this difficulty is to first take the logs of the original data and then fit a straight line regression to these logs. The reasons is that a logarithmic transformation of many curves will turn out to be a straight line and the property ad logs is concerned with the economic concept of elasticity. By elasticity we mean that percentage change in one thing related to (divided by) the percentage change in another thing. For the estimation of equation involving logs, the elasticity is simply the coefficient on the log of the explanatory variable.

4. DATA SOURCES

We have used data for the period 1972-7 to 1994-95 in our empirical study to examine the behavior of the money demand function. The principal sources of data are:

i) Pakistan Economic Surveys, Government of Pakistan, Finance, Division, Economic Advisory Wing (various issues).
ii) Annual Reports, State Bank of Pakistan (various issues).
iii) Monthly Bulletin of Statistics, State Bank of Pakistan (various issues).

5. ESTIMATION OF MONEY DEMAND FUNCTION

The purpose of this paper is to discuss the results of estimating the money demand function. A sample period from 1972-1973 to 1994-1995 is used and Ordinary Least Square (OLS) method is applied for the estimation of money demand equation; Following the procedure developed in previous section, the money demand function is a regression of money demand on income (Y), price level (P), interest rate (i) and an intercept term. The equation for money demand in simple linear form gives the following results:

Estimation of Money Demand Function in Sple Linear Form:

$$Md = - 59.82 + 0.098Y + 1.23p - 3.11i,$$
$$\quad\quad (-0.69) \quad (5.54) \quad (2.91) \quad (0.37)$$

$R^2 = 0.98$
D.W = 1.97

Where:

Md = Demand for money
Y = National income
P = Price level
i = Interest rate

The results of this equation are satisfactory. The adjusted R^2 is very high (0.98). All variables except the interest rate have significant coefficients. The coefficients of both income and price level are statistically significant at the 5 percent level. The t-ratio is given in parenthesis directly below the value of the relevant coefficient. Moreover, the algebric signs of these coefficients as Friedman hypothesized them are positive (+) for real income and negative (-) for the rate of interest.

Next, to get the results of money demand function in elasticity form, we have taken logs on both sides of the equation and re-estimated it. The results are as follows:

Estimation of Md function in Log Linear Form:

$$LMd = -3.08 + 1.03\ LY - 0.26\ Li$$
$$(-4.04)\quad (7.80)\quad (1.92)$$

$R^2 = 0.98$
D.W. = 2.08

Where:

LMd = Log of money demand
LY = Log of real income
Li = Log of interest rate.

The results of the estimated equation satisfy the Milton Friedman's hypothesis. The adjusted R^2 is very high (0.98) and the coefficients on income and interest rate are statistically significant at the 5 percent level of significance. The algebraic signs of these coefficients, as Friedman hypothesized them are positive (+) for real income and negative (-) for the rate of interest.

Since the numerical values of the coefficients in a logarithmic equation show their elasticity estimates. Therefore, the coefficient on log Y (Lyt = 1.03) is thus to be interpreted as the elasticity of the demand for real money balances with respect to real income. It explains that if real income rises by 1 percent, the demand for real money balance will rise by

1.03 percent. This is exactly in accordance with Friedman's hypothesis that cash balances were a luxury good and elastic with respect to income. On the other hand the coefficient on log of interest rate (Li = -0.26) is quite low and explains that the demand for real balances with respect to interest rate is inelastic. It also shows that one (1) percent increase in the interest rate leads to a decrease in demand for money by 0.26 percent. The finding that the demand for money is interest inelastic, is regarded as very significant by modern quantity theorists. They also argue that the demand for money is not very responsive to changes in the rate of interest, contrary to the criticisms of the J.M. Keynes on the quantity theory.

Furthermore, to see the stability and dynamic position of the money demand function, dependent variable is used as a lagged variable. To assess the effect of inflation, LP is used as an additional variable in the model. It is a Koyck transformation type model and the re-estimation of the function is given in the following equation:

Estimation of M_2 Function using Dependent Variable as a Lagged (I):

$$LMd_2 = -2.13 + 0.59LY + 0.7Li + 0.09LP + 0.51\ LMd_{t-1}$$
$$(-3.11)\ (3.48)\quad (0.57)\quad (0.81)\quad (2.87)$$

$R^2 = 0.99$
DW = 1.86

This equation shows the coefficients of both real income (LY) and dependent variable lagged one period (LMd) are significant at the 5 percent level of significance. The inflation and interest rate are not playing any significant role in determining the demand for money. It also shows that the demand for money function is stable both in the short run as well as in the long run.

If the inflation level is excluded from the function, the same results from the computation of the equation are obtained. The estimation is given in the following way:

Estimation of M_2 Function using Dependent Variable as a Lagged (II):

$$LMd_2 = -1.92 + 0.57\ LY + 0.03\ Lit + 0.56\ LM_2d_{t-1}$$
$$(-3.05)\ (3.42)\quad (0.28)\quad (3.51)$$

$R^2 = 0.99$
D.W. = 1.83

The estimation of the money demand function is presented in linear form, log linear form and dependent variable is also used as an explanatory variable. All the estimation shows that real income (Yt) plays vital role in the determination of the money demand function. On the other hand, the inflation level and the interest rate are not very important in determining the money demand.

6. POLICY IMPLICATIONS AND FORECASTING

The policy implication of the estimated money demand function shows that the money demand function is stable and also elastic with respect to the level of real income. So whenever the monetary authorities are interested in making certain policies towards demand for money or supply of money, they should keep in mind the elasticity of the money demand function. On the other hand, the elasticity of money demand with respect to interest rate is inelastic which may be due to the checks imposed on the interest rate from the central authorities. In recent years, the government has undertaken financial sector reforms that include a shift from direct to indirect monetary control.

In developing countries like Pakistan, the absence of a well developed financial sector has seriously hampered the role of monetary policy and its effectiveness. Keeping in view the unsatisfactory financial environment prevailing in the country, financial sector reforms program was undertaken in the end of 1989 with aims to:

i) Facilitate efficient and effective monetary management through the introduction of indirect monetary controls to replace the use of credit ceiling policy.
ii) Remove distortions and segmentation of financial markets by creating a homogeneous market for government debt instruments.
iii) Switch from an administered interest rate setting to market based interest rate determined by initiating a regular auction program of government debt; and
iv) Create and encourage the development of a secondary market for government securities.

In general, the objectives of financial liberalization under taken by the government were to enhance the effectiveness of monetary policy through a greater reliance on market forces.

It also deals with the forecasting accuracy of the estimated equation of the money demand function. To evaluate the predictive power of the function the normal practice is to compare the actual series of the

estimated equation with the predicted series of the equation. The forecasting is based on five (5) observations from 1991 to 1995. The comparison of the actual and predictive values is given below.

Static Forecast Based on Fixed Initial Values CO-AR (1)
Regression of LM, on
A, LY, Li, 18 Observations Used From 1973 to 1990

Observations	Actual	Prediction	Error
1991	6.5303	6.604	-0.733
1992	6.5414	6.472	0.069
1993	6.5474	6.498	0.049
1994	6.543	6.634	-0.91
1995	6.694	6.649	0.045

The summary statistics for evaluating the predictive power are given below:

Summary Statistics for Static Forecasts:
Mean Prediction Errors = -0.00925
Mean Sum Absolute Prediction Error = 0.0012
Root Mean Sum Square Prediction Errors = 0.035
Predictive Failure Test = F (5-13) = 0.34
Structural Stability Test = F94-14 = 0.44

For evaluating the predictive accuracy of the estimated equation. All these statistics evaluate forecasting accuracy of the estimated equations. These criteria basically compare the actual time series with the predicted ones. Although all the above mentioned criteria can be used but the Predictive Failure Test (Chows 2nd Test of adequacy of Predictions) has been applied to judge the forecasting accuracy of the estimated equation of the money demand function. The Chow's Predictive Failure Test shows that the actual and predicted series are very close to each other. The test also indicates that calculated F-statistic is lower than the tabulated value at the 5% level of significance. From these results it can be easily concluded that estimated equations has good predictive power and can be used for forecasting the money demand function and formulating the policy implications.

7. SUMMARY AND CONCLUSION

The major objective of this paper has been to estimate the money demand function for Pakistan and to test the Milton Friedman's Hypothesis. For this purpose the annual data for the period 1972-1973 to 1994-1995 has been used. The money demand function has been

estimated in linear form, log linear form and lagged form. Real income, interest rate and prices are used as explanatory variables and the money demand as an endogenous variable. Ordinary Least Square (OLS) technique was used for the estimation of the structural equations of the money demand function.

The results of the regression analysis of the structural equations of the money demand function are reported in section 4. The coefficients of real income (Y) and interest rate (i) are statistically significant in the both linear form and the log linear form estimations. The real income is positively related and the real interest has negative relation with the money demand. This exactly supports the Milton Friedman's hypothesis. This paper further emphasizes that the real income elasticity is greater than one, while the interest rate elasticity is less than one. This is proved from the estimation of the money demand function in log linear form.

So the estimation of the money demand function leads to the following main conclusions:

1. Consider the numerical value of the co-efficient, log Y (LY i.e. 1.03), it explains that an increase in real income by one percent leads to an increase in the money demand by 1.03 percent. This result is supporting the Milton Friedman's hypothesis.
2. Similarly, the numerical value of the coefficient of interest rate (Li, i.e.
   -0.26) indicates that one percent increase in interest rate leads to a decrease in the money demand by 0.26 percent. The finding that money demand is interest inelastic, is very significant with modern quantity theorists.

To assess the stability and forecasting power of the estimated money demand function, the equation was re-estimated using the dependent variable as a lagged explanatory variable. We found that the real income plays significant role in determining the money demand function. In addition, to check the forecasting accuracy of the estimated equation, we tried the estimated equation for 5 observations, that is, data from 1991 to 1995 and found that the actual and predicted series are very close to each other with a small margin of error.

So we can conclude that this paper fully supports the hypothesis developed by Milton Friedman and find that the money demand function is stable one. It has important policy implications and can be used for forecasting the demand for money.

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CHILD LABOR:
A Management Paradox

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ABSTRACT

A number of studies have indicated that child labor practices are continued through bondage and low wages. The practice of child labor has many economic and social dimensions. The economic conditions of the developing countries involved and profit maximization goals of the corporations of developed countries alike make it real difficult to abandon child labor.

International Labor Organization (ILO) has been striving to discourage the evil practice of child labor. A number of conscientious concerns in the involved countries and UNICEF have also joined hands to curb exploitation of the children and bring forth solutions.

As long as business corporations continue to gain from manufacturing products through the use of child labor in developing countries and importing these products into developed world, it will be difficult to eliminate child labor completely. Many corporations of developed countries use subcontractors to avoid any direct liability in breaking child labor laws. Few corporations are adopting constructive measures to deal with the concerns for child labor. In this connection, Nike and Reebok have announced plans to build soccer ball factories in Pakistan that will only employ adults; and to develop education programs for children.

This study discusses the practice of child labor in selected countries and appoaches of corporations to take advantage of this situation. The study addresses the paradox between economic realities in developed and developing countries; and conscientious concerns for the rights of children. It recommends collective efforts of all concerned to resolve the situation.

1. INTRODUCTION

This is an age of international trade. People talk more of international markets than countries of the world. As multinationals increase their international trade operations and hence import and export transactions, their management has to face the paradox between the rights of working children in the production of goods and services and profit goals.

The concern for the elimination of child labor is getting more attention in developed countries day by day. The organizations for the rights of children are adopting a number of measures including the boycott of the products made through the use of child labor. However,

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some critics allege that the measures are more of management strategies to curtail the business pursuits of competitors.

The question remains: whose moral, economic and social responsibility is it when it comes to the health, education, wages, and free will of working children? In this connection, all countries have established laws against child labor. However, because of economic reasons, many developing countries have not been successful in totally eliminating the use of child labor. Child labor is quite frequent in Pakistan, India, Bangladesh, Brazil, Mexico, and in most African countries. Seasonal labor shortages and booming economics also attract children to work even in an affluent country like USA.

2. CONSCIENTIOUS CONCERN AND ECONOMIC REALITIES

Many countries of Asia like India, China and Pakistan have experienced expansion in their economies in this decade. There seems to be a shortage of workers because of this expansion. As a result children often find a job on a family farm or shop even before completing their compulsory education. Some organizations for the rights of children in developed countries consider this practice unacceptable.

Documentaries of children working in developing countries making shoes, shirts and rugs for sale in Paris or New York have been shown on television. These media campaigns have provoked call for trade sanctions and boycott against countries that exploit children. However some critics argue that grinding poverty and the lack of affordable schooling leave no choice for the children of developing countries but to start working as soon as they develop some sense (Fairclough, 1996).

In some countries like Bangladesh, India and Pakistan parents may sell their children to the owners of small business enterprises in exchange for debt owed, making it easier the exploitation of children on personal property basis. This practice is called bondage. International Labor Organization and conscientious people of the world consider bondage a form of slavery and have taken firm stands against bondage. According to ILO at least 15% of all 10-14 years old children in Asia work as bondage labor (Fairclough, 1996).

The demand of child labor is high in enterprises that produce cheap goods for the domestic market. Also, the competition from foreign companies and lack of cash to buy modern technology have forced small

businesses to use cheap child labor in order to have cost-effective production.

Consumers and other stakeholders in the west not wanting to be a party to the exploitation of children are increasingly advocating trade sanctions and boycotts to force companies stop hiring the child labor. Their efforts are echoed by labor groups who want to link international trade to the workers and children rights (Fairclough, 1996).

Almost all the involved developing countries have established certain laws against bondage and hazards on the work places for the working children because of the fears of sanction and boycott of their products in developed countries; and because of the pressures from ILO and UNICEF on human and legal grounds. However, the incompetent law enforcement inspectors and their corrupt practices have greatly undermined the application of these laws.

Many people consider sanctions and boycott as counter-productive efforts since they tend to undermine trade as an important engine of economic growth. It is alleged that sanctions may not be helpful since majority of working children is not involved with export-oriented industries. Trade sanctions can backfire in the form of counter-sanctions and lower demand of products from developed world because of lower income levels in developing countries as a result of their reduced exports.

3. CHILD LABOR AND THE UNITED STATES

The United States has the highest GNP of the world. It is also the most free trade nation and a champion of human rights. US Congress, administration and media all have responded to abandon the exploitation of working children.

The U.S. Department of Labor (DOL) imposes fines of up to $10,000 per employed minor for violating the provisions of the Fair Labor Standard Act. Also DOL is cracking down on violations that result in the death and injury of a working minor. The U.S. Fair Standard Act and comparable laws at state level contain strict regulations governing the employment of children.

It is asserted that many kids are safer working in a restaurant kitchen than they are in the streets. Federal law mandates that 14-15 years old children cannot work more than 3 hours on school nights. The law was enacted hoping that the children should be studying at homes.

However, it is alleged that in reality, the kids are involved in such activities that can not be termed as constructive as their homework.

The proponents of constructive child labor argue that working in safe environment teaches the kids how to work with people, develop the connection between work and reward, earn their tuition money, help contribute to household expenses, pay taxes, and stay out of street gangs. Restrictive laws hurt small business and nation's economic success (Reiland, 1994).

4. SENATOR HARKIN'S BILL OF 1972

In 1972, Senator Tom introduced a bill in the U.S. Congress to bar imports made by children. The measure induced panic among Bangladeshi garment makers. Faced with the potential loss of American sales that provided significant part of their revenues, the manufacturing enterprises laid off thousands of working children. However, ironically, UNICEF found many children ending up as prostitutes on the streets (Fairclough, 1996).

Harkin bill initiated serious efforts to solve the problem of child labor. After introduction of the bill, the management of the industries practicing child labor realized the severity of the issue and began to abandon the use of child labor. Most of the children working in industries were expelled but these children ended up wandering in streets. However, many U.S. corporations continued to import their supplies from the developing countries to take advantage of cheap child labor. It was easier for these corporations to market the imported products rather than facing stiff sanctions at home to produce locally through the use of cheap child labor.

5. SENATOR HOWARD METZENBAUM'S BILL (1991)

In March 1991, Senator Howard Metzenbaum introduced the Child Labor Amendments of 1991, noting that thousands of children in U.S. work at too young age, far too long hours and in unsafe working environment. It was asserted that the bill would strengthen the enforcement scheme for child labor law violations, close loopholes, and bar repeated violators from receiving federal grants, loans, and contracts. The bill required the publication of the names of violators and the nature of their violations. When Department of labor had inspected more than 3,000 businesses searching for child labor law violations in March 1990,

they uncovered violations in almost half the businesses and found 7,000 minors working illegally (Hayes, 1991).

Federal rules established several age segments and general minimum age of 14 years for employment and restrictions to certain occupations for 15 and 16 years old children. The children aged 16 to 17 can do any non-agricultural work that has not been declared hazardous. If an employer is found in violation of rules, each violation could cost $1,000. In the case of a wilful repeated violation, the Department of Labor can fine $10,000 per violation, as well as punishment of 6 months jail.

6. ATTITUDES OF DEVELOPED AND DEVELOPING COUNTRIES

Efforts to enforce child labor policies include labelling campaigns, in which labels are used to identify goods made without child labor; and community based initiatives in which industries adopt souring guidelines and provide a combination of incentives and disincentives. The incentives include educational services for children and improving the standard of living in the community. The ILO estimates that at least 115 million under the age of 15 years are employed world-wide. In some countries, children constitute upto 26% of the total labor force (Hasnat, 1995).

In recent years, developed countries have taken initiatives to eliminate child labor world-wide by linking international trade to the prohibition of child labor. The developing countries consider these initiatives to be disguised protectionism and claim that their exports are being curtailed under the cover of issue of child labor, in order to protect inefficiency and unproductive jobs in the developed countries. The developing countries advocate that though the basic cause of child labor may appear to be poverty, yet child labor is also rooted in their traditions, attitudes, and customs.

It has also been discovered that there are plenty of violations of child labor laws in U.S. and other developed countries. American state laws on child labor were initially enacted in the nineteenth century and the federal law became effective with the new Deal in the 1930s. Violations of child labor laws often involve 14-15 years old children working in hazardous occupations or suffering injuries on unsafe work sites.

The religious institutions are becoming quite active in their struggle to ensure the rights of children. In this connection, Catholic Bishops, National Council of Churches, and National Farm Worker Ministry in the United States have focused attention on conditions among

migrant farm workers in USA, including child laborers. These groups have threatened boycott and adverse publicity, compelling major U.S. food corporations to change a variety of their farm products buying policies.

7. CHILD LABOR PRACTICES IN SELECTED COUNTRIES

7.1 China And Hong Kong

In Hong Kong there is a fine of 10,000 Hong Kong dollars for illegal employment of children. The enforcement and compliance of child labor laws are rigorous. The special economic zones established in Mainland China are attracting foreign investment and production schedules are involving child labor because of labor shortages. Currently, children as young as age 10 years are working as assemblers in plants with maximum possible hours per day and wages that range from $10 to $31 per month. The use of child labor is justified because of growing labor shortage. The tough working hours, while acceptable to Mainland Chinese children striving to escape the harsh life on Chinese farms, are illegal under China's provincial labor laws. Chinese officials have increased pressure to stop the abuses of child labor (Lee, 1988).

In 1987 at least three million Chinese children left school to begin work, joining 37 million other child dropouts from schools in the city and the countryside (Christian Science Monitor, 1988). An increasing number of children leaving school below the legal working age may suggest the possibility of a growing child labor problem in Chinese society.

A new labor law published on July 6, 1994 (effective January 1, 1995), prohibits the employment of children under 16 years of age (Journal of Commerce, 1994). Previously, regulations promulgated in 1987 prohibited the employment of school age minors who had not completed the compulsory nine years of education (U.S. Department of State, 1994).

The enforcement of laws is sometimes difficult because of counterfeit identification cards. Asian-American Free Labor Institute (AAFLI) reports that underage workers in Southeastern China use counterfeit IDs to get jobs for adults. Some workers admitted that they were three or four years younger than the 16 years as certified on their ID cards (Asian-American Free Labor Institute, 1994).

7.2 India

It is alleged that India has the largest number of urban and rural child workers in the world (International Labor Organization, 1994). The Government of India acknowledges at least 17.5 million working children (International Labor Rights Education and Research Fund, 1994). Estimates by various organizations range from 44 million to over 100 million child workers (U.S. Department of labor, 1994).

The exact number of child workers in India's export industry is not known. Major export industries using child labor include hand-knitted carpets, gemstone polishing, brass and base metal articles, glass and glassware, footwear, textiles and silk, and fireworks. Children are also exploited as bonded laborers, particularly in the carpet industry. The South Asian Coalition on Child Servitude (SACCS) estimates that there are approximately 300,000 children working in the industry (Statement of South Asian Coalition on Child Servitude, India). It is estimated that children in the carpet industry range from 300,000 to 400,000 (American Embassy-New Delhi, 1992).

Article 24 of the Constitution of India prohibits employment of children less than14 years of age in factories, mines, or other hazardous employment. India has numerous laws pertaining to child labor. The Children (Pledging of Labor) Act, 1933 prohibits any agreement to pledge the labor of a child. Pledging means the taking of advances by parents and guardians in return for bonds of child labor.

In 1986, the Child Labor (Prohibition & Regulation) Act was promulgated to consolidate the various other child labor laws. It provides penalties for employing child labor; a uniform definition of "child" (14 years or under); machinery for proclaiming a list of prohibited occupations for children; and permission for any person to file a complaint against anyone employing children. Proscribed occupations include: carpet weaving, cloth printing, dyeing and weaving; and manufacturing of matches, fireworks, and explosives. The 1986 Act also limits child work for six hours between 8 a.m. and 7 p.m. with one day of rest per week, and provides penalties of imprisonment and fine up to 10,000 rupees for violations. For repeated offences, imprisonment can be granted up to three years (Dingwancey, Dogra, Vidyasagar, and Gupta, 1988).

7.3 Pakistan

Most Pakistani children work on the agricultural farms run by their families and village landlords. However, a large number of children also work in urban industries including weaving carpets, manufacturing surgical instruments, and producing sports goods for exports, There are allegations of children also working in other industries including leather processing, footwear works, and mining (International textile, Garment and Leather Workers' Federation, 1994). Total number of working children in Pakistan is somewhere between 2 and 19 million (Kamal, 1994).

In May 1994, the Asian-American Free Labor Institute (AAFLI) investigated five carpet factories in the Lahore area and found child labor in four of them. None of these factories was a "parent-child" operation to take the advantage of child labor in cottage industry (Asian-American Free Labor Institute, 1994).

According to Employment of Children Act 1938, a "child" is defined as a person younger than fifteen years. The legal minimum age for employment is 14 years for shops, commerce, industry, and work at sea; and 15 years for mines and railways (International Labor Organization, 1991). The Constitution of the Islamic Republic of Pakistan prohibits slavery, forced labor, the trafficking of human beings, and employment of children below the age of 14 years in any factory or mine or hazardous environment.

8. CONCLUSION

The practice of child labor has many complicated dimensions. On one hand it involves the production of low cost goods and services in developing countries through the use of nominally paid children. On the other hand, business corporations of the developed countries are able to realize their profit maximization goals by importing the low cost products. The child labor practice has certain limited beneficial effects as it teaches the children skills, teamwork and the importance of prosperity.

Seasonal labor shortages can induce children into working force. This is true of both developing and developed countries, Children may work in hazardous environment. They work on farms with pesticide sprays and in the presence of other toxic materials in both the cases of developing and developed countries, School going children mostly work part-time in developed world, while because of the lack of education

funds and hence facilities; and prevalence of widespread poverty, they have to work full-time in industries in order to survive in developing countries.

Trade sanctions alone may not be helpful since majority of working children is not involved with export-oriented industries. As a matter of fact, trade sanctions can backfire in the form of counter-sanctions and lower demand for products from developed world because of lower income levels in developing countries as a result of their reduced exports.

Both developing countries and developed world have made laws to protect children against the unjust and hazardous labor practices. Conscientious people are striving for the rights of children, all over the world. However, violations of child labor laws are found in both cases of developed and developing countries because of the cheap child labor and other economic consideration. The majority of the constitutions of world countries and political agendas of their governments ensure the rights of children. Again, however, the reality does not correspond to the intent of constitutions and political agendas. The paradox between the existing economic and political realities and the cause of working children need to be resolved by the joint efforts of **ILO, UNICEF**, the governments and interest groups of both developed and developing countries.

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Defense Spending and Economic Growth In Less Developed Countries: Re-examining the Issue of Causality

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ABSTRACT

The paper re-examines the question of causality between defense spending (DFN) and economic growth (GDP) for selected less developed countries by using the new techniques of co-integration and error correction modeling. The results confirm a feedback relationship, found in previous studies, only for Pakistan and Iran. Our analysis also suggests a feedback relationship for India. We find unidirectional causality runs from GDP to DFN for Guatemala and Venezuela, and for Turkey from DFN to GDP. No relationship in case of Philippine, Ecuador and Sri Lanka is found.

1. INTRODUCTION

What is the impact of carrying a heavy defense burden on country's economic development and growth? Views expressed in the literature[1] argue that national defense is a consumption good which reduces economic growth by reducing saving and capital investment. A number of empirical studies have investigated the possible trade off between defense spending and other government expenditures like health and education. Empirical evidence concerning the relationship between defense spending and economic growth for developed countries is not inconsistent with the view that defense reduces the resources available for investment and hurts economic growth. See, for example Benoit (1973). The evidence for developing countries, however, has not been entirely consistent or conclusive[2]. Benoit (1978), using data on 44 less developed countries (LDCs) for the period 1950-65, found a strong positive association between defense spending and growth of civilian output per capita. Fredericksen and Looney (1982), using data for the period 1960-78 on a large cross section, concluded that increased defense spending assists economic growth in resource rich countries and not in resource constraint ones.

Using a sample of 54 LDCs pertaining to the period 1965-73, Lim (1983) found that defense spending hurts economic growth. Biswas and Ram (1986) in a sample of 58 LDCs for time period 1960-70 and 1970-77, using conventional and augmented growth models, concluded that military expenditures neither help nor hurt economic growth to any significant extent.

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Most of the studies, mentioned, above, typically use Ordinary Least Square (OLS) to estimate the following growth equation:

$$Y = B_0 + B_1X + B_2M + \varepsilon$$

Where Y is the rate of growth of GDP, X is a vector of other explanatory variables, M is the rate of growth of military expenditure and ε is classical random disturbance term. The estimated parameters would be biased and inconsistent if any of the independent variable is not econometrically exogenous. Joerding (1986) raised this issue by arguing against the assumed exogeniety of military expenditures. He employed Granger causality to test for the exogeniety of defense spending in a sample of 57 LDCs for the period 1962-1977. He found that defense spending is not a strongly exogenous variable, relative to economic growth suggesting that previous studies were flawed.

LaCivita and Fredericksen (1991) pointed out that Joerding's result is based on a pooled sample and argued that splitting a pooled sample into separate groups can lead to quite different results. They also questioned Joerding analysis for assuming a common lag structure for all of the countries in a sample. They re-examined the defense growth causality issue for 21 countries for the years 1952-82, individually over time and in a pooled sample. Employing Granger causality procedure adopted by Joerding[3], they replicated jeording's result that growth Granger causes defense, but not vice versa in a pooled sample. The causal relationship, however, differed from country to country with no relationship for majority of the simple. The analysis was based on an arbitrary lag structure of four years both in a pooled sample and for each individual country. They also used Granger causality method developed by Hsiao[4] (1981) on each country individually and on a pooled sample. They found that feedback relationship exists not only for a pooled sample but also for most of the countries including Pakistan. No relationship was found for four countries in the sample.

Oskooee, M. Bahmani and Alse J. (1993) pointed out three major shortcomings associated with such time series studies as that of LaCivita and Fredicksen (1991). First, these studies did not check for co-integrating properties of the time series involved. Since, as argued by Granger (1988), any causal inference would be invalid if time series involved are co-integrated. Second, to avoid spurious regression result because of nonstationarity tendencies of most economic time series, they use rates of change instead of levels. Miller (1991) argued that rates of change, which is close to the concept of first differencing, filters out low frequency (long run) information. The co-integration technique[5] and error

correction modeling are recommended to remedy this problem. Third, these studies use annual data because of the unavailability of quarterly or monthly observations. So the lack of causation could be the result of temporal aggregation.

Whether defense spending helps economic growth is an important policy consideration for developing countries like Pakistan and India. Since defense expenditures of these countries absorb a significant portion of their public current expenditures. This motivated us to re-examine the issue of defense growth causality, by taking into consideration the above mentioned major shortcomings of time series studies. We were able to collect data on real GDP and real defense expenditures for ten LDCs[6].

The second section illustrates the methodology used in the paper. The next section reports the empirical findings and the final section presents our conclusions.

2. METHODOLOGY

Co-integration and error correction modeling technique involves three main steps. Testing the relevant time series for stationarity (unit roots), testing for co-integration and finally error correction modeling. We use standard text book[7] notation to explain briefly the steps involved.

A non stationary time series y_t is said to be integrated of order "d", ($y_t \sim I(d)$), if it achieves stationarity after being differenced "d" times[8]. To determine the order of integration, unit root tests have been developed. The most common test is known as Dickey – Fuller[9] (DF) or Augmented Dickey Fuller (ADF)[10] test.

To discuss the DF test, consider the Model

$$y_t = \beta_0 + \beta_1 t + u_t$$
$$u_t = \alpha u_{t-1} + \varepsilon_t$$

Where E_t is a covariance stationary process with zero mean. The reduced from for this model is:

$$y_t = \gamma + \delta t + \alpha y_{t-1} + \varepsilon_t \quad \ldots\ldots\ldots [1]$$

Where

$$\gamma = \beta_0(1-\alpha) + \beta_1\alpha \text{ and } \delta = \beta_1(1-\alpha)$$

This equation is said to have a unit root if $\alpha = 1$. The DF test is based on testing the hypothesis $\alpha = 1$ in (1) under the assumption that ε_t are white noise errors. The test statistics are:

$$t(1) = \frac{\acute{\alpha} - 1}{SE(\acute{\alpha})}$$

Since these statistics do not have a standard t distribution, the critical values for K (1) and t(1) are tabulated in Fuller (1976).

Suppose that $y_{t-I}(d)$ and $x_{t-I}(d)$. Then Y_t and X_t are said to be co-integrated if there exists a β such that $Y_t - \beta x_t$ is I(d-b) and $b > 0$. Thus testing for co-integration one must make sure that both series are integrated of the same order in first step. Second step then involves estimating the following co-integration equations by Ordinary Least Squares (OLS):

$$Y_1 = a_0 + b_0 X_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$
$$X_1 = a_0 + b_0 X_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

And testing for the stationarity of the residuals from equations 2 and 3 to make sure that μ_t and $\acute{u}_t$ are I(d-b), where $b > 0$. Co-integration Regression Durbin-Watson statistic (CRDW)[11], in addition to DF and ADF, can also be used to test the stationarity of residuals.

If two variables are co-integrated, then third step involves formulating the error correction model (ECM) as follows:

$$(1\text{-}L)Y_t = c_o + d_o\mu_{t-1} + \sum_{i=1}^{M} e_{oi}(1-L)Y_{t-i} + \sum_{i=1}^{N} f_{oi}(1-L)X_{t-i} + \varepsilon_t \ldots\ldots[4]$$

$$(1\text{-}L)X_t = c_1 + d_1\acute{u}_{t-1} + \sum_{i=1}^{M} e_{1i}(1-L)X_{t-i} + \sum_{i=1}^{N} f_{1i}(1-L)Y_{t-i} + \acute{\varepsilon}_t \ldots\ldots[5]$$

Where L is the lag operator and the error correction terms (ECTs) μ_t and $\acute{\mu}_t$ are the stationary residuals from co-integration equations 2 and 3 respectively. According to standard Granger causality test, X is said to Granger cause Y if f_{0i}'s are jointly significant. The inclusion of ECTs, however, provide additional channel through which Granger causality could be detected. Thus, X is said Granger cause Y, as the ECT carries a significant coefficient even if f_{0i}'s are not jointly significant[12]

3. THE EMPIRICAL RESULTS

Three steps of co-integration technique and error correction modeling, described above, are employed to investigate the relation between real defence spending (DFN) and real output (GDP) for ten LDCs in the sample. We use log of these variables, such that their first differences could reflect the rate of change of each variable.

As for the data, International Financial Statistics and Government Finance Statistic of International Monetary Fund, Statistical Year Book and Statistical Year Book; Asia and the Pacific of Untied Nations were used to collect data on GDP and Defence for ten LDCs. The sample varies across countries with largest sample from 1961:1 – 1997:4 for Pakistan and with shortest sample from 1973:1 – 1997:4 for Venezuela. The data series were not available on a quarterly basis. We first generated the quarterly data using the technique described in Khan and Raza (1989). The largest sample has 148 observations and the shortest sample has 100 observations.

The results corresponding to each step of the technique are reported in Tables 1, 2 and 3 respectively. Results reported in Table 1 show that the calculated DF/ADF (with and without trend) statistics are less than their critical values only for first differences of GDP and DFN for each country. This indicates that both variables are integrated of order zero, i.e. I(0) GDP and DFN would be considered co-integrated. Results of co-integration regressions, two for each country, are reported in table 2. Along with ADF test Co-integration Regression Durbin Watson (CRDW) statistic and the slope co-efficient of each equation are also reported in the same table. The calculated ADF statistics for residuals of six countries, are less than their critical values[13]. This suggests that these residuals are stationary and are integrated of order zero, i.e. I(0), which in turn implies that GDP and DFN series of these six countries are co-integrated.

Alternative to ADF test, CRDW statistic could also be used to determine the stationarity of residuals. For them to be stationary, CRDW must be significantly different from zero. The calculated CRDW for GDP and DFN of Pakistan are smaller than the critical values at 5 and 10 percent levels of significance. This however, does not appear to confirm the stationarity of residuals[14].

The sign of slope coefficients show the long run relationship between defence spending and output is positive for each country.

Therefore, increase in defence spending stimulates output and an increase in output also stimulates defence spending.

The above analysis suggests that there exists a long run relationship between defence spending and output in Pakistan, India, Iran, Turkey, Guatemala and Venezuela. But in order to determine which variable Granger causes the other and provides the short run dynamics adjustment toward the long run equilibrium error correction (EC) models were estimated for only these six countries. Since EC model, as described by equations 4 and 5, involves lag variables, one must determine the optimal number of lags for each variable. Final Prediction Error (FPE)[15] criterion was used for this purpose to select the appropriate specification in each case. The results are reported in Table 3[16].

The results indicate that there exists bi-directional causality between defence spending and output for Pakistan, India and Iran. The unidirectional causality is found in Guatemala, Turkey and Venezeula. In each case, only the lagged independent variables are jointly significant. This significance varies from 1 percent to 10 percent level. The EC term, however, turns out to be insignificant. This result is consistent with the earlier finding, LaCitivita and Frederiksen (1991), of a feedback relationship between defence spending and output in case of Pakistan. Table 5 provides the comparison of our results with the findings of LaCitivita and Frederiksen (L&F) (1991).

4. CONCLUSIONS

A number of studies have attempted to analyze the causal relationship between defence spending and economic growth in Less Developed Countries (LDCs). Earlier studies have used time series, cross sectional and pooled data for this purpose. The results, however, are neither consistent nor conclusive. In this paper we have re-examined the defense growth causality issue. Co-integration technique and error correction modeling were adopted for this purpose. Our results are consistent with previous studies to the extent that a feedback relationship is found for Pakistan and Iran. Our results differ in case of other countries. These differences indicate the importance of the issue of stationarity and co-integration of time series in general and for testing causality in particular.

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NOTES

1. See for example Joerding, W. (1986).
2. See Chan (1985) for a review of an existing literature.
3. They employed the procedure as described in Granger (1969).
4. Hsiao has developed a systematic method for choosing lag lengths for each variable in an equation.
5. See for example Engle, Robert F. and Clive W. Granger (1987).
6. These include Pakistan, India, Sri Lanka, Philippine, Iran, Ecuador, Turkey, Thailand, Guatemala and Venezuela.
7. The discussion is based on Maddala "Introduction to Time Series Analysis.
8. This definition is due to Granger (1986) and Engle and Granger (1987).
9. Dickey, David A. and Wayne A. Fuller (1979).
10. Engle and Granger (1987) have argued that ADF test allows for dynamics in the DF regression and consequently is over-parameterized in the first order case but correctly specified in the higher order cases.
11. If residuals are nonstationary, the DW will approach zero and thus the test rejects non-cointegration. This was proposed by Bhargava (1984).
12. Granger (1988), p.203.
13. With the exception of one of the residuals from cointegration regression for Pakistan and Turkey. In this case the calculated ADF is greater than its critical value.
14. We considered residuals to be stationary on the basis of ADF test. Engle and Granger (1987) recommend the use of ADF test owing to its higher power.
15. Hsiao (1981).
16. Table 2 does not indicate long-run relationship between defense spending and economic growth for four countries in our sample. To investigate the issue of causality for these countries, we employed standard procedure instead of error-correction modeling. The results are reported in Table 4.

Table-1
UNIT ROOT TEST

COUNTRY	GDP		DFN	
	LEVEL	IST. DIFFERENCE	LEVEL	IST. DIFFERENCE
PAKISTAN	-2.02(4)	-7.338*(1)	-1.536(4)	-7.124*(1)
PHILIPPINE	-2.233(t)(4)	-7.940*(1)	-1.991(t)(4)	-7.534*(1)
INDIA	-0.715(t)(3)	-7.61*(t)(1)	-1.72(t)(3)	-7.54*(t)(1)
IRAN	-1.906(2)	-7.472*(t)(1)	-1.234(2)	-7.172*(1)
ECUADOR	-3.05(t)(3)	-5.795*(t)(1)	-2.470(t)(3)	-5.443*(1)
TURKEY	-1.733(t)(4)	-5.5315*(t)(1)	-2.820(t)(4)	-5.597*(1)
THAILAND	0.638(t)(4)	-7.130*(t)(1)	-2.153(t)(4)	-8.048*(t)(1)
SRI LANKA	-2.192(t)(3)	-7.356*(1)	-2.373(t)(3)	-7.306*(1)
GUATEMALA	-1.99(1)	-10.934*(t)(1)	-1.575(1)	-6.396*(t)(1)
VENEZUELA	-2.40(4)	-6.200*(t)(1)	-2.402(4)	-5.00*(1)

Note: (t) stands for trend otherwise without trend.
The critical value of ADF statistic in the vicinity of 100 observations from the Fuller's table is 3.51 without trend and –4.04 with trend at 1% level of significance.
(.) stands for No. of lags.
*significant at 1%

Table-2
CO-INTERGRATIN TEST

COUNTRY	Regression Equation	Slope coefficient	CRWD	ADF
PAKISTAN	GDP =f(DFN) DFN = f(GDP)	4.30(8.968) 0.011(8.968	0.0697 0.085	-3.824**(t)(3) -1.979(t)(3)
PHILIPPINE	GDP =f(DFN) DFN = f(GDP)	31.18(15.11) 0.0214(15.11)	0.055 0.079	-1.676(3) -2.038(4)
INDIA	GDP =f(DFN) DFN = f(GDP)	29.85(38.40) 0.031(38.40)	0.217** 0.230**	-3.61**(t)(4) -3.51**(t)(3)
IRAN	GDP =f(DFN) DFN = f(GDP)	4.315(9.00) 0.102(9.00)	0.067 0.084	-3.841**(t)(4) -3.80**(t)(4)
ECUADOR	GDP =f(DFN) DFN = f(GDP)	23.93(4.34) 0.0098(4.34)	0.081 0.292	-1.490(2) -2.32(3)
TURKEY	GDP =f(DFN) DFN = f(GDP)	35.63(6.65) 0.0113(6.657)	0.122 0.279	-1.235(3) -2.847**(3)
THAILAND	GDP =f(DFN) DFN = f(GDP)	28.05(41.16) 0.033(41.16)	0.155 0.161	-1.499(4) -1.88(4)
SRI LANKA	GDP =f(DFN) DFN = f(GDP)	17.51(9.426) 0.0265(9.426)	0.086 0.162	-2.154(t)(3) -2.24(t)(3)
GUATEMALA	GDP =f(DFN) DFN = f(GDP)	26.81(13.28) 0.0268(13.28)	0.498* 0.436*	-3.267**(1) -2.897**(1)
VENEZUELA	GDP =f(DFN) DFN = f(GDP)	-5.25(-1.21) -0.005(-1.21)	0.070 0.396**	-4.73**(1) -2.77***(3)

Note: (t) stands for trend otherwise without trend.
(.) Stands for No. of lags
The critical value of ADF statistic in the vicinity of 100 observations from the Fuller's table in –3.51, -2.89 and –2.50 without trend and –4.04, -3.45 and –3.15 with trend at 1%, 5% and 10% level of significance respectively.
The critical value of the CRDW (cointegration Regression Durbin-Waston) statistic in the vicinity of 100 observations is 0.39 at 5% significance level.
* Significant at 1%
** Significant at 5%
*** Significant at 10%
Figures in brackets with slope coefficient are T-values. These values are significant at 1% except for Venezuela.

Table-3
ERROR CORRECTION MODELING

COUNTRY	Dependent variable	Error term		ADF
PAKISTAN	(1-L)GDP	-0.00438 (-0.01536)	0.894(5)	4.4394*(5)
	(1-L)DFN	-0.00009 (-0.00448)	5.839*(5)	0.110(5)
INDIA	(1-L)GDP	0.16527 (0.10686)	2.382*(21)	2.433**(9)
	(1-L)DFN	-0.0001499 (-0.02253)	2.575*(17)	1.779**(13)
IRAN	(1-L)GDP	-0.0112178 (-0.0303)	0.595(21)	4.296*(14)
	(1-L)DFN	-.0.000108 (-0.0033)	2.79**(4)	0.462(21)
GUATEMALA	(1-L)GDP	0.087185 (0.65135)	17.76*(17)	0.4576(16)
	(1-L)DFN	0.0003266 (0.02559)	5.12*(5)	1.92(5)
VENEZUELA	(1-L)GDP	-0.032707 (-0.06484	3.418**(5)	0.0678(5)
	(1-L)DFN	0.0008159 (0.02737)	2.556**(9)	0.710(12)
TURKEY	(1-L)GDP	0.032 (0.974)	2.14(9)	2.85**(8)
	(1-L)DFN	0.00029 (0.99)	0.556(9)	1.46(15)

Note: * Significant at 1%
** Significant at 5%
*** Significant at 10%
Figures in brackets are optimal lags used in the regression.

Table-4
SIMPLE CAUSALITY TEST

COUNTRY	DEPENDENT VARIABLE	∑(1-L)GDP	∑(1-L)DFN
PHILIPPINE	(1-L)GDP (1-L)DFN	5.436*(5) 1.030(9)	1.161(13) 0.244(5)
ECUADOR	(1-L)GDP (1-L)DFN	0.554(14) 0.0127(5)	0.0521(7) 0.856(9)
THAILAND	(1-L)GDP (1-L)DFN	1.87***(9) 1.778***(9)	0.570(9) 0.0274(5)
SRI LANKA	(1-L)GDP (1-L)DFN	0.1717(9) 0.045(5)	0.1588(9) 0.446(5)

Note: * Significant at 1%
** Significant at 5%
*** Significant at 10%
Figures in brackets are optimal lags used in the regression.

Table-5
SIMPLE CAUSALITY TEST

DIRECTION OF CAUSALITY	COUNTRY	
	L&F STUDY	OUR STUDY
GDP→DFN	Ecuador Sri Lanka Turkey	Guatemala Venezuela
DFN→GDP	Venezuela	Turkey
GDP⇄DFN	Iran Pakistan Philippine Thailand	Iran Pakistan India
No Relationship	India Guatemala	Philippine Ecuador Sri Lanka

ROLE OF ZAKAH IN POVERTY ALLEVIATION EVIDENCE FROM D.I. KHAN DISTRICT

Muhammad Khan[1], Khair-uz-Zaman[2] & Ijaz Hussain[3]

ABSTRACT

Role of 'Zakah' in Poverty Alleviation in District D.I.Khan (Pakistan) was investigated by collecting primary data from a sample of 200 Zakah recipients and 40 Local Zakat Committees. For this, stratified sampling techniques was used. Regression equations were estimated by Ordinary Least Squares (OLS) for education, consumption and living standard of Zakat recipients. Zakah receipts did have positive impact on education, consumption and living standard of the recipients. However, the impact on living standard was not very significant primarily due to very low level of such payments.

1. INTRODUCTION

"Establish worship, pay the poor due and bow your heads with those who bow (in worship)". Al-Quran II, v.43.

"Establish Worship, and pay the poor due and whatever of good ye send before (you) for your souls, ye will find it with Allah. Lo! Allah is sear of what you do". Al-Quran II, Vo.110 "Lo! Those who believe and do good works and establish worship and pay the poor due, their reward is with their lord and there shall be no fear come upon them neither shall they grieve". Al-Quran, II. V.277.

The above verses of the Holy Quran signify the importance of 'Zakah' (Zakat) which is the third in sequence of the five fundamental pillars of Islam. It is a tax at a fixed rate in proportion to the worth of property i.e. cash, cattle and crops etc. For cash the rate is 2.5% Zakah is payable only on net balance at the end of the year after all lawful obligations have been discharged. It is collected from the well to do and distributed among the poor Muslims.

Almost all the great religions have had a word of sympathy for the poor but it is Islam which has made the concern for the poor as one of the five pillars of Islam in the form of institution of Zakah.

The system of Zakah was officially enforced in Pakistan in June 1980 with the promulgation of Zakah and Usher Ordinance. Since the

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System has now been operational for more than one decade, it is important to systematically analyze the effects of Zakah on poverty reduction. Except for one recent study by Shirazi (9), no significant effort in this direction seems to have been made either on national or regional level. We however, believe that apart from studies on national level, regional studies are far more important because such studies keep in view the peculiar circumstances of a particular area and hence can help a lot in policy formulation in regard to the achievement of the objective of the welfare of the poor.

In this study, we have tried to analyze the contribution of "Zakah" towards poverty alleviation in D.I. Khan District. The paper is organized in the following manner. The role and significance of "Zakah" is highlighted in the next section. This is followed by the methodology of the study. The next section analyses the effect of "Zakah" on poverty alleviation in the study area focusing on its impact on education, consumption expenditure and standard of living of "Zakah" recipients. Then observations and recommendations are given. The summary and conclusions of the main findings and bibliography appear at the end of the paper.

2. ROLE AND SIGNIFICANCE OF "ZAKAH"

The literal meaning of "Zakah" (Zakat) is "purity" and "nourishment". It is in the context of these virtues that the term Zakat denotes the financial submission to Allah which has been obligatory for every Muslim possessing wealth of a requisite amount so that, after discharging the right of Allah and the people, his wealth and soul is purified. Zakat is the third pillar of Islam. It is applied to all Muslims having a specified minimum income or possessing a specified minimum wealth. Zakat is meant to be collected in an organized way. Or, in other words, Zakat is a wealth tax covering almost all kinds of wealth. The heads of expenditure of Zakat are given in the following verse of the Holy Quran:

"The alms are only for poor and the needy, and those who collect them and those whose hearts are to be reconciled, and to free the captives and the debtors and for the cause of Allah, and for the wayfarers, a duty imposed by Allah. Allah is Knower, Wise". (9.60).

This means the Quran earmarks the Zakat revenue for specific purpose. That is, it is to be spent on : the poor, the deprived, those who are to pay their debts, destitute travelers and in the path of Allah." The cost of collection and administrative cost is incurred from the Zakat

revenue [2]. The most important feature of the Zakat is the compulsory religious duty, which transfers some of the income and the wealth from the rich to the poor [3].

Collection of the Zakat is based on the principal of proportional taxation [4]. Different from other systems, zakat is the religious levy aimed at purifying the individual and payment of zakat brings the Muslims nearer to Allah. Zakat thus becomes an expression of gratitude to Allah for having bestowed the bounties on the individual. Further, Zakat is not left to the individuals to pay as charity whenever they like. The state is entrusted with collecting zakat. The first war after the Prophet's (P.B.U.H) ***weesal*** was waged because of non-payment of zakat. Thus the zakat was not left to the individuals to pay as charity [2]. Similarly, zakat used to be collected and spent by the Islamic state in order to redistribute income. However, Shariah has made the obligation of complete separation of the zakat from the general budget of the state to protect the rights of the poor and other beneficiaries of zakat. It is in fact a collection of measures and not a single measure, as the beneficiaries have different economic characteristics [3]. The phenomenon of zakat is one leap forward from the other systems because zakat is not only treated as tax but also a sort of "Ibadat". Therefore zakat is the pillar of Islamic public finance [4]. It avoids the drawbacks of other systems form the outset. Whereby the consequences of capitalism is the intense form of exploitation which ultimately leads to class-war and the disintegration of the overall society. Thus the Islamic economic system absolutely discourages this cause-and-effect process because Islam believes in the circulation of money rather than it's hoarding. Hoarding of and speculative demand for money is a source of mal-functioning of the economy causing instability in the value of money, fluctuations in output and employment and resulting in mal-distribution [10]. Thus it is the zakat that discourages the hoarding. Zakat keeps the concentration of the wealth under control and it has distributive impact in the economy [1].

Moreover, Islam further aims at achieving an equitbale distribution of resources among present individual and future generations. Islam also stresses the need to give the poor their rights in such a way that pride and dignity are preserved and upheld [2]. Unlike western secular tax system, Zakat is also not likely to affect the work incentive of the rich which is very much prevalent in the concept of Efficiency-Equity tradeoff. But zakat is also "Ibadat" a moral obligation which purifies the wealth and soul of the rich [4].

Since Zakat covers the focal point in the fiscal policy of Islamic economic system, it becomes one of the important tools of the Islamic fiscal measures. Some scholars advocated direct transfer payment to the poor and needy, and the other for providing needed services through institutional arrangements supported by the Zakat funds. Beneficiaries can be categorized into non-working poor who are incapable of earning an income and the working poor who live below poverty line.

The unemployable need direct transfer payment and the working poor who live below poverty line can be provided with needed services to increase their productivity. The most important way aiding the non-working poor would be through direct transfer payments and low-paid working poor families by filling income deficiencies in real terms as far as practicable right from the bottom thereby, assuring a minimum level as the available zakat funds permit. Instituting and administering zakat as tool of fiscal policy deserves careful and conscious planning by Islamic state [4].

Following the principles of direct transfer payment to the ***unemployable*** and the working poor in order to take them out of poverty trap, the Government of Pakistan promulgated Zakat and Usher Ordinance; 1980. The government herself collects the zakat through the banking systems in the month of Ramazan and distributes among the needy people through Central, Provincial and Local Zakat committees.

In general two methods are suggested to eradicate poverty from the society. One is to provide the poor sufficient resources for subsistence and the other to provide him/her the means to earn his/her livelihood i.e. rehabilitation. Both of these methods are the salient features of the zakat systems in Pakistan [6].

Faiz (1991) pointed out total Mustahqeen-e-Zakat (MZ) are 42.58% of the total household. It was concluded that between 50%-70% MZ have benefited from Local Zakat Committees (LZCs) so far in one way or the other. It was suggested that if the Zakat systems has to serve the poor in meaningful way, its scope has to expand to include assets as stocks in trade [6]. In the existing system a small amount is specified for rehabilitation of the recipients, which does not produce results. Moreover, rehabilitation schemes are not the answer for permanently ill, aged, minor, orphan and (unskilled) widows [6].

.3. METHODOLGY

Our universe was the Dera Ismail Khan District. A sample size of 200 Zakah recipients (ZRs) and 40 Chairmen of Local Zakat Committees (LZCs) was drawn which we think is a reasonable number out of the total population of the area under study who are enlisted as Zakah's recipients. A stratified random sampling techniques was adopted that is the entire area of the D.I. Khan District was divided into following four sub-regions of D.I. Khan city; D.I. Khan suburbs; Tehsil Kullachi and Tehsil Pahapur. This was done to give equal representation to the Zakah recipients of the area to avoid any bias in the results, which may have otherwise occurred due to the peculiar circumstances in any particular area. Fifty Zakah recipients and ten Chairmen, LZCs were randomly selected for the interview from each of the four regions. Two separate questionnaires, one for Zakah recipients and other for Chairmen, LZC was designed. The first questionnaire contained as much as 70 questions while the second had 33 questions. The questionnaire of Zakah recipients had three main parts, viz:

(a) Personal profile
(b) Existing Zakat System
(c) Impact on recipients in terms of Basic Needs and other physical facilities.

The Chairmen of LZCs were asked questions about eligibility of ZRs, allocation and distribution of Zakat funds etc. Both the questionnaires were first pre-tested and then analyzed. All the respondents were personally interviewed to collect primary data. The data thus collected was analyzed accordingly. In order to systematically assess the impact of Zakah on education, consumption expenditure and standard of living the following model was developed and tested accordingly using regression analysis:

The Model:-

$$Edu = f \quad (y_o\ y_2 \ldots\ldots\ldots\ldots\ldots\ldots (1)$$
$$Con = f \quad (y_0\ y_2 \ldots\ldots\ldots\ldots\ldots\ldots (2)$$
$$Liv = f \quad (y_0\ y_2) \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

i.e $Edu = b_0+b_1 Y_0+b_2 Y_2+U_1$

$Con=C_0+C_1 Y_0+C_2 Y_2=U_2$

$Liv=d_0+d_1 Y_0+d_2 Y_2+U_3$

Hypothesis:- $b_1, b_2 > 0$
$c_1, c_2 > 0$
$d_1, d_2 > 0$

Explanation:- Y_0 = Income from other sources

Y_2 = Income from Zakat

4. ANALYSIS OF THE DATA

4.1 Family Education Status

The total number of family members of our 200 respondents were 699. Majority of those i.e. 65.7% were illiterate; 19% had primary level education, 8% were middle pass, 5% matriculates, only 1.4% had intermediate and 4 people out of 699 had degree level education (Table-1).

Table 1: FAIMLY EDUCATION STATUS

Educational level of family members	No.	% age
Nil	459	65.7
Primary	132	18.9
Middle	57	8.1
High (Metric)	37	5.3
F.A.	10	1.4
Degree	04	0.6

Source: Questionnaire.

5. INTER FAMILY EDUCATION STATUS

In almost half of the families i.e. 86 in our sample, no member had any education at all. Twenty nine percent families had only upto primary level educated members, the number of such educated members ranging between 1-5. Most of the families i.e. thirteen percent had, however, only one member who had studied upto primary level. Thirteen percent of the families had only one midle level educated member, only 5% had 2-3 members of middle standard. Seven percent families had one of their member with high school education and there was only one family each where one of the member had studied upto intermediate and degree level (Table 2).

Table 2: EDUCATION STATUS OF FAMILY MEMBERS

No Education		Primary		Middle		High	
	B	A	B	A	B	A	B
Upto 2	53	1	26	1	26	1	14
3-4	13	2	18	2	7	2	4
5-6	14	3	7	3	3	3	2
7-8	2	4	2				
9-10	4	5	5				
Total	**87**	**Total**	**58**	**Total**	**36**	**Total**	20

Source: Questionnaire.
Note : A=Family members. B=No. of families

6. MEETING EDUCATIONAL EXPENSES

Majority of ZRs i.e. 26.25% were meeting educational expense of their children by getting help from philanthropists and or relatives. Only 16.25% were using Zakah money for such purpose. But 69% of such respondents said only 25% of educational expenses were being met by Zakah money. About 13% of the respondents said they had taken loan for their children's education. A significant proportion i.e. 12.9% said they had to do manual work to earn money for educational expenses of their children (Table 3).

Table 3(a): Source of Meeting Educational Expenses

Source	No.	%age
Zakat	39	16.25
Other stipends	3	1.25
Help form rich/relatives	63	26.25
Loan	31	12.9
Through labor work	38	15.8
Other sources	66	27.5
Total	240	99.95

Table 3(b): Share of Zakat in Education

Up to25%	26-50%	51-75%
27	9	3

Source : Questionnaire

7. SHARE OF BASIC NEEDS EXPENDITURE MET BY ZAKAT RECEIPTS AND IMPACT OF ZAKAT ON SOCIO-ECONOMIC CONDITIONS.

It was really discouraging to observe that in 68% of the cases a very nominal (less than 25%) share of the expenditure on basic needs was met by Zakat receipts. In only 27.5% of cases upto 25% of the expenditure on basic needs was met from Zakat money and mostly these recipients had very small size family, otherwise the situation would have been different. Less than 5% of the respondents said that half of their basic needs were catered for by the Zakat receipts. Here again, Zakat had no significant role in poverty alleviation (Table 4).

Table 4: Basic Needs Met from Zakat Receipts

Proportion	No.	%age
Nominal	136	68
Upto25%	55	27.5
26-50%	9	4.5
Total:	200	100

Source : Questionnaire

Another manifestation of this undesirable situation was the fact that 93.5% of our respondents saw no significant change in their socio-economic condition even after the receipt of Zakat money. Only 6.5% people felt some change for the better. Most of this later category of people said Zakat money was helpful in meeting their Medicare expenses.

The main reason cited by 65.2% of the respondents, of Zakat having no impact on socio-economic conditions was the fact that Zakat money received by them was too small. Ten percent of the people said that there were leakages in the distribution of Zakat, almost 7% put the blame on the faulty procedure (Table 5).

Table 5: Change in Socio-economic Conditions

Yes / No	No	%age
Yes	13	6.5
No	187	93.5
Total :	200	100

If Yes How?			If No How?	No	%age
Got myself treated	10	43.5	Zakat is small	15	65.2
Can educate my children	3	13	Funds have leakage	24	10
Have minimum food	8	34.8	Payment procedure is faulty	16	6.6
Can repay house rent	1	4.3	Nepotism	4	1.7
Can pay house rent	1	4.3	Longer interval between payments	16	6.6
Total :	23	99.9	Other	8	3.3
			Total :	83	93.4

Source: Questionnaire

When asked Zakat Recipients (ZRs) to what extent Zakat payments were helpful in eradicating poverty in their area, 80% gave a negative answer. Only 18.5% thought Zakat money was helpful in eradicating poverty to some extent.

7.1 Role of Zakat in Elimination of Poverty

Only one-fourth of the respondents thought that the existing system of Zakat can be effective in eliminating poverty from the society, provided (I) distribution system is improved (II) only genuinely deserving persons are paid (III) the entire system is de-politicized. The percentage share of respondents giving above suggestions was 17,4.5 and 3.5 respectively (Table 6). The rest of the respondents ($3/4^{th}$) seemed to be so disgusted that they thought the present system can't eliminate poverty.

Table 6: Eliminating Poverty by Zakat

Response	No.	%age
Yes	50	25
No	145	72.5
Don't know	5	2.5
If yes, how		
Distribution system be improved	34	17
Political influence by removed	7	3.5
Only deserving be paid	9	4.5

Source : Questionnaire

8. DETERMINANTS OF EDUCATION, CONSUMPTION AND LIVING STANDARD FOR 'ZAKAH" RECIPIENTS

8.1 Results

Regression equations have been estimated by Ordinary Least Squares (OLS) for education, living standard, and consumption. The estimated equations, are reported in Table 7. Equation 1 explains education, in term of income other than 'Zakah' and Zakah income (Zakah receipts). In this equation, other income and Zakah receipts both positively influence the dependent variable. As expected the constant has a negative sign indicating the fact that zero values of explanatory variables have negative impact on education. R^2 is 94% and t-ratios (in parenthesis) are also significant. Equation 2 explains consumption in terms of other income and income from Zakah. In this equation, both the explanatory variables positively influence the dependent variable, with Zakah receipts having relatively, lesser impact due to smaller value of such payments. As expected the value of constant is positive indicating the fact that there is some consumption even if income is zero. Here also t-ratios are given in parenthesis and the value of R^2 is 72%. Equation 3 explains living standard of Zakah recipients in terms of other income and 'Zakah' receipts. Here also, the negative sign of the constant indicates the fact that zero income from the sources and 'Zakah' has negative impact on standard of living. Both the explanatory variables have positive signs. However, very small value of the co-efficient of Zakah income (receipts) indicates it's very little influence on the standard of living of the Zakah recipients. This is due to very low amount of Zakah payments to the 'Mustahiqeen' R^2 in this case is 87% and t-ratio for 'other income' is also very significant.

Table 7: Determinants of Education, Consumption and Living standard for "Zakah" Recipients

Dependent Variable	Constant	Other Income	Zakah Income	R2
Education	-14.10 (-32.55)	1.27 (10.19)	0.86 (7.07)	0.94
Consumption	3.43 (12.05)	0.44 (5.38)	0.10 (1.24)	0.72
Living	-9.07 (-19.01)	1.43 (10.44)	0.02 (0.17)	0.87

T- ratios in parentheses.

9. SUMMARY AND CONCLUSIONS

An effort was made to systematically study the effects of Zakat on poverty alleviation in Dera Ismail Khan District. Primary data was collected on stratified sampling basis from four sub-regions of the district through interviewing of as much as 200 Zakah recipients and 40 Chairmen of Local Zakat Committees. The questions asked from ZRs ranged from personal profile (age, education, and family size), to existing Zakat system, and the quality of life before and after the receipt of Zakat. The Chairmen of LZCs were asked about he procedure of determining eligibility of zakat recipients, allocation of funds, by the central and provisional Zakat Administration and distribution of zakat money among the 'Mustahqeen'.

As expected, most of the recipients were illiterate but some people with reasonable level of education were also on the list of Zakat recipients. Age-wise, most of the recipients were of relatively younger age group.

Another discouraging finding was that most of the recipients were able-bodied and having normal health. Similarly, most of the recipients were not very enthusiastic about religion, yet wanted to enjoy the fruits of the religious institution.

Regarding the determination of eligibility, there were not many cases of political or ideological considerations. However, a lot needs to be done for finding out genuine 'Mustahqeen'. There were cases where people do not voluntarily come forward to enlist themselves due to self-pride while on the other hand a considerable number of people who relatively speaking were not deserving managed to be enrolled as Zakat recipients. We therefore, think the whole the system of registration of 'Mustahqeen' needs to be reviewed. We suggest members of LZCs should hold open meeting with Mohallah Committees which should represent various political, ideological and religious sects. The Mohallah Committee should identify the Mustahqeen in order of priority and then LZC can enlist the number of people they think can be adequately helped with the given amount of zakat money.

On the basis of information gathered by interviewed ZRs and the Chairmen of LZCs, it can be concluded that the present system of zakat distribution has not helped at all in alleviating poverty. Although 'Zakah' receipts do have positive effect on education and consumption, its impact on living standard of the recipients is very negligible. As a matter of fact, there has been no difference in the living condition of zakah recipients

before and after the receipts of zakat money. The main reason being the very small amount of money paid to each recipient. On the average, a sum of Rs.55 is being given to a person per month, which in no way can bring any change in the living standard of a recipient. This can be attributed on the one hand to the insufficiency of Zakah collection and on the other hand to the large number of the people registered as 'Mustahqeen-e-Zakat'. Since this report is not primarily concerned with the collection system, we leave that discussion for some other occasion although there is need for bringing revolutionary changes in this area as well. We believe, if a better distribution system is devised, significant improvement can be made on the poverty reduction front even with the existing level of Zakat collection.

The amount of money given to each recipient must be increased to make it meaningful. Nothing less than Rs. 500 per month would make any significant difference in the living standard of an individual. Because of insufficiency of funds under the existing system of Zakah collection, no increase would be possible unless the number of recipients is reduced. We think this trade-off between the number of recipients and the share of each recipient will have to be conceded to make the system really beneficial to the fewer but most deserving category of Zakah recipients. The present system of zakah scholarships especially for higher education should be dispensed with because in most of the cases, the facility is misused. At the same time, the system of zakah collection has to be improved by broadening its base. Another point worth-mentioning is that Zakah collection will improve voluntarily once well-to-do have faith in the system which is geared towards the needs of most deserving lot and is free of all sorts of corrupt (intentional or unintentional) practices.

Another very important aspect of this problem is the adoption of rehabilitation schemes both short and long term. This is important for two reasons; to enable the recipients to make their own living after getting skills and other relevant opportunities, and leaving enough money in Zakah Fund for the existing recipients. Some sort of Trust Fund may be created out of a part of zakah fund for financing permanent rehabilitation schemes.

For those who can't be rehabilitated and have to be on the Zakah recipients list for ever, destitute homes should be established and should be run by philanthropists and Welfare Trusts of good reputation in the private sector.

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EMPLOYMENT PROSPECTS AND ITS CONSTRAINTS IN THE AGRICULTURE SECTOR

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1. INTRODUCTION

Agriculture continues to be the predominant sector of the economy of Pakistan. It contributes more than 24% towards Gross National Product and it provides employment to about 48% of labour force. Moreover, 68% of the total population is directly or indirectly dependent upon this sector. Besides, it is one of the major sources of foreign exchange earnings. The expansion of agriculture and employment generation is slow[1]. Agriculture sector has been suffering from double squeeze. Firstly, investment in the agriculture sector decreased over time and it remained low. Since 1970s this sector was never a priority in the development strategies. Secondly, as a result of the above, the so, called engine of agriculture growth i.e. Green Revolution, ran out of steam[2]. Not only that income in the agricultural sector grew slower than other sectors but also its share towards GDP decreased. A result of this neglect is that today we are importer of several agricultural goods. About 16% of the total imports are directly related to agriculture which could have been substituted.

Unemployment has emerged as one of the severe economic problems in Pakistan. It is continuously on the rise. Manpower planning was never a serious part of development plans in Pakistan. The official figures indicate that unemployment rate which was around 3.5% in the 1980s increased to over 5.5% in the early 1990's. The actual unemployment rate is believed much higher than the above cited figures. Since major bulk of population and labour force is residing in the rural areas, therefore, they are the major victim of unemployment. In the rural areas, underemployment is even more severe than open unemployment. A district study by Chaudhry and Chaudhry (1996) indicated that rural unemployment is as high as 20%[3]. Given this background, there is a need to look for avenues of employment generation and also to pinpoint neglects in the policies so that remedial measures may be suggested to solve the problem of unemployment. More specific objectives of this paper are as given below:

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2. Objectives

The study is focused to analyze the following:

i) To analyze present situation of unemployment and constraints in employment generation, particularly, in rural areas and agriculture.
ii) To provide scenarios for future employment generation under alternatives strategies.
iii) To suggest policy measures to generate employment in the agriculture sector.

To this end the paper is organized as under: Part II provides an analysis of existing pattern of employment and unemployment, constraints and bottlenecks in employment generation. Part III consists of conclusions and policy suggestions.

3. PROSPECTS FOR EMPLOYMENT GENERATION AND CONSTRAINTS

In the first three development plans, agriculture was given due importance. The investment in agriculture was made up to 16% of the development plans. As a result not only employment generation increased by bringing new areas under cultivation but also agricultural growth was respectable. Agricultural growth was as high as 6.3% during the second development plan. Agricultural growth was never as high thereafter. During the 6th Plan average annual agricultural growth was only 3.5%. The same was 4.5% during the 7th plan[4]. Recently, during 1996-97, it grew less than 1%. It may be noted that investment in agriculture slowed down overtime. During 1985-86, only 3.7% of the total and 6.2% of the public sector investment was made in agriculture. The same was as low as 2.2% of the total and 3.7% of public investment, during 1989-90. Overall, since 1986-88 public investment in agriculture varied between 2.2% to 5% of the development outlays. The planned agricultural allocation during 8th plan is about 1% of the federal programme[5]. It reflects low priority given to this sector. Such a neglect not only increased our dependency of food items on imports but it also led to squeeze exports and employment generation. Low investment, neglect of agriculture reflected in surplus of agricultural labour force. The result is high unemployment in the country.

The total area of Pakistan is 79.6 million hectares. The reported area is 58.5 million hectares, out of which 24.5 million hectares are not available for cultivation. The forest area has been decreased from 4.2 to 3.6 million hectares. There is about 9 million hectares which are considered as cultivable waste. Total cultivated area is 21.5 million

hectares[6], out of which 5.4 million is fallow land. Thus, net area sown is only 16 million hectares i.e. 28% of the reported area. It appears that around 9 million hectares could be brought under cultivation if investment is made to exploit these resources. With the application of modern chemicals, more area can be improved and made fertile. Such a land is either victim of salinity, waterlogging or need some chemical treatment. In Baluchistan alone, more than two million hectares of virgin land is waiting for irrigation. In the era of modern technological development, the contemporary techniques of irrigation and modern inputs, the backward areas of Pakistan continued its cultivation through "Karaiz System". In Baluchistan, population density ratio, considered as number of persons per square Kilometer of cropped land, is as low as 0.72 compared with 1.0 for Pakistan as a whole. The same ratio is 0.54, 0.85 and 0.73 in case of NWFP, Sindh and Punjab, respectively. The same density will be one half that of above, if measured in terms of cultivatable land[7]. It is generally considered that Pakistan is over populated country, which might not be appropriate impression. The above analysis indicates that there is inequitable distribution of population which led to such understanding. Besides, neglect of agriculture and inefficient agricultural policies have led not only to frustrated agricultural growth but it also resulted in wide spread unemployment. Thus, if extensive agricultural growth policies were adopted and equitable investment is made in this sector, the presently wide spread unemployment may have been avoided. It appears that potential exists to generate sufficient employment by bringing new area under cultivation. Thus, extensive growth policy is needed to curtail rural unemployment.

4. GROWTH AND EMPLOYMENT

Over time, not only that output growth slowed down but also employment generation was slow. Sectoral and overall employment elasticites are as given below

Table 1: Employment Elasticities

Major Economic Sectors	6th Plan	7th Plan	Long Run Regression Estimates
Agriculture	0.45	0.57	0.35
Manufacturing	0.14	0.28	0.20
Construction	0.95	0.74	0.82
Services	0.50	0.64	0.72
Overall	0.34	0.45	0.37

As indicated by Table 1, target employment elasticities were higher for the 7th Plan, whereas actual economic performance and

employment generation during the 7th Plan was much lower. The GDP growth was only 5% against the target of 6.5%. The agriculture sector grew by 3.8% against the target of 4.7%. As a result, the above cited employment elasticities for the 7th Plan were not applicable[8]. Regression estimates of long term employment elasticities, including the period of 7th Plan, are as given in Table 1. Overtime, employment generation slowed down in almost all sectors of the economy. The agriculture sector, where the major bulk of labour force is employed, also showed a low employment elasticity. The employment elasticity for agriculture decreased from 0.45 to 0.35. A similar decline was for the construction sector. There was a slight improvement in the same for services sector, manufacturing sector and overall for the economy. However, the change in the latter was minimal (0.34 to 0.37). It indicated that, over time, the economy is not moving towards labour intensive techniques. Thus, there is a need that labour intensive techniques must be encouraged if unemployment problem is to be solved.

Overtime, agricultural land remained victim of divisions into small pieces and fragmentation[9]. It not only leads to low productivity, inefficient use of inputs but it also keeps hanging on the small farmers who remain underemployed. It is one of the reasons that underemployment is high in the rural areas. Besides, there is lack of extra earning opportunities, or such opportunities are very limited. Thus, surplus labour migrates to other places while such half hearted manpower continues to hang on to poor earning opportunities. Such a situation leads to triangle problem of unemployment and under–employment–low income and poverty[10].

Another constraint that leads to unemployment in the rural areas is the neglect of small industries and businesses. The agri-business has not flourished to its full extent. There is hardly any significant development in processing of agri-raw material. It is not only that small industry did not develop, the agriculture sector has also not been fully exploited. Small farmers could generate additional employment and income through substitution of crops, multi-cropping and by planting trees etc., on watercourses or on free land. Such practices do exist on a small scale but it needs to be spread widely. Similarly, small industries and businesses need to be encouraged[11]. The farmers are not aware of such potential. It is the businessmen or small entrepreneurs who have to utilize their spare time to produce low cost products. A survey indicated that in the villages where such practices exist, the labour force participation rate was as high as 60%; against the national labour force participation of hardly 30%. The income of such families was more than double of other small farmers[12]. The businesses like food processing, carpet and cloth weaving, handicrafts and toys manufacturing etc., were prominent in

these areas. The businessmen provided the raw material, training and supervision. In some cases he extended credit to already trained labour. There is a need to develop such businesses environment which could substantially provide employment, reduce under employment and increase income of the poor. It may also be an appropriate adjustment of released labour from agriculture. As per our knowledge, there is hardly any study which may have identified such potentials at regional levels. Thus, there is a need to carry out comprehensive regional feasibility studies to identify small businesses. The bad luck is that there exists no data on small industry or businesses. No one even knows actual performance of small industries. At national level, old growth rates of the same are repeated every year; without any actual information or linkage with the performance of other economic activities or sectors.

5. EMPLOYMENT AND UNEMPLOYMENT SCENARIOS

Based upon the employment elasticities and present performance of economic and sectoral growth, forecast for future employment is made. Expected changes in the labour force participation and population growth etc., are also incorporated[13] to estimate future trend of these variables.

Table 2: Labour Force Demand And Supply Scenario

Year	Total Labour Supply	Labour Demand	Imbalance 2-3	Imbalance %
1	2	3	4	5
1996-1997	37.5	35.1 (25.7)	2.4	6.4
1999-2000	43.1	38.8 (27.4)	4.3	10.0
2004-2005	50.8	45.6 (31.9)	5.3	10.3
2009-2010	59.9	54.7 (37.1)	5.2	8.7

( ): Expected absorption in the rural areas:

Assuming GDP growth of 6% and population growth of 2.8% there will be about 60 million labour force to be absorbed by 2010 (Table: 2). However, about 54.7 million labour force will be absorbed, if present trend of economic growth were to continue. In the rural areas, about 37.1 million workers will be absorbed. The employed rural labour force which was 73% in 1996-97 will reduce to about 68% by the year 2009-10. It may be noted that this pattern is based upon the previous growth of the

economy; on the face of 8.7% unemployed labour force. To reduce the unemployment, there will be a need for specific employment generation policies, either by high economic growth or by more labour intensive technique.

6. SECTORAL EMPLOYMENT

The prospects of sectoral employment growth are provided in Table 3. Manufacturing sector is expected to absorb major bulk of labour force, while structural changes take place in the economy. However, in Pakistan, this sector is not responding to generate needed employment, as per expectations[14]. Agriculture sector will continue to absorb the major bulk of labour force. It is expected that by 2010, about 39% of the total employed labour force will still derive their livelihood from agriculture. Thus, over 21 million labour force will be engaged in agriculture. Other major growing sectors will provide employment to about 19.2 million workers. The employment share of these sectors will be over 35% while the same for agriculture will reduce from 47% to 39%; by 2010. It may be noted that over 15 million rural labour force will be employed in other sectors, like agri business, services, construction or transport. The above scenario indicated that there is a need for policy interference to absorb the rapid growing surplus labour force.

Table 3: Sectoral Distribution Of Employed Labour Force

Year/ Sector	Agricul ture	Manufacturing & Mining	Transport and Construction	Trade	Services	Total
1996-97	16.4	3.5	4.5	5.3	5.4	35.1
1999-2000	17.5	4.7	4.8	5.6	5.8	38.4
2004-05	19.2	5.5	6.1	7.1	7.3	45.2
2009-10	21.5	6.7	7.1	9.4	9.8	54.7

The above scenario of employment was based upon the GDP growth of 6% and agricultural growth of 4%. To reduce the unemployment rate from 8.6% to 5%, the economy must grow over 6.5% and for the agriculture sector extensive growth policies have to be introduced. Besides, to achieve such a goal, agriculture sector needs to grow over 5%. As mentioned earlier, there are two major areas for employment generation in the rural areas which must be focused on priority basis. Extensive agricultural development policies are needed to be introduced, along with intensive growth. The intensive growth has also been slowed down and now almost exhausted[15]. It must be revived to increase production. On the other hand, small industries, particularly, cottage, home spread small industries must be introduced to generate additional employment and to enhance additional income of the poor.

On average, an investment of Rs. 150 thousand creates a job in small industry against an investment of Rs. 3.5 million in the large scale industry. The cottage and informal business activities create a job with an investment even less than 100 thousand. To create a job in the agro business, the investment is even low than that of above. In spite of the importance of this sector, no concrete plan or policy was designed for the development of this sector. In the 8th Plan, only its importance is admitted and no concrete steps or investment plan is provided[16]. Moreover, there is hardly any direction for agro industries. These industries continue to grow on its own. Presently, the situation has emerged where unemployment is high, large scale industry is stagnant or closing down. Low savings continued for years and poverty has increased to a threatening level. The small and cottage industry is an answer to all these ills of the economy. Therefore, during the 9th plan, special programme must be introduced for agriculture like extensive growth, acceleration of small and cottage industries and, particularly, rural and agro industries. By doing so employment in the agriculture sector alone can be generated to the extent that unemployment rate can be reduced to a significant level.

7. CONCLUSIONS AND POLICY RECOMMENDATIONS

Unemployment and under_employment have emerged as important economic problems. It is expected that it will become more severe if the present trend was to continue. Agriculture, as one of the most important sector which employed the major bulk of labour force has emerged as slow employment generation sector. This sector has been neglected in terms of investment and priorities. As a result not only its growth is affected but also it added to unemployment problem. Overtime, it is expected that its share in employment and GDP will decrease. This sector has two major potentials to generate significant employment. Extensive agricultural growth policies can enhance employment in this sector. Besides, development of agro rural small and cottage industries can absorb additional labour force. In addition to above, there is a need to accelerate overall economic growth. It can also be done if agricultural growth is increased above the present level, since agriculture is directly related to overall economic performance. Thus, it is recommended that agriculture and small industrial growth must be priority areas for development in Pakistan if higher economic growth and employment opportunities have to be increased.

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NOTES

1. Details of employment elasticities are given in the next Section.
2. For a comprehensive analysis of the same see Chaudhary M. Aslam, (1995), Journal of Economics.
3. See Chaudhary and Chaudhary (1996), Employment and Income Generation in Sahiwal District. It may be noted that Economic Survey 1996-97 stated unemployment rate of only 5.37%. Recently, for the posts of police constables applicants vacancies ratio was 80:1 which indicates unemployment situation.
4. See: pricing of Farm Produce in Pakistan by M.S. Niaz (1995) P. 10-11.
5. For details see, Economic Survey 1995-96 P. 42-43, T.2.8, 2.9 i.e. Gross Fixed Capital Formation also see 8th Plan.
6. The details of figures are provided in Agricultural Statistics of Pakistan, (1993) and Economic Survey, 1996-97.
7. See Agricultural Development and Public Policies, by M. Aslam Chaudhary (1989). It also provided a rationale for extensive growth and employment generation. A significant number of workers migrated to new areas to bring virgin land under cultivation.
8. For more details of employment elasticities see: The Management of Human Resources, Unemployment and Their Future Prospects In Pakistan", By A. Hamid (1995).
9. For provincial and overall fragmentation of agriculture land see: Nazeer M. Mian (1985).
10. The emergence of poverty is widely covered by Jaffrey (1995).
11. A comprehensive analysis and review of performance and policies is carried out by M. Aslam Chaudhary (1995). It also provides review of different plans, pertaining to small industrial development. Small Industries grew by 7.3% (1983-88) and 8.4% since 1990-91. It constitutes 13% of the manufacturing activities. Besides 81% of the labour force employed in manufacturing draw their livelihood from small industries.
12. Such means and activities were observed through a survey of Sahiwal District (1996).
13. See Appendix 1, for assumptions of the forecast.
14. For detailed analysis of sectoral, professional and education level of unemployment see M. Aslam Chaudhary and A. Hamid (1995).
15. Several variables, which could accelerate agricultural growth were tested only irrigation and fertilizer were valid. See M. Aslam Chaudhary (1996).
16. See 8th Five year Plan, GOP.

APPENDIX I

a. Assumptions for Forecast:

GDP Growth rate	:	6.1% & 5.5%
Population growth rate	:	3% , 2.75%
Labour force participation	:	28.1%, 29%, 29.5%, 30%

Employment function:

i. $Et = 5.49 + 4\ yt + 0.71\ Et\text{-}1$
(1.9) (1.52) (4.01)
Adj. $-R^2 = 0.97$ DW = 2.21 F-stat = 204.

Sectoral Distribution was used as per Labour Force Survey (1991-92) description i.e. 9 sectors.

b. Sectoral Growth Rates:

Sector		Growth Rate %
1.	Agriculture	4.0
2.	Minning and Quarrying	9.0
3.	Manufacturing	9.0
4.	Electricity, Gas and Water	9.0
5.	Construction	5.0
6.	Trade	6.7
7.	Transport	5.4
8.	Finance	8.0
9.	Services	5.4
	GDP	**6.1**

c. Output Growth in Agriculture
Regression Results (1972-95)

Variable	Co-efficient	
Irrigation/water	9.241*	
	(1.70)	
HYV's	0.026	Adj $-R^2 = 0.97$
Fertilizer	0.28	DW = 2.1
	(5.7)	F-Stat = 273.7

Significant at 10%.

ANNEXURE II

PROJECTED GDP, EMPLOYMENT D&S AND IMBALANCES (MILLIONS) GDP GROWTH RATE 6.1%

Year	GDP	Employment D	Total LF Supply S	Imbalance (S-D)	Imbalance %
1994	122921	32.80	34.98	2.18	6.23
1995	130419	33.67	36.03	2.36	6.55
1996	138375	34.58	37.11	2.53	6.82
1997	146816	35.54	38.23	2.69	7.04
1998	155771	36.55	39.37	2.82	7.16
1999	165274	37.62	40.55	2.93	7.23
2000	175355	38.76	4.77	3.01	7.21
2001	186052	39.97	44.39	4.42	9.96
2002	197401	41.25	45.72	4.47	9.78
2003	209442	42.61	47.09	4.48	9.51
2004	222218	44.05	48.50	4.45	9.18
2005	235774	45.58	49.96	4.38	8.77
2006	250156	47.20	53.23	6.03	11.33
2007	265416	48.92	54.83	5.91	10.78
2008	281606	50.74	56.47	5.73	10.15
2009	298784	52.67	58.17	5.50	9.46
2010	317101	54.72	59.91	5.19	8.66

APPENDIX III

PROJECTED EMPLOYMENT D&S AND IMBALANCES (MILLIONS) GDP GROWTH RATE 6.5%

Year	Employment D	Total LF Supply	Imbalance (S-D)	Imbalance %	3Y Moving Average from 2000
1994	32.80	34.98	2.16	6.2	6.2
1995	33.67	36.03	2.31	6.4	6.4
1996	34.58	37.11	2.44	6.6	6.6
1997	35.54	38.23	2.54	6.6	6.6
1998	36.55	39.37	2.60	6.6	6.6
1999	37.62	40.55	2.63	6.5	6.5
2000	38.76	4.77	3.84	8.9	7.9
2001	39.97	44.39	3.71	8.4	8.4
2002	41.25	45.72	3.54	7.8	7.8
2003	42.61	47.09	3.30	7.1	7.6
2004	44.05	48.50	3.83	7.9	7.3
2005	45.58	49.96	3.49	7.0	7.0
2006	47.20	53.23	3.08	6.0	6.5
2007	48.92	54.83	3.49	6.5	5.9
2008	50.74	56.47	2.94	5.3	5.3
2009	52.67	58.17	2.30	4.1	4.0
2010	54.72	59.91	1.56	2.7	3.4

APPENDIX IV
EMPLOYMENT PROSPECTS AND ITS CONSTRAINTS IN THE AGRICULTURE SECTOR

Issues	Facts/Figures/Policy	Reasons	Recommendations
◘ Slow extensive growth	8.91 million hectares of cultivatable land lying ideal i.e. 55% of the area sown land net (16.13) sown	◘ No expansion programme ◘ Low investment in agriculture** ◘ Lack of irrigation facilities improvement	◘ Investment in agriculture need to be increased. ◘ Irrigation facilities need to be expanded and improved. ◘ Virgin land may be allotted to farmers.
◘ Small farm size low income thus migration to urban. ◘ Low price of output	i) 81% small farms @ (under 5 hectares) ii) 17% middle farms (57 20 hectares) iii) 44% of total cultivated are (farm≥35 hectares) iv) 38% of total cultivated area (5≥20 hectares) v) Support prices are neither market prices not international prices.	◘ Small farms, no absorption of increasing labour force. ◘ Division of land into pieces thus low income ◘ Small farms, less use of modern inputs thus low income ◘ Political decision rather than technical / economic	◘ Fragmentation of farms need to be controlled. ◘ Agri-business need to be strengthened to enhance income and employment generation. ◘ Politics should be avoided in economic policies.
◘ Merchanization and displacement of rural labour force	Agri-machinery is increasing as a result labour released or new labour not absorbed (1977-7:11902 tractors imported in 1995-96:28, 364 tractors imported) Addition of tractors: 3.8 million.	◘ Better plouging ◘ Subsidized machinery	◘ Mechanization should continue but side jobs in Agri-industry need to be generated ◘ Provision of credit, training/skill and feasibilities for rural small industry.
◘ Low employment elasticity	Agri. Employment elasticity is between 0.35-0.43 (low) it is on decreasing trend (7^{th} Plan=0.57)	◘ Slow output growth ◘ Decline in the rate of output growth**. ◘ Low extensive growth.	◘ Output enhancing policies need to be adopted i.e. Green Revolution need to be strengthened again. ◘ New land should be brought under cultivation. ◘ Neglected regions need to be developed (Baluchistan).
◘ Slow growth of agri-business and rural development.	◘ Lack of statistics on Agri-business. ◘ Neglect of small/rural industries and therefore low expansion of rural employment.	◘ Lack of information for feasible businesses. ◘ Lack of capital ◘ Marketing and middle men problems.	◘ Small feasibilities need to be done and provided to the interested one. ◘ Provision of small credits and generation of local savings. ◘ Provision of marketing information and related support.

Employment Prospects and its Constraints in the Agriculture Sector

■ High population growth low employment generation and migration.	■ Population growth over 3%. ■ Hardly 1.7% of additional labour force absorbed in agriculture, the rest migrate to other places (over 1%). ■ Under employment 12% - 16%. ■ 1.15% investment in agriculture. (8^{th} Plan).	■ High population growth illiteracy. ■ Lack of public facilities, education, health etc. ■ Low income thus self employment is limited. ■ Subsistence farms and landless farmers / labour. ■ Migration impose high cost on urban areas and add to unemployment there. ■ Neglect of priorities for development.	■ Restructuring population welfare programmes. ■ Accelerated provision of public basic services to rural areas. ■ Creation of off farm employment (small industries). ■ Effective self employment schemes. ■ Expansion of agriculture sector. ■ Increase in investment in agriculture.

@ Econ. Survey T.P. 57
*Imported and manufactured, since 1978
**Agricultural growth during 7^{th} Plan: 3.8% P.A. vs. target = 4.7%
PSDBI growth during 2% of Plan (350 b)
PSDPI planned for 8^{th} Plan – 1.15%.... (751 b)

MEASURING REAL INTEREST RATE IN PAKISTAN

Salman Ahmad[1]

The distinction between nominal and real interest rates is an important one. The *nominal interest rate* is the stated interest rate on an asset such as a loan or a savings account. It indicates the percent increase in the number of rupees that are paid or received at the end of a year (assuming no compounding) as the result of lending or borrowing money. During periods of rising prices, the purchasing power of rupees paid or received as interest tends to decrease. A more appropriate measure of the cost of lending or borrowing money should therefore account for differences in the purchasing power of money that occur over the life of an asset.

Some of the problems caused by inflation arises when it is unanticipated, for when it is anticipated, many people are able to protect themselves from its ravages. Let's start in a hypothetical world in which there is no inflation and anticipated inflation is zero. In that world, you may be able to borrow money at a nominal rate of interest of say, 10%. If you borrow the money to purchase a computer or a car and your anticipation of inflation turns out to be accurate, neither you nor the lender will have been fooled. The rupees you pay back in the years to come will be just as valuable in terms of purchasing power as the rupees you borrowed.

What you ordinarily need to know when you borrow money is the real rate of interest that you will have to pay. If you are able to borrow money at 10% and you anticipated an inflation rate of 10%, your real rate of interest will be zero-- lucky you, particularly if the actual rate of inflation turned out to be 10%. In effect, we can say that the nominal rate of interest is equal to the real rate of interest plus an inflationary premium to take account of anticipated inflation. That inflationary premium covers depreciation in the purchasing power of the rupees repaid by the borrowers.

There is fairly strong evidence that inflation rates and nominal interest rates move in parallel fashion. Periods of rapid inflation create periods of high interest rates. Banks attempt to protect themselves against inflation by raising nominal interest rates to reflect anticipated inflation.

The real rate of interest indicates the percent change in purchasing power that occurs over the life of an asset. For a given time period:

$$Rr = Rn - P^e \qquad (1)$$

where Rr denotes the real rate of interest, Rn is the stated or nominal interest rate, and P^e is the expected rate of inflation.

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Unlike the nominal interest rate, which can only be positive, the real rate of interest can be either positive, negative, or zero. If, for example, the nominal rate of interest on a savings account is 7 percent while expected inflation is 10 percent, the real interest rate is - 3 percent.

Even though 7 percent more rupees are received at the end of the year, each rupee is expected to buy 10 percent less. The real interest rate in this example is negative because the expected loss in purchasing power more than offsets the growth in the number of rupees gained by saving. *The real interest rate is positive only when the nominal interest rate exceeds expected inflation. The real interest rate is 0 when the nominal interest rate equals the anticipated rate of inflation.*

We do not observe the real rate of interest. Transactions involving interest rates are stated in terms of nominal interest rates. If we are interested in working with real interest rates, it is therefore necessary to approximate these values. The inflation rate that appears in Equation (1) is not the actual but the expected inflation rate. Calculating real interest rates requires a measure of expected inflation. The government of Pakistan does not publish a time series called the expected rate of inflation. One available course of action is the use of existing data to provide an approximation called a **proxy variable**. The simplest method for constructing a proxy of inflationary expectations is to assume that individuals use past inflation rates as the basis of their projections of future inflation. This framework, which is used in Keynesian economics, is called adaptive expectations. Table I contains data on interest rates and inflation that we can use to approximate real interest rates based on the adaptive expectations framework.

Starting with the CPI inflation rates in this table, we postulate that individuals formulate inflationary expectations that pertain to long-term interest rates based on the average of past rates of inflation. If we use the average of inflation over the past two years as the basis for our expected inflation proxy variable, then:

$$P^{e}t = (P\,t - 1 + Pt - 2) / 2 \qquad (2)$$

where $P^{e}t$ represents expected inflation in year t, and $P\,t - 1$ and $P\,t - 2$ represents the measured CPI inflation rates in the previous year and two years earlier, respectively. This formulation is called a **two-period moving average**.

Table I: Real Interest Rates 1986-87 to 1997-98

Year	Weighted Average Rate of Return on Interest bearing deposits of 5 years and over*	CPI (Inflation rate)**	Expectations Proxy***	Real rate of interest
1984-85	12.47	5.67	--	--
1985-86	12.41	4.35	--	--
1986-87	12.03	3.60	5.01	7.02
1987-88	12.20	6.29	3.97	8.23
1988-89	12.08	10.39	4.95	7.13
1989-90	12.32	6.04	8.34	3.98
1990-91	12.50	12.66	8.22	4.28
1991-92	11.41	10.58	9.35	2.06
1992-93	10.95	9.83	11.62	- 0.67
1993-94	10.86	11.27	10.20	1.21
1994-95	10.68	13.02	10.55	0.13
1995-96	11.61	10.79	12.15	- 0.54
1996-97	11.38	11.80	11.91	- 0.53
1997-98	9.33	7.81	11.30	- 1.14

*State Bank of Pakistan. *Annual Report. (Various Issues)*
**Government of Pakistan *Economic Survey* (Various Issues)
***Two-year moving average of past CPI inflation rates.

The values of expected inflation derived from Equation (2) are given in column labeled " Expectations Proxy" in the Table. Estimated real interest rates are given in the far right column. The real interest rate for 1992-93 and 1995-96 to 1997-98 is negative, since the expectations proxy exceeds the nominal interest rate for those years. Note also how substantially real interest rates derived from this methodology have fallen since 1991-92.

This procedure for calculating real interest rates can be criticized on several grounds. First, its use of adaptive expectations implies that people do not use current information when forming expectations of future inflation.

Second, use of the CPI inflation rate for the period may be inappropriate.

Third, averaging values of a variable that is expressed as a percentage is more properly accomplished using geometric mean rather than the arithmetic mean.

By manipulating the real interest rate in equation (1), we can express the nominal interest in terms of the real rate of interest:

$$Rn = Rr + P^e \quad (3)$$

The expected inflation term in Equation (2) is referred to as the inflationary premium in the nominal rate of interest. This equation provides us with a connection between the expected rate of inflation and nominal interest rates. When expected inflation rises, a higher rate of interest is needed to preserve the purchasing power of funds that are loaned (such as savings). We therefore expect the inflationary premium in interest rates to rise, which, other things being equal, will bring about an increase in nominal interest rates. Based on this reasoning, we anticipate a positive relationship between these variables, so that an upward trend in nominal interest rates should occur during periods when expected inflation is rising, while falling interest rates should accompany moderating inflationary anticipations.

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SOCIO-ECONOMIC CONDITIONS DURING THE MOGHUL PERIOD

Qais Aslam[1]

1. INTRODUCTION

The importance of the Moghul Empire as the forerunner of the Modern Pakistan cannot be denied. The basis of our society's cultural and social fabrics comes from the height and the depth of the Moghul Empire. The Moghul Empire gave to the subcontinent a certain level of economic stability, cultural heritage, social norms, language, architecture, knowledge, laws and many other socio-economic behaviours that are still prevalent in our society even today.

The purpose of this study is to give an overview of the socio-economic conditions of the Moghul period. In order to understand how people lived and participated in economic activity during that period.

The Moghuls during their rule united a large part of the country, giving a relevant level of stability and centralisation. They increased agricultural output and utilised the skills of artisans and craftsmen in non-agricultural traits. During that era, there existed middlemen, traders, entrepreneurs, skilled labour and foreign traders.

There was a money relationship in the market. Taxes and dues were collected in money form with uniform and fixed weightage of different types of minted coinage. There was an indigenous and highly efficient banking system in place throughout the country, facilitating trade and manufacturing sectors.

During the Moghul empire, a certain level of education and technology existed in the subcontinent. Thinkers and scholars of that time surrounded all the kings. Their buildings and architecture revealed a high level of knowledge of mathematics and physics and the use of imagination and mass production of standardised building materials of different kinds.

There was an active political, economic, and cultural contacts of the Moghuls with the outside world. Large scale production sector of the Empire were mining of precious stones, construction of buildings, along with affiliated crafts and the production of saltpetre and armaments.

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Individuals not part of the royal family in the private sector carried on most of the economic activity of that time. Also most of the members of the royal family, the ministers, nobles and mansabdars had their own private businesses and were interested in production of luxury items, horticulture and trade. At the same time the construction of buildings, infrastructure and maintenance of the army and social welfare was paid from the state treasury in accordance with the will of the king himself.

Most of the population during that era lived in the rural areas and off the land. The village was the basic unit and in each village the dominant cast controlled the land through their property rights, which were circumscribed. Land could not be sold or transferred outside the village. Also the tenants could not be evicted of their rights during that period.

2. POPULATION

Total population of the Moghul Empire in the year 1600 (as estimated by Moreland) was about 100 million; - 85 per cent of the population lived in villages. 15 per cent of the population lived in urban centres[1]

It is estimated that the Moghul Empire during Akbar's rule contained 120 big cities and 3,200 townships (qasbas), each having approximately 100 to 1,000 villages around it[2].

It is also estimated that the population of Delhi during 1659-66 was estimated at about 500,000 inhabitants; of Lahore during 1581 & 1615 respectively was at about 400,000 & 700,000 inhabitants; of Thatta during 1631-35 was at about 225,000 inhabitants and Dacca (1630) - at about 200,000 inhabitants[3]

The population of Bengal in the first half of the eighteenth century was 25,000,000-30,000,000[4] and during that period, it was the wealthiest, most densely populated and most developed regions of the Empire.

The ratio of Muslims in the urban population was bigger than the Hindu population because caste restrictions kept Hindu artisans out of towns; therefore most urban workers were Muslims. It should be noted that, although fertility was high in the Moghul Empire, life expectation was low, because of very high death rates.

According to Prof. Gankovsky, the Muslim population, of the Moghul Empire was about a fifth or a quarter of the total population.

About 10 % of the Indian Muslims of that period were Turks, Afghans, and Mongols, the rest included some forcibly, and many more voluntaries converted Hindus. The Muslim ratio grew over time because polygamy and widow remarriage gave them greater fertility than Hindus did[5].

3. WAY OF LIVING

Life of Moghul Emperors was lavish and wasteful, they kept big households and harems with all the staffs and kitchens to look after them. Kings and their nobles gave away expensive presents at will. Music concerts, dancing girls, elephant fights and other expensive sources of pleasure were often found at great expense.

Life styles of the nobles were not any worse. Most of these nobles were corrupt and lived the life of extravagance; they maintained large establishments and wasted their income on luxury. There was an abundance of gold and silver, and the upper classes were fond of luxury.

4. FABRICS OF MOGHUL NOBILITY

The Moghul nobility formed a numerous class and not a close corporation. New nobles were made every day and every day some of the old ones disappeared. Every one was a life peer and surrendered the peerage with his death or dismissal. Many warriors and learned men arrived from outside countries attracted by the rumours of the wealth of the Moghuls. It was from this band of fortune hunters that the nobility was mainly recruited. As a natural result Moghul nobility came to be a heterogeneous mass composed of diverse and incongruous elements - Turks, Tatars, Persian, Indian, Muslims and Hindu and even European (Francis Khan and Frangi Khan)

In the Moghul Empire, the Muslims made the upper core of the rulers and nobility. Approximately 94.5 per cent of the *Mansabdars* were Muslims of all sects and nationalities. While 5.5 per cent - were Hindu *Mansabdars* - and had a major share of the administrative and bureaucratic jobs at all levels in the Empire. The Hindus controlled the agriculture; business, commerce and banking which were the main economic activity of the country. Although the Muslims also took part in the economic activity, their number and traditional share was smaller.

The Moghul nobility was the `Sword of the State and the Pillars of the Kingdom'. They were landlords but they held the land on conditions of services, civil as well as military. The Moghul nobility was mainly interested in horticulture and commerce.[6] The most formidable of those

nobles were Taimurides who came with Humayun and Akbar in India. They were ordinarily called Mirzas. Akil Mirza, Mirza Sharif-ud-din, Mirza Suleiman, Shah Mirza, Mirza Ibrahim Husain, Mirza Mohammad Husain, Mirza Ulugh Beg and Mirza Mohammad Hakim were the most important of them. [7]

The Moghul *Amirs* were divided into:

1. Turrani, who were of the Sunni sect, professing the prevalent belief of Muslims, and came from the original home of the reigning dynasty.

2. Irani, which consisted of Persians and were fewer in number, they professed the Shia faith.

3. The Afghans who came from the region between the Indus on the East, and Kabul and Kandhar on the West, and outnumbered the Moghuls.

4. Hindustanis who were Muslims born in India. They were descendants of foreign immigrants in the second or third generation. They made a common cause against the `foreigners' along with the Hindu nobles

5. The Hindu Nobles who were the Rajputs and other powerful Hindu landowners that had allied themselves with the Moghuls and had become an important part of the Moghul nobility. The first Hindu chiefs to be promoted to the rank of Moghul Amirs were Raja Puran Mall (Bahari Mall) and his son Bhagwan Das who were enrolled among the nobles of Akbar's court.

The majority of the nobles, who were given landed rights and made *Mansabdars* in the army by the Moghul Emperors, never remained faithful to their kings, just because of these titles and gifts. They only served their masters till such time that they feared the Emperor's cohersive force. These landlords intrigued and revolted against their sovereigns whenever they believed that the central power had weakened. When after Aurangzeb, his weaker successors ascended the throne of the Moghul Empire, the deterioration in the character of the Emperors led to a rapid decline in the standard of the nobility, many of them turned traitors from selfish motives. During the reign of the later and weaker Moghuls after the death of the mighty Aurangzeb, each noble became a law to him self and refused to recognise any higher authority and behaved like highway robbers. Many times the sovereign ceased to be

regarded as a powerful person, and his rights were usurped by those most powerful than himself.

5. SOCIAL AND ECONOMIC CLASSES

There were several kinds of feudal land tenure, the principle of which were conditional land benefices (*Jagirdari*) and private landowners (*Zamidari*). *Mansabdars* were appointed *jagirdars*, while the owners of the *zamidari* lands comprised big Hindu landlords which had been rulers of the principalities and still held part of their estates, as well as hereditary leaseholders in certain areas.

A class of big landlords were the clergy, which included Muslim theologians, who managed mosques and madrasas and guarded the shrines of numerous Muslim saints; and Hindu priesthood.

Another class of landlords included: wealthy merchants, professional men and petty *Mansabdars* formed the core of the middle class, which was heterogeneous in composition. The merchants usually concealed their wealth as there was always the danger of the same being forcibly taken away by the local governor or *Faujdar.* Officials of all ranks, lived in luxury, enjoying their wealth gained through malpractice, bribery and extortion.

Hindus were mostly traders and millionaire bankers, giving a very meek image through their modest life style, but these traders and moneylenders were viciously exploitative and very greedy.

The intelligentia, including the professional classes, was not an extensive body in the Moghul Empire. They were patronised by the Emperors and individual nobles, who were generous patrons of the professions and art - through pensions or gifts, they maintained scholars, poets, theologians, physicians, painters, musicians and dancers.

Among the ranks of this professional 'middle' class may also be counted the accountants and officials who were employed in large numbers in the nobles establishments. This was also true of the vast bureaucratic apparatus of the imperial administration and the royal establishment.

The employees of the Moghul state and nobility included a vast number of lesser functionaries ranging from *Ahadis* and revenue officials to petty clerks and accountants attached to every department of the

administration and every noble's establishment. This was not a very small group of people involved.

The army of servants and retainers in the employment of the Emperor and nobles lived at the margin of subsistence and were maintained primarily for the purposes of useless display. Actual income of such functionaries frequently exceeded their nominal pay and many of them could aspire to a life-style modelled on that of the nobles. The servants of the nobles and high officials also fleeced the common folks in the name of their masters.

Many of the middle classes reproduced or tried to imitate on a smaller scale the mode of living of the nobility.

According to Irfan Habib, if two-third of the noble's income was spent for the maintenance of cavalry and artillery and about one-tenth for the support of the professional classes, the nobility should still have had about a fourth of their income to spend on themselves. Much of this went undoubtedly to maintain their notoriously huge establishments and luxurious life styles. The Moghul troopers and soldiers also maintained a relatively large human establishment, comprising their own families, servants and slaves. Irfan Habib calculates that population dependent upon Moghul 8,000 cavalry, including their own families directly at 30,000 and indirectly at over three million, while the numbers employed in the Moghul artillery was over 40,000 men[8].

Irfan Habib sees the expense of the Moghul army on the move from his following statement. "The Moghul army on the march - a moving city with 200,000 to 300,000 men and vast quantities of tents, baggage, furniture, etc. carried by some 50,000 horses and oxen - was as much a display of imperial life-style as a purposive instrument of state power".[9] Thus a very large number of people were engaged in purely unproductive services and lived a life of minimum subsistence.

The lower classes in the Moghul Empire comprised of the cultivators, artisans, small traders, shopkeepers, household servants, slaves etc.

6. ECONOMIC CONDITIONS OF THE COMMON PEOPLE

During the entire Moghul period, the economic conditions of the people were very bad. Their lives were simple and their belongings limited. Common people " did not use woollen clothes at all, very few could afford to have shoes".[10]

Shopkeepers were better off, the lives of artisans was hard. They had to work in different villages to maintain themselves, as there was not enough work in one village. Food was much, therefore no starvation except in times of famine. Life of the peasants in the villages was tedious, dull and hopelessly monotonous. Babur writes that, Hindustan "has unnumbered and endless workmen of every kind. There is a fixed caste (*Jam'i*) for every sort of work and for everything, which has done that work or that thing from father to son till now".[11] They worked hard, but the demand of the Emperors and their officials was great and burdensome.

The basic line of division among the working people of the countryside was, however, between the peasants and the land-less. This line was set socially by the cast system, which prevented by compulsion the menial' castes from tilling the soil on their own. Besides following their prescribed professions, leatherwork, scavenging, etc. they formed a rural reserve force for work on the fields of *Zamidar*s and peasants. For most peasants, life was a battle for bare survival. Recurring cycles of famine with immense immoralities. Nature's calamities underlined man's oppression. To the peasant, during the Moghul period, the heaviest burden that he had to bear was the land tax, which was an arbitrary surrender of such a large part of his produce.

Land revenue was the major causes of pauperisation of the poorer strata, especially the peasants, followed by moneterisation of the economy and greater fluctuations in prices. Most of the cash crops involved larger investments in cattle and in installations and heavier risks, in respect of harvest and prices, therefore the poorer peasants could not afford to harvest cash crops. Another means of exploitation of the peasants was by moneylenders, which charged very high interest rates.

7. THE DOCILITY OF THE PEOPLE

The Moghul State apparatus was parasitic. It was a regime of landlord predators who were inefficient. The reason why the Moghuls could raise so much revenue from taxation, without having a ruling class, which directly supervised the production process, was that village society was very docile.

Maddison writes that, "Another characteristic feature of Indian society was the joint family system", "where women were completely subordinate to men, and adult men were expected to do what their fathers told them". "This kind of society was the base of economic life for more than 2,000 years. Villages were defensive, self-contained units designed for survival in periods of wars and alien domination. They paid taxes to

whoever held state power, and were relatively indifferent to the passage of foreign invaders and rulers. Conquerors of India found a ready-made source of income, so they had no incentive to destroy the system. Instead they simply established themselves as a new and separate caste".[12]

At micro levels, each village had a three-tier structure of caste exploitation, the village headmen cultivating with hired labour; the mass of ordinary cultivators; and the wage labourers being exploited.

Although self-cultivators of the land (*Khwud-kasht*), the richer farmers employed labourers as their servants. They put these servants to the tsks of agriculture - making them plough, sow, reap and draw water out of the well. The servants were paid their fixed wages, whether in cash or in grain. The farmers then appropriated to themselves the gross produce of cultivation.

The relevant absence of the use of save labour in production is, perhaps, to be explained by the presence of a very large class of land-less labourers, who could be called upon to work in the fields in return for the provisions of their barest needs of subsistence.

Cultivators coming from other villages were strangers, and, classed separately (*Paikasht*) were obliged to settle terms with the village headmen in each village. The caste system, therefore, remained an important pillar of the system of class exploitation during that period.

8 LABOUR & ARTISANS

Skilled labour in Moghul Empire included all types of artisans: weavers, spinners, carpenters, blacksmiths, goldsmith, silversmiths, glass-workers, potter, shoemakers, as well as construction workers and builders of all types.

The artisan served as the productive base of urban economic life, his products constituted one of the chief sources through which the towns could eventually acquire an independent economic status. But crafts and trade in Moghul Empire was closely linked with the caste system, evolved in the Hindu society from thousands of years.

A. Maddison writes, "From an economic point of view, the most interesting feature of caste in traditional society is that it fixed a man's occupation by heredity".[13] There was division within the caste that led to emergence of sub-castes with distinct occupations due to high specialisation in production.

Most important skilled workers in Moghul Empire, from an economic point of view, were the weavers and spinners, followed by the carpenters and the blacksmiths and other artisans.

9. TEXTILE TRADES & CRAFTS

The development of cotton manufacture drew a growing number of people of various castes into the spinning trade. The spread of weavers and spinners as professional artisans were linked with the growth of the weaving trade, which led to further development of the productive forces and division of labour.

The operations connected with the processing of cotton, and also a number of other steps like processing the thread, cotton cleaners, combers (carders), twisters, winders, dying of cloth, printing etc. became independent professions during that period.

In Bengal people who bred silkworms and reared cocoons were called *Chassars.* There were weavers in practically all-Indian towns and contributed for the greater part of town population.

In the 1630's, for example in two large towns of Sindh - Thatta and Nasarpur, there were about 3,000 weavers. Dacca, one of the largest centres of cotton- cloth production, had in the 1620's a population of about 150,000 - 200,000 and weavers accounted for a large part of this population[14].

Weaving was the leading trade in all the main regions of Moghul Empire as regard the number of people employed and its role in the economy. But the economic condition of the weavers was not very good. Weavers were indeed the most miserable of all artisans.

10. OTHER CRAFTS OF MOGHUL INDIA

Detailed analysis of crafts and trade in the Moghul Empire and their role and importance in the economic life of that period has been given by A. I. Chicherov.

Carpenters and blacksmiths made different kinds of weapons, agricultural implements and household articles. In some places the same person made the whole implements of agriculture, wood and iron, and coarse work of both kinds (as carpenters and blacksmith); while in other the two professions were separate.

The potter produced all types of utensils and earth ware and was considered a highly skilled craftsman, while the washermen washed the community's clothes.

The community barber as well as the washermen carried out many additional functions. The barber for example, was also the village healer and veterinary surgeon, he acted as musician during celebrations, he cooked at wedding feasts, carried news from village to village, and he was the community matchmaker etc. The peasants for auxiliary agricultural work on the fields often enlisted the barber and the washermen.

The village community tanner (shoemaker), or *Chamar*'s main business was the sewing of leather footwear, wineskins, saddles, harness etc. In the Punjab the *Chamar*, in addition to being the tanner and acting as sweeper, was also obliged to supply the community members with wood, to mow grass, to act as watchman and porter, to repair the peasants houses and to help in agricultural work.

Coppersmiths, goldsmiths and jewellers in many parts of Moghul Empire were small commodity producers who, for a payment, produced all sorts of ornaments for women and retailed on markets expensive metal household whereas, images of gods, etc.

Craftsmen in the sub-continent had great artistic ability, but because they were poor and the prices of materials very high, middlemen enriched themselves on their costs.

11. CONDITION OF SLAVE & OTHER UNSKILLED LABOUR

Unskilled workers included slaves, bearers (palanquin bearers), porters, cart-men, domestic servants, water-carriers, serfs, and agricultural workers etc.

Work and life of slaves and servants was not much different, they were mostly employed for domestic work, and their life was miserable. The Imperial camp employed between 2000 to 3000 servants.[15]

Slavery was considered legal during the Moghul Empire and hereditary played the major role to determine and continue this institution. Criminal offenders; insolvent debtors with their whole family; revenue defaulters etc. constituted slaves, accumulated by `voluntary surrender' of children by famine-stricken parents to work for their whole life.

The economic conditions of the skilled workers, `free' unskilled labourers and that of slaves in Moghul Empire were not very different.

12. PRICES AND WAGES DURING THE MOGHUL PERIOD

Prices of some commodities in the Moghul Period were quite low, while of others very high, thus survival of the common people remained hand to mouth through out that period

Prices of some basic commodities in Akbar's time (per one man or 55 & 1/2 pounds) were. Wheat was sold at a rate of 12 dams; barley at - 8 dams; gram at - 16 & 1/2 dams; jawar at - 10 dams; millet at - 8 dams; milk at - 25 dams; oil at - 80 dams; ghee at - 105 dams; and white sugar at - 128 dams. Vegetables were cheap, while a sheep could be bought for Rs. 1. 80. And a cow could be bought for Rs. 10. Wages at that time were low, - an unskilled labourer earned nearly 2 dams, or one-twentieth part of a rupee, while a skilled labourer earned approximately 7 dams.[16] 400 maunds, or 3,200 Kharasani maunds of saffron was produced in Kashmir and a sair of it was sold for 10 rupees. Upon giving the extract to the public officer, the peasants received in return an equal weight of salt, in lieu of money wages[17]

13. WAGES OF COMMON FOLK

Women spinners selling thread to merchants or weavers earned sometimes as much as 7 to 10 shillings (about Rs. 5 to 8) a month. While highly skilled spinners producing the finest thread earned up to Rs. 3 a month; for thread of average quality the spinners received up to 2 rupees a month, and for the coarse kind only 12-14 annas. For very high quality cloth, the spinners earned from Rs. 4 to even Rs 5.5 a month, therefore the monthly pay of an adult spinner came to about one rupee. The pay for bleaching cloth was Rs. 3 per courage (score) of cloth, while the blacksmiths generally earned 2 annas a day, an experienced blacksmith would earn up to 3 annas. In rural areas blacksmiths earned about half as much as their counterparts in towns. Shoemakers in the rural areas earned about Rs. 3 and in the towns between Rs. 5 and Rs. 6.[18]

Wages of unskilled workers in Moghul Empire were - for bearers, the pay varied from 192 to 384 dam; for carters, for a carriage of 81 maunds in carts they were paid Rs. 153, with a promise of Rs. 8 more. If the cart arrived in time; porters were given 4 rupees annually and 2 & 1/2 *Kachha Sairs* per day of wheat flour for their services.

For servants and peons, for example, the "Dutch Factory at Agra in 1637-38 indicates that the servants and peons were paid Rs. 3 and Rs. 3.5 per month while unskilled labourer were paid 2 dams per day." "The lowest wage earned by the ordinary unskilled labour under Akbar was 2 dams or Rs. 1 & 1/2 a month. This was considerably lower than the wages paid to Terry's guards and those paid to peons in 1637 in the Dutch factory at Agra.

It seems that the wages had risen in the reign of Jahangir as compared with the time of Akbar. However, the unskilled labour was a loser in Shah Jahan's times as compared to earlier Emperors where as the master artisan and the skilled craftsmen added to their wages, though small but the monthly wages of the unskilled labour went down from an average of Rs. 3.5 to Rs. 2.75".[19] The pay of a soldier was approximately 1,700 paisas per annum.[20]

14. PAYS OF NOBILITY

Nobility and soldiers of the Moghul Empire were highly paid for their allegiance to the Emperors and received both land and money wages in accordance to their rank and position.

Sher Shah Suri, although not a Moghul his rule had an important impact on the economic policies of Emperor Akbar. It should be noted that, Sher Shah (1540-1545) paid his nobles (*Umara*) both monthlies (*Mahana*) in cash and gave them direct administration of land (*Iqta*). The state service drew the highest talent in the country, as it was the most lucrative career open to any one. These *Amirs* not only enjoyed high-sounding titles, but were also receiver very handsome pays. Many engaged in business, and made large profits. The salaries of the *Mansabdars* in the highest grade, for example, ranged from Rs. 12,000 a month to Rs. 30,000.[21]

Lower officers received from 150 to 700 rupees a month, and kept but two to six horses; and beneath them in rank were the *Rausaldars*, who were paid daily, and often filled the posts of clerks and secretaries. *Mansabdars* was entitled to the pay 25 rupees a month for each horse.[22]

Besides, a *Watan Jagir* (the territory of a subordinate chief who had been enrolled in the imperial service) was granted to a *Mansabdar*. His pay was then supposed to be met by the income of this territory.

Irfan Habib calculated the income of the ruling elite of the Moghul Empire; "The small ruling class consisted, of about 8,000 *Mansabdars*,

according to an official estimate of 1647. The income of 445 *Mansabdars* amounted to 61.5 per cent of the total revenues of the Empire; and of these again a mere 73 (or 0.9 per cent of the total) claimed for their share 37.6 per cent of the total revenues". "The first claim upon their income was that of the army. Among the top 445 *Mansabdars*, the total pay against their sawar ranks ... came to 77.2 per cent of their total pay."[23]

Income of the top 445 *Mansabdars* in the Moghul Empire and proportion of pay against *Zat* and *Sawar* rank in total salary of *Mansabdars* are shown in the following tables: [24]

Table 1:

Income of the top 445 *Mansabdars* in the Moghul Empire under Akbar's rule

	Total salary bill For both *Zat* and *Sawar* ranks (Million of dams)	Percentage of estimated revenue income (*Jama)* of the Empire[25]
4 Princes of imperial family with ranks above 7,000 Zat	724.0	8.2
21 *Mansabdars* of 5,000 to 7,000 Zat	1,417.7	16.1
43 *Mansabdars* of 3,000 to 4,000 Zat	1,080.2	12.3
151 *Mansabdars* of 1,000 to 2,500 Zat	1,454.0	16.5
226 *Mansabdars* of 500 to 900 Zat	735.0	8.1

.Table 2:

Proportion of pay against Zat and sawar rank in total salary of *Mansabdars*

Class of *Mansab-* Dars	Total salary bill	Pay against salary bill (Min. dams)	% of total salary Bill	pay against *sawar* ranks (Min. dams)	% of total salary Bill
Princes of above 7,000 *Zat*	724.0	124.0	17.1	600.0	82.9
Mansabdars of 5,000 - 7,000 *Zat*	1,417.7	229.7	16.2	1,188.0	83.8
Mansabdars of 3,000 - 4,000 *Zat*	1,080.2	266.6	24.7	813.6	75.3
Mansabdars of 1,000 - 2,500 *Zat*	1,454.0	398.8	27.4	1,055.2	72.6
Mansabdars of 500 - 900 *Zat*	735.0	209.6	28.5	525.4	71.5 [26]

15. LIFESTYLE OF THE ROYALTY

The luxurious life of the royalty and the wealth of the nobles can be judged from the prices of presents received or given by them

Akbar's treasure contained 70 million rupees in cash,[27] and at the fall of Golkonda, Aurangzib appropriated some seven millions sterling from the royal property of Golkonda.[28]

The price of the Peacock Throne was Rs. 19 crores (Rs. 19,00 million)[29]

When a prince was born the nobles offered jewels, money, elephants or horses as presents to the Emperor, or when an Emperor visited his nobles at their homes. His loyal subjects gave expensive gifts to him.

When Babur visited his paymaster the latter's offerings in money and goods were worth more than two lakhs of rupees; when Jahangir visited Asaf Khan at his house the latter offered presents worth Rs. 1,14,000 consisting of jewels, jewelled ornaments, articles of gold, and cloth. When Jahangir visited *Itimad-ud-Daulah* at his house the latter presented him a throne of gold and silver worth Rs. 4,50,000.[30]

In December 1665, Tavernier offered to the Moghul Emperor, "a shield of bronze in high relief, thoroughly well guilded, the whole price worth 4378 livres, equal to pound sterlings 328-7. A battle mace of rock crystal, all the sides of which were covered with rubies and emeralds inlaid in gold in the crystal, costing 3119 livres, equal to pound sterling 133-18-6. A Turkish saddle embroidered with small rubies, pearls, and emeralds, costing 2892 livres, equal to pound sterling's 219-15-0" [31]

The Moghul Emperors also bestowed on the princes and nobles expensive gifts from time to time.

Dara received from his father Shah Jahan, a robe of honour studded with diamonds and pearls, said to be worth 50,000 rupees (pound sterling 5600), and a splendid ruby for his turban, besides other jewels and money to the value of a third of a million. [32]

The extent of the wealth of the nobles can be judged from the following example.

During the reign of Shah Jahan in the year 1641 *Yamin-ud-Daulah* Asaf Khan Khan-Khanan, Commander-in-Chief, who enjoyed the Mansab of 9000 persons and 9000 horses, had a gross pay of sixteen *Crores* and twenty *Lacks* of *Dam*. His net profits or income after paying his contingent amounted to fifty lakhs of rupees. At his death he left money and valuables worth two *Crores* and fifty *Lakhs* of rupees.[33]

16. FAMINE

In spite of the riches of the Empire, the people were very poor. Their condition worsened, because of the feudal set up, frequent wars, unpredictable weather conditions, primitive modes of production and an uninterested official attitude.

The Moghul Emperors, their nobles and the middlemen became rich at the expense of the peasants, craftsmen, artisans and traders.

When there would be an abundant harvest, it was taken away by the revenue collectors and landlords. And when the crops would fail, famine would rage in the kingdom, killing thousands.

Professional artisans, especially spinners and weavers depended almost completely on the market for their livelihood and for every day food, therefore, their families would starve when the crops failed and there was famine.

Many people died also of plagues and disease because of a lack of any proper hygienic or health care.

Famine was raging in Sher Shah Suri's reign, thousands died in Delhi and Agra of starvation. When Akbar ascended the throne the economic conditions of the people had deteriorated and thousands had died of starvation, therefore he ordered the government to come to the help of people in times of famine.

In 1650 famine broke out in Deccan, Gujrat and Khandesh, thousands of people died of starvation. Adulteration in flour and meat was rampant, the people suffered and thousands died, while others left and land became uncultivable. In 1770 famine in Bengal killed many spinners and cotton-growers pushing up the price of thread by 25 %.[34]

From 1616-1691 Plague broke out in Delhi, Lahore, Agra and other towns, many died, and no effective measures were taken to combat it.

H. M. Elliot writes that, in eleventh year of Jahangir's reign, "a pestilential disorder (*Waba*) broke out in certain parts of Hindustan, and gradually increased until it raged with great fury. This dreadful calamity arose in the parganas of the Punjab. It reached Lahore and a great number of Muslims and Hindus lost their lives from it. It then proceeded towards *Sirhind* and through the Doab as far as Delhi and the surrounding place. It destroyed many villages and *Parganas* in that part of the country".

"It was also very severe in Kashmir, ... In Hindustan no place was free from this visitation, which continued to devastate the country for a space of eight years".[35]

Historians argue that the local population of the Moghul Empire, with the exception of a few martial races, was very docile, and they readily accepted the supremacy of foreign invaders. The causes given for this docility, apart from weather condition, diet (vegetarianism), and non-violent preaching of Hinduism, Buddhism and other religions of the local population, are joint family system and mainly the caste system prevalent in India from centuries. "This docility was not ensured by a church hierarchy, but by a subtle network of internal sanctions which existed nowhere else in the world".[36]

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Book Review

Title:	**Human Resource Development and Management in Pakistan.**
Authors:	**Prof. M. Aslam Chaudhary, Quaid-e-Azam University, Abdul Hamid, B.Z. University.**
Publisher:	**Ferozesons, Lahore (1999).**
Pages:	**216 + xiv** **Price Rs. 300**
ISBN:	**969 0 01541 9**

The above titled book is a new publication on the subject of development and management of Human Resource in Pakistan. The book has covered major issues on the subject matter. The book consists of eleven chapters. The important chapters are: International Comparison of Human Resource of Pakistan, Supply and Demand of Human Resource and their forecast up to year 2010, an analysis of unemployment by profession, sector and education level, Present and future prospects of employment generation, Development of small industries and employment generation. Poverty and income distribution, Child labor and new directions to manage human resources. Besides, strategy and policy for better development of Human Resources are also discussed. The foreword of the book is written by Sartaj Aziz, former Minister for Finance and later Minister for Foreign Affairs. He has very clearly mentioned the neglect of human resources in the past, as argued by the authors, and stressed for more financial allocation as well as their better utilization. Comments by renowned economists such as Dr. Sarfraz Qureshi, Dr. A.R. Kemal, Dr. Abdul Rauf Butt and Dr. K. Amjid Saeed are quite appreciative of the efforts made by tthors.

The book contains new research findings in the subject area. It is also supplemented by the important findings of other scholars. The official figures are analyzed by using new methodologies so that the factual position is brought home to the readers. The information pertaining to the disputing figures is reviewed in the light of fresh survey, for example, as per official statistics, unemployment in Pakistan is indicated around 6%, however, this book points out that the same, based upon fresh survey is over 20%. The issue is analyzed by utilizing different approaches. Besides, forecast is given for important variables so that policy guidance is provided. An action plan based upon the recommendations can solve issues of human resource development and management.

The book provides a vivid picture of the existing poor human resources in Pakistan and it presents a case to increase investment in the areas of education and skill development. It critically reviews the low financial allocation for education and its neglect, which led to emergence of the present severe economic problems. The book also provides a good discussion on the social and economic benefits of promoting literacy and skill. Mass spread of education is seen as a solution to several other economic problems like high population growth, lawlessness and degradation of moral values. In addition to above, the book contains uptodate situation of child labor and inequality in income distribution. Besides development of small industries is seen as a major solution to widespread unemployment. It contains a detailed review of small industries and their pattern of development.

Although the book contains a comprehensive analysis of the major issues pertaining to human resources, however, it needs to further strengthen the debate of social benefits of education. Inclusion of a program to reduce poverty and child labor could provide an additional guideline to the policy makers. In this respect the present programs like Social Action Plan (SAP) may be reviewed and suggestions for its improvement need to be incorporated. The provision of social services should focus both on quantity and quality. Most important is their sustainability. It is a core program, which needs to be discussed in details. I am sure the authors will keep on working in this area and they will further improve the book. The issues therein are not only important in Pakistan but these issues are also very popular in the world. The book is equally useful for courses in economics, M.B.A. and CSS examinations. It is a good effort to bring knowledge to the readers and scholars. The book is expected to promote further research in the area of human resource development.

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