Volume XXX111 2000 No. 1 & 2

GOVERNMENT COLLEGE

ECONOMIC JOURNAL

Department of Economics
Government College
Lahore - Pakistan

ISSN 0242-2815

GOVERNMENT COLLEGE
ECONOMIC JOURNAL

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Volume XXXIII 2000 No.1&2

ESTIMATION OF DISTRIBUTION OF INCOME IN PAKISTAN AND INDIA

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1. INTRODUCTION

The topic of distribution of Income and Wealth has been very popular among the economists. Similarly, comparison of income distribution across countries has also been popular subject among researchers. Numerous studies have been conducted to compare size distribution of income among various countries of the world. Main problems faced in international comparison are of two types. The first one is related to the aggregates used for comparison i.e. the content of the aggregates is not uniform in different countries even though the names are identical. The other is related to the fact that the data obtained from various countries is expressed in terms of their own currencies. This data cannot be compared directly; therefore, we use official exchange rates that are inadequate for proper or true conversion.

Despite these difficulties encountered in the comparison, many people are still writing on the topic. In the following few pages we shall review some of the studies in the area of international comparison of income distribution. One of the oldest studies in this area is that of Morgan (1953) who compares distribution and level of income in Sri Lanka with one underdeveloped (Puerto Rico) and two developed countries (USA and UK). In his paper Karvis (1960) compares U.S. distribution of income (before tax) with ten other countries and explains differences that are observed. The comparisons are made by selecting, from American data, distributions that match those for other countries as closely as possible with respect to the strata of society covered, the concept of the income receiving unit, the definition of income, and general technique.

Oshima's (1962) paper supplements the discussion initiated by Professor Kuznets and continued by Professor Irving Kravis in his work on the impact of economic growth on size distribution of income. The paper deals with (1) measures of income inequality in international comparisons (2) determinants of differences in income dispersions in various countries, and (3) the sources and limitation of data used. Szilagyi (1966) notes some of the methodological problems encountered while comparing national income and its components, of the planned economies of Eastern Europe.

The paper by Podoluk (1970) compares the income distribution of USA and Canada(currently/over time). The comparison of distribution of family and individual income is made by arranging incomes into various quintiles.

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Then further refinement is made by arranging data according to family size, age, and level of education.

Richard Weisskoff (1970) in his paper, answers the following question. Has economic growth in developing countries led to increasing inequalities in the size distribution of income? To answer this question, the author measures the changes in the size distribution of income of families during the post war period of growth in Puerto Rico, Argentine, and Mexico.

The paper by Ewusi (1971) is written in response to professor Irving Kravis's (1960) conclusion that there is greater equality of income distribution in more advanced countries and that economic development generates "forces that operate to make income distribution more equal". The author says that distribution of wages and salaries in Ghana tend to indicate that the increases in per capita income in African countries do not necessarily lead to a more equal distribution.

The study by Adelman and Morris (1971) is an empirical investigation into the sources of inter-country variation in various facets of income distribution in 44 underdeveloped countries of the world. Utilizing various sources, the authors construct basic data from which they derived dependent and independent variables chosen as having some possible relationship with the aspects of income distribution.

Jerry Cromwell (1977) in his paper collects and extends the data base of size distributions of income (provided in Paukert 1973) by country, and then uses these data to develop a hypothesis about the relation of stage and mode of development to the distribution of income. In particular, the author attributes the increase in income inequality which often occurs in the early stages of economic development to the uneven spread of capitalist modes of production leading to separation of capitalist sector from the rest of the economy.

Pan A. Yotopoulos (1987) while utilizing HIES, of fourteen countries, measures the within-country relative and absolute poverty in real terms. Having normalized various national income distribution for real income, he defines global socio-economic classes and measure their density based on material levels of living that cut across national aggregates.

The paper by Michael O, Higgins, Guenther Schmaus, and Geoffery Stephenson (1989) reports the detailed results of a comparison of the distribution of income in seven countries using the Luxembourg Income Study (LIS) database. The paper presents overall pattern in the inequality of income and economic welfare in Canada, USA, U.K., Germany, Sweden, Norway, and Israel. The paper also shows the role of cash benefits in increasing equality.

In another paper Yotopoulos (1989) collected income and expenditure data from 14 countries to construct national income distributions and, after normalizing by purchasing power parities, he constructed a world distribution of real income. The density of real income equivalent groups (socio-economic classes) across countries is measured for the "affluent", the "well off" and the "poor".

In their paper Peter Saunders, Halen Scott, and Garry Hobbs (1991) extend the Previous analysis of income distribution and redistribution using the Luxembourg Income Study (LIS) data base by including Australia and New Zealand in the comparisons. Formby, and Smith (1991) analyzed LIS data using recently developed statistical tests and used this data to compare the degree of relative inequality across nine developed countries. Green, Colder, and Ryscavage (1992), using LIS, present a comparative analysis of earnings inequality during 1989 among prime age men who headed households and worked year-round, full time, from five industrialized countries.

In Saltz's (1995) paper (an expansion of Kuznets work) a.two stage least squares estimate of the distribution of income in the third world is derived using the per capita ownership of cars, infant mortality rates, and the average daily calorie requirement along with the per capita GDP. Whalley's (1997) paper is concerned with the calculation of worldwide income distribution. The paper uses a variety of assumptions to produce calculations of worldwide income distributions for various international data compilations.

We can summarize the above studies as follows.

(i) Almost all the studies reviewed above used published grouped data to estimate various measures of inequality etc.

(ii) Very few studies (only one or two) used non-grouped micro data like Luxembourg Income Study Data.

(iii) In most of the studies less developed countries are compared with developed countries i.e. dissimilar countries are compared with each other. Probably in two studies, only developed countries are compared with developed countries.

iv) In almost all cases individual countries are compared with each other and then brought on Lorenz chart.

(v) Many studies discuss (a) problems related to various measures of income inequalities (b) problems related to inter country income comparisons.

(vi) In some cases countries located in certain areas are compared with each other e.g. Australia Vs. New Zealand.

(vii) In inter country comparison almost all the studies tried to test one hypothesis i.e. Kuznets inverted U hypotheses. The

data sometime confirmed with the theory and it did not other time.

In our study we intend to do the following:

(i) Apart from published data we shall also make use of non-grouped micro data.

(ii) Like many studies mentioned above, one to one comparison is made between Pakistan and India.

(iii) As mentioned above, many studies tried to test Kuznet's inverted U hypothesis. According to this theory, inequality varies in accordance with the level of development. The theory we wish to test in our study is that no matter what the level of development may be, Muslim countries(like Pakistan) would always have better distribution of income vis-à-vis non-Muslim countries(like India). The reason for this is the existence of various Islamic measures and institutions (like *zakat,* prohibition of interest etc.), which, if applied, would always lead to better distribution of income in Muslim countries/societies[1].

DISTRIBUTION OF INCOME IN PAKISTAN AND INDIA

As we mentioned above the main purpose of our study is to compare the distribution of income between Pakistan and India. The idea to compare the distribution of income between the two countries comes into one's mind due to the fact that, despite being archenemies with completely different religious background, there are many similarities between the two countries. For example, these two countries are geographically very close to each other. They are both underdeveloped having per capita income and resources more or less at the same level. They share common sub continent culture. They also share common understanding in approaching and solving various social and economic problems.

METHODOLOGY

Numerous indices exist for measuring the degree of inequality in the distribution of income and wealth. They range from simple measures like the share of aggregate earnings received by each quintile, the coefficient of variation, and the variance of the natural logarithm of earnings, to more complex measures such as the Gini, Theil, Atkinson measures, and generalized entropy indices. All have different mathematical constructions and can lead to different assessments concerning the degree of inequality (Slotteje, 1989).

In our study the main measure of inequality used as proxy to show distribution of income in Pakistan and India is Gini coefficient or ratio.By means of this ratio, the cumulated shares of income as ordered from poor

to rich are compared to the income shares that would be held by recipients under the perfect equality. The Gini ratio approaches zero as the actual income distribution approaches perfect equality and one as the actual income distribution become highly concentrated.

DATA BASE FOR INDIA

On our part we tried our best to get data from India preferably micro data on tape. When this mission failed we modified our demand and tried to get secondary data directly from India. When these efforts also ended up in failure we satisfied ourselves with data we got from World Development Report 1998 and A world Bank Country Study 1997. Using the data taken from the above-mentioned documents we proceed to present our analysis below.

DATA BASE FOR PAKISTAN

The main feature of this study is that it is based on individual household data of the Household Integrated Economic Survey (HIES) 1992-93 being conducted by the Federal Bureau of Statistics. At the time of this study Household Integrated Economic Survey 1992-93 was the latest data available on tapes. The universe of this survey consisted of all urban and rural areas of the four provinces of Pakistan defined as such by 1981 Population Census excluding FATA, military restricted areas, districts of Kohistan, Chitral, Malakand (Protected Area) and FATA of NWFP. The population of excluded areas constitutes about 4% of the total population.

SAMPLE COVERED

Due to various reasons, out of 14,976 households, 382 households could not be numerated for various reasons such as non-contact, locked house etc., thus the results of this survey are based on 14,594 households.

PACKAGE USED

The package used to calculate measures of inequality is Statistical Package for Social Sciences (SPSS).

FRAME OF REFERENCE

The most commonly used income receiving/consuming unit (frame of reference) is household but according to Kuznets (1976) "it makes little sense to talk about inequality in the distribution of income among families or households by income per family or household when underlying units differ so much in size. A large income for a large family may turn out to be small on per person or per consumer equivalent basis, and a small income for a small family may turn out to be large with allowance for the size of the

family. It follows that before any analysis can be undertaken size distributions of families or households by income per family or household must be converted to distribution of persons (or consumers equivalents) by size of family or household income per person or per consumer" (Kuznets. 1976/87).

The point is that there is no sense in assigning equal weight to a single person household and households consisting of say ten or more members. The traditional framework, which treats households as equal units regardless of their size and composition, grossly distorts the true image of the distribution of income and makes the level of inequality look like what it really is not. Similarly any inter temporal comparison of pattern and trend of inequalities may give misleading directions if analysis of income distribution is conducted in terms of per household/family income. In reality "trends observed in the conventional distribution may well be associated with trends in size differences among families, not in income per person or per consumer" (Kuznets, 1976). Likewise, international comparisons of traditionally measured income inequalities lose sense if no account is taken of household size variations and other demographic characteristics. This may particularly be true in the case of comparisons between the developed and the developing countries as the size and compositions of families/households undergo fundamental changes with modernization and industrialization process. (Kuznets, 976).

In view of the above arguments, an attempt is made to calculate Gini coefficient as a measure of inequality using individuals as frame of references. Ours is not the first attempt in this direction. Numbers of other writers have calculated various measures of inequalities for countries of their choice using both households and individuals as frame of reference. These include Kuznets (1963,1976), Ranadive (1965), Ojha (1971), Kumar (1974), Henry (1975), Hsia and Chou (1978), Visaria (1980), Datta and Meerman (1980), Choudhry (1982,1984,1995) and many others.

As noted in the World Development Report, Gini coefficient for India, calculated on the basis of 'persons' data year 1992, was 0.338. This could be seen from table 1 below. Looking at the figure 0.338, it could be safely stated that India is one of those countries, which have minimum level of inequality. To make comparison meaningful similar data including Gini coefficients (using same source) for Pakistan is also presented in table 1. The table shows Gini coefficient for Pakistan equal to 0.312 which is lower than India by 0.026. The table also shows the share of lowest 10% of the population. It is 3.7% for India compared with 3.4% for Pakistan. At this stage India shows slightly better distribution of income for the poorest 10% of the population. The share of the poorest 20% is again slightly better (more), as shown in the table, for India than for Pakistan. The difference between the two countries is only 0.1%. The second, third and fourth quintiles show more income share for Pakistan compared with India. In the last or highest quintile the position of India improves (i.e. inequalities rises)

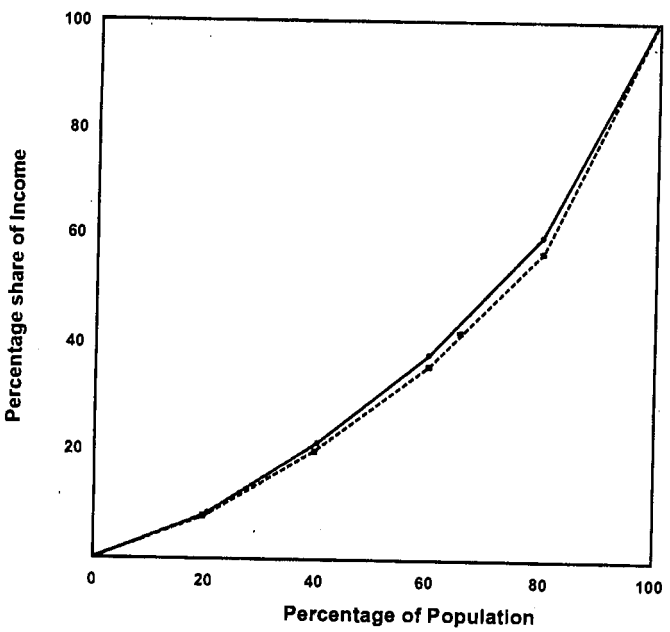
again as the share of richest 20% in India amounts to 42.6% compared 39.7% in Pakistan. The share of top 10% follows the trend of the highest 20%. Here again the share of highest 10% of the population is 28.4% in India compared with 25.2% in Pakistan. This means the lowest and the highest quintiles (also highest and lowest 10%) show better distribution (higher share) in India whereas middle three quintiles show better position for Pakistan. But since Gini coefficient is heavily influenced by middle quintiles, therefore, we see lower Gini coefficient for Pakistan compared with India.

Table 1

Measures	Pakistan (1991)	India (1992)
Gini Coefficient	.312	.338
Share of Lowest 10%	3.4	3.7
Share of Lowest 20%	8.4	8.5
Share of 2nd quintile	12.9	12.1
Share of 3rd quintile	16.9	15.8
Share of 4th quintile	22.2	21.1
Share of Highest quintile	39.7	42.6
Share of Highest 10%	25.2	28.4

The information from table 1 could be transformed into figure below

Figure 1



Solid Line shows Lorenz Curve for Pakistan
Solid Line shows Lorenz Curve for India

The figure shows two Lorenz Curves for both countries of Pakistan (solid) and India (broken). As we can see that at the poorest 20% level the distribution of income is better in India than in Pakistan. But as we move into second quintile the share of Pakistan improves and this improvement continues for the next two quintiles. In the last quintile the position of India improves (i.e. inequality rises) in the sense that share of highest 20% (i.e. richest) increases to 42.6% compared with 39.7% in Pakistan. While referring to the figure we can see that in the first quintile India Lorenz curve is above Pakistan Lorenz curve but in the second quintile Pakistan Lorenz curve cuts India Lorenz curve from below to stay on top until the two curves meet in the top right hand corner.

The Gini coefficients for the two countries show that distribution of income in Pakistan(Gini=0.312) is better than distribution of income in India(Gini=0.338). But the difference between the two coefficients is very small. This is also shown by the Lorenz curves in the figure above. The figure shows the intersection of the two curves at a point between first and second quintile. The intersection of the two curves makes our results doubtful in the sense that whenever two curves interest it becomes difficult to say which distribution is better. The intersection of the two curves shakes our confidence but given the difference in the values of Gini coefficients still we can say that distribution of income in Pakistan is better than the distribution of income in India.

As mentioned above we had problems in getting Indian data and some of the very crucial data could not be obtained. One such data was breakdown into rural urban for all India. However, we managed to get around this problem by taking average of Gini coefficients (of rural and urban) of fifteen states/provinces of India. The rural/urban Gini coefficients so calculated together with Pakistan's data are presented below:

	Rural	Urban
Pakistan	0.260	0.285
Indian	0.267	0.327

Here again the position of Pakistan is far better than that of India. This is particularly true in case of urban areas. There is difference of almost four points indicating that distribution of income in urban Pakistan is far better than distribution of income in urban India. In rural areas there is almost no difference between the two countries. Gini coefficient of 0.267 in India matches Gini coefficient of 0.26 in Pakistan. This shows that the distribution of income in rural India is the same as distribution of income in rural Pakistan.

Inequalities in Pakistan and India at Provincial/State Level:

To compare inequalities or distribution of income at provincial level is not an easy task. The reason is that so many states/provinces in India match four provinces of Pakistan. It becomes difficult to select four

provinces of India and then compare them with the four provinces of Pakistan. Anyway Gini coefficients of fifteen (on which data was available) Indian provinces/states are presented as follows.

Table 2

Levels of Inequalities in Different Provinces/States of India (As presented by (%) Gini coefficients)

Province	All	Rural	Urban
Andra Pardesh	30.29	28.29	32.29
Assam	23.44	17.89	28.89
Bihar	26.68	22.45	30.91
Gujrat	26.57	24.00	29.13
Occupied Jammu & Kashmir	30.57	26.31	34.82
Karnatka	29.42	26.97	31.87
Kerala	32.20	30.07	34.32
Madya Pradesh	30.48	27.96	33.00
Maharashtra	33.16	30.65	35.67
Orissa	27.63	24.57	30.69
Rajistan	27.92	26.48	29.36
Tamil Nadu	33.04	31.24	34.84
Uttar Pradesh	30.23	28.12	32.33
W. Bengal	29.63	25.41	33.84
Punjab	34.22	30.05	38.39

The data presented in the above table is obtained from "A World Bank Country Study–India–Achievements and Challenges in Reducing Poverty". The Gini coefficient data was broken down to rural and urban level but without the data for state/province as a whole. We solved this problem by taking average of rural and urban Gini coefficients of the fifteen states/provinces of India.

The table shows highest level of inequality (as represented by value of Gini coeffiient=34.22) in Punjab followed by Maharashtra and Tamil Nadu with Gini coefficients of 33.16 and 33.04 respectively. Whereas lowest level of inequality is found in Assam (Gini coefficient=23.44) followed by Gujrat (Gini coefficient=26.57) and Bihar (Gini coefficient=26.68).

Considering rural areas of various Indian states/provinces we can see (from the table) that highest level of inequality is found in rural Tamil Nadu (Gini=31.24) followed by Maharashtra (Gini=30-65) and Kirala (Gini-30.07). Whereas lowest level of inequality is found in rural Assam (Gini=17.89) followed by rural Bihar (Gini=22.45) and rural Gujrat (Gini=24.00). Turning to the urban areas of different states/provinces of India it can be seen that highest level of inequality is found in urban Punjab (Gini=38.39) followed by urban Maharashtra (Gini=35.67) and urban Tamil Nadu (Giini=34.84). Whereas lowest level of urban inequality is recorded by Assam (Gini=29.36) and Gujrat (Gini=29.13).

Given the complexity of the problem we adopt two ways to compare distribution of income in India and Pakistan. In the first instance we bring together eight states/provinces of India to be compared with four provinces of Pakistan. The eight Indian states/provinces are divided into two sets. The first set brought here consists of those states/provinces which have highest values of Gini coefficients whereas second group consists of those states/provinces which have lowest values of Gini coefficients.

Table 3

Province	All	Rural	Urban
Pak Punjab	30.00	29.40	28.40
Sindh	32.70	28.90	27.40
NWFP	25.20	29.70	20.80
Balochistan	20.80	17.50	20.20
Indian Punjab	34.22	30.05	38.39
Moharashtra	33.16	30.65	35.67
Tamil Nadu	33.04	31.24	34.84
Kerala	32.20	30.07	34.32
Assam	23.44	17.89	28.98
Gujrat	26.57	24.00	29.13
Bihar	26.68	22.45	30.91
Oarrisa	27.63	24.57	30.69

When we compare 'all' Gini coefficients of Pakistan with the 'all' Gini coefficients of the four most unequal provinces of India we can see that all provinces of Pakistan show lower Gini coefficients. In fact the most unequal province of Pakistan has lower Gini coefficient (=30.00 for Punjab) than the least unequal province of India (Gini=32.20 for Kerala). But if we compare 'all' Pakistan provinces data with 'all' data of the least unequal provinces of India we can see that even now the position of Pakistan in not too bad. In fact the position of Balochistan is still better than even the highly equal provinces of India. Balochistan's Gini coefficient of 20.8 is matched by 23.44 for Assam. In fact even the Gini coefficient for NWFP is lower than all these four least unequal provinces (of India) except Assam.

Comparison of rural/urban data for India and Pakistan shows that the values of Gini coefficients for rural Pakistan provinces are either in 20s or in 10s whereas Indian rural provincial Gini coefficients values are mostly in 20s and 30s. The provincial Pakistan urban data on Gini coefficients shows values in 20s but never exceeding 28.40 (for Punjab) whereas provincial Indian urban data on Gini coefficients is in 30s except on two places where coefficients are in 20s minimum being 28.98, higher than the highest Pakistan provincial urban Gini value of 28.40.

This means that no matter which way we look at it the values of Gini coefficients of Pakistan provinces (including rural/urban) are lower than Indian provinces Gini coefficient. This also means that distribution of income is better in Pakistan compared with India.

Another way of comparing distribution of income in Pakistan and Indian states/provinces is to compare Pakistan provinces with those India provinces which are geographically nearest to Pakistani provinces. In this connection we can compare Gujrat and Maharashtra with Sindh and Punjab with Pakistan Punjab. This could be done by looking at tables 2 and 3. Let us take Sindh vs Gujrat and Maharashtra first. The tables 2 and 3 show that while comparing 'all' data, the position of Sindh (Gini=32.7) is better than Maharashtra (Gini=33.16) but worst than Gujrata (Gini=26.57). The position of Pak Punjab (Gini = 30.00) is far better than Indian Punjab (Gini=34.22). Just to ensure the accuracy of our conclusions we can also compare rural/urban areas of nearest provinces i.e. Sindh with Gujrat and Maharashtra and Pak Punjab with Indian Punjab. Here the position of Sindh improves vis-a-vis India provinces than before but the position of Pakistan Punjab remains unchallenged. In fact now Pak position is much better than 'all' data comparison. This means that when we used the second method of comparison (i.e. comparing nearest with the nearest), the Gini coefficients compared show that distribution of income in Pakistan provinces is better than the distribution of income in Indian states/provinces.

CONCLUSION

To conclude this paper we can say that in the light of Indian data available at our disposal, the distribution of income in Pakistan in better than in India. This is true for 'all' India and Pakistan as well as for 'all' provinces of Pakistan and India. The distribution of income was also better in Pakistan when we compared the two countries on rural/urban perspectives. In short no matter which way we look at it the distribution of income in Pakistan is better than the distribution of income in India.

BIBLIOGRAPHY

Adlman, Irma and Morris Cynthia Taft (1971). An Anatomy of Income Distribution Patterns in Developing Nations - A summery of Finding. International Bank for Reconstruction and Development. International Development Association, staff working paper No.116, Sept

Ahmad, Ehtisham and Ludlow, Stephen (1989). Poverty, Inequality and Growth in Pakistan. *The Pakistan Development Review,* Vol.28, No.4.PP.831-850.

Bentzel, R. (1970). The Social Significance of Income Distribution Statistics, Review of Income and Wealth, Series 16, No.3, September 1970.

Bergan, Asbjorn (1967) Personal Income Distribution and Personal Savings in Pakistan, 1963 64. *The Pakistan Development Review,* Vol.7 No.2.

Bishop, J. A. Formby, J. P. and Smith, W. J (1991). International Comparisons of Income Inequality: Tests for Lorenz Dominance Across Nine Countries. Economics, Vol. 58 No. 232 Nov, 1991.

Bjerke, Kjeld (1970). Income and Wage Distribution - Part I: A survey of Literature, Review of Income and Wealth, Series 16, No. 3- September 1970).

Cheema, A.A. and Malik, M.H. (1984). Consumption and Employment Effects of Income Redistribution in Pakistan. *The Pakistan Development Review.* 23(2 & 3), P.P. 347-360.

Choudhry, M.K. (1984) Income Inequality in Pakistan-Some Estimates Based on Household Income Per Capita *The Kashmir Economic Review*, Vol.1, No.2.

Cromwell, J. (1977). The Size Distribution of Income: An International Comparison, Review of Income and Wealth, Series 23, No. 3, September 1977).

Dalton, H. (1920). The Measurement of the Inequality of Income, *Economic Journal.* Vol.30.

Danziger, Sheldon and Taussig, M.K. (1979) Income Unit and the Analogy of Income Distribution. *Review of Income and Wealth* No.4. Series 25 Dec. 1979.

Datta, G. and Meerman, J. (1980), Household Income or Household Income Per Capita in Welfare Comparisons, *Review of Income and Wealth, Series* No.26.

Davies, J.B. (1979). On the size Distribution of Wealth in Canada , *Review of Income and Wealth* No.3, September 1979.

Ewusi Kodow.(1971) Note on the Relative Distribution of Income in Developing Countries. *Review of Income and Wealth,* Series 17 No.4 Dec.1971

Ginnneken. W.V. (1982). Generating Internationally Comparable Income Distribution Data. Evidence from the Federal Republic of Germany (1974), Maxico (1968), and U.K. (1979"), *Review of Income and Wealth.*

Green, Gordon and Coder, John and Ryscavage, Paul (1992) International Comparison of Earnings Inequality for Men in the 1980s, *Review of Income and Wealth,* Series 38 No.1.

Henry, R.M. (1975), A Note on Income Distribution and Poverty in Trinidad and Tobago, Research Wroking Paper WEP 2-23/WP 29 Geneva, ILO.

HIES 1992/93, Federal Bureaus of Statistics, Statistic Division, Govt. of Pakistan.

Hsia, R. and Chau, L. (1978), *Industrialisation, Employment and Income Distribution: A Case Study of Hong Kong* . a study prepared for ILO London Croom Helm.

Jeetun, A. (1981) Trends in Inequality of Income Distribution in Pakistan. Discussion Paper No.29. *Applied Economic Research Centre*, University of Karachi.

Jenny R. Podoluk- (1970) Some Comparison of the Canadian, U. S. Income Distribution, *Review of .Income and Wealth*, Series 16, No.4, December 1970.

Jerry Cromwell (1977). The Size Distribution of Income: An International Comparison *Review Income & Wealth* series 23, No.3 Sep. 1977.

Kakwani, N. (1980) *Income Inequality and Poverty: Method of Estimation and Policy Application*, N. Y. Oxford University Press.

Karvis, I. B. (1960) International Differences in the Distribution of income, *International Review of Economic & Statistics,* Nov. 1960

Kondor Yaakov (1975). The Gini Coefficients of Concentration and the

Kuznets Measure of Inequality. A note *Review of Income and Wealth* series 21 No.3 Sept 1975.

Kruijk de Hans (1986) Inequality in the Four Provinces of Pakistan. *The Pakistan Development Review* Vol.25 No.4.

Kruijk de Hans and M. Van Lecuwen (1985) Changes in Poverty and Income Inequality in Pakistan During 1970s *The Pakistan Development Review* No. 3 and 4.

Kumar, D. (1974) Changes in Income Distribution and Poverty in India: A Review of the Literature. *World Development*, Vol.2 No.1.

Kuznets, S. (1955), Economic Growth and Income Inequality, *American Economic Review,* March.

Kuznets, S. (1963), Quantitative Aspects of Economic Growth of Nations: VIII Distribution of Income by Size, *Economic Development and Cultural Change* Vol. SI , 1963.

Kuznets, S. (1976). Demographic Aspects of the Size Distribution of Income; An Exploratory Essay, *Economic Development and Cultural Change.* Vol. 25, No.1, October

Mahmood, Zafar (1984) Income Inequality in Pakistan: An Analysis of Existing Evidence. *The Pakistan Development Review*, Vol. XXIII, Nos. 2&3 (Summer Autumn 1984).

Morgan, James (1962). The Analogy of Income Distribution *Review of Income & Statistics* vol. XLIO No.3 Aug. 1962.

Morgan, T.(1953) Distribution of Income in Ceylon, Puerto Rico, the United States, and the United Kingdom, *Economic Journal,* XLIII, Dec-1953.

Higgins, Michael. Schmaus, Guenther and Stephenson, Geoffrey (1989); Income Distribution and Redistribution: A Micro Data Analysis for Seven Countries. *Review of Income & Wealth*, series 35, No.2, June 1989.

Ogwang, Tomson (1995). The Economic Development Income Inequality Nexus: Further Evidence on Kuznets U Curve Hypothesis, *American Journal of Economics and Sociology*, Vol.54, No.2, April 1995.

Ojha. P.D. (1971) Pattern of Income Distribution in India, 1953-55 to 1961-64□, (Mimeographed).

Oshima, H. T.(1962) The International Comparison of size Distribution of Family Incomes with Special Reference to Asia. *The Review of Economics and Statistics* vol XLIV Nov. 1962

Pakistan Economic Survey 1999.

Quan, N.T. and Koa, A.Y.C. (1985) Concentration of Landholdings, An Explanation of Kuznets conjecture, Journal of Development Economics, 18 (1985).

Ranadive, K.R., (1965), □The Equality of Income in India, Bulletin of Oxford University Institute of Economics and Statistics, May.

Saltz, I. S (1995). Income Distribution in the Third world: Its Estimation Via Proxy Data. *Review of Income & Wealth*, Vol. 54 No.1 Jan. 1995.

Saunders, Peter. Scott, Helen and Hobbes, Garry(1991). Income Inequality in Australia and New Zealand: International Comparisons and Recent Trends, *Review of Income & Wealth*, Series 37.No.1, March 1991.

Seiver, D.A. (1979). A Note on the Measurement of Income Inequality with Interval Data, *Review of Income and Wealth*, Series 25, No.2, June 1979.

Sen, A. (0) On Economic Inequality.

Simon Kuznets (1925). Economic Growth and Income Inequality *American Economic Review* Vol. XLV No.1 March 1995.

Stoikov, Vladimir (1975). How Misleading are Income Distributions? *Review of Income and Wealth*. Series 21, No. 2, June 1975.

Szilagyi, Gyorgy (1966) Notes and Memoranda. An International Comparisons of the National Income of Planned Economies, *Review of Income and Wealth*, Series 12 No.2, June 1966.

Thon, D (1981) Income Inequality and Poverty: Some Problems *The Review of Income and Wealth*, Series 27 No.2 June .

United Nations - A Survey of National Sources of Income Distribution Statistics. (Statistical Paper Series M No.72).

United Nations - Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households (Studies in Method series M. No.61).

United Nations - UNCTAD Statistical Pocket Book (UN Conference on Trade & Development).

Visaria, P. (1978), Demographic Factors and the Distribution of Income, Some Issues, Paper prepared for the Conference on Demographic and Economic Change: Issues for the 1980s, Convened by the International union for the Scientific Study of Population, Helsinki, August 28-September 1.

Weisskoff Richard-(1970) Income Distribution and Economic Growth in Puerto Rico, Argentina and Mexico, *Review of Income and Wealth.*, Series 16, No.4 December 1970.

Whalley,John(1997).The Worldwide Income Distribution: Some Speculative Calculations. *Review of Income & Wealth*, Series 25, No.3, Sep. 1997.

Wooley, R.F. and Judith Marshal (1994). Measuring Inequality Within the Household, *Review of Income and Wealth*, Series 40, No.4, December 1994.

World Bank Country Study–India–Achievements and Challenges in Reducing Poverty 1998.

World Bank Development Report, 1984, 1997, 1998.

Yotopoulos, P. A. (1989) Distribution of Real Income: Within Countries and by World Income Classes *Review of Income & Wealth*, series 35, No.4, December 1989.

Yotopoulos, Pan (1987). A. The 'World' Distribution of Income and Real Poverty and Affluence *Pakistan Development Review,* Vol. XXVI, No. 3, Autumn 1987.

END NOTE

[1]For details see Ahmad,Mehboob Distribution of Income in Muslim Countries vis-a-vis non Muslim Countries(Unpublished Ph.D. Thesis submitted Bahauddin Zakria University , Multan).

AN ECONOMETRIC ANALYSIS OF THE IMPACT OF CAPITAL MARKET DEVELOPMENT ON LONG RUN GROWTH OF PAKISTAN

Muhammad Aslam and Atif Naveed*

Capital market development has significantly influenced the long run growth in many countries. This paper aims to ascertain the veracity of this statement in the case of Pakistan and also monitor the direction of this influence. The approach followed to observe the impact of capital market's development on long run growth is regression analysis. It is not easy to see the impact of any one or two variables on the per capita GDP growth of our economy. This is so because there are a number of explained and unexplained variables, which influence the growth of economy. With this consideration in view, a number of variables other than stock market and financial intermediary development indexes had to be introduced and were controlled to see the sole impact of stock market and financial sector's development on the per capita GDP growth of Pakistan.

CONTROL VARIABLES

A brief explanation of the control variables is necessary before discussing the regression analysis.

1. Initial real per capita GDP (Y/P):– Research suggests a strong link between initial real per capita GDP which is a measure of physical capital and GDP growth. However the impact is found to be negative normally. Giving due importance to this variable, it is introduced in model. The logarithmic values of the data for real per capita GDP are taken.
2. Secondary school enrollment rate (E):– A strong link exists between per capita GDP growth and secondary school enrollment rate which is measure of human capital. The link is positive as higher level of education casts a positive impact on the growth of an economy. The logarithmic values of the data for secondary school enrollment rate are taken.
3. Govt. consumption expenditure to GDP (C_G):– Research reveals negative influence of the government consumption expenditure to GDP on per capita GDP growth. This is so because of the "crowding out effect". The greater the govt. consumption, the lesser the flow of resources in the private sector and hence lesser the growth.
4. Inflation Rate (P):– A negative impact of inflation on real GDP growth prevails although the relation gets reversed if nominal GDP is taken. This is so because nominal GDP (at current prices) keeps increasing with the rise in prices over the years. The GDP deflator is used as a measure of inflation rate to see its impact on real GDP growth.

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5. Market Exchange rate premium (Z):– This variable is included because international price distortions may impede economic growth. Hence it is expected to enter negatively in the model. To arrive at the premium, the difference between market exchange rate and official exchange rate is taken.
6. Unemployment rate:– The increase in unemployment rate negatively influences growth. This finding is based on the OKUN'S LAW. In view of its importance, it is also introduced as a control variable in the model.

Long run growth represented by the real per capita GDP growth (G) may be expressed as a function of the factors mentioned above plus the level of financial intermediary development (F) and the development of the Stock market (S).

$$G= F(y/p, E, Cg, P, Z, U, F, S)$$

The general model formed on the basis of the above mentioned functional relationship is as under.

$$G=B_0+B_1\ y/p + B_2E + B_3Cg + B_4P + B_5Z + B_6U + B_7F + B_8S + V$$

In order to isolate the impact of stock market development (S) and financial intermediary development (F), all other variables are controlled and general model is transformed a under.

$$G= B_0 + B_1X + B_2F + B_3S$$

Where X stands for set of control variables. To fit a good regression model (with a high value of R_2, anticipated signs of beta-coefficients and significant F–values), different combinations of the control variables are combined with the main indexes of stock and financial intermediary development.

Aggregate indexes of financial intermediary development were constructed by using the individual indicators such as ratios of liquid liabilities to GDP, quasi–liquid liabilities to GDP, domestic credit to private sector to GDP, assets of private insurance funds to GDP, outstanding amount of national savings schemes to GDP and spread of scheduled banks. These aggregate indexes present an assessment of the overall level of financial intermediary development and are labeled as FINDEXES (Findex 1 through 3).

Aggregate indexes constructed of capital market development are of two types namely i) means–removed indexes and ii) simple average indexes. The approach for the construction of the means removed indexes of the capital market development is that adopted by Demirgic–Kant and Ross Levine of World Bank Policy Research Department. The simple average indexes have also been used by some researchers to aggregate information about different indicators.

DISCUSSION OF THE RESULTS OF REGRESSION ANALYSIS WITHOUT THE CONTROL VARIABLES

To see the individual impact of stock market and financial intermediary development indexes on per capita GDP growth without controlling the

other variables, the following models were built. The symbols used in writing the models have already been defined.

MODEL A

The results of model A in which the independent variable is the means removed INDEX 1 of stock market development are given below:

$Y = B_0 + B_1S_1$ ------ is the general model

The equation obtained is:

$$Y = 0.023 - 0.013S_1 \qquad R^2 = 0.381$$
$$(0.014)$$

MODEL B

The results of model B in which the independent variable is the simple average INDEX 1 of stock market development are given below:

$Y = B_0 + B_1S_2$ ------ is the general model

The equation obtained is:

$$Y = 0.036 - 0.083S_2 \qquad R^2 = 0.352$$
$$(0.020)$$

MODEL C

The results of model C in which the independent variable is the means removed FINDEX 3 of financial sector are given below:

$Y = B_0 + B_1F_1$------ is the general model

The equation obtained is:

$$Y = 0.023 - 0.063F_1 \qquad R^2 = 0.076$$
$$(0.319)$$

MODEL D

The results of this model in which the simple average FINDEX 3 of financial sector is taken as the independent variable are given below:

$Y = B_0 + B_1F_2$ ---- is the general model

The equation obtained is:

$$Y = -0.073 - 0.305F_2 \qquad R^2 = 0.531$$
$$(0.478)$$

On the basis of the results of these models, both the stock market and financial intermediary sector have had negative impacts on the GDP growth of Pakistan. However the negative impact of financial sector is insignificant at 0.05 level. These results, though findings at their own place, are not very important and therefore are not given a detailed discussion. They are not important because the other variables have not been controlled. The purpose of this entire exercise is to compare the results when other variables are controlled with those when they are not controlled. Referring to the results of the "strong" model formed later (MODEL F), we find a significant positive impact of financial intermediary development on the per capita GDP growth unlike the one deduced from these models. This finding

in itself highlights the importance of our control variables and the widely different impact they can have on our results as compared to the situation when they are not controlled. The difference in the results arises due to the positive or negative influence of the uncontrolled variables on the independent variable of the model leading to distorted results.

Thus the entire above discussion signifies the inclusion of control variables in our regression models to get the actual results. An attempt in this regard has been made below:

QUEST FOR A STRONG MODEL

In order to arrive at a strong model which more precisely determines the GDP per capita growth, we initially introduced all the control variables along with INDEX 1 (means removed) and FINDEX 3 (means removed) representing variables of stock market and financial sector's development respectively. The regression results of the model thus formed (MODEL E) are reflected in the table below:

MODEL E

R^2 = 0.718 F – value = 1.906

Independent Variable	B Estimate	T Value	Sig. Level
Intercept	0.773	0.450	0.668
Y/P	–0.141	–0.243	0.816
E	0.0027	0.011	0.991
C_G	–2.083	–1.617	0.157
P	0.0321	0.144	0.890
Z	0.0073	0.742	0.486
U	0.0007	0.080	0.939
S_1	–0.046	–2.149	0.075
F_1	–0.200	1.787	0.124

An analysis of the results reveals that all the control variables carry the expected signs except for inflation, black market exchange rate premium and unemployment rate. This observation should not bother much since their B coefficients are very small. None of the control variables is significant at even 0.10 level of significance. The stock index negatively influences the per capita GDP growth and its co-efficient is significant at 0.10 level only, The financial intermediary index positively explains the GDP growth but its co-efficient is not significant even at 0.10 level. Thus the co-efficient of none of the variables is significant at 0.05 levels.

R^2 is 0.718, which means that about 72 percent of the total variation in per capita GDP growth is explained by the explanatory variables.

However, the most important outcome which partly explains why all coefficients are insignificant at 0.05 level is that F–value turns out to be insignificant at 0.05 level. This speaks of the fact that the model is not strong enough to explain the per capita GDP growth.

Attempts made to see if F-value turns significant when other stock market and financial intermediary indexes are included proved in vain.

Therefore, on the basis of the results of MODEL E, the control variables were gradually deleted. On removing the variable 'E' i.e. secondary school enrollment rate which was a comparatively weak variable it was observed that R^2 remained unchanged as 0.718 while F–value improved (02.541 which was still insignificant at even 0.10 level. Other combinations with seven variables revealed comparatively poor results to the one quoted. Hence removal of another weak variable was necessitated.

On the basis of the results obtained from the seven variable model excluding secondary school enrollment rate, it was observed that unemployment rate was the weakest of all the explanatory variables. Removing it, R^2 remained almost unchanged as 0.717 while F–value improved to 3.383. This F–value was insignificant at 0.05 level but significant at 0.10 level indicating that the model had considerably improved. However removal of another weak variable was inevitable. Other combinations with six variables revealed poorer results.

On the basis of the results obtained from the six variables model excluding secondary school enrollment rate and unemployment, inflation rate turned to be the weakest variable. On removing it, R^2 remained almost unchanged as 0.715 while the F–value improved to 4.514. This value was significant at both the 0.05 and 0.10 level confirming that the model was now strong for Pakistan. An attempt to remove a relatively strong variable, initial real per capita GDP in place of inflation rate, gave weaker results.

The results of the strong model (MODEL F) have been displayed in the table below. MODEL F represents the equation $G=B_0+B_1X+B_2F_1+B_3S_1$:

Independent variable	B estimate	T value	Sig. level
Intercept	0.631	I .263	0.23 8
YIP	–0.098	–0.745	0.475
C_G	–2.107	–3.204	0.011
Z	0.0074	1.365	0.205
S,	–0.046	–3.424	0.008
F_1	0.189	2.381	0.041

The analysis of the table reveals that all the control variables carry the expected signs except for black market exchange rate premium, which is insignificantly positive even at 0.10 level. The govt. consumption expenditure to GDP has a significant negative impact on the per capita coefficient (–2.107), which is significant at 0.05 level and very nearly misses 0.01 level of significance. This observation reveals an important fact that unnecessary consumption expenditure of the government crowded out the private investment in the last fifteen years leading to poor growth of the economy.

However, the most important finding of this entire analysis is that the stock market development has had a significantly negative impact on the

per capita GDP growth of our country. The B coefficient of INDEX I (mean-removed) of stock market comes out to be 0.046, which is significant even at 0.01 level of significance. However, the size of B coefficient is not very large.

Another important finding is that financial intermediary development has had a significantly positive impact on the GDP growth. The B co-efficient of FINDEX 3 (mean-removed) of financial sector comes to be 0.189, which is significant at 0.05 level. Although it is insignificant at 0.01 level yet its magnitude is relatively more than the stock co–efficient.

R^2 is 0.715, which means that 71.5 percent of the change in per capita GDP growth is explained by the five variables entered in MODEL F.

Multicollinearity:

For multicollinearity to prevail, the R^2 should be very high and the t–value should be mostly insignificant. Applying this condition on our strong model we find that a high R^2 in the model is coupled with relatively significant t–ratios. Thus the problem of multicollinearity is not faced.

Taking the results of model (F) in view, we thus deduce a significantly negative impact of stock market development on GDP growth while the financial intermediary development casts a significant positive impact on it. Thus on the basis of the findings of the model our hypothesis of financial sector's impact on GDP growth stands confirmed while that of stock market's impact on GDP growth gets rejected.

Negatively significant impact of Stock Market Development on GDP Growth:

The negatively significant impact of stock market's performance on GDP growth over the years shows that rapid stock market development was highly nominal and not real. This nominal development substantively rose in the latter half of 90s just due to the very high nominal increase in the turnover ratio and value traded to GDP. In real sense this substantial increase in these indicators did not reflect genuine increase in market liquidity. Rather these increases had a detrimental effect on the market liquidity and hence market's real development, which in turn led to negative impact on growth. In fact the strong detrimental effect of these indicators was the main factor, which disproved our hypothesis as well. According to the hypothesis it was expected that these nominal developments would have no significant impact *on* real GDP growth. However, the situation turned to be far more adverse than expected. The process through which these nominal increases in turnover and value traded contributed towards retarding the growth of Pakistan is discussed below:

The high turnover and value traded is reflective of excessively high trading in a few scrips only (roughly 25 in number) while the rest of the scrips lie dormant with no trading in them. In other words the market is generally very illiquid. The illiquidity in most of scrips is because:

- Most of the scrips are not good companies. Their performance has

been poor either due to the recessionary tendencies in the economy or just because many of these scrips were not sound enough to be listed on the stocks but were forced to get public. Due to either of the two factors, they could never attract the demand of the investors. Hence these companies could not enjoy a permanent access to the capital raised through equity issues during the subsequent years after their listing. Lack of capital adversely affected their economic activity, which in turn hampered growth. A very important argument to quote is that of our textile sector. Half of the companies listed comprise of the textile mills, which could not mobilize enough capital from the stock market to contribute to the economic activity.

b. A second more important argument finds credence in the excessively high trading in a few selected scrips (HUBCO, PTCL, ICI, SUI NORTHERN, DEWAN SALMAN FIBRE etc.) which is reflective in high turnovers and value traded. These few scrips are the only good scrips that our market holds. The investors tend to demand and trade in these scrips. The lust for quick gains, which can be attained out of these relatively better scrips makes big investors resort to speculations, short selling etc which greatly increases the turnover for these scrips. The small investors follow suit. Thus high trading in these scrips partly because of speculative tendencies ensures a permanent access to capital of these few firms. But since investors remain engaged in few scrips only, the investment in other scrips gets "crowded out". Hence these "other scrips" which at times include some good companies as well, do not have permanent access to capital leading to poor contribution of these scrips towards economic growth. Thus excessive liquidity in few leads to high illiquidity in other scrips. This all reflects that our market lacks depth and risk diversification–two essential components of a healthy stock market.

Our findings are consistent with those of Ross Levine and Saga Zervos (1996) who have concluded that liquid markets enhance better allocation of capital and ensure a long-term commitment of capital for companies, which is in turn conducive for long–run growth. In our case since the market is in true sense highly illiquid, therefore, the order gets reversed.

Apart from the above stated major factors other relatively less important factors have also retarded real development of our stock market. These include:

a. Institutional investors such as investment companies, unit trusts, pension funds and insurance companies have very little participation and enrollment on the stock market. The limited role played by them has retarded growth.

b. A very important factor, which contributes to speculative trading in few chips is the lack of dissemination of proper information regarding the stock market. The institutional regulations are very weak which promote speculations and hence partly increase trading in the better

scrips. This keeps the market directionless. Hence, increased trading in few scrips further crowds out investment prospects for other companies. There is a cliché for KSE that the regulator is the last to know as to what is happening in the market.

c. A number of companies are reluctant to disclose information about their financial status. Most of the private companies do not have to submit externally audited financial statements which keeps public sector companies at a disadvantage to these private ones. These private companies later turn out to be just white elephants for the stock market.

Significant positive impact of financial intermediary development on long–run growth:

The positive significant impact of financial sector's development on the growth of Pakistan confirms that although the level of development was apparently less in the financial sector as against stock market, yet it was real development contributing significantly to real per capita GDP growth.

The following factors have contributed towards these results:

a. There has been a slow but consistent increase in short term and long term liabilities of the financial sector. This is mainly because the scheduled banks have been able to increase their deposits in real terms. The banks have been able to create deposits over the years mainly due to i) confidence of the people in the banks and ii) positive real interest rates on deposits for most of the period save years like 1989 and 1991 in which inflation rate exceeded the deposit rates. The resultant effect of these two factors has been that very little disinvestment on the part of depositors has occurred. This has ensured a continuous flow of the national savings to the financial intermediaries, which once channelised as advances has had a significant impact on GDP growth. However, the impact of these mobilized resources would have been much more if the advancing services (due to various factors) would have been better.

b. The DFIs have been successful in extending credit for agricultural and rural development and have promoted setting up of new industries to some extent. This in turn has contributed to the economic growth.

c. The most important factor which has contributed to growth via financial intermediary development, however, is a factor from without, for which probably banks and DFIs do not deserve much appreciation. A large number of loans are the un-recovered loans reflecting inefficiency of the financial sector to recover them. Yet these defaults are not non–performing in true sense. Many defaulters run profitable businesses e.g. some of the sick textile mills are happily producing.

These defaulters through their profitable businesses have to some extent contributed to economic growth. Similarly, the mandatory or subsidized credit may have been officially meant to be used for specific purposes only, but in reality has been applied to more profitable activities. This abuse of subsidized credit as has been practiced in the

past, has contributed unconsciously towards growth.

It is relevant to mention that the financial sector's impact on GDP growth was greatly curtailed by the discouraging monetary policies of the government. Had these policies not been there, the financial sectors' contribution to growth would have been much more. These policies include:

1. Banks are subject to liquidity requirements as they have to keep 30 percent of the deposit liabilities with the government in the form of government securities carrying 6 percent interest only. The purpose behind this concessional borrowing has been to extend mandatory credit at subsidized rates for productive proposes. However, this credit has never had any noticeable impact on the growth pattern because studies reveal that hardly 25 percent of such loans reach the intended beneficiaries.
2. Government has imposed credit ceilings on the banks to allow restricted credit allocation for the private sector. Not only this, commerce and other services have been deemed unproductive by the government so that banks can extend credit in the private sector for agriculture and industry only The entire purpose behind these credit ceilings is that banks may he left with excessive deposits, which can in turn be tapped by the government through excess liquidity requirements for subsidized lending.

Moreover, according to newspaper reports some 35 percent of the loans of the banks were non–performing during the period 1984–93 suggesting that bank management made unwise credit decisions. Few hundred large creditors hold two–third of the total non–performing loans. Hence credit not retrieved from defaulters does not become available for new promising firms.

These loopholes need to be plugged to have a more substantial impact of financial intermediation on GDP growth.

REFERENCES

1. Ahmad and Rafique: 'The Development of the Equity Market in Pakistan and its future prospects' Royal Book Company (1993).
2. Gold Smith, Raymond W: 'Financial Structure and Development', Yale University Press (1969).
3. Hussain Fazal and Muhammad Ali Qasim: "The Pakistani Equity Market in 50 Years: A Review". The Pakistan Development Review. Vol. (4), 1997.
4. Hussain Fazal and Uppal: 'Random Walk Model on Karachi Stock Exchange', The Pakistan Development Review. Vol. (4), 1994.
5. Khan M.S: 'The Securities Market of Pakistan, Karachi': Royal Book Company (1993).
6. Khilji, N: "The Behavior of Stock Returns in an Emerging Market: A Case Study of Pakistan". The Pakistan Development Review, Vol. (4), (1993).
7. King Robert G and Ross Levine: "Finance, Entrepreneurship and Growth:

Theory and Evidence Journal of Monetary Economics, Vol. (3), 1993.
8. Kunt Demirgue and Vojislav Maksinovic: "Stock Market Development and Financing Choices of Firms", The World Bank Economic Review, Vol. (2) 1996.
9. Levine Ross: "Stock Markets, Growth and Tax Policy", Journal of Finance, Vol. (4), 1991.
10. Levine Ross and State Zervos: "Capital Control Liberalization and Stock Market Development", Work Bank Economic Review, Vol. (2) (1995).
11. Levine Ross and Sara Zervos: "Stock Market Development and Economic Growth", The World Bank Economic Review Vol. (2), 1996.
12. Lucas, Robert E: "On the Mechanics of Economic Development", Journal of Finance, Vol. (1), 1988.
13. Mayer Colin: "New Issues in Corporate Finance", European Economic Review, 1988.
14. Meenai S.A: "Money and Banking in Pakistan", Oxford University Press (1984).
15. Meier. Gerald M and Dudley Seers: "Pioneers in Development", New York: Oxford University Press (1984).
16. Shah, Salman: "Capital Market Development in Pakistan", (ed) LUMS (1992)
17. Sharpe, William F: "Portfolio Theory and Capital Markets", New York, McGraw Hill (1970).
18. Shleifer Anderic and Lawrence Summers: "Breach of Trust in Hostile Takeovers", University of Chicago Press (1988).
19. Smith D. Bruce and Ross M. Starr: "Equity markets, transaction costs and capital accumulation", The World Bank Economic Review, Vol. (2) 1996.
20. Stern Nicholas: "The Economics of Development: A Survey", Economic Journal, Vol. (2), 1989.
21. Stiglitz Joseph. E: "The Role of State in Financial Markets", World Bank Annual Conference on Development Economic, (1993)
22. Z.B. Abbasi: "The Capital Market of Pakistan", Oxford University Press (1993).

IMPERATIVES OF LAND-USE PLANNING

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The world's land surface is man's most critical resource, critical because man can so drastically alter it by putting it to use that can set in irreversible changes in its environments. Air and water are other resources, on which man's existence depends, but at present at any rate, the influence he exerts on them is insignificant compared to what he can do to the land surface. Often in the past, the treatment meted out to land has been entirely contrary to man's own best interests. Even today, in many parts of the world, land is being grievously maltreated.

Of the world's total land area of 145.09 million square kilometers, 90 million square kilometers is unfit for any vegetative growth. Out of the remaining usable land, 40.63 million square kilometers comprise of arid and semi-arid tracts, which cannot be put to any economic use unless specialized technology such as localized irrigation systems is used to meet the water deficit. Thus, survival of the humankind depends on 14.46 million square kilometers of land area, which supports all agricultural, forest and pasture crops. This gives roughly one square kilometer of productive land to 40 persons. Imagine how poorly poised is the humankind!

The position of Pakistan is even worse. Its total land area is 87.98 million hectares, inclusive of Azad Kashmir. Of this, less than *25* % is fit for any productive use. Its population has grown from 32.50 million in 1947 to 138 million in 2000 AD According to the present rate of population growth, it is likely to rise to 280 million in 2025. The cultivated land in Pakistan is 0.35 hectares per capita. Each Pakistani shares 0.04 hectares of forestland. This shows that land-wise, Pakistan is nearing its end of tether. Fortunately, technology exists for the productive use of 11 million hectares of cultivable waste, and a fair proportion of 25.67 million hectares of the unreported area. This constitutes a handsome future land bank, which will assume a great significance during the new millennium.

Land Use Conflicts

Uses of land are diverse and limitless. What society wants from its land varies in space and time. In human history, there always has been a certain degree of competition for land resources. Infrastructure development, such as construction of townships, highways, airports, factories etc., is always in competition with agriculture and forestry. Agriculture on the other hand competes with forestry for claim on land, particularly in the plain irrigated areas. Expansion in cultivated area has been taking place at the cost of forests. To quote an example, take the case of the Indus basin. During the Mughal rule over Indo-Pakistan subcontinent, a vast proportion of the present day Pakistan, including

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northwestern hills, was covered with tropical and sub-tropical forests, which at places were nearly impassible. In less than three centuries, this vast area stands denuded and better pieces of land brought under pastures and cultivation.

Conflicts over land use do not arise only because individual men are stubborn or selfish- although, of course, such people are involved in such controversies. The primary cause of conflicts arises from fundamental economic considerations as judged by men. Most lands have more than one use. When a piece of land produces lesser economic return than some alternate use, controversy starts boiling over until majority of interested persons, or the authority in power, find a use acceptable to them.

Development of infrastructure, centers of production and business is man's undeniable right. However, over-exploitation and misuse of land is detrimental to man's own interest. Development should be sustained rather than expletive. Without ensuring land hygiene and sustenance of its productive potential, development is futile.

Misuse of prime agricultural land for purposes other than agriculture is not uncommon in Pakistan, as elsewhere in the world. Let us take a few instances. In Pakistan, most of the industrial units, airports, cantonments, townships and other similar facilities have been built in prime agricultural areas. A majority of the industrial estates conceived in public sector too has been established in lands technically fit for cropping alone. Similarly, many of the newly established cantomnents, including those at Okara, Gujranwala etc. were built in areas having high potential for agricultural crops. This blunder could have been righted if the location of these facilities had been shifted a few kilometers to areas less suitable for agriculture. Such unscientific and irrational decisions cause irreversible losses to long term economic interests of the country.

Another classic example of misjudged land use priority is the continuation of more than 290,000 hectares of high quality agricultural land under irrigated forest plantations. A long time ago, land and water in this tract were abundant. It was possible for the state to earmark certain portion of land and irrigation water for raising of irrigated forest plantations. A ready market also existed for their main products, namely, fuel and furniture-wood. With population increasing in geometrical progression, pressure on land resources increased proportionately. During the past several decades, an appreciable breakthrough has been achieved in popularizing tree planting in private sector with state subsidies. The present position is that 90 % of the market demand for fuelwood and 85 % for furniture timber is being met by the private sector. The state owned irrigated forest plantations hardly meet the remaining deficit.

The productivity of these plantations has otherwise gone down due to factors such as shortage of irrigation water, continuous monoculture and

failure of the forest services to adopt new technologies. According to a report published by a former Chief Conservator of Forests in 1987, the irrigated forest plantations were yielding far less than their actual potential. It was further reported that out of a gross area of 290,00 hectares, approximately 102,950 hectares was lying unplanted. The productivity of the planted area too is highly questionable. Table I highlights the wide gap between the present productivity and annual yield prescribed in the official management plans.

Another survey by the World Bank in 1989 revealed that on the whole, the irrigated forest plantations were yielding 0.85 cubic meters of timber per hectare per annum against their productive potential of 2.80 cubic meters. Similarly, they were producing 1.6 cubic meters of fuelwood per hectare per annum against a potential of 4.8 cubic meters. Thus these plantations, enjoying location on prime agricultural lands and receiving irrigation water twice than the agricultural crops certainly are a white elephant on our agricultural economy.

Table 1

Name of Plantation	Yield of Timber, m3/ha		Yield of Fuelwood, m3/ha	
	Prescribed	Actual	Prescribed	Actual
Abbasia	2.09	1.14	41.71	35.00
Chak Plantations	2.86	0.89	*48.57*	14.06
Rajanshah	2.86	0.66	*48.57*	16.74
Machu-Inayat	2.86	1.40	*48.57*	20.26
Walhar	2.09	1.14	41.71	*35.00*
Khanewal	2.86	—	*38.57*	9.30
Depalpur	4.29	0.29	*38.57*	*22.35*

Contribution of irrigated forest plantations to environmental amelioration is no more than nominal as they occupy small pockets of land in a vast arid country. This argument becomes all the more forceful when one considers the significant increase in number of trees grown in private lands. A well distributed network of private shelterbelts and tree groves serves the cause of environments better than isolated, half empty islands of trees.

Pakistan, which already suffers from an acute paucity of forest resources, may find it difficult to take out of forest plantations an area almost 5% of the total land under management of the provincial Forest Departments. However, sometimes, harsh decisions are required in the long-term national interest. The area under irrigated forest plantations being more suitable for agriculture may be deforested in favour of agricultural cropping or agro-forestry, and the afforestation confined to marginal plain and steeper hilly areas. Scientifically, forestry is practiced all over the world in marginal and hilly lands having steep slopes

exceeding 30 %.

It would amount to over-simplification of a complex problem if one believes that this change over can take place in a short period. Therefore, it may be necessary to draw up a long-term plan to facilitate this transformation.

Why Land Use Planning?

Few facets of our modern life are as all pervading as planning. We plan for a boom in population, for vastly accelerating demands on resources of all kinds, for space to house people, to amuse people, to feed people, to educate people. We plan for youth; we plan for old age. We plan for the living and we plan for the dying. Planning for land use is irreversible of all.

Land use planning involves resolving conflicts between a variety of its uses, mainly those relating to environmental protection and, socio-economic considerations. The state must act as an arbitrator and determine which particular piece of land is used for what purpose. Land use decisions should not be left to the whims of an individual owner, private or public, but must be decided by a competent technical authority on scientific basis.

Land use planning is the application of scientific principles to the use of land, instead of non-scientific, illogical and random decisions. Planning is an orderly and rational problem-solving procedure.

Land Capability Classification

Productive capacity of land varies from place to place. Before a piece of land is put to any particular use, its suitability for that purpose must be determined based on detailed soil survey. Many districts of the country have already been surveyed by Soil Survey of Pakistan and their reconnaissance soil survey reports published. However, detailed soil survey of many areas is yet to take place, being an expensive and highly involved job.

Future Strategy

Pakistan faces towering problems of rapid population growth, shortage of high quality agricultural lands and ever-increasing water deficit. If it has to survive as a progressive nation, it must take bold decisions concerning its land and water resources. Firstly, detailed soil survey of cultivable lands, especially arable lands, should be carried out by the Soil Survey of Pakistan. All lands should be classified based on their productive potential.

Secondly, having classified all lands according to their capability classes, rules should be framed under a land use enactment to bind all the land users to put their lands to a use permitted under the capability classification. A set of strict, scientific principles of zonation should be evolved to specify fitness of a particular piece of land for a specific purpose. All landowners, private or public, should be bound to use their lands in accordance with these principles.

Thirdly, use of all lands should be controlled by the state through legal enactment. The areas classified as potentially agricultural should be used for agriculture only. All marginal plain lands and steep terrain be earmarked for forestry and pasture management. Habitations, industrial and business centres, airports, cantonments and other similar facilities should be built for areas classified fit for these facilities. The state must act as an arbitrator in tatters concerning proper land use.

The district governments, likely to be created soon, can play a pivotal role in granting permission to landowners, private or public, to put their lands to the use certified by the legally notified technical authority. The basis of such a permission could be a detailed soil survey and classification issued by Soil Survey of Pakistan, or similar other technical entity. Like the land ownership documents, which are not considered complete without authentication from the revenue authorities, land use should also be considered illegal without corresponding authentication from the said technical authority.

REFERENCES

1. "Perspective Study of Agriculture Development for Pakistan", FAO of the UN, 1975.
2. "World Development Report, 1992", Oxford Univ. Press, New York.
3. "Towards a National Conservation Strategy", Govt. of Pakistan, 1986.
4. "Marginal Lands—The Case for Forestry and Agriculture", The Economist' Intelligence Team, London, 1972.
5. "Planned Land Use and the Classification and Dedication of Land to Forestry", Sir Henry-Beresford Peirse, Royal Forestry Commission, London, 1957.
6. "Pakistan Forestry Sector Survey", The World Bank, Islamabad, 1989.
7. Official Management Plans of various forest plantations.

TOWARDS ELIMINATION OF BEGGARY IN PAKISTAN: PROBIT AND LOGIT TECHNIQUES

Muhammad Ayub Siddiqui*

INTRODUCTION

The study attacks the problem of beggary in Pakistan. This discusses the causes of beggary and suggests remedial measures. In Pakistan beggary is unattended, but a vital issue. It is very rampant. So far no econometric based study[1] has been conducted, to address this socio-economic and widely confronted issue. But this issue cannot be ignored if the area of human resource development is under consideration. In conventional economics the income of beggars is not incorporated in the GNP bring a transfer payment. For, they do not render any services and produce goods in reward for what they receive in the form of alms and *zakat.*

Allah has created human being with dignity and honour. Allah has set certain principles, fundamentals and obligations for Ibn-i-Adam to enjoy this honour in this world. People in every nook and corner of this world put efforts to earn and live comfortably. Yet a large section of population has chosen an easy and short cut way to collect money without putting any effort, rendering any service and producing any good. They are known as beggars. They beg from dawn to sunset and some of them even work late at night. They consider begging as very lucrative profession. Poverty, inflation, lack of job opportunities, ignorance, illiteracy and many other factors force people to gather money through thick and thin. But many people without gender discrimination have opted begging as profession and they will not renounce it even if earning opportunities are offered to them in the domain of economic affairs.

I have advisedly chosen this issue for research. Besides discussing it theoretically my growing interest was to synthesize ideas and test them using some data. The exercise has been successfully completed. This study addresses one of the important socio-economic issues. Advanced statistical techniques of Probit and Logit have been applied owing to the qualitative nature of the variables.

In Islamic perspective the system of zakat is claimed to abate and control social repression and economic constraints of the poor. The system was promulgated during 1980s in Pakistan. It did not prove helpful to eradicate begging, a socio-economic evil, from the country. The begging practices have been on increase instead[2]

Owing to pervasive illiteracy in the country no beggar morally takes

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begging as ill. Moreover, nobody considers it social responsibility to convince them on refraining from this so-called profession. I believe, had the beggars not been paid zakat/alms, the problem would have been alienated from society, or has not been so common and humiliating for our society[3]. *Zakat* is conceived to have not been fairly and properly distributed among the deserving sections of the population. It does not reach the targeted people. In our case the targeted recipients are the beggars. Intermediaries are assumed to plug substantial amount of *zakat.* Had the *Zakat* money reached the targeted beggars, the one out of eight heads of *Zakat* recipients, the problem of begging would not have been so acutely confronted today. That is the reason for taking *zakat* into account as an important factor influencing beggary and poverty in this study.

Following the introduction, the study contemplates as to how Islamic teachings have placed this issue in the society. Methodology, the results and analysis have been taken up afterwards. Important conclusions of the study are discussed in the end.

PROHIBITION OF BEGGING IN ISLAM

Through Motivation of Haves

Beautiful description of the righteous and God-fearing persons is given in four heads:

(a) True and sincere in faith (b) Showing this sincerity in deeds of charity to our fellow -men (c) supporting social organizations and (d) with unshaken and firm individual soul in all circumstances[4]

The deeds of charity must be with love, social and moral sense of responsibility without any other motive[5]. In giving charity the first preference must be given to our kith and kin. Secondly orphans and those who are helpless. Then the others might be considered for financial assistance and help. Thirdly, we must not forget those needy people who never ask for financial help. Fourthly the strangers are entitled to the laws of hospitality. Buying freedom of slaves is also charity.

Then comes the category of those who ask for financial help. They must be entitled to ask. This excludes those lazy beggars who one way or the other insistently ask for money until they are helped. For, paying charity individually does not expiate our duties. Prayer and charity system of Islam requires the followers to be organized and coordinated with one another. The role and need of the government intervention in various organizations are imperative. It is the government to ensure fair dealing to all whether they are good or bad; Muslims or otherwise (2: 177). There are various factors, which prevent a person from begging. Sense of honor is the prime factor that restricts one from begging. A person engrossed in some ideal cause may not think of asking for financial help. He may be

involved in disembodied communication and even does not care about his need by considering spiritual gifts and talents as the real wealth. He may not wish to be aware of the things possessed by others that can meet his needs. He may be dumb and helpless. Charity is an enjoinment by Allah to help those who are endowed with little resources *(51:19).* Repulsion of petitioners[6] is prohibited (93:10).

The Holy Prophet (PBUH) set an example to his companions and followers by never saying 'No' to the petitioners, even if he had to borrow to meet the need of *Saail (the one who asks for financial help),* though it was not obligatory on him[7]. Thus we must relieve those who are really in need. For charity no discrimination should be made. As Allah gives light according to His wisdom. Quran (2:273) clearly indicates the real beneficiaries of charity as mentioned earlier. We should make sure that persons are really in need of charity. This need may arise due to some honorable cause. Such a cause has many forms. For instance, they may be doing some unpaid service to the nation such as teaching, acquiring knowledge or skill or be in exile, for the cause of their faith in Oneness of Allah. They may be prevented from seeking employment or doing strenuous work. The cause of Allah is not so narrow. It may be any real service to community and devotion to the religion in the form of organization and effort to uplift the name of Allah, His Apostles and their teachings[8].

Through Condemnation of Beggars

Three basic needs are the right of Ibne-Adam: food, clothing and shelter[9]. In order to achieve this right every person does arduous work. Some people improve their capabilities by getting higher education. Such people are able to earn ample amount of money to meet not only their basic needs but also help ameliorate their life and enjoy luxuries. Our religion does not prohibit any one from beautifying his life provided the follower of Islamic teachings is satisfactorily performing all obligations.[10]

If a person could not equip himself with skills of earning he is enjoined to improve his skills and work for the improvement of welfare of his family. Many glorious instances from the life of Holy Prophet (PBUH) teach us to break the begging bowl, earn through permitted means, even going to the extent of selling household items of utmost necessity[11]. If a person is extremely poor to the danger of confronting starvation he must refer to his Creator[12] Who has created opportunities for him to come out of miserable poverty. Referring to Allah means searching for opportunities as per His orders and guidance and giving up all alternative unethical and prohibited means such as begging and so on.

A person may seek financial help only in the following three situations[13]:

1) Extremely straitened circumstances,
2) When he is highly indebted and,
3) When he has to pay indemnity for murder.

The system of *zakat* in Islam covers all the above three by the heads of *Fuqra' and Sailin. zakat* is one of the fundamentals of Islam. Its payment is not a favor to its recipients rather it is an obligation on those who possess minimum zakatable *(Nisab)* income or wealth. Thus claim of Islam being a complete code of life means that it covers all practicable aspects of life. In the presence of *zakat* the genuine needs of the needy people do not remain unaddressed.

Though severe punishment has been prefixed, in the life Hereafter, for professional beggars but their blemishes can be quite obviously seen even in this life. The Beggars are down-rated creatures of our society. Despite collecting big amount of money through begging every day their faces are bleak, and there seems no improvement in their standard of living. They waste the whole collected money conspicuously. Most of them are addicted to taking heroine, drugs, indulge in adultery and many other immoral practices.

A Burden on Economy

Transfer payments in the conventional economic system have the following justification:

1) Those who receive are the prospective workers for the future time to come. So, the unemployed potential workers get allowances but they are skilled people. When they get job opportunities they contribute to the national output in one form or another. Moreover, they pay taxes in various forms leading to increase in government revenues, and share the nation building and development of the country.

2) Child benefits are granted with a view to lessen the financial burdens of parents and build human capital endowment.

3) Similarly financial assistance to students and sick improved human capital of the country.

Giving financial assistance to the beggars is only wastage of resources. This assistance in nutshell at the macro level makes a big sum of burden on those who contribute in one form or the other to national output in order to be remunerated. It is such a nasty leakage from the circular flow of income that, creating demand for various goods and services, pops up shortage of goods and services for productive economic agents of the economy. Since beggars do not render any service in the productive activities they are mere burden and parasite on Country's resources.

According to the economic principles of justice they have no right to consume goods and services for which neither they contributed nor would they be expected to contribute any thing in future. They are parasites, obsolete and expired section of economy. With the expansion of such section of population the economic activities would be on decline. In Pakistan the number of beggars is already large and it is on increase day by day[14]

METHODOLGY

Almost all the variables under consideration are qualitative including the dependent variable. Logit and Probit, the advanced statistical techniques have been used. Since hetroscedasticity is inevitable in such models hence weighted least squares method has been used to overcome such a problem. Gallup Pakistan, Pakistan Institute of Public Opinion with the collaboration of International Islamic University Islamabad in 1988-89, conducted a survey on *zakat.* The report was finalized in 1990-91 by the International Institute of Islamic Economics. Sample of 1071 observations has been used for regression analysis. Begging is a dummy variable taking on values of 0 or 1, 0 implying no begging and 1 implying begging. Sixteen independent variables were under consideration, which have been discussed in the following paragraph.

The amount of *zakat* paid to the beggars does not meet their actual needs. They have made begging as their profession. Shirking work is their normal practice and they do not like to work. No institution or individual is there to have a check on them. They consider *zakat* as complement of alms paid to them. Begging is more paying rather than receiving *zakat* only. No exercise of moral suasion is done to convince them for giving up begging practice. In many regions beggars are ignored while distributing *zakat.* Receiving *zakat* has perhaps developed the habit of begging, in them[15]. Distribution of *zakat* in cash, payment not on monthly basis, non existence of permanent rules of stern actions or steps to prevent begging, increasing the amount of *zakat* to be paid, suspicious role of intermediaries in the distribution *of zakat* and persistent inflation are the other factors affecting the begging practice.

Some of the variables showed very high degree of collinearity. Thus the number of independent variables was reduced, reorganized and grouped into the following forms:

1. Freedom to get *zakat* and alms (FRED).
2. Moral suasion to prevent begging (MORL).
3. Non-payment of *zakat* to beggars (NPMENT).
4. Intermediaries extort *zakat* money and don't let it reach the needy people/beggars (INTZ).
5. Inflation (INFL).

6. Ignorance of people (IGNO).
7. Setting up business with *zakat* money to employ beggars (BUSN).
8. Begging is their habit (HABIT).
9. Insufficient amount is paid to the beggars (INSUF).

RESULTS AND ANALYSIS

Table 1 below shows the findings of the logit model. A cursory look at the T–statistics signifies the variables FRED. MORL, BUSN, HABIT and INSUF. The standard errors of these statistics are reasonably low. R-squared (0.94) strengthens the reliability of the results. Only 6 percent variation in the dependent variable is unexplained and the rest 94 percent explained by the variables under consideration. The adjusted R-squared (0.88) is also having reasonable size. These findings implicate the following conclusions:

Table 1

Variables	Standard Error	T-Stat.
FRED	0.097	*3.5*
MORL	0.11	3.1
NPMNT	0.089	1.8
INTZ	0.197	0.6
NFL	0.181	1.6
IGNO	0.062	1.1
BUSN	0.073	3.9
HABIT	0.056	7.1
1INSUF	0.050	5.9

R-squared	0.94,	Adjusted R-squared	0.89
D-Watson	1.86	Log Likelihood	19.7

Freedom of Begging and Getting Zakat (FRED)

There looks no inhibition and obstruction in the way of begging and at the same time the recipients of *zakat* are not vigilated from case to case, properly. It is therefore becoming extremely difficult to bring the begging practice down to the lowest possible rate. Such a freedom is indeed very disturbing and disruptive to our social values. This might lead to menace sanctity of religious obligations pertaining to the respect for *viceregency* conferred upon human being on this earth as a responsible creature.

Moral Suasion (MORL)

Moral suasion seems to have significant impacts on allaying begging practices. Presently no arrangements on the institutional or individual levels prevail in the society, to convince beggars to give up begging. Some steps on firm footing should be taken in this regard. Islamic teachings

might be widely spread to educate people about the rights and responsibilities pertaining to the payment of charity and spending in the way of Allah and concur to this, beggars might be taught as to how bad thing it is to spread hands and malinger for a few pennies.

Table 2

Variables	Standard Error	T-Stat.
FRED	0.096	3.6
MORL	0.092	3.9
NPMNT	0.084	2.0
INTZ	0.166	0.8
NFL	0.157	1.8
IGNO	*0.055*	1.3
BUSN	0.067	4.3
HABIT	0.054	7.5
NSUF	0.047	6.3

R-squared	0.95,	Adjusted R-squared	0.90
D-Watson	1.9	Log Likelihood	20.9

Note: The Probit results are quite supporting similar to what was obtained in the Logit technique. For the sake of economising the space the Probit results have not been shown.

BUSN

It seems quite effective to control beggary if investing *zakat* money starts some sort of business. Then in the business beggars may be asked to work on daily wages- basis. However, an accountable checks and balance is needed for this purpose which may not be an easy job. NGOs can play an important role in this regard. This scheme will be successful if and only if
zakat money is not paid in cash at all and the entrepreneurial control is in the hands of people other than the recipients of *zakat.*

HABIT

Most of the beggars seem to have opted beggary as a Profession. They have developed such habits for shirking work and have no religious sanction for receiving *zakat.* They consider *zakat* a kind of alms. They beg for pennies keeping their belief, faith and religion aside.

INSUF

The amount of *zakat* is paid three times a year. This is not a substantial amount to meet the needs of the recipients. Had the *zakat* been paid in substantial amount the problem of begging would not have been so

acute and severe. Beggars can gather substantially much more amount of money through begging than *zakat* paid to them.

Weighted Regression

In the weighted regression, results slightly improve. R-squared improves from 0.941 to 0.948 and adjusted R-squared slightly improves by increasing from 0.88 to 0.90. Standard Error of the regression also improves; it decreases from 0.127 to 0.120. Durban Watson also improves from 1.86 to 1.90; Log likelihood increases from 19.74 to 20.89. NPMENT, which was insignificant, has become a significant variable suggesting that by not paying *zakat* the rate of begging would increase, as shown in Table2.

INFL and IGNO

Insignificance of these two variables is surprising. IGNO is taking astonishingly small value of t-statistic. This shows that although inflation is an important variable but it has nothing to do with begging. But these two variables are significant at 10 % level.

CONCLUSIONS

Human capital is sometimes more important than physical capital. For the development of human capital Government must take up very firm steps and make effective policies to overcome social evils. Begging is one of these evils. Beggars like flunkey to individuals of all classes feign that they are quite helpless and forfeited in the society. In this way they are able to get alms from pedestrians, shopkeepers, drivers, businessmen and even distributors of *zakat.* Most of them are professional beggars. They are lethargic and shirk work. They consider begging as lucrative and facile profession. Even if they are paid money from *zakat,* they are not going to stop begging.

There looks no inhibition and obstruction in the way of begging and at the same time the recipients of *zakat* are not utterly vigilated from case to case properly. It is therefore becoming extremely difficult to bring the begging practice down to the lowest possible rate.

The Government must pay attention to this problem and people should also view it an important socio-economic issue. Government must make a law against begging and professional beggars must be punished. People should develop societies, committees and organizations to eradicate this socio-economic evil from the country through moral suasion, arranging some jobs/work for beggars and indict them as criminals. If such a large section of population enters into economic activities, our GNP will grow rapidly and national income would indeed rise manifold.

ANNEXURE

A Brief Survey of Practical Examples

Begging is very rampant practice in all the regions of our country. Though the rules are stringent but these are not strictly implemented and nor do the people have any restraint to restrict such a lucrative business. A survey on begging was published in the Jang, a national level News -paper of Pakistan. According to the author, beggars' abrasive remarks, their languishing from money and malingering compel pedestrians, travelers and strangers to commiserate with them. Ultimately they take out some money from their pockets to help improve the beggar's plight. This interesting survey implicates that most of the beggars are addicted, With the batten charge of Police blinds become viewers, lames come up with complete limbs, and the number of beggars is reduced to a few only.

Interviews of a few Beggars

Shafique Ahmed son of Nazir Ahmed a lame beggar says" I am the resident of Muzzang Lahore. I am married and my family is settled in Karachi. Ten years ago I started taking heroine because of which my master kicked me out of job. I met a beggar who told me the tact of earning and I started begging. Within four hours I can earn 400 to 500 Rupees.

Akbar, another beggar states "I am the resident of Ghaziabad. I earned only 70-80 rupees a day after an arduous work I started heroine with my cousin and met a friend Javed who helped me out of financial crisis by telling me how to beg. I tie up my folded legs and wear loose trousers such a way that I look without legs ". Another beggar Sharif says" I am the resident of Band Road Lahore and used to sell cut-sugarcane. In a queue to buy tickets for a movie I came across a person whom I used to give alms every day. I clutched the viewer blind from the neck but he promised to tell me the truths and transfer technology of making money. From that day we beg together.

Reference:

1. Faiz Muhammad of Islamic Development Bank, Juddah superficially discussed the problem of beggary while writing the report of the "Survey on Zakat", conducted by the Gallup Pakistan and IIIE (1988–89).
2. This is very commonly observed in the streets, on the roads, near the traffic signals in many cities of the country. The problem has also been discussed by newspaper columnists and analysts (see for instance, Khan Arif Yaqoob, Gadagar Behroopiay, Jang Magazine, June 14, 1998).
3. These are the hypotheses tested in this study.
4. The Holy Quran (2:177).
5. According to the English proverb "Charity coves a multitude of sins". Such a sentiment is strongly disapproved in Islam.
6. Those who come asking for something, they may be genuine beggars asking for financial help or ignorant people asking for knowledge or timid people asking for lead of encouragement.
7. Bukhari cited in Ziaul Quran P–592.
8. The example of Ashab–e–Sufa during the era of the Holy Prophet (SAW).
9. Tirmizi, cited in Intikhab Hadith P142–43.
10. Payment of Zakat and earning through permitted means.
11. Intikhab–I–Hadith, P 140–1
12. Intikhab–I–Hadith, P 140–1
13. Intikhab–I–Hadith, P 140–1
14. This is very commonly observed in the streets, on the roads, near the traffic signals in many cities of the country. The problem has also been discussed by newspapers columnists and analyst (see for instance, Khan Arif Yaqoob, Gadagar Behroopiay, Jang Magazine, June 14, 1998).
15. This is one of the hypotheses tested in this study.

FACTORS DETERMINING RESIDENTIAL LOCATION IN THE CITY OF KARACHI

Muhammad Mubarik Sulehri*

ABSTRACT

This research is an attempt to explain the choice of residential location of households in the city of Karachi. The choice being made is whether they prefer to live in the central business district (CBD) or in suburbs. It is important in the sense that residential area occupy a very large proportion of land in any city. The study aims at analyzing the determinants of residential location and is helpful predicting growth point, location of infrastructure and services and other economic activities in the city. Karachi is the largest city of Pakistan and the major port in the country. It has a great attraction for economic households in the city of Karachi. The standard logit maximum likelihood technique is used for the estimation purposes, which is most suitable for a binary dependent variable. The results of the study show that most of the coefficients are highly significant and have the expected signs. Literature does not provide much help with the sign of some variables and they are ambiguous but these coefficients indicate reasonable signs for circumstances in developing countries. Statistical tests show that most of the results are robust and comparable to research in other developing countries.

1. INTRODUCTION

This is a study of choice of residential location of households in the city of Karachi. The choice being made is whether they prefer to live in the central business district (CBD) or in suburbs. A study of residential location is important for reasons. First, residences occupy a very large proportion of land in any city, therefore, the location patterns will determine the growth of the city. Secondly, other economic and social activities are related to where people locate and a focal point for them. A study of factors that determine residential location, since they affect land use patterns, will help in predicting growth points, location of infrastructure and services and other economic activities.

Karachi is the largest city of Pakistan and hub of economic activity and is also the major port in the country and main employment centre. It had is one of the fastest growing cities in the Third world. It had a population of 10 million in 1994 according to one estimate by the World Bank, which was 7 percent of the country's population and about 22 percent of total urban population. Ahmad (1993). According to there is a shortage of housing, basic services, and congestion and overcrowding. All these also make a study of residential location essential for planning purposes.

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Data used in the analysis comes from a survey of over 6000 households in the city of Karachi. The survey was conducted by Applied Economics Research Centre (AERC), University of Karachi, in 1987–88. The standard logit maximum likelihood technique is used for the empirical analysis, where dependent variable is the probability of household moving away from CBD or close to it. Taking value 1 for households which move towards the CED and taking zero otherwise.

The study is organized in the following way. Section 2 gives a brief profile of the city based on the sample survey of the city. Existing literature is briefly reviewed in Section 3, section 4 is reserved for the theoretical development of the model, data collection, and describes the methodology and estimation of the model. Results and their interpretations are discussed in section 5, and section 6 discusses policy implications.

2. A SOCIO–ECONOMIC PROFILE OF THE CITY

A brief socioeconomic profile of the city of Karachi is given below based on the household characteristics of the head of household. First household characteristic like, average household size, ethnic composition and migration, household income, owner—renter status, access to services and then characteristics of the head of household are given.

2.1 Household Characteristics.

— Average Household Size

Number of family members in a house average about 7 person an average which is almost the same for the CBD and suburban areas. Locational consideration different for households taking into account the needs of the family members and one which is convenient to all members.

— Ethnic composition and Migration

The ethnic composition of households is shown in Table 1 for the CBD and suburbs separately.

The distribution of the households who are migrants is presented in Table 2, also shows that more migrant households reside in the suburban parts of the city (33.3 percent) than in the CBD (around 19 percent) as 30 percent of all households in the city are migrant households.

— Monthly Household Income

The distribution of households by their monthly household incomes is given in Table 3.

— Types of House

In the city of Karachi the settlement pattern is such that higher income areas with posh bungalows, where all facilities are available, exist side by side with other areas where the poor reside, with hardly any provision of basic facilities. The distribution of households by the type of house they live in, is presented in Table 4.

— Owner–Renter Status

Table 5 shows the owner—renter status of households in the city and also separately shows households living in CBD and the suburbs.

Ownership may mark the end of the mobility process for most households in Karachi and in the cities of a developing country. Ownership is also prestigious and a source of personal satisfaction. The percentage of owned houses is, therefore, not surprisingly high in Karachi.

— Access to Services

It is vital and important to have available services in the house. Table 6 shows the percentage of households which have the availability of the three basic services (water, electricity and gas) in the city and their proportion in the CBD and suburbs.

2.2 Head of household Characteristics

— Travel Characteristics

The choice of mode between public and private transportation play an important role in determining the distance between residence and work place, and therefore the choice of location of residence. However, travel time is considered to be less important in determining residential location in developing countries. Households with private modes of travel available to them can easily commute longer distance, so the probability of locating far away is more likely. The average travel time that the head of household takes to travel to work is 36 minutes. The table 7 shows the distribution of heads by their mode of travel to work.

One interesting observation regarding travel patterns of head of households is that around 21 percent of all households walk to work. Therefore, these households exert no pressure on the transport system of the city.

— Occupational Characteristics

The occupational characteristics of the heads show that as many as 72

percent of them are self–employed. Out of the total self–employed head of Households, 18.5 percent are in the CBD and 81.5 percent are in the suburbs.

2.3 Educational Achievements

Table 8 shows the educational attainments of the head of the household in the city and also in CBD and suburbs separately.

This section of the study has given a brief profile of the city, based on characteristics which may be important in determining the decision to locate residence in the city, and provide help in selecting variables for the more sophisticated analysis which follows in section 5.

3. REVIEW OF LITERATURE

A major concern of urban economics has been to study the urban structure of cities. Since residences occupy a large proportion of land of any city and households may spend upto 25 percent of their disposable income on housing, such a study of location is important and has major policy implications for the urban planning and development of an urban area.

Different aspects of the spatial location of activities have been studied by researchers from time to time, although relatively little work has been done regarding location preferences of households. Here only those studies are reviewed which have a direct relationship to the subject under study.

3.1 Findings for Developed Countries

In the context of developed countries, the research has concentrated on two issues: one of discrimination and the segregation of population by race, and the second of decentralization. Most of the literature available is for cities in the U.S.A.

Suburbanisation has been a fact of American life for many years. Even in the 1970's when according to some a 'back to the city' movement has materialized. Housing prices may vary between central city and the suburbs. First, the 'accessibility model' argues that suburbanisation is a natural result of economic growth. The other theory is the 'blight flight model' which has a negative tone where people have left the cities not because they preferred suburban living but because the cities them selves have become less desirable places to live in (Follain and Maipezzi, 1981). The movement of people and firms from central city areas to suburbs during the past several decades has caused growing employment problems for those who continue to live in the inner cities, especially blacks. Blacks in central city areas have less access to employment than

have blacks or whiles in the suburbs, where access is measured by the ratio of jobs to people within neighborhoods and by average travel times (Hoizen, 1991). Suburbanization of blue collar jobs has reduced the job access and thereby the employment opportunities of urban blacks according to these writers (Ihlanfeldt and Sjoquist 1989). The results show that a large change in income leads to a higher propensity to move, the same is true for changes in the family's required number of rooms. Those families in which the head of the household changes jobs, there is a significantly higher mobility rate, compared to households in which there was a change in the head or in the head's marital status (Goodman, 1976). The study by Offer and Saks (1971) for the U.S, concluded that removal of residential segregation might have resulted in a relative job loss for negroes. They show that change in overall negro employment resulting from residential segregation, there would be relative losses in the skilled and higher–status categories. Mooney (1969) examines effects of residential segregation of negroes on various socio—economic indicators such as academic performance, family stability, housing condition, and crime rates.

The decentralization of population and employment in metropolitan area, continues to occur in the U.S.A, according to (Hoizer, 1991). Inlanfeldt and Sjoquist (1989) studied effects of job decentralization on earnings of workers with a high school education or less, living in the central city. They concluded that job decentralization has substantial negative impact on earnings and that the effect is the same for white and black males. The results for females suggests that they are disadvantaged to a lesser extent than males by job decentralization. This is also true for black females. The results also suggest that the most educated household heads were likely to accelerate their moving plans compared to those who were less educated (Varady 1974). As a result of their low income and a certain degree of racial discrimination in the housing market, urban negroes (Migrants and Natives) have been largely constrained in their choice of residences to particular areas of the central city, according to Mooney (1969) study.

3.2 Findings for Developing Countries

Relatively little work has been done on the subject in developing countries. Most studies are concerned with the location behaviour of the poorer segments of the population or of migrants or ethnic considerations in third world cities are determinants of residential location.

In a study, Ahmad (1993) observes that the permanent income, location specific income, ethnic composition of an area and the incidence of violence, are major determinants of neighbourhood choice in the city. Another study, also for Karachi (Ahmad: 1992), analyses factors which influence the location behaviour of migrant households. Results show that migrants settle close to friends or relatives or in areas where majority of households are of same ethnic background. The most dominant factor

influencing location behaviour of migrants in Karachi is the ethnic composition of an area. Locating close to major centres of employment is not an important consideration for the recent arrivals to the city; and with the decentralization of the city, migrants no longer have to rely on major employment centres for jobs or live near them. Linder's (1991) study for La paz studies settlement patterns for migrants. The end result of housing choice is in most cases a choice between various preferences, the most important being housing conditions, tenure and location. The study by Ozo (1986) for Benin city, Nigeria, observed that a low rate of residential mobility that change in residences does not always result in improvement in the housing satisfaction. Changes of residence, have usually been explained in terms of life–cycle changes and career income reasons, becoming independent from parents, getting married, moving nearer place of work and into one's own house. Search for a house where there is water and constant electricity supply, for bigger rooms, and for better environment, were the few factors responsible for most moves. A study by Lee (1985) observed decentralization trends of employment in Bogata and Cali. This decentralization occurs because of deteriorating conditions in the central city, transportation improvements, suburban (new town) development programs, and federal subsides to home ownership. The cities may experience catastrophic failure of management. The study by Onokerhoraye (1977) suggests that social, cultural and institutional factors have been the main influence in the development of the present residential pattern in Benin city, Nigeria, or in other developing countries, which cannot be explained by the theories developed for western industrial cities. The growth and spatial pattern of the various grades of residential regions in the town are largely associated with the social valuation of various residential spaces within it. Some cases, traditional obligations make it necessary for certain parts of the town move in terms of their relationships with friends and relatives rather than of the physical character of their dwelling.

4. METHODOLOGY AND DATA COLLECTION

The research is an analysis of movements of households toward the central business district (CBD) or away, and in this sense is a dichotomous variable taking the value 0 or I. In modelling the choice behaviour of individuals when two alternatives are available and one must be chosen, the individual can be conveniently represented by the random variable Yi that takes the value one if the choice is made and the value rezo if the other choice is made. Let Pi represent the probability that Yi takes the value one. While it may be of interest to estimate the probabilities Pi, economists are typically interested in the more general problem of studying how various explanatory variables affect Pi. The usual regression estimation procedure (OLS) is not applicable, as this faces some special problems such as, Non normality of disturbances ui, Heteroscedasticity variances of the disturbances, Non fulfillment of the $O<E(Yi/x)\leq 1$ condition and the goodness of fit measure R^2 value is questionable.

There are several alternatives to OLS estimation. The most common of these are.
The linear probability Model.

$$F(X'_i\beta = X'_i\beta$$

Where:

F, is the cumulative distribution function (CDF).

X'_i the set of explanatory variables.

β is the vector of parameters.

The probit Model

$$F(X'i\beta) = \int_{-\infty}^{X'i\beta} \frac{1}{\sqrt{2\pi}} e - \frac{t^2}{2} dt$$

This model is in definite integral form

Where

e is exponential

π is the numerical value 3.1415.

The logit Model

$$F(X'_i\beta) = \frac{1}{1+e^{-X''i\beta}}$$

The linear probability model (LPM) assumes that Pi = E (y = 1/x) increase linearly with X, that is, the marginal or incremental effect of X remains constant throughout. In reality one would expect that Pi is nonlinearlly related to Xi. For example for a poor family it is very difficult to move toward the CBD or suburbs as compared to a rich family on the occurrence of the same events. Thus the probability of both types of families for the change of residence location is no the same. So to estimate probabilities we need two additional features for any model:

1. As Xi increases Pi=E(Y=l/x) increases but never steps outside the 0–1 interval.

2. The relationship between Pi and Xi is non linear.

The other two models the logit and probit fulfil the above properties, due to the simplicity and availability of computer programs we have used the maximum likelihood technique of the logit model for estimation purposes.

The model of residential location in Karachi is estimated in this article. The basic locational decision analyzed, is to locate near the CBD or in the suburbs. The model estimated is as follows:

L = f (SPACE, INCOME, HOHCHAR, HHCHAR, SERVICES)

Here L, the location variable is the dependent variable and is the probability to reside in the CBD or in the suburbs. The first set of independent variables are the space variables (Plotsize, etc). The second set of independent variables related to economic variables and represented by different ways of depicting income (family income, per capital income). HOHCHAR set of variables represent the characteristics of the house (ownership, quality of roof etc.) The Head of household characteristics are included in the HHCHAR variable (household size, ethnic composition, migration status etc.) The SERVICES variable is a set of variables which, in a sense, represent neighborhood characteristics and the availability of services like water, electricity, and gas. The different sets of variables affect the decision of the household to locate either at the CBD or at the suburbs.

Data for the descriptive and the logit analysis come from a city wide socio–economic survey of Karachi carried out in 1987–88 by the Applied Economic Research Centre of the University of Karachi. The city of Karachi is divided into 26 zones of neighbourhoods. These zones represent homogeneous areas in terms of household income, plot size, provision of services, and distance from the central business district. A sample of 6275 households, spatially distributed throughout the city, was selected on the basis of a multi–stage sampling procedure. Data was collected on the following variables: family characteristics, housing characteristics, availability of services, income and other variables. The descriptive analysis and the logit analysis is under taken on this data set.

5. Results and their Interpretation

The results and their interpretations are presented in this section. The different specifications of the estimated logit equations are presented in Tables 9 to 11. t values are given in parenthesis. The major determinants of the decision to locate are income, space, ownership status, ethnicity, head of household characteristics (occupation, travel time), availability of services and quality of house.

— The ownership of the house variable coefficient is large, indicating that owning a house is one of the most important decision of households

while considering residential location.

— Ethnicity has a significant and large effect on movement of households. Households prefer to reside in areas where the majority of households are of the same ethnic group as themselves. There is also a tendency of households with different backgrounds who come from other areas of the country to move towards suburbs.

— Plot size, representing space considerations, has a negative effect on choice of location, which means that space considerations translated into bigger plotsize cause households to move towards the suburbs.

— Family size also representing space has a mixed effect on choice of location. This may be caused by the fact that family size is representing moving costs. The bigger the size of family the higher the moving cost.

— Considering the occupation variable which is mostly significant indicates that households self–employed heads prefer to move toward the CBD.

— The significance of the migrant variable indicates that migrant households prefer more suburban locations.

— The travel time variable has a negative and significant effect, but small effect on movement of households.

— Ownership of car provides ease in moving to any place. The result for the variable indicates that ownership of car is a strong reason for a family to move to suburban areas.

— The public transport also has a significant effect on movement of households. The positive co–efficient indicates that users of public transport prefer more central residential location, possibly because of the unreliability of the said service.

— The water availability, availability of electricity and gas have considerable effect on the movement of the households.

— Results on the quality of construction indicate that households which have a preference for better quality of construction also prefer a more central location.

— Income measured as per MINCOME1, PERCAINC and MTTINC has a significant but small affect on movement of households. This movement is towards the CBD as income increases.

The results in Tables 9 to 11 show that the over all fit of the equations are good as the estimated chi squares are quite high: more than 440 for all the equations and are significant at 99.9 percent level of significance. The

percentage of correct predictions is also very high at about 82 percent for all equations. The log likelihood value is quite reasonable at about –1243 for all equations. Most of the coefficients are highly significant and have the expected signs. The literature does not provide much help with sign of some variables and they are ambiguous but these coefficients indicate reasonable signs for circumstances in developing countries. All estimated probabilities show that almost 15 percent chances exist, that on average value of explanatory variable a household moved to CBD. Here, if the value of any variable is changed then this probability is changed according to the sign of the coefficient of this variable. As in the results presented in this section, the effect of these variables on movement of the household cleared.

6. POLICY IMPLICATIONS

Policy implications based on results are as follows:

— The results of this research indicate that ownership status is an important factor deriving residential relocation decisions. The results also show that desire to attain ownership status leads to movement of households to suburbs. The reason is that ownership is some what restricted in the CBD, so the need is to establish new housing schemes in the outskirts of the city as to make sure to provide them better facilities in future also, the need is that these housing ownership be provided on affordable installments and need on the part of government is to subsides these housing.

— The desire for more space can be fulfilled in the suburbs. The need is to develop new housing schemes, but consideration is also required about the fact that boundaries of cities do not extend beyond a certain limit, and these space requirements should be adjusted under a constraint.

— The results indicate that the self–employed persons are likely to locate in CBD. This tendency certainly creates pressure on the CBD areas, in terms of providing facilities to these incoming migrants, and also reduces the percentage share of facilities enjoyed by existing residents of CBD. The need is to make other areas attractive for them so as to reduce the burden on the CBD area by providing more employment and business opportunities there.

— Migrant households shift towards suburban areas leads to an increase in the size of the city and increased costs in the provision of services. The need is to confine and restrict this movement of migrants toward the city center.

— As the time spent on the travelling is important, the need is also to construct better and wider roads as time consumed on travelling can be saved. As own–travel–mode reduces this time, there is a need to

provide them their own travel modes on subsidized rates. The improvement in the public transport service is also required.

- The need is to make sure that the regular provision of drinking water and other services are available in all areas. If the city is expanded to a certain limit then the cost of providing these services will increase too much. This consideration also requires to confine the city within a certain limit where these services can easily be provided.

Here are some general policy implications based on this study:

- As the movement of households toward suburbs continues, this tendency will lead to an extension of the boundaries of the city. In order to restrain this, it is required to develop existing or new cities with all urban amenities which would attract population towards them, so that a single city would not become too big, where it creates problems for residents of this city and creates difficulties in the provision of services to them.

- The factors which are responsible for determination of residential location in Karachi are more or less applicable for the determination of residence location in the other cities of Pakistan. The above mentioned policy implications would also be helpful for determining residential patterns in these cities.

- In order to estimate more reliable determinants of residential location as the households move within the city to different places, there is a need to collect information afresh, as within a few years many changes take place in locational pattern of household. So, estimation with more recent information is required.

Table 1: Distribution of Households by their Ethnic Background

Ethnic Group	Overall (%)	CBD (%)	Suburbs (%)
Urdu Speaking	61.9	39.8	67.0
Punjabi	15.3	12.5	15.9
Pushto	6.7	8.1	6.4
Gujrati	5.5	19.3	2.3
Sindhi	2.7	5.5	2.0
Other Groups	8.1	14.8	6.4
Total	100.0	100.0	100.0

Table 2: Distribution of Migrant Household in the City

Distribution of Migrants in the City	% of the Households
Overall	30.4
CBD	18.9
Suburb	33.3

Table 3: Distribution of Households by Monthly Income

S.No.	Monthly Income of Head	Overall Households (%)	Household in CBD (%)	Household in Suburbs (%)
1.	0–1000	25.5	18.9	27.2
2.	1001–2000	42.0	46.2	40.9
3.	2001–3000	14.3	17.1	13.6
4.	3001–5000	11.2	11.6	11.1
5.	5001–20000	6.6	6.0	6.8
6.	200001–1000000	0.3	0.2	0.3
	Total:	100.0	100.0	100.0

Table 4: Distribution of Households by Quality of Construction

Type of House*	Overall (%)	CBD (%)	Suburbs (%)
Pucca	50.9	56.3	49.6
Semi–Pucca	48.5	43.6	49.7
Katcha	0.6	0.1	0.7
Total	100.0	100.0	100.0

* Roof=Reinforced Cement or iron griders with tile, wall=cement house is pucca.
Roof=Reinforced concrete cement, iron griders with Tile or asbestos/tinsheet. Wall=Cement plastered or unplastered house is semi–pucca.
Roof=mud/thatch. Walls=stone/mud/wooden plants or Chatai/hatch/tin house is katcha.

Table 5: Distribution of Households by Owner Renter Status

Households Status	Overall (%)	CBD (%)	Suburbs (%)
Owner	76.6	58.4	81.2
Renter	23.4	41.6	18.8
Total	100.0	100.0	100.0

Table 6: Distribution of Household by Availability of Services

Services Available	% of Total Household	% of Household in CBD	% of Household in Suburbs
Water (Piped Water	70.5	71.8	70.1
Electricity	86.3	92.2	84.9
Gas	59.7	66.7	57.9

Table 7: Distribution of Workers by Mode of Travel to Work

Mode Used for Worktrip	Household (%)	CBD (%)	Suburbs (%)
Own Car	6.8	4.8	7.3
Office Van/Car	5.3	3.8	5.7
Scooter/Motorbike	9.4	11.3	9.0
Cycle	5.2	5.4	5.1
Minibus	10.9	7.4	11.8
Bus	31.7	33.2	31.3
Walking	21.4	26.8	20.1
Others	9.3	7.3	9.7
Total	100.0	100.0	100.0

Table 8: Distribution of Heads of Households by Education

Educational Achievements	Overall (%)	CBD (%)	Suburbs (%)
Illiterate	28.9	27.1	29.4
Can read and write	8.6	10.7	8.1
Primary	5.7	5.2	5.8
Matriculate	30.6	32.7	30.1
Graduate	19.3	19.6	19.3
Professional and Higher Education	6.9	4.7	7.4
Total	100.0	100.0	100.0

Table 9: Estimate Parameters of the Logit Model t–Statistics in Parenthesis

	1	2	3
MINCOME1	0.38 E–04		
	(2.2)**		
MTTINC		0.18 E–04	
		(1.4)	
PERCAINC			0.17 E–03
			(2.2)
PLOTSZE	–0.62 E–03	–0.53 E–03	–0.65 E–03
	(–1.5)	(–1.3)	(–1.6)*
OWRNT	–0.82	–0.81	–0.81
	(–8.2)***	(–8.1)***	(–8.1)***
MOTGURD	–1.34	–1.34	–1.34
	(–12.3)***	(–12.3)***	(–12.3)***
OCCTUS	0.27	0.26	0.25
	(2.4)**	(2.3)**	(2.3)**
TMETR1	–0.02	–0.02	–0.02
	(–6.9)***	(–6.8)***	(–6.8)***
TRMCAR	–0.34	–0.29	–0.33
	(–1.7)*	(–1.5)*	(–1.7)*
TRMBUS	0.37	0.37	0.37
	(2.9)***	(2.9)***	(2.9)***
MIG	1.12	1.11	1.13
	(–9.2)***	(–9.2)***	(–9.3)***
WATER	0.23	0.23	0.23
	(1.8)*	(1.8)*	(1.8)*
ROOF	0.44	0.45	0.43
	(3.6)***	(3.7)***	(3.5)***
CHI–SQUARE	454–86	451.83	454.48
% of correct prediction	82.80	82.70	82.59
Loglikelihood	–1244.1	–1245.6	–1244.3
Probabilities	0.15	0.15	0.15

*** Significant at 99 percent level of Significance.

** Significant at 95 percent level of Significance.

* Significant at 90 percent level of Significance.

Table 10: Estimate Parameters of the Logit Model t–Statistics in Parenthesis

	1	2	3
MINCOME1	0.18 E–04		
	(1.1)		
MTTINC		0.19 E–05	
		(0.1)	
PERCAINC			0.74 E–04
			(0.9)
HHSIZE	0.43 E–03	–0.15 E–03	–0.35 E–02
	(0.0)	(0.0)	(0.2)
OWRNT	–0.93	–0.92	–0.93
	(–8.6)***	(–8.6)***	(–8.6)***
MOTGURD	–1.42	–1.42	–1.42
	(–12.9)***	(–12.9)***	(–12.9)***
TMETR1	–0.02	–0.02	–0.02
	(–7.0)***	(–7.0)***	(–7.0)***
TRMCAR	–0.42	–0.36	–0.41
	(–2.2)**	(–1.9)**	(–2.1)**
TRMBUS	0.34	0.33	0.33
	(2.6)***	(2.6)***	(2.6)***
MIG	–1.16	–1.16	–1.17
	(–9.3)***	(–9.3)***	(–9.3)***
WAER	–0.10	–0.10	–0.11
	(–0.7)	(–0.7)	(–0.7)
ELECTR	0.61	0.63	0.60
	(3.8)***	(3.9)***	(3.7)***
GAS	0.24	0.24	0.24
	(1.7)*	(1.7)*	(1.7)*
ROOF	0.22	0.23	0.22
	(1.7)*	(1.8)*	(1.7)*
CHI–SQUARE	473.54	472.47	473.30
% of correct prediction	82.83	92.83	82.80
Loglikelihood	–1234.7	–1235.3	–1234.9
Probabilities	0.15	0.15	0.15

*** Significant at 99 percent level of Significance.

** Significant at 95 percent level of Significance.

* Significant at 90 percent level of Significance.

Table 11: Estimate Parameters of the Logit Model t–Statistics in Parenthesis

	1	2	3
MINCOME1	0.29 E–04		
	(1.7)*		
MTTINC		0.10 E–04	
		(0.7)	
PERCAINC			0.13 E–03
			(1.6)*
PLOTSZE	–0.81 E–03	–0.71 E–03	–0.83–03
	(–1.9)*	(–1.7)*	(–1.9)*
OWRNT	–0.90	–0.90	–0.90
	(–8.8)***	(–8.8)***	(–8.7)***
MOTGURD	–1.42	–1.42	–1.41
	(–12.8)***	(–12.8)***	(–12.8)***
EDUCAT	–0.16 E-02	0.01	–0.02
	(–0.0)	(0.1)	(–0.1)
TMETR1	–0.02	–0.02	–0.02
	(–7.0)***	(–7.0)***	(–7.0)***
TRMCAR	–0.32	–0.28	–0.31
	(–1.6)*	(–1.4)	(–1.6)*
TRMBUS	0.34	0.34	0.34
	(2.7)***	(2.7)***	(2.6)***
MIG	–1.16	–1.16	–1.17
	(–9.3)***	(–9.3)***	(–9.4)***
WATER	–0.09	–0.09	–0.09
	(–0.6)	(–0.6)	(–0.9)
ELECTR	0.64	0.64	0.63
	(4.2)***	(4.3)***	(4.2)***
GAS	0.25	0.25	0.25
	(1.7)*	(1.8)*	(1.7)*
ROOF	0.23	0.24	0.23
	(1.8)*	(1.8)*	(1.8)*
CHI–SQUARE	477.67	475.61	477.47
% of correct prediction	83.17	83.07	83.11
Loglikelihood	–1232.7	–1233.7	–1232.8
Probabilities	0.15	0.15	0.15

*** Significant at 99 percent level of Significance.

** Significant at 95 percent level of Significance.

* Significant at 90 percent level of Significance.

REFERENCES

Ahmad, N (1992); "Choice of location and mobility behaviour of Migrant Household in a third word city". 'Urban studies'. vol. 29, No. 7, pp 1147–1157.

Ahmad, N (1993); "Choice of Neighbourhoods by mover households in Karachi". 'Urban Studies'. Vol. 30, No. 7, pp 1257–1270.

Anas, A. (1978); "Dynamics of' urban residential growth". 'Journal of Urban Economics'. pp 66–87.

Brown, H.J (1975); "Changes in work place and residential location". 'AIP Journal'. pp 32–39.

Clark, W.A.V. and J. L. Onaka (1985); "An empirical test of a joint model of residential mobility and housing choice". pp 915–930.

Eaglstein, A. S. and Yitzhak B. (1988); "Correlates of intra–urban Migration in Israel". 'Social indicators Research'. Vol. 20, pp 103–111.

Follain, J. R. Jr and Stephen Malpezzi (1981); "The Flight to the Suburbs: Insights Gained from an analysis of Central city Vs Suburban housing costs". Journal of urban Economics'. vol. 9, No. 3, pp 381–398.

Fujita, M. (1982); "Spatial patterns of residential development". 'Journal of Urban Economics'. vol. 12, No. 1, pp 22—52.

Fujita, M. (1989); "Urban Economic Theory Land use and City Size". 'Cambridge University Pres Cambridge'.

Goodman, J. L. Jr (1976); "Housing consumption disequilibrium and local residential mobility". 'Environmental and Planning'. vol. 8, pp. 855–874.

Graves, P. E. and Peter d. Linneman (1979); "Household migration theoretical and empirical results". 'Journal of urban Economics'. vol. 6, No. 3, pp 383–404.

Grubb N. W. (1982); "The flight to the suburbs of population and employment 1960–70". 'Journal of Urban Economics'. vol 11, No. 3 pp 348–361.

Hirsch, W. Z. (1973); "Urban Economics analysis". 'McGRAW–HILL Book Company'.

Holzer, J. (1991); "The spatial mismatch hypothesis: what was the evidence shown?". 'Urban Studies'. vol. 28. No. 1, pp 105–122.

Ihlanfeldt, K. R. and David L. Sjoquist (1989); "The Impact of job decentralization on the Economic welfare of the central city Blacks". "Journal of Urban Economics". vol. 26, pp 110–130.

Judge G. et al (1985); "The Theory and Practice of Econometrics". Wiley Series in Probability and Mathematical Statistics.

Kain, J. F. (1968); "Housing segregation black employment, and metropolitan decentralization". 'Quarterly Journal of Economics' vol. 82, No. 2, pp 175–197.

Lee, Barrett A. and David C. Hodge (1984); "Spatial differentials in residential displacement". 'Urban Studies'. vol. 21, No. 3, pp 219–231.

Lee,' Kyu Sik (1985); "Decentralized trends of employment location and spatial policies in LDC cities". 'Urban Studies'. vol. 22, No. 2, pp 151–162.

Lindert, P. V. (1991); "Moving up or staying down? Migrant Native differential mobility in La Paz". Urban Studies'. vol. 28, No,. 3, pp 433–463.

Miller, V, P. and John M. Quigley (1990); "Segregation by racial Demographic Group: Evidence from the San Francisco Bay Area". 'Urban Studies'. vol. 27, No. 1, pp 3–21.

Mooney, J. D. (1969): "Housing segregation Negro employment and metropolitan decentralization: An alternative perspective". 'Quarterly Journal of Economics'. vol. 83, No. 2, pp 299–311.

Onokerhoraye, A. G. (1977); "The spatial pattern of Residential Districts in Benin, Nigeria". 'urban Studies' vol. 14, No. 3, pp 291–302.

Ozo, A.O. (1986); "Residential location and intra–urban Mobility in a developing country: some empirical observations from Benin City Nigeria". 'urban Studies'. vol. 23, No. 6, pp 457–470.

Shefer, D and Niki Primo (1985); "The Determinants of Household Migration into and out of Distressed Neighbourhoods". 'Urban Studies'. vol. 22, No. 4, pp 339–347.

Simpson, W. (1987); "work place location, Residential location and urban commuting". 'Urban Studies'. vol. 24, No. 2, pp 119–128.

Varady, D. P. (1974); "White Moving plans in a recially changing Middle–Class Community". 'AIP Journal', Sep pp 360–370.

Vaughan, D. R. and Waltruat F (1973); "Initial settlement and intra city movement of migrants in Monterrey, Mexico". 'AIP Journal'. Nov. pp 388–401.

Vrooman, J and Stuart Greenfield (1980); "Are Blacks making it in the suburbs? Some new evidence on intra metropolitan spatial segmentation". 'Journal of Urban Economics'. vol. 7, No. 2, pp 155–167.

White, M. J. (1977); "A model of residential location choice and commuting men and women workers". 'Journal of regional science'. vol. 17, No. 1, pp 41–52.

APPENDIX–A

DESCRIPTION OF VARIABLES

Here explanation regarding the variables used in this study with their symbolic specification and how they are constructed as to fit in estimation purposes.

MINCOME1	Monthly income of the head of family. MTTINC Total Monthly income of all family members. PERCAINC Per capita income of the family, which is obtained as total family income divided by household size.
HHSIZE	Family members in a household.
PLOTSZE	Size of the Plot (in square yards) where Household likely to move and/or presently residing.
OWRNT	Ownership of house by the household, and is constructed as (own house = 1, 0 otherwise).
MOTGURD	Ethnic consideration variable, is a dummy one and constructed as (Urdu speaking = 1, 0 otherwise).
OCCTUS	Occupational status of the head of household, This variable is also a dummy variable and constructed as (self employed = 1, 0 otherwise)
EDUCAT	Educational attainments of Head of Household and this variable is in the form of dummy and constructed as (Graduate or Higher Educated or Professional = 1, 0 otherwise).
TMETR1	Time spent on travelling from home to workplace by the head of household in minutes.
TRMCAR	Ownership of private car by the head of household. This variable is a dummy variable and constructed as (own car = 1, 0 otherwise).
TRMIBUS	Public transport used by the head of household and this variable is dummy variable and constructed as (using' public transport = 1, 0 otherwise).
MIG	Migrant status of household (came in city after 1955 = 1, 0 otherwise).

WATER	Presence of piped water inside dwelling as services variable and constructed as (piped water = 1, 0 otherwise).
ELECTR	Presence of electricity in the house as services variable and constructed as (available = 1, 0 otherwise).
GAS	Presence of Gas in House as service variable and constructed as (availability of piped gas in house = 1, 0 otherwise).
ROOF	Indicating construction quality of house and is constructed as (Pucca roof of house = 1, 0 otherwise).
CBD	Probability to Move toward CBD or away from CBD and take value 1 or 0 respectively which is dependent variable in the estimated equation and is to determine the locational preferences of the household.

APPENDIX–B

Table 12: Mean and Standard Deviation of Variables

VARIABLES	MEAN VALUE	STANDARD DEVIATION
MINCOME1	2414.25	3064.25
MTTINC	3593.25	4277.50
PERCAINC	591.63	696.69
HHSIZE	6.89	2.95
PLOTSZE	137.33	157.87
OWRNT	0.77	0.42
MOTGURD	0.60	0.49
OCCTUS	0.72	0.45
EDUCAT	0.21	0.41
TMETR1	36.48	26.48
TRMCAR	0.13	0.34
TRMIBUS	0.43	0.50
MIG	0.30	0.46
WATER	0.70	0.46
ELECTR	0.86	0.34
GAS	0.60	0.49
ROOF	0.52	0.50
CBD	0.20	0.40

SOCIAL INSTITUTIONS, PEER GROUPS AND ECONOMIC DEPRIVATION IN SOUTH ASIA

M. Aslam Chaudhary*

INTRODUCTION

The paper is aimed to capture the present socio-economic conditions, role of institutions and peer groups which improved or restricted economic and social development in South Asia. No attempt is made to follow the academic approach to pinpoint the lacking role of social institutions and organizations. However, vision survey is utilized to highlight the conditions. The vision survey is based upon interaction and interviews with existing heads of social institutions, views of experts and peer groups. Appropriate weight is given to their views. Besides, performance of social institutions, existing social behavioral norms and practical experiences are utilized to make arguments. Assessment of prevailing social norms is also made based upon current available statistics. Quantitative approach is adopted to critically review the current economic conditions and future prospects, keeping in view long term sustainable development. Examples for specific country are intentionally avoided. Notwithstanding the above, the out come apply, in general, to most of the region. South Asia consists upon India, Pakistan, Sir Lanka, Maldives, Bangladesh, Bhutan and Nepal. The region may be considered one of the most deprived and poor in the world. The region not only have one of the lowest income per capita but it also suffers from poor basic socio-economic facilities. Maximum number of poor persons reside in this region. A large proportion of population's income is below poverty line, having income less than $15 per month. However, it is one of the most militant regions, where defense expenditures are many times higher than the expenditures for education and social welfare. Two of the largest world armies are also in this region. More than twenty five percent of children find no school to go. It may also be considered one of the most illiterate regions in the world. Illiteracy is wide spread, with the exception of two countries[1]. While basic facilities are depleting, poverty is on rising trend and population pressure is increasing. High population growth rate hardly matches with the growth of basic economic facilities. Most of the countries of South Asia suffer from negative real per capita income growth, if real economic factors are taken into account.[2] On the face of this, it received significant amount of international aid but it hardly contributes much to change the economic situation. The region may also be considered one of the most indebted region. Foreign loans are becoming a bottleneck to its growth, rather than of much help to accelerate economic growth.[3] The region has ended up

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[1] Sri Lanka and Maldives are exceptions in this case.

[2] These factors could be population growth, inflation and payment of debt servicing etc. For details see Aslam Chaudhary, and Ali S(1993).

[3] A detailed analysis is carried out by Sabahat A (1997). The entire economic growth is washed away alone by foreign debt servicing. Now borrowing is done to repay the old debt.

with dependent growth. Saving rate is low and effective policies are not introduced to overcome the problem. Law and order situation is poor. Ethics, moral values and character building institutions are very poor. Given this background the paper attempts to pinpoint the nature and outcome of above factors. Suggestions are provided to bring about a change in the present situation. The paper is divided into five parts. Part II is a critical review of economic conditions. Part III contains the role of social institutions and peer groups. Part IV provides future directions to bring about a change in the present situation. Part V contains conclusions of the study.

II. ECONOMIC CONDITIONS AND DEVELOPMENT

South Asia's per capita income ($347) is even lower than Africa's ($555). The same for developing countries was $1090.[4] The adult literacy in South Asia is hardly 48%, much lower than sub-Saharan Africa (53%). The same in East Asia is 98%, excluding China. About fifty percent of the world's illiterates live in South Asia. Table-1 shows that, since 1960, there is hardly any social and economic indicator in which South Asia has gained its share, except population's, which increased illiterates and poor. South Asia's share in global GDP has decreased since 1960; from 6.9% to 5.3% (1993). The region has neither kept up with the world's advancement nor social development. Such an outcome is on the face of respectable economic growth prevailed in South Asia. Human Development Index (HDI) decreased over time. Illiterate adults increased from 234 million to 398 million between 1960 and 1993 i.e. its share in the world increased from 32% to 46%.

Table I: Economic Conditions and South Asia

(Millions)

	Population			Real GDP (PPP $ billion)		Absolute Poverty	Illiterate Adults	
Year	1960	1993	1997	1960	1993	1993	1960	1993
World	2996	5508	5829	5303	30542	1314	735	853
S. Asia	264	1191	1289	365	1632	527	234	396
Share (S. Asia %)	19	22	22.2	6.9	5.3	40	32	46

World Bank and Human Development in South Asia (HDSA), 1997, 1998.

Rapid increase in population in South Asia poses a serious threat to its development. In the last two decades or so its population has doubled. It will again double in the next twenty years, if fertility rate is not controlled. India will surpass China in the next fifty years, having population of 1.8 billion. The population of Pakistan will be over 400 million, more than the population of Brazil, USA, Indonesia and Russia. It will be the third largest country in the world. Such a tremendous growth in population hardly matched to their economic development. The economic conditions have gone worse in the recent years, taking this region towards more economic deprivation. The region can also be considered the most malnourished and

[4] For details see Human Development in South Asia (HDSA), 1998, P 177. The figures are for 1995

Share in the World poor.

least gender sensitive. Other major current economic and social conditions are as described below:

Pakistan and India were rapidly growing countries in the South Asia. Recently, Pakistan's economic performance has been poor. Up to 1990, its average per annum economic growth was over 6%. During 1997-98, its growth has been only 3.1%, almost equal to its' population growth. Thus, hardly any increase in real per capita income is observed. Recently, India's economic growth was 5%, compared with 7% in the early 1990's, which again shows a decreasing trend. Taking into account its population growth and payment of debt servicing, its real per capita income growth turns out to be negative. The economic growth in Nepal was 4.3%, in 1997, as compared with over 6% in 1996 and 1994. In real terms, its per capita income growth was also negative. Bhutan, Sri Lanka and Bangladesh have recently shown some improvements in their economic growth but it is not high enough to change the poor economic conditions. Overall, economic growth was still close to 4% in 1997 which was over 7% in the 1990's. The newly industrialized countries of Asia were experiencing much higher economic growth over a decade or so. As a result, relatively, the South Asia is pushed behind in Asia. Several factors can be held responsible for such poor economic outcome and deprivation of South Asia. Major sources of the same are given below.

South Asia has done better than sub-Saharan Africa, in terms of long term economic growth but its rapid growth of population has wiped away its affects. The per capita income in South Asia increased by 2.3 percent between 1960 and 1993. It is more than double than the sub-Saharan Africa's. As per Human Development Report (1996) 29 countries in Sub Saharan Africa experienced negative economic growth. The South Asian Countries did not face such a bad economic situation. Its growth was over 5%. Despite the relative good economic performance, it is South Asia where malnourished children are greatest than sub-Saharan Africa. About 65% children in South Asia are born underweight, compared to one-sixth in sub-Sahara Africa [HDSA, 1997, 1998]. South Asia is the poorest region, which had per capita GNP $ 347 (1995), lower than any other region in the world. It is estimated that over 500 million people live below absolute poverty line. The very basic human needs like potable water, basic health facilities, basic education, shelter and clothing remain unfulfilled for the large segment of the society. South Asia has over 22% of world's population, having only 1.3% of the world's income. About 40% of the world's poor live alone in this region. South Asia and its comparative picture with rest of the world are given in Table 1. However, Sri Lanka is an exception, not only that it successfully increased literacy but it also reduced its population growth. Presently its population growth is below 1.5%, having female literacy over 86% and overall literacy over 90%. On the face of this, *75%* of Pakistani women remain illiterate. Human development was either been neglected in this region or its development is not as per needs. The outcome is widespread of unemployment, including educated youth [Aslam C. and Hamid A., 1999].

Literacy and education are the major areas, which has been ignored in the South Asia. As stated above, adult literacy is below 50%. Besides, what so ever primary education is provided, its quality is very poor. The literacy hardly helps to become a good citizen. The basic education is not focused to build character and moral values. Thus, even after completing primary education, it hardly helps much in improving character or productivity. Drop out rate exceeds 50% for some countries. Poverty, unemployment and injustice force them either to child labour or they join criminal groups. Over 135 million children are engaged in child labour. There are more children out of school in South Asia than in the rest of the world. Teaching a girl is equivalent to teaching a family, since she is going to raise the family. In South Asia two-third of female's generation is wasted due to ending up illiterates. Alone in India over 250 million adults are illiterates. About 40 million children are out of school. Besides, skill learning and professional training is ignored. There are 0.3 scientist and technicians per 1000 people. Situation in other South Asian countries is worse than even India's. Recently, India has made substantial progress in increasing enrolment. Public expenditures on education are increased but still very low. On average it remained below 4% of GNP (1995).

Adult literacy in Pakistan is below 40%. About 17 million children find no school. For decades, expenditure on education were less than 2% of GNP. Recently, it has been slightly increased. Drop out at primary level is also over 4o%. The scientist / technician ratio is hardly 0.1 per 1000 persons, which indicates the neglect of technical education. A similar situation prevails in Bangladesh. In Bangladesh adult literacy is same as in Pakistan. Nearly two-third of all adults are illiterates. Over 25 million children are out of school. Female illiteracy is over 70% Public expenditures on education are below 3% of GNP. The Scientist / technician's are 0.1, per 1000 persons.

Nepal and Bhutan are even poor, as compared to other countries in South Asia. Adult literacy in Nepal is below 30%. Expenditures on education are below 3% of GNP. About 45% of primary children are dropped out before completing basic education. Combined enrolment is below 70%. About 2 million children are out of school i.e. 10% of population. In Bhutan adult literacy is 40% and primary enrolment ratio is 70%. Over 70% of female adults are illiterate. The situation in Maldives is better where adult literacy is the highest, in the South Asia i.e. over 90% of adults are literate. Recently, primary enrolment ratio is substantially increased. It has also increased expenditures on education to the tune of 6.6% of GNP. Maldives has the highest per capita income of over $1000 (1996). A similar situation prevails in Sri Lanka. Its literacy rate is over 90%. But recently it has decreased expenditure on education. Almost all children are in primary school. Scientist / technician ratio as per 1000 person is 0.2. It has been spending over 4% of its GNP on education. Recently it is decreased to around 3 percent. These factors keep the region underdeveloped.

As stated earlier, South Asia appears lacking in basic facilities, where over 250 million people lack in access to basic health facilities. Over 300 million people have no access to safe drinking water. About 800 million people are deprived of sanitation facilities. Over 400 million people go hungry every day. Human Deprivation Measure (HDM) indicated that there are over 500 million people who are deprived from basic facilities of life (HDSA, 1998). The development of basic facilities and human resources was ignored, although respectable economic growth was achieved. Such economic growth did not turn out to be sustainable. It is also interesting to think who bear the fruits of economic growth, since poverty keep on increasing the region.

South Asia is also a victim of poor health facilities. Half of the new born children are under-weight in South Asia. Moreover, the Gender Equality Measure (GEM) indicated that economic and political opportunities open to women compared to men are the lowest; (0.235), among all regions of the world. The economic deprivation has gone to the extent that mass population is becoming drugs addictive Alone in Bangladesh over 100,000 persons are drugs addicted. Heroin abuse is a major problem in Nepal. It is also widespread in Maldives. Over 5 million people are drugs user in India. In 1993, as per official estimates, over 50,000 people were drugs addicted in Sri Lanka. Pakistan has become one of the major heroin exporting country; with the influence of Afghan refugees. Domestic consumption of drugs has also been significantly increased in Pakistan. About 5% of its adult population end up with drug addiction. It is estimated that 86% of the opium processed in Pakistan comes from neighboring countries. Thus, it is also an importer of drugs. One source of above cited evils is extreme poverty in South Asia. Poverty profile is given in Table 2.

It is estimated (World Bank) that 40% of the World's absolute poor, surviving on less than one Dollar a day, [HDRSA, 1997, HDR 1996] struggle for survival in South Asia. The basic human capability figures (CAP) are alarming. About two third of the population is deprived from basic human capabilities. Country-wise profile of poverty is given in Table 2, which is shocking. The poverty situation in the Bangladesh is extremely dismal, although the situation in other countries is also very similar. Present restrictions on child labour have added to further aggravate the problem. Similarly, poverty situation in Pakistan has become worse over time. It is estimated that roughly 30% of population is below absolute poverty line, while 50% population fall under poverty line. Gerdazi (1991), HDC (1999) and Aslam, C., and Hamid, A., (1999) also provided similar picture of poverty. In the last ten years, over 20 million people may have been added to the ranks of absolutely poor. Overall, about 45 million people are hardly able to survive, but do not get all basic necessities of life. Income poverty in Sri Lanka is around 30% too. The wide spread poverty in South Asia poses a serious threat to its growth. Poverty elimination is on the top agenda of almost all political parties in South Asia. However, any government takes hardly any concrete step. There is a need to change such attitude. Good governance is badly needed.

Table 2: Poverty in South Asia.

(Percentage, Population)

Country	Capability Poor People	Income Poor People (Head Count)
Bangladesh	77	48
India	62	25
Pakistan	61	35
Weighted Average	63	28

UNDP 1996, H DSA/HDI 1997.

South Asia may also be considered one of the most indebted regions in the world. Foreign debt in South Asia is growing over 10% per annum, which is double than their economic growth. Recently, foreign Debt/GNP ratio was over 35%, 25%, 70%, 53%, 22%, 47% and 40% for Pakistan, India, Bangladesh, Sri Lanka, Nepal, Maldives and Bhutan, respectively. If the same trends were to continue, the same ratio will increase to 82%, *65%,* 150%, 130%, 60%, 90% and 95% for the respective countries, by the year 2008-9 (Sabahat, 1997). It means that the debt will double in ten years. More shocking is the debt servicing which washes away almost the entire economic growth. Presently, debt servicing, as percentage of GNP, was 3%, 4%, 13%, 7%, 3%, 10% and 7% for Pakistan, India, Bangladesh, Sri Lanka, Nepal, Maldives and Bhutan, respectively. The same is expected to grow to 9%, 10%, 7%, 20% and 17% for the respective countries in the year 2008-9. Almost 10% of national income will be washed away by alone debt servicing. It means that what so ever high economic growth may be achieved by this region, it will not get out of poverty. International aid is meant to support and uplift the poor countries so that they can catch up with others. However, the outcome is different for South Asia In South Asia, it is becoming a bottleneck to their economic growth, rather much help to them.

On the face of above cited poor economic outcome, the region has focused much of its attention on expanding military and defense expenditures. Defense and debt servicing alone washes away more than two-third of the budget. It may also be called the most militant region in the world. As per HDSA (1997) two of the largest armies in the world are in South Asia. The region spends twice as much each year on the purchase of high-tech arms as does Saudi Arabia. South Asia is the only region where military spending is increasing from the last two decades. Given that the region has over 40% of the world poor. There hardly exist any affective program for the poor. However, its spending on defense exceeds $14 billion a year. The soldiers/doctors ratio is 6:1 in South Asia. About 90% of the total region's military spending is in Pakistan and India. India is ranked at 142 (WB) as per capita income in the world, while it ranks number one in terms of total arms imports. Now both the countries have become nuclear power too, whereas very basic social services are missing in the both countries. Military spending are increasing over 11 % per year in these countries, which is double than their economic growth. Such a pattern and outcomes are shocking.

The above cited economic conditions indicate dismal picture of the region. Other indicators are not better either. Unemployment is increasing, particularly, educated Unemployed youth is a major challenge. Gender and income disparity is wide spread. Besides, human resources are poor. The quality and spread of education is a major bottleneck to their economic growth. One of the core problems is political instability and lack of interest of the peer and influential groups. These groups enrich themselves rather the country.

III: SOCIAL INSTITUTIONS AND PEER GROUPS

The fundamental problem in South Asia is the structure of institutions, which is very weak. Politics is personality based, rather democratic. Even the countries where democracy is evident, votes are purchased and sold. Such an outcome is due to poverty and illiteracy. The peer groups build institutions for their own interests. These institutions are live until the influential personality or peer group is in power, for example, in Pakistan Ayub Khan introduced Basic Democracy System. It becomes functionless, as soon as he was out of power. Institutions are born and they die with the downfall of the personality. As results, institutions remain weak and peer groups dominate the politics and economy. Good Laws are there along with monopolies and widespread corruption. These peer groups are either a small class of businessmen or landlords which sweep the major proportion of the economic fruits of the economy. Some countries military is equally peer group to reap the benefits and they have share in ruling too.

The peer groups work for individual benefits (Tagore 1999). They sweep wealth and enjoy luxury life. All that income is not earned. Illegal activities are normal part of life. It not only keeps the country underdeveloped but it also leads to poverty, hunger, lack of education and spread of unemployment. For example in Pakistan, few bureaucrats and politicians have transferred capital abroad to the tune of billions of dollars, much more than the national foreign debt of the country. More than one-third of the economy is underground economy. Every Prime Minister is removed with a gift of hundreds of corruption cases registered against him/her. But there is hardly any outcome of these court cases. Similar situation prevails in other South Asian Countries. Some countries are still ruled by kings, although apparently, they have adopted democracy.

The region does not have stable political environment and it suffers from individual conflicts, unstable political and investment environment. Such a situation forces them to accelerate military expansion and therefore lavish military expenditures keep on increasing. As a result, very little is left for development purposes. It also pushes the region to heavy international borrowing. The region turned out to be one of the most indebted regions in the world. The out come is that a substantial proportion of economic growth is washed away by debt servicing. Thus, foreign loans are becoming bottleneck to growth. Political instability also leads to unstable economic policies and makes the region unattractive for international flow of capital and investment. Multinational firms are hesitant

to invest in this region. Illiteracy and poor human resources are also the major contributing factors to make the region unattractive for international investment, although substantial opportunities exist for profitable businesses in the region. Several regions of these countries are still under tribal rules, not directly but indirectly. About five hundred to one thousand families rule and occupy important positions in the governments. Landlords, rich businessmen and top military personnel and bureaucrats are closely related and they take turns in ruling the country. These elite classes hardly attempt to change the economic fate of the masses. Thus, neither effective reforms are introduced nor economic policies bear much, fruits. Good policies may be prepared but those are seldom implemented. Adhocism and day to day economic management continues. On the face of this, substantial amount of resources are washed away by the above cited influential peer groups. Country may become poor and poor but certain privileged groups keep on enriching themselves. Mass community hardly benefits from economic growth. Income inequality keeps on increasing. Social and economic institutions are weak and have very little impact. The major bones of content are week institutions, illiteracy and poverty, which leave no choice for the mass poor to force accountability of the influential classes.

Social institutions like households, family, educational institutions and religious centres are not very strong. However, due to mass illiteracy the family and households are ineffective to contribute to character building of the new borns. Character building and introduction of moral values is absent in the family, households, schools and other institutions. Large family structure and little income force these institutions to let the children to bear their fate. Religious schools are busy in traditional education, rather character building, honest behaviour and social responsibilities. The education institutions are also engaged in traditional and modern education than that of character building. Thus, as a result, the grown up masses turn out to be not caring for law, truth and keeping the promises. Most of the new generation has the dreams to become rich over night by hook or by crook, rather based upon their labor or work. Such behaviour may benefit some individuals but it is dangerous for the whole community. Majority of such vicious young ends up with either victim of drugs or crimes. Over 8 million persons are drugs addicted in South Asia' alone. There is a need to change such an attitude and character building is the most important area to be focused for positive change. For this purpose social and economic revolution is needed.

IV: FUTURE NEEDS AND AGENDA FOR CHANGE

The review of economic and social situation in South Asia seems dismal. However development starts with the development of peoples. Social development in South Asia is neglected. Although, presently, economic growth is respectable but it will not be sustainable until the basic social values are made favourable for development. The feudal structure will never allow mass welfare of the nation. In many societies and countries Fabian socialism partially adopted by the rulers and top bureaucrats had

left some influence but it was unable to change the fate of the region. The role of the government failed when it played as businessmen. Given the present pattern neither the government nor foreign aid could change their fate. Private enterprises suffered in South Asia due to an active role of the public sector in producing private goods. Nationalization of businesses and again denationalization has broken the confidence of the private sector. Besides, institutions were lacking their role. Thus, there is a need to look back and reform the institutions first. Family training must achieve high moral values, while raising the children. School education may also change to meaningful character building and skill oriented. Several of these functions are successfully done by NGO's, which need to be further strengthened. Friendly relations between governments and NGO's are needed. However, fear is that tension between government and NGO's to seek funds may not interrupt the process. On the other hand NGO's need to be regulated so that they do not end up with self-enrichment.

There are many lessons, which can be learned from Asia, particularly from Japan. The East Asia started from almost the same level of per capita income as of South Asia, three decades ago. But East Asia now enjoys about 30 times higher per capita income than that of South Asia. East Asia's, Human Development Index is twice that of South Asia's. The major factors, which contributed to their growth, were investment in education, political stability, institutional reforms, outward-looking trade strategies and international flow of capital (HDSA, 1997&1998). All these factors are needed for the uplift of South Asia too. Besides, mobilizing saving and investment and good governance can significantly contribute for their growth. Thus there is a need to shift the development priorities in South Asia. Institutional builds up and reforms will also provide a cure for the social evils like corruption and lawlessness. Such a change will improve productivity, reduce' poverty and unemployment and improve health conditions.

South Asia can also learn to a great deal from Japan. Industrial revolution was made possible by massive investment in education, skill and moral/ethic development of the peoples. The priority for technical training and on job training gave a big stimulus to its growth. Widespread and equitable provision of education also helped to equitable distribution of income and raised productivity. It enabled the country to not only face international competition but it also led the competition race. Thus South Asia must change from the most illiterate region to skilled region. Income poverty may not be a barrier for spreading education. Informal and purposeful education can save a lot in terms of its cost. Present trend of formal expensive education will take decades to address the issue. Therefore informal education must be a part of universal literacy programme. The quality of education must be raised to improve the quality of human resources in South Asia. Spending less than an additional one percent of South Asia's combined GNP can ensure universal primary education in South Asia [HDSA, 1998]. Besides, reduction in military

spending and diverting these resources to education can reduce the period for universal education to one-half. The compulsory primary universal education, as per constitution, needs to be implemented. After primary education, technical and vocational training must be the top priority, which is lacking in South Asia. Indian software industry has expanded dramatically due to their special attention paid for computer training and education. India's enlightened policy to support the software exports was fruitful which raised foreign exchange earnings over billion dollars. Such changes need to be introduced in other countries of South Asia.

A lamp can never light another lamp unless it continues to burn in its own flame [R. Tagore, 1998; HDS,A, 1998). South Asia is getting trapped rapidly in international debt and debt servicing. It will never stand on its feet until the present trend is changed. India's saving rate was over 22%, while Pakistan's saving rate was hardly 15%, although India is poor than Pakistan. The foreign borrowing of Pakistan has trapped it in to debt trap. If Pakistan raised its savings, there is no need for foreign borrowing and hence, letting debt wash away its fruits of development. Similarly situation prevail in other South Asian Countries. It is not the poverty which restricts savings and encourages borrowing. It is attitude, lack of responsibility and inefficient economic policies, which trapped the region to dependent growth. Appropriate policies and change in attitude can help to reducing foreign borrowing, increase domestic savings and accelerate economic growth, which will be sustainable. Such a fundamental change is essential to change the economic and social scenarios.

V: CONCLUSION

The study was aimed to critically review the economic and social conditions in South Asia. Major focus was on its economic deprivation. Besides the role of institutions and peer groups was also to be highlighted. Based upon the review, future directions were to be provided for economic and social improvement.

The review of current literature and statistics pertaining to economic conditions in South Asia indicated that South Asia has emerged the most deprived region in the world. The region ranks the lowest in human development indicators. Basic necessities of life are limited. Almost half of the population is deprived from basic needs. The region is far behind in social welfare, as compared to sub-Saharan Africa, although economic growth rate was much, better in South Asia. Rapid increase in population and gender inequality has led to poor economic conditions in South Asia. Besides, poverty is wide spread and almost half of the young generation is illiterate, which ranks the region the most illiterate region in the world. Human development. particularly, technical education is far behind to cope with economic growth. Gender disparity in education and education policies biased towards general education have not only led to spread unemployment but it also resulted in depriving females from basic education. Moreover the region has also emerged as the most indebted region in the world. The international aid has not helped much to overcome economic deprivation. Presently it is washing away almost all economic

growth in the region. Such outflow of resources leaves the per capita income growth almost negative. It is a fear that if the present trend were to continue, it will become major bottleneck to its growth. The region also suffers from' political instability. Individual conflicts force them to keep on increasing defense expenditures. It is the only region where defense expenditures are on increasing trends, since the end of cold war era. The region has two of the largest armies of the world. Military personnel/doctors ratio is very high, as compared to other regions.

The roots of economic deprivation seem deep in social, economic and cultural values of the region. Feudalism is still very effective. Such system hardly allows social and economic changes. Few peer groups dominate politics. They take turn in enjoying political power and they have a little interest in developing the region. Individual country conflicts prolong and even end up with wars to save their government. Illiteracy, poverty and unemployment keep the masses dependent upon these peer groups. Since institutions are weak, therefore, corruption is spread. Moreover, breaking the laws is considered a pride. Every leaving ruler is entertained with hundreds of corruption and law breaking court cases. But these cases hardly end up with any accountability. The peer groups keep on piling up wealth by legal and illegal means. As a result, income distribution become worse and worse. Underground economy keeps on expanding. Few families own more wealth than the national debt of countries. The basic cause for all these evil is weak institutions. Family system, education institutions and religious, centres hardly focus on moral values and character building. Thus majority of young persons does not hesitate to break the law and they feel pride to do illegal activities. They are so deprived from even earning opportunities that they end up with drug addiction. Such a situation is alarming. There seems a little hope for sustainable development or improving social and economic conditions. Basic fundamental changes are needed in the institutions and development planning agencies.

It appears that present system has failed to deliver economic means to the masses. Therefore, alternative approaches to government and aid is the need of the day. NGO's are becoming active and they are playing a significant role in changing the situation. But such a struggle needs to be strengthened by other quarters. Family system must focus on basic values like character building and teaching moral values. It needs to be supplemented by the education system. Education system needs to be overhauled to being about any change. Along with formal education, informal education must be introduced for quick and less costly results. Meaningful education for entire society is needed. Economic reforms to rebuild public, private and social institutions are badly needed. Defense expenditure must be curtailed and more resources must be directed to develop human resources. Many 'lessons may be learned from East Asia, like human development, priority for skill education, outward looking policies, development of moral values and maintaining law and order situation. Although some of these changes have been introduced but it

needs to be further accelerated so that their effect is not wiped away and early results are obtained.

REFERENCES

Asian Development Bank, Asian Development Outlook; Different Issues.

Aslam M. Chaudhary, (1988), International Debt and Foreign Dependency: Poverty Options for Pakistan. The Pakistan Development Review.

---------- (1989), Choice Between Foreign Aid and Self-Reliance: Pakistan Economist, Islamabad.

---------- and Ali S.S., (1993), Pakistan's Foreign Dependence. Its Capacity for Debt Repayment and Future Prospects, Pakistan Economic and Social Review.

---------- (1996), The Bomb of Foreign Debt, Is there Any Way to Escape? A Case Study of Pakistan, Pakistan Journal of Applied Economics, Karachi.

Aslam M. Chaudhary and Hamid A., (1999), Human Resource Development and Management In Pakistan, Ferozsons, Lahore, Pakistan.

Bromley D. W. (1989) Economic Interests and Institution, The Conceptual Foundations Public Policy, Basil Blackwell, New York.

Gardezi. H., N., (1991), Understanding Pakistan, the colonial Factors in the Social Development Maktaba Fikr-o-Danish. Lahore.

Govt. of Pakistan, Economic Survey, 1997-98, Ministry of Finance, Islamabad.

Govt. of India, Economic Survey (India), different Issues, Ministry of Finance, Bombay.

Human Development In South Asia (HDSA), 1997, 1998, see Haq & Haq.

Haq. Mahbub-ul and Haq K., (1997), Human Development in South Asia, Human Development Centre (HDC), Islamabad, Oxford University press.

---------- (1998), Human Development in South Asia, HDC, Islamabad, Oxford University press.

---------- Poverty Profile of Pakistan (1999), Mahbub-ul Haq Human Development Centre Islamabad.

Sabahat A., (1997), Foreign Debt of South Asia And Its Economic Implications, M.Phil. thesis, Department of Economics, Quaid-i-Azam University, Islamabad.

Tagore R., (1998), See in Human Development in South Asia by Mahboob-ul Haq and Khadija Haq, HDC, Islamabad.

World Bank (1995), World Development Report (1998/99), Oxford University Press.

---------- (1996), Social Indicators of Development, Washington D.C.

---------- (1996). Trends in Developing Economies, Washington D.C.

---------- (1997). World Development Indicators, Washington D.C. UNDP, Human Development Report, Different.

ELECTRICTY DEMAND: A DECOMPOSITION APPROACH

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1. INTRODUCTION

Energy has played a vital role in the development of human society. The history of economic development shows a clear positive correlation between energy and economic growth.

Electricity is one of the sources of energy. It is a necessity of human life. In this paper we shall estimate the electricity demand in various sectors. We decompose the economy into five sectors. These are as follows:

i. Household sector
ii. Commercial sector
iii. Agricultural sector
iv. Industrial sector
v. Other sectors

This study analyses the electricity demand pattern of these sectors.

In section II we summarize the main points of some previous studies. Section III is devoted for methodology and data. Results and their interpretations will be presented in section IV. Section V deals with some limitations of the model.

II

Betancourt [1] specified a single equation electricity demand model as:

$$Q = a\,Y^{\alpha}p^{\alpha_{2(P_{-1},z)}}X^{\alpha_3}S$$

Where;

Q = Electricity consumption in KWH
Y = Income
P = Price of electricity
Z = Vector of heating and cooling days
X = Vector of weather variables
S= Maximum KWH consumption of the existing stock of electrical Appliances

Donnelly and Diesendorf [2] introduced some variations in Betancourt's model. They specified their model as:

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$$Q = aY^{\alpha_1}P^{\alpha_2}X^{\alpha_3}$$

$$Q = aY^{\alpha_1}P^{\alpha_2 P-1}X^{\alpha_3}$$

$$Q = aY^{\alpha_1}P^{(\alpha_2(65^\circ)} + \alpha_3 H^{+\alpha_4 C}X^{\alpha_5}$$

$$Q = aY^{\alpha_1}P(^{\alpha_2}P - 1 + \alpha_3 H + \alpha_4 C)X^{\alpha_5}$$

These authors did not give the results of their models so these models cannot be tested.

Robert Halverson [3] estimated demand for residential electricity. He did this task by specifying a quantity equation and a price equation. His hypothesis was that electricity energy is sold at declining block rates, so the price paid by each customer is inversely related to quantity purchased. Therefore, to obtain identification of the demand equation, it is necessary to include in the model an equation for marginal price. His model was as follows:

$$Q = b_o + b_1P + b_2Y + b_3G + b_4D + b_5J + b_6R + b_7H$$

$$Q = b_o + b_1Q + b_2L + b_3K + b_4F + b_5R + b_6I + b_7T$$

Where;

Q	=	Average consumption of electricity
P	=	Price of electricity
Y	=	Income
G	=	Price of all types of residential gas
D	=	Heating degree days
J	=	Average July temperature
R	=	Percentage of population living in rural areas
H	=	Average size of households
T	=	Time
L	=	Cost of living
K	=	Percentage of generation produced by publicly owned
F	=	Cost of fuel

The results presented were:

$$\text{LogQ} = -0.21 - \underset{(0.03)}{1.15}\ log\text{P} + \underset{(0.06)}{0.51}\ log\text{Y} + \underset{(0.06)}{0.04}\ log\ \text{G} - \underset{(0.02)}{0.02}\ log\ \text{D} + \underset{(0.21)}{0.54}\ log\ \text{J}$$

$$+ \underset{(0.02)}{0.21}\ log\ \text{R} - \underset{(0.12)}{0.24}\ log\ \text{H} \qquad R^2 = 0.91$$

$$\text{LogP} = -0.57 - \underset{(0.03)}{0.6}\ log\,Q + \underset{(0.04)}{0.24}\ log\,L + \underset{(0.01)}{0.02}\ log\,K - \underset{(0.25)}{0.01}\ log\,F + \underset{(0.01)}{0.54}\ log\,R + \underset{(0.01)}{0.21}\ log\,I - \underset{(0.03}{0.06}\ log\,T$$

Halverson's specification of price equation seems quite unsuitable to our case. The consumer of electricity does not face a single price, but a price schedule, from which electricity is purchased in blocks at increasing marginal price. This block pricing leads to the following implications:

i. Because of piece wise linearity of the budget constraint, the equilibrium of the consumer cannot be derived, as is conventionally the case, using the differential calculus.
ii. Demand functions are discontinuous with jumps
iii. Demand functions are multivalued.

Therefore, at the level of individual consumer specification and estimation of a conventional demand function for electricity cannot be rigorously justified. Moreover, the price of electricity is purely exogenous, settled by the government. It cannot be considered as a behavioural function.

III

Our aim is to estimate electricity demand for Pakistan's economy as a whole, but different sectors have different influencing factors. So we have decomposed the economy into five sectors, namely domestic, commercial, agricultural, industrial and other sectors.

The simultaneous equation model to be estimated is:

$$E_1 = \alpha_o + \alpha_{1Y_t} + \alpha_2 E_{q_t} + \alpha_{3E} + u_1$$

$$E_2 = \beta_o + \beta_{1Y_t} + \beta_{2P_t} + \beta_{3E} + u_{21}$$

$$E_3 = \gamma_o + \gamma_{1Y_t} + \gamma_{2T_t} + \gamma_{3E} + u_3$$

$$E_4 = \alpha_o + \alpha_{1Y_t} + \alpha_2 E_{q_t} + \alpha_{3E} + u_1$$

$$E_5 = \alpha_o + \alpha_{1Y_t} + \alpha_2 E_{q_t} + \alpha_{3E} + u_1$$

$$E_6 = \alpha_o + \alpha_{1Y_t} + \alpha_2 E_{q_t} + \alpha_{3E} + u_1$$

Where;

E_1 = electricity demand in domestic sector
E_2 = commercial sector

E_3 = agricultural sector
E_4 = industrial sector
E_5 = other sectors
E = Total electricity demand
E_{qt} = Number of electrical equipment
P_t = Price index
Y_t = GNP per capita
T_t = Number of tubewells installed
P_{nt} = manufacturing production index

All the sectoral demands have two common explanatory variables. These are GNP per capita, Y, and total electricity available, E, (total demand equals total supply). Y is a proxy for general well being i.e. an indicator of welfare. As general welfare increases, it has positive impact on electricity demand. E also influences directly the sectoral demand. The reason is obvious and does not need to mention.

Domestic sector demand has number of electrical equipment, E, as an argument. Commercial sector demand contains general price index, P, as an explanatory variable. Number of tubewells installed, T, is an argument for agriculture sector demand. Industrial sector demand depends also on manufacturing production index, P. Other sector has Y and E as explanatory variables.

All the statistics have been taken from "The Economic Survey1986–87 onwards published by Ministry of Finance.

This is a simultaneous equation model. OLS cannot be applied directly. Further, the system is over identified. It implies that ILS will give the biased results. We adopt 2SLS techniques.

IV

The results are as:

$$E_1 = -2153 + 1.96\ Y_t + 0.195\ E_{qt} + 0.274\ \hat{E}$$
$$(1.36) \quad (0.593) \quad (0.811) \quad (2.61) \qquad R^2 = 0.97$$

$$E_2 = 348.73 - 0.8251\ Y_t + 1.366\ P_t + 0.0052\ \hat{E}$$
$$(0.544) \quad (0.58) \quad (1.75) \quad (1.69) \quad R^2 = 0.96$$

$$E_3 = -106.22 + 6.22\ Y_t - 0.18\ T_t - 0.107\ \hat{E}$$
$$(0.008) \quad (1.63) \quad (1.97) \quad (0.84) \qquad R^2 = 0.92$$

$$E_4 = 2849.47 - 4.45\ Y_t + 13.41\ P_{nt} + 0.318\ \hat{E}$$
$$(1.35) \quad (0.97) \quad (0.790 \quad (1.95) \quad R^2 = 0.96$$

$$E_5 = -2374.57 + 5.19\ Y_t - 0.028\ \hat{E} \qquad R^2 = 0.79$$
$$\qquad\quad (1.32) \qquad (1.33) \quad (0.294)$$

Some equations have negative intercepts. It can probably be interpreted that Pakistan at its early stage of development relied heavily on non–electric sources of energy. The subsequent process of industrialization and urbanization is highly energy intensive. In statistical terms, one can expect a negative intercept for a LDC like Pakistan.

Some coefficients turned out to have signs opposite to our hypothesis but these have insignificant T statistic. Only the case of tubewell coefficient looks awkward. The coefficient is negative. Probably it is due to data weaknesses. All other coefficients have the signs in conformity with our hypothesis. Most of the coefficients are significant at 10% level of significance.

V

This study has some weaknesses. The most important one is that it ignores suppressed demand for electricity. In economic terminology, demand exists but it cannot be entertained due to supply constraint. This factor can be considered in our model by incorporating a variable consisting the difference between applications for electric connections and the sanctioned connections. This difference will give us the suppressed demand for electricity. Unfortunately, the data on suppressed demand for electricity is not available.

2. CONCLUSION

This study showed that there are some common determinants of electricity demand. These are GNP per capita——a sign of prosperity and the availability of electricity. Apart from these, there are some other explanatory variables which are peculiar to any one sector. For example, tubewells for agriculture, manufacturing production index for industry etc. This study ignores the suppressed demand for electricity and its black marketing.

REFERENCES

1. Betancourt, R.R. "An Econometric Analysis of Electricity Demand in the Short run" Energy Economics Vol:3 Jan. 1981.
2. Donnelly, W.A & Diesendorf, M. "Variable Elasticity Models for Electricity Demand" Energy Economics Jan. 1985.
3. Government of Pakistan. Economic Survey, 1999–2000, Ministry of Finance, Islamabad, Pakistan.

4.Halverson, R. "Residential Demand for Electricity Energy" Review of Economics and Statistics Vol:57 1955.
5.Honthabber, Hendrick S. "Some Calculation of Electricity Consumption in Great Britain", Journal of the Royal Statistical Society (A), 1951, No.114, Part IV, 351–371.
6.Honthabber, Hendrick S. "Electricity Tariff in Theory and Practice", Economic Journal, 61:241, March, 1951, 2–25.
7.Riaz, T. "Pakistan: Energy Consumption and Economic Growth" Pakistan Development Review Vol:23, 1984.

CONCERNS. ISSUES AND PROSPECTS OF LABOUR MARKET IN PAKISTAN

Qais Aslam*

I. INTRODUCTION

A market is defined as a place where buyers and sellers can come into contact with each other in order to determine the price of a commodity. The contact does not necessarily have to be in person, nor is the market limited to one particular place.

A labor market is, therefore, naturally defined as a place where labor is supplied and demanded and its price determined.

But than labor is just not another commodity demanded for consumption and therefore supplied for the satisfaction of the consumer.

Labor is a very special factor of production which is attached to a human being, supplied by the human being in its physical and intellectual form for earning a certain amount of income for the laborer (human being) in order to maintain the standard of living of the laborer.

In short, all human efforts of body and mind that are undertaken for material reward is called labor. Because Labor is not homogeneous in characteristics and productivity, the supply of labor is further divided into unskilled, semi-skilled, skilled and highly skilled, depending upon the level of training and productivity of the laborer.

Main characteristics of labor are that it is perishable; it is attached to human beings; it differs in efficiency; and after a certain point at very low wages its supply increases when its price decreases. Labor has both geographical mobility and economic mobility, but it does not have legal mobility, i.e. labor can be hired but cannot be bought and sold, because it is attached to a human being.

Labor is a very special factor of production which is demanded not by the consumers of commodities, but by the producers of commodities in order to produce both the man made consumer as well as producer goods

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for the satisfaction of needs of others, supplied through the market at the market price.

As the price of these commodities increases in the market because of an increase in their demand, so does its price and therefore their subsequent supply. With an increase in the supply of commodities, the aggregate employment levels must increase in order to produce the required amount of output needed to fulfil the increase in the demand for these commodities. Increased employment levels would mean an increase in the derived demand for labor in the short run, with other factors, population and technology levels remaining constant.

Labor market in Pakistan therefore would mean the supply of physical as well as intellectual labor by so called blue–collared and white–collared men and women and the demand for labor by the producers of different goods and services in the country in order to determine different levels of wages which are the price of labor for different kinds of labor which is not homogeneous in nature, productivity and characteristics.

In other words, Men and women seeking employment at different levels of skill, education, craftsmanship, and productivity are the supply of labor. While employers—producers and businesses that produce and sell different goods and services (commodities) for consumption and investment purposes demand labor for the production of such commodities.

2. CONCERNS OF THE SUPPLY AND DEMAND FOR LABOR IN PAKISTAN

Because labor is supplied by a human being, the state of human development in Pakistan will also determine the quality and quantity of labor supplied in the country. On the supply side, concerns of the labor force are only two:

- Can labor find employment in Pakistan?
- If employed, can the work force increase their nominal and real income in Pakistan?

Because the demand of labor is derived indirectly from the production of goods and service in the country and increase in aggregate output level

is directly related to the aggregate employment as well as aggregate income level of the country. Both the concerns of labor supply; i.e. employment and income are directly related to the level of economic growth in the country.

Changes in the level of output, employment and income depends on the changes in aggregate demand, which respond to the multiplier effect to changes in aggregate investments, other elements of aggregate demand and money supply in the economy remaining stable.

$$E = Y = I/I\text{-}b\ (a - b\ T + I + G)$$

Where, E = employment, Y = National output and Income, a = consumption at zero income, b = marginal propensity to consume, I = aggregate autonomous investment, T = taxes and G = government expenditure.

With a, T, and G = 0

$$\partial E = \partial Y = I/I\text{-}b\ (\partial I)\ (\partial \text{ represents change})$$

or

$$\partial E = \partial Y / \partial I = I/I\text{-}b$$

In other words a unit change in Investment gives a multiple change in income, output and employment.

On the demand side, the concerns of the labor market relate to:

- The productivity efficiency and cost-effectiveness of labor
- Can Pakistani labor work with fast increasing capital and technological intensive productive techniques introduced in the country.

3. ISSUES RELATING TO LABOR MARKET

"Countries that have been most successful in attacking poverty have encouraged a pattern of growth that makes efficient use of labor and have invested in the human capital of the poor. Both elements are essential. The first provides the poor with opportunities to use their most abandoned asset—labor. The second improves their immediate well being and

increases their capacity to take advantage of the newly created possibilities. Together, they can improve the lives of the most of world's poor".[1]

Pakistan has a population of 137.5 million people with an average annual population growth rate at approximately 2.8 percent, therefore, the quantitative output of able bodied and able to work men and women in the country is far more than required by the fragile economy of the country.

The principal concerns and issues pertaining to the supply and demand of labor force in Pakistan arises from the challenges (on the supply side) of high growth rate of labor force in the country, the low level of productivity and skills of labor. This would mean both low level of human resource development (HRD) and low level of investment in human capital. Combining with (on the demand side) creation of productive jobs for maximum utilization of human resource and minimizing skill mismatch in the labor market.

The Issues relating to labor market in Pakistan can be categorized into the following categories:

3.1 Volume of human resource in Pakistan Population growth and the labor situation.
3.2 Problem of women participation in labor force
3.3 Education, skills and health of labor force
3.4 Health of labor force
3.5 Rural Urban Migration
3.6 Labor Migration and Brain Drain
3.7 Child labor
3.8 Hidden unemployment and Underemployment
3.9 Sectoral and Occupational Imbalance

3.1 Volume of Human Resource in Pakistan: Population growth and the labor situation.

Pakistan covers only 0.67 percent of the world's land[2] area but contains about 2.3 percent of the world's population, i.e. 137.5 million in 1999–2000[3] with an annual growth rate of 2.28 percent[4]. The high fertility rate and a low mortality rate bring about this high population growth rate.

Labor force in Pakistan increased from 31.15 million in 1989–1990 to 39.34 million in 1999–2000[5] adding approximately 8 million people to the labor force in the last ten years. Between 1998-1999 and 1999-2000 alone active labor force increased with 0.8 million people.

According to official statistics, employed labor force increased from 30.18 million in 1989-1990 to 37.0 million in 1999-2000. In other words the country did employ a total of 6.82 million extra people in the last ten years, leaving approximately 1.2 million people unemployed during the same ten years. In 1999-2000 the unemployed labor in the country was 2.4 million people. This along with another 98.16 million people as dependents is a lot of population to feed with the incomes of only 37 million employed in the country. "A high dependency ratio not only puts an extra burden on the working age population but also leads to the slowing down of the process of economic growth". Further "A decline in the fertility rate would help in reducing the number of the population under the age of fifteen years".[6]

According to one estimate, Pakistan's economy needed to create 2.3 jobs every minute in the 1990's to ensure that the existing employment situation does not worsen,[7] as the labor force will be increasing by 1.25 million per annum in this period.

Table I shows the Crude Activity (participation) rate of labor force in Pakistan. Table I shows that the overall crude participation rate of our labor force is only 28.7 percent out of a population of 136 million people.

Table 1 further shows that labor force participation in rural areas is 29.4 percent and in urban areas 27.2 percent. Male participation in rural areas is 47.2 percent while male participation in urban areas is 46.4 percent. Which is approximately the same for both rural and the urban areas tilting the balance of male labor participation in favor of the rural areas with only 0.8 percent.

Table 2 shows that out of a population of 137.5 million total numbers of labor force in 1999-2000 are 39.40 million while 98.10 million are dependents. Out of this 39.40 million, 2.40 million are unemployed. Theoretically speaking this shows that we are producing at a point little less than the full employment level and our immediate needs are to create 2.40 million jobs this year to keep all our active labor force fully employed.

3.2 Problem of Women Participation in Labor Force

Almost 60 percent of the Pakistani villages are without electricity, 80 percent without clean drinking water, 80 per cent without sewerage and other hygiene facilities and almost 80 percent people living in the rural areas of the country are illiterate. The condition of the female population that is 51 per cent of the population is even more miserable than their men folk. All this is having an adverse effect on the economic environment of the country, on ecology, on physical environment, on health and productivity of the labor force in Pakistan.[8]

Female labor force participation lags behind male participation in most of the fields of economic life. In Pakistan women have a far lower literacy rate, poorer health care, low life expectancy, and non-recognition of their work within the family and community than their male colleagues. Conditions in high paying professions are usually not favorable for women, as they are mostly absorbed in traditional sectors like agriculture and low paid occupations pertaining to petty services. Their contribution towards economic development is not acknowledged.

Out of the total 2.40 million unemployed in the country, Table 4 shows that 4.2 percent are males and 16.6 percent are females. In other words that not only the participation rate of the females in the country is very low, the unemployment rate among them is very high (16.8 per cent).

Table 3 shows that out of a total unemployed females in Pakistan, 1.14 percent are in *the* rural areas and 1.01 percent in the urban areas.

The alarming situation of low labor participation in Pakistan among the female population can be seen from table 1, where their participation in rural areas is 10.0 percent, while in urban areas they actively participate in our labor force with only 5.9 per cent. In other words women in rural areas (which incidentally are more socially and education wise backward than the urban areas of Pakistan) contribute 4.1 per cent more in economic labour force.

The major reasons for gender inequality in Pakistan are fewer opportunities for women are: our diverse culture, social and economic conditions, non–recognition of the women economic participation. The women labor force is mainly concentrated in rural areas where they

contribute substantially in activities like tilling, sowing, harvesting, and thrashing, feeding of cattle, dairy and poultry, fetching of water, preparing pickles, weaving rugs, handicrafts, embroidery, tailoring etc. Most of this work is unpaid and actually goes unrecognized. In urban centers, women are mainly participating in paid work in teaching, doctors and nursing professions and work in pharmaceutical industry. These days more and more girls have started educating themselves and have started active participation in office work, mainly in private sectors and multinational corporations.

Human Development Report in South Asia 1998 states, "Citing Pakistan as an example, Mr. Summers estimated that educating one thousand girls for an additional year would have cost the Pakistani government approximately $40,000 but than this investment would have prevented roughly 60 infants deaths, averted 660 births, besides intergenerational gains such as healthier and better educated mothers with healthier and better educated children and grand children".[9]

3.3 Education, Skills and Health of Labor Force

Education is the key factor to economic growth. Pakistan has failed to educate its people in the last 53 years of its existence and, therefore, the quality of labor supply is very poor. Apart form improving productivity of labor, education has linkages with other human development indicators like basic needs, and its effects on fertility, long life, environment protection, and innovative skills, technological advancement, and socio-political development.

Education is the biggest indicator of Pakistan's slow human and economic development. Quoting the Late Mabboob-ul Haq, "While South Asia is the most illiterate region in the world, Pakistan is among the most illiterate countries within South Asia"[10]. He further points out that "Education in Pakistan has suffered a myriad of issues including under investment, failure to implement five-year plans and a lack of purpose and direction of its policies".

Because Pakistan did not educate its people, is reason that it has remained underdeveloped and the productivity levels of its labor force remain very low. There is a direct relationship between education and economic development. World Bank Report 2000-2001 states that in

Pakistan during 1991 only 21 per cent was spent on the education of the very poor, while 29 percent was spent on the education of the very rich."[11]

Akbar Zaidi writes "as government facilities have not been able to keep pace with growing demand for educational services, especially at the lower levels, the private sector and non-governmental organizations have begun to play a critical role. Primary and secondary education has now developed into a large market".[12]

Table 5 shows the literacy rates in Pakistan. We can see that total literacy rate 47 percent in Pakistan. In other words more that 50 per cent of the population is still illiterate. 59 percent of the literate are males, while only 35 per cent of the literate are women. In the rural areas only 19. 1 per cent women are literate, while in the urban areas *55.2* percent of women are literate. In the male population, there are 48.6 per cent men literate in the rural areas, while the percentage in the urban areas is 74.3 percent.

One of the common features of all development plans in Pakistan is the low priority to vocational and technical education in the country. Which coupled with low literacy rates, low enrolment in schools, un-purposeful and outdated education system, and lack of trained teachers in the country keeps the skill and productivity of Pakistan's labor force very low.

3.4 Health of labor force

Healthy labor force is a productive labor force. Another issue in Pakistan relates to the health of its present and future labor force. Malnutrition of children under five years of age is the highest in Pakistan, where one child dies of curable disease every 40 second. 80 percent of Pakistan's villages do not have access to clean drinking water, and sewerage facilities. Most of the unskilled labor force in the cities also live in slums without running water, sewerage facilities, and access to a decent medical care. All this seriously reduces the productive capacity of Pakistan's present and future labor force.

There is a lack of infrastructure, facilities in the rural areas, roads and transport facilities are poor, rural health and education facilities are non-existent, and where ever they exist, they are in shambles due to lack of care and financial assistance both from private as well as public sectors.

One of the main causes of low education and health in Pakistan is Poverty among its population. Poverty in the country has increased during the last decade. More than 44 per cent of the population lives below poverty line with less than $450 yearly income and another 40 percent lives just above poverty line. Malnutrition, disease, hunger, slum dwelling, illiteracy, and lack of technical skills all undermine productivity of labor force and contribute to the both slow economic growth for the nation and fall in personal incomes for the house holds in the country.

3.5 Rural Urban Migration

Because of lack of job opportunities and a low standard of life in the rural areas many people make their way to the cities for a better life and opportunities. The cities of Pakistan are now swelling with labor which is unskilled and have nowhere to live, doing odd jobs. This trend of urbanization is transforming city slums a center of poverty, crime, corruption and terrorism. In 1997 Pakistan had 45.4 million people living in Urban cities and centers.

The World Bank report shows that in 1980, 28 per cent people were urban dwellers, by 1997 their number had risen to *35* percent. An increase of 7 per cent or 22. 2 million in this period.[13]

Malik and Nazli write, "The number of cities and towns has more than doubled since 1951. For example, Karachi alone accounts for 21 per cent of the urban population. Lahore, Faisalabad, Rawalpindi, Gujranwala Peshawar, Hyderabad and Multan contain another 30 per cent of the urban population. Thus, more than half of the urban population lives in the eight major cities".[14]

3.6 Labor Migration and Brain Drain

The gulf syndrome in the seventies and early eighties saw a large number of Pakistani skilled and semi–skilled workers work in the Gulf States, the Far East and other countries for better job opportunities. This migration of labor to other countries brought a lot of remittance to the families of these people working abroad. After the Persian Gulf War with Iraq and the economic crisis in the East Asian countries, the outflow of Pakistani workers to these countries has dwindled substantially. Thus effecting the balance of payments situation of the country, as well as bring

down the personal lifestyles of these families. But now there is a tendency of a large number of these workers returning home wanting to fit into this fragile economy, competing for already diminishing jobs at home, due to not very favorable economic situation in the country.

Another phenomena which Pakistan faces is the brain drain, or the outflow of educated and technically sound labor force to industrialized developed nations for better economic and social opportunities there. The educated labor force migrates along with their families, to the West leave little room for sending remittance back home effecting the economy on one side by depriving the country of educated and efficient people and on the other by not have any favorable effect on the balance of payments of the country.

3.7 Child labor

The depth of poverty forces innocent children into labor when they should be at school enjoying the little traits of fun, learning and friendship that all children are entitled to. In Pakistan, low per capita income, illiteracy, and other socio-economic evils of a low-income country have forced thousands of children to work for their families. And thus not only keep themselves bonded to whatever trade they would learn for life, they also take away badly needed jobs of their adult colleagues. Usually these children do adults, work at adult's working day, but receive children's wages which are far lower than what their adult colleagues would get for the same work.

One survey revealed that there are 8.3 per cent of the children population as working children. The prevalence of working children in rural areas is 10.3 percent and boys (14.2 %) have higher tendency to work than girls (6.1 %). Similarly in urban areas the participation is 3.3 per cent — boys participation is 5.6 percent and girls — 0.8%. [15]

3.8 Sector–wise Employment In Pakistan

Table 6 shows that in Pakistan approximately 44 percent people are employed in agriculture, and approximately 60 percent in non-agricultural sectors out of all employed approximately 20 percent are employed in the formal sectors of the country and above 36 percent are employed in the informal sectors.

Pakistan is facing a 'low level HRD trap'. It is this low HRD trap that can explain why, in Pakistan despite satisfactory growth performances, the country is not able to break away from its present low level of per capita income of $450 and, therefore, Pakistan remains a Low Middle-Income Nation (LMIN).

The Low level HDR trap is difficult to break due to low level of education, especially female education, because of which high fertility rates have not been able to bring down population growth rates substantially. The high population growth rate results in negating the real economic gains and keeps both the labor force in a less productive state as well as poor and unemployed.

Vicious Circle of poverty can be broken through high investment levels, attracted through substantial foreign investments, and sustained growth but these efforts are frustrated because of lack of trained and skilled manpower.

What is lacking also are bold initiatives both to attract investments from home and abroad, as well as for improving skills and productivity of the labor force, through education, skill management, research and development (R & D).

It is a recognized fact that human resources have not been fully utilized in Pakistan. There is an excess supply of labor over demand for labor in the country. By official estimates the unemployment rate per annum had reached 6.12 per cent in 1996–1997 and since then has constantly remained 6.12 % till 1999-2000.

With GDP growth rate at 4.46 percent and the unemployment growth rate at 6.12 per cent, the economy can not only NOT give jobs to the existing labor force. But in absolute terms is not sustainable enough to find employment for millions of young men and women who will enter the army of unemployed in the future. More so, when the emphasis is on empowering women (the deprived half of the population) to enter into income generating jobs and activity in the country.

Malik & Nazli write, "The informal sector serves as an important source of employment and income generation for the less educated and unskilled and semi-skilled labor force. Various studies, for example, Guisner and

Irfan (1980), Kazi (1987), Nadvi (1989), Chaudary, et al. (1989), Mahmood (1990), Ahmed and Arshad (1990),. Burki (1990), Kemal and Mehmood (1993), and Sher (1995) have examined the structure of the informal sector by conducting surveys in different cities at different time periods. These studies highlight the main features of the informal sector and point to the growth constraints faced by this sector".[16]

3.9 Problem of Unemployment of Labor

"Unemployment is the central economic challenge of our times. It entails a massive loss of output, and a tragic waste of people's lives" [17]. Further he states, "Unemployment is like an elephant: easier to recognize than to define"[18]

Effects of Unemployment

1. Unemployment and suicide are tragically associated along with other symptoms, but recent studies all over the world suggest positive links between suicide and unemployment.
2. Unemployment and physical health: Although there is no data proving direct link to physical health being impaired by unemployment, but unemployment causes financial hardships which in turn can cause poverty, which in its own harms physical health of the house hold of the unemployed.
3. Unemployment and mental health: While the effects of unemployment on physical health remain controversial, or at least hard to establish, there are direct consequences of unemployment on mental health of the unemployed and his or her house hold. Many studies prove this hypothesis.
4. Unemployment and subsequent earnings: Unemployment diminishes a worker's subsequent earning opportunities and different studies have tended to prove a direct relationship between diminishing of earnings and unemployment.
5. Unemployment and crime: Unemployment furnishes both the opportunity and the motive for crime: There is a strong upward trend in both unemployment rates and crime rates in most part of the world.
6. The financial consequence of Unemployment: Unemployment entails a severe drain on public finance. A man and woman out of work earns no wages, which would otherwise be subject to income

tax. No contribution for social security is received from workers or the employers. Less is spent, because of a decrease in income; therefore less is collected in indirect taxes. Finally unemployment benefit generally becomes payable, often supplemented by additional welfare payments in cash or kind. The revenue losses born by governments have been estimated by various studies around the world[19].

Akbar Zadi writes, "While the overall population of Pakistan almost doubled between 1969 and 1990, the number employed in industry went up by less than half. The reason for this could be that industry is becoming more capital intensive".[20]

4. PROSPECTS FOR THE FUTURE

If the present structural adjustments policies, policies of HRD and women uplift and literacy projects hold, then it can be expected that in percentage terms, the women share of labor force is expected to rise. It is also expected that the over all participation of male labor force will also rise. It should be expected that a large number of Pakistani compatriots working in the Gulf States and the Far East will continue to return home due to relatively slow economic performances in these countries. It has been noted that the government sector which till now was the major employer (about 80 per cent) of the labor force is also cutting down because of its policy of privatization and down sizing, and therefore number of jobs available in the Public sector are also going to decrease substantially in the future. The policy of removing the menace of child labor from the country has not succeeded significantly, but if seriously implemented, that a large number might be created for their older colleagues in the vacuum of children going to school. Another problem is the problem of brain drain in the country. If attractive jobs are not created at home, a large number of qualified men and women might leave for better pastures and leaving a vacuum for need of qualified and productive labor force in the country.

Although Agricultural sector remains the major sector where Pakistani labor force is currently absorbed, the growth rate of employment in agriculture will be low and with serious structural adjustments, the hidden unemployed will continue their track to the urban centers to find jobs in the manufacturing and services sectors.

Labor force employment in Transport, energy services and manufacturing sectors will grow in the future as investment levels in these sectors grow.

5. RECOMMENDATIONS

In order to have a serious thought on the low level of HRD and the unsustainable future situation of labor force in the country:

- Human Resource development projects will have to be seriously put into place both at Public as well as Private levels for increasing the skills and employability of the labor force.

- On the other hand foreign and local private investments will have to increase in such a way that they introduce labor intensive technologies, so that not only growth is enhanced, more labor can be employed without compromising on cost effectiveness of the investments.

Table 1 Crude Activity (participation) rate of labor force in Pakistan[2] 1996–1997.

	Pakistan	Rural	Urban
Both Sexes	28.7	29.4	27.2
Male	47.0	47.2	46.4
Female	09.0	10.0	05.9

Table 2 Total labor Force (in Millions)[3].

Labor Force	1996–1997	1999–2000
Total	36.35	39.40
Employed	34.13	37.00
Unemployed	02.22	02.40

[2] Source: Labor Force Survey 1996–1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan, pp. ix.
[3] Source: Labor Force Survey 1996–1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan, pp. ix.

Table 3 Shows the Unemployment percentages of 10 years and above labor force[4]

Unemployed	Total	Male	Female
Pakistan	2.62	1.54	1.09
Rural	2.55	1.41	1.14
Urban	2.78	1.79	1.01

Table 4 Unemployment rate in Pakistan[5] in percent.

Unemployment Rate	In %
Both Sexes	6.1
Male	4.2
Female	16.8

Table 5 Literacy rates in Pakistan in percent[6].

	Pakistan 1999–2000	Rural 1996–1997	Urban 1996–1997
Both Sexes	47.0	34.4	65.2
Male	59.0	48.6	74.3
Female	35.0	19.1	55.2

Table 6 Employment by sector in Pakistan[7] in percent.

Total	100 percent
Agriculture	44.1
Non-agriculture	55.9
Formal	19.8
Informal	36.1

[4] Source: Pakistan Economic Survey 1999–2000, Government of Pakistan, Economic Advisor's Wing, Finance Division, Islamabad, pp. 138.

[5] Source: Labor Force Survey 1996–1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan, pp .lx.

[6] Source: Labor Force Survey 1996–1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan, pp. ix and Pakistan Economic Survey 1999–2000 pp. 7.

[7] Source: Labor Force Survey 1996–1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan, pp. ix.

BIBLIOGRAPHY

1. Amjad, Rashid. Employment Implications of Development Policies for the 1990s see Anjum Nasim
2. Aslam, Dr. Qais, Selected Essays on The political Economy of Pakistan. Studio4 Communications, Lahore, 2000
3. Chaudhry, M. Aslam, Human Resource Development and Management in Pakistan. Ferozesons, Lahore, 1999
4. Haq, Mahboob Ul & Khadija Haq, Human development in South Asia 1988 Oxford, NY
5. Labor Force Survey 1996-1997, Federal Bureau of Statistics, Statistics Division, Government of Pakistan
6. Malik, S. J & Nazli H. Population, Employment and the state of Human Resources, *Fifty years of Pakistan's economy* ed. Shahrukh Rafi Khan, Oxford, Karachi, 1999
7. Pakistan Economic Survey 1999-2000, Government of Pakistan, Economic Advisor's wing, Finance Division, Islamabad
8. Sinclair, Peter. Unemployment, Economic Theory and Evidence, Basil Blackwell, Oxford, 1987
9. World Development report 1999-2000, Oxford
10. World Development report 2000-200 1, Oxford

REFERENCES

[1] World Bank Report, Oxford University Press, 1990, p. 51
[2] Malik, S. J & Nazli H. Population, Employment and the state of Human Resources, Fifty years of Pakistan–economy ed. Shahrukh Rafi Khan, Oxford, Karachi, 1999, p. 328.
[3] Pakistan Economic Survey 1999–2000, Government of Pakistan, Economic Advisor's wing, Finance Division, Islamabad, p. 7.
[4] Ibid, p. 121
[5] Ibid, p. 7.
[6] Malik, S. J & Nazli H. OP–Cit, p. 332.
[7] Amjad, Rashid. Employment Implications of development Policies for the 1990s see Anjum Nasim, p. 54–55.
[8] Aslam, Qais, Dr. selected essays on the political economy of Pakistan. Studio4 Communications, Lahore, 2000, p. 23–24.
[9] Haq, Mahboob Ul & Khadija Haq, Human development in South Asia 1998 Oxford, NY, p. 90.
[10] Ibid. p. 51.
[11] World Bank Report 2000–2001, (Oxford University Press), p. 80.
[12] Zaidi, S. Akbar. Issues in Pakistan's Economy. Oxford University Press, p. 361.