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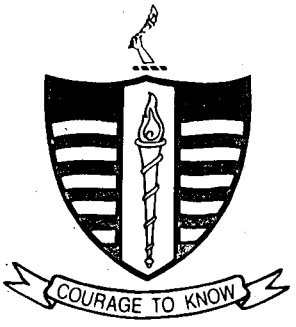

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MONETARY ASPECTS OF THE BALANCE OF PAYMENTS UNDER FIXED EXCHANGE RATES: A CASE STUDY OF PAKISTAN

By

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Introduction

The monetary approach to the balance of payments has been formulated and developed by Johnson (1972) and Mundell (1968). They assert that the balance of payments is essentially a monetary phenomenon. The logic of the view that the balance of payments is basically monetary phenomenon would be obvious by considering the balance sheet of the consolidated monetary sector of an open economy :

ASSETS	LIABILITIES
D	MS
R	

Where:
MS=The stock of money supply
R=The International Reserves being held by the Central Bank
D=Domestic Assets of the banking system

$$MS=R+D \quad ...(1.1)$$

Equation (1.1) is the balance sheet identity.

$$\text{Or } R=MS-D \quad ...(1.2)$$

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Differentiating the above identity with respect to time, we get:

$dR/dt = dMS/dt - dD/dt$ ...(1.3)

Where

dR/dt = The balance of payments.

The equation (1.3) states that the balance of payments is identically equal to the difference between the rate of change of money stock and the rate of change of domestic assets of the banking system. Therefore, it is evident that the balance of payments is a monetary phenomenon.

The monetary approach to the balance of payments is a framework for analyzing how an open economy eliminates its excess money supply and demand under a fixed exchange rate system. Considering an increase in the money supply, in a small open economy, such that actual cash balances exceed desired cash balances, will cause the balance of payments to go into deficit as individuals exchange excess cash balances for foreign goods. This process will continue until the excess money supply is eliminated and money market equilibrium is re-established. Hence, the monetary approach to the balance of payments focuses on the role of monetary disequilibrium as the driving force to eliminate the external imbalance.

2. The Monetary Model

I. ASSUMPTIONS

(i) Small country

(ii) Fixed exchange rate

(iii) The demand for money is a stable function of few variables.

(iv) Output is fixed at its long run full employment level.

(v) No Sterilization

II. IMPLICATIONS

Prices and interest rates are exogenous due to assumption (i).

If the demand for money is a function of interest rate and real income, then due to assumptions (i) and (iv), the demand for money function is exogenous to the economy.

Assumption (v) implies that supply of money is endogenous. Monetary authorities can't control the money stock but its composition. Given money demand, a change in domestic assets will produce an equivalent and opposite change in international reserves, leaving the total money stock unchanged.

Money adjusts to prices, not prices to money. If there is an increase in money stock such that actual cash balances exceed desired cash balances, the individuals would get rid of this excess cash balance by spending it. This would not change prices, interest rate or real income because these are all exogenous due to the given assumptions. Instead, the public would get rid of their excess money balance by spending on the foreign goods, services, and securities, thereby eliminating the excess cash balance and restoring money market equilibrium.

An exogenous rise in the price level boosts the money demand such that demand for cash balances exceeds the money stock. If the increase in the money demand is not satisfied by domestic asset creation, inflow of money from abroad will occur in order to eliminate the excess demand and to support the higher price level. So the direction of causality between money

and prices tends to be from prices to money and not vice-versa, contrary to the quantity theory of money.

III. THE MODEL

$$MD = PY^{a_1} e^{u} / i^{a_2} \quad ...(1.4)$$

$$MS = m(R + D) \quad ...(1.5)$$

$$MD = MS \quad ...(1.6)$$

Where

MD=The demand for money

RM=R+D=The reserve money

MS=The supply of money

Y=Real income

P=Price index

m=MS/RM=Money multiplier

i=The interest rate

R=The stock of international reserves held by the central bank

D=Domestic assets held by the banking system

a_1=Income elasticity of money demand

a_2=Interest elasticity of money demand

u=a log normally distributed disturbance term

Equation (1.4) expresses that the demand for money is a stable function of income and the rate of interest. Equation (1.5) states that the money stock is equal to a money multiplier times the reserve money. The money multiplier is assumed to summarize the behavior of the State Bank and all other financial institutions with respect to the composition of their assets. The money multiplier is believed to be affected by income level and market interest rate on the one hand and monetary policy variables on the other hand. The monetary policy variables which influence the money multiplier include the minimum reserve ratio and discount rate policies. Therefore

the change in money supply comes either through the change in international reserves via the changes in the balance of payments or change in domestic assets of the banking system, i.e. by extending credit, or reserve requirement changes i.e. the change in money multiplier. The variables domestic assets (D) and money multiplier are exogenous and under the control of the State Bank of Pakistan. These would be used as policy variables in the model. On the other hand, the variable international reserves (R) is endogenous responding passively through the balance of payments to changes in money demand. Equation (1.6) is the monetary equilibrium of the model. It states that money supply equals money demand so that all money is willingly held. Combining equations (1.4), (1.5) and (1.6), we get:

$$m(R+D) = PY^{a_1} e^{u/i^{a_2}} \qquad ...(1.7)$$

Taking the long on the both sides of the equation (1.7) and differentiating with respect to time yields :

$$(R/RM)\, gR = a_1 gY - a_2 gi + gP - gm - (D/RM)\, gD + U' \qquad ...(1.8)$$

Defining $gz = (1/z)(dz/dt)$ where z = R, D, Y, P, i, and m

gz = The percentage change in z

$U' = (1/u)(du/dt)$

d = denotes change

Equatin (1.8) is the basic relation of the monetary approach to the balance of payments. Equation (1.8) is also known as reserve flow equation. Equation (1.8) is estimated in the following form :

$$R = a_1 gY + a_2 gi + a_3 gP + a_4 D + a_5 gm + u_1 \qquad ...(1.9)$$

Where

$\dot{R} = (R/RM)gR$
$\dot{D} = (D/RM)gD$
and $a_1 > 0$, $a_2 < 0$, $a_3 > 0$, $a_4 < 0$ and $a_5 < 0$.

Equation (1.9) expresses that the variation in the international reserves depends upon the percentage change in real income, the percentage change in the interest rate, the percentage change in the money multiplier, the percentage change in the price level and the percentage change in domestic assets multiplied by D/RM.

It has a normal distribution with

$E(U_t) = O$

$E(U^2_t) = \sigma^2 u$

$E(U_t U_{t+s}) = O$, s is not equal to O

Equation (1.10) is the standard reserve flow equation. Equation (1.11) is a constrained form of reserve flow equation which follows from the assumption of linear homogeneity in prices. Equation (1.12) is also a constrained version of reserve flow equation which follows from the theoretically expected values of the coefficients of income, price and interst rate, i.e. 1,1 and lies between 0 and -1 respectively.

The equations were estimated by using ordinary least squares method with the help of TSP package. The detail of the data is given in Appendix-A.

The equations were estimated for the period 1973 to 1981 using quarterly data. During this period, Pakistan was officially on a fixed rate system ($1.0 = Rs.9.90). The equations were estimated with and without constant term. The equations

were also estimated by using the whole-sale price index (1980 = 100.0) of U.S.A. by invoking purchasing power parity (3). The results are displayed in Tables 2, 3 and 4.

The results reported in Tables 2 and 3 show a weak support to the claims of the monetary approach to the balance of payments for Pakistan. In general, the estimated coefficients of income, interest rate and price variables are either statistically insignificant or with the wrong sign and/or size. This may be due to the presence of multicollinearity among explanatory variables. The estimated coefficients of money multiplier and domestic credit are close to their expected value of -1 and highly significant (Table-2). The estimated coefficient of money multiplier becomes insignificant when we estimated the equations (1.10) and (1.11) without the constant term while domestic credit coefficient retains its significance level (Table-3). The values of D.W. Statistic indicate the absence of serial correlation.

$a_1 > 0$ Beause growth in real income would lead to increase in demand for the real and hence nominal cash balances. This increased demand creates an excess demand which would be met by an inflow of international reserves through balance of payments surplus. Therefore, growth in real income would lead to a balance of payments surplus.

$a_2 < 0$. An increase in the rate of interest raises the opportunity cost of holding money, thereby reducing the demand for money such that money supply exceeds money demand, which induces an outflow of reserves in the form of balance of payments deficit, lasting until money market equilibrium is restored.

$a_3 > 0$. An exogenous rise in the price level increases the demand for money. There would be an excess demand for money in the economy, hence inducing a net inflow of reserves through balance of payments surplus, enough to eliminate the excess demand and support the higher price level.

$a_4 < 0$. An increase in domestic assets would lead to increase in money stock, thereby producing an excess supply of money in the economy. This excess supply of money would induce an outflow of international reserves by creating a deficit in the balance of payments sufficient to eliminate the excess supply of money.

$a_5 < 0$. An increase in the money multiplier would lead to increase in money stock, thereby producing an excess supply of money in the economy. This would induce an outflow of international reserves by creating a deficit in the balance of payments sufficient to regain money market equilibrium.

3. Review of the Empirical Studies of the Developing Countries

The basic proposition of the monetary approach is that the balance of payments and exchange rates are an essentially monetary phenomenon and the analysis should be focused around the demand for the supply of money.

The empirical studies of the developed (1) as well as developing nations support the hypothesis that international reserve levels are positively related to the level of income and the price level and negatively related to interest rate, money multiplier and domestic credit. The empirical studies of the develping nations that have been performed along the specifications of the monetary approach are presented in

Table-1. In most cases, the estimated coefficients had the expected signs and were significant. Moreover, the coefficient of the money multiplier and domestic credit variables were close to -1. Therefore the empirical evidence obtained for the developing countries (except Pakistan) was supportive of the monetary approach.

PAKISTAN

There are two empirical studies in which the propositions of monetary approach to the balance of payments had been tested using time series annual data. Uddin (1985) estimated the reserve flow equation (1.09) by excluding the money multiplier variable for the period 1960-1980. The results indicate that all the coefficients had the correct signs except that of price variabls. All the estimated coefficients are statsitically insignificant. Udinn concluded that Pakistan's international reserves movements cannot be explained by using monetary approach to balance of payments model.

Bilquees (1989) employed the monetary approach to the balance of payments model which was developed by Aghevli, B.B. and M.S. Khan (1977). This model has growth of inflation rate as an additional explanatory variable than that of standard reserve flow equation (1.09). She tested the reserve flow equation for the period 1959-60 to 1981-82. It is obvious from the results that while variables such as real income, the rate of inflation and interest rate bear correct signs but they are not significantly different from zero. The money multiplier and domestic credit variables are of the unexpected signs, but are insignificant. Bilquees concluded that the monetary approach to the balance of payments is incapable to explain the flows of foreign exchange reserves in Pakistan (2). She supported the conclusions drawn by Uddin that the failure of

the monetary approach to the balance of payments in explaining reserves movements are due to controlled foreign exchange and capital markets.

Criticism

(i) Both studies did no take into account the massive devaluation of the currency during early 1970's. The results would have been different if they had taken such a period in which exchange rate was fixed.

(ii) The generation of data prior to 1970's may have led to such conclusions.

(iii) Highly insignificant results with wrong signs may have been due to the presence of multicollinearity among explanatory variables. The results would have been different, if they incorporated extraneous quantitative information such as theoretical expected value of unity of the coefficients of price and income variabls.

4. Empirical Analysis of the Balance of Payments

The international flow equation (1.9) can be written in estimation form as follows:

$$\bar{R}_t = a_0 + a_1 gY_t + a_2 gi_t + a_3 gP_t + a_4 \bar{D}_t + a_5 gm_t + u_{1t} \quad ...(1.10)$$

$$\bar{R}_{1t} = a_6 + a_7 gY_t + a_8 gi_t + a_9 D_t + a_{10} gm_t + u_{2t} \quad ...(1.11)$$

$$\bar{R}_{2t} = a_{11} + a_{12} \bar{D}_t + a_{13} gm_t + u_{3t} \quad ...(1.12)$$

Where

$a_1 = a_7 = 1$, $a_2, a_8 < 0$, $a_3 = 1$,

$a_4 = a_9 = a_{12} = -1$, and $a_5 = a_{10} = a_{13} = -1$

R = The stock of internatinal reserves held by the State Bank of Pakistan.
Y = Real income (1980 prices)
P = Whole sale price index (1980 = 100.0)
i = The interest rate (call money rate).
D = RM − R = Domestic assets held by the banking ststem.
RM = Reserve money of the State Bank of Pakistan.
m = MS/RM = Money multiplier.
MS = Nominal Stock of money inclusive of time deposits (Broad money)
g= Denotes growth rates
t = Denotes time
$\dot{R} = (R/RM)gR$
$\dot{D} = (D/RM)gD$
$\dot{R}_1 = R - gP$
$\dot{R}_2 = (R - gP - gY + 0.4\ gi \text{ or } 0.02\ g_i)$
a_1, a_7 =Income elasticity of money demand
a_2, a_8 =Interest elasticity of money demand
a_3, =Price elasticity of nominal money demand
U_{jt} =Random error term, and j = 1,2 and 3

The estimates of equation (1.12), which is the most restrictive version of international reserve flow equation, are highly supportive of the monetary approach to the balance of payments in the case of Pakistan (Table-4). The estimated coefficients of money multiplier and domestic credit are highly signifincant and very close to their expected value of -1. Both coefficients strongly suggest that an autonomous increase in money supply would induce a proportional outflow of international reserves by creating a deficit in the balance of payments. Therefore the estimates of equation (1.2) fulfill the prediction of the monetary approach to the balance of payments that the growth in the domestic components of the money supply determines the balance of payments surplus or deficit.

TABLE - 1

Empirical Findings of Monetary Approach to Balance of Payments of Developing Countries

Author	Country	Data Type Time Period	Dependent Variable	Constant	Income Elasticity	Price Elasticity	Interest Elasticity	Money Multiplier Coefficient	Domestic Credit Coefficient	R^2	D.W.	F
Aghlevi B.B.& M. S. Khan (1977)	39 Developing Countries	Cross Sectional Annual (1957-76)	$\dot{R}$	-4.25 (2.74)	1.03 (3.67)	0.26 (3.39)	-0.12** (2.00)	-0.15 (0.58)	-0.42 (6.62)	0.62	...	...
Wilford, D.S.& W.T. Wilford (1978)	Honduras	Annual 1950-74	$\dot{R}$	...	1.11 (4.09)	1.12 (3.61)	-0.16 (2.01)	-0.94 (3.47)	-0.88 (6.76)	0.81	2.50	19.1
Wilford, D.S.& W.T. Wilford (1978)	Honduras	Quarterly 1966-74	$\dot{R}$-gP	... (4.42)	1.07	... (2.16)	-0.15 (3.85)	-0.97 (6.99)	-0.88	0.97	2.41	25.2
Wilford, D.S.& J.B. Zecher (1979)	Mexico	Annual 1955-75	$\dot{R}$	...	1.09 (0.19)*	0.71 (0.19)*	0.04 (0.10)*	-0.76 (0.10)*	-1.02 (0.12)*	0.91	2.05	...
Kemp, D.S.& D.S.Wilford (1979)	Bolivia	Annual 1956-73	$\dot{R}$	...	0.77 (3.82)	0.62 (4.51)	...	-0.52 (0.72)	-1.00 (4.88)	0.82	1.53	...
	El Salvador	Annual 1957-73	$\dot{R}$	...	0.64 (2.35)	1.10 (1.35)	...	-0.55 (1.43)	-0.91 (6.95)	0.82	2.56	...
	Peru	Annual 1956-73	$\dot{R}$	...	1.17 (2.12)	0.93 (2.19)	...	-1.47 (3.04)	-1.07 (4.85)	0.79	2.24	...
Bhatia,S.L. (1982)	India	Quarterly 1951-73	$\dot{R}$	-.01 (0.71)	0.90 (10.53)	0.73 (10.53)	0.11 (3.28)	-0.99 (2.42)	-1.23 (13.53)	0.77	1.95	...
Uddin, M. Sohrab (1985)	India	Annual 1960-80	$\dot{R}$ (0.79)	-.06 (-0.07)	0.14 ...	-0.09 (2.47)	-0.15	...	0.52	0.15	2.64	0.6
	Thailand	Annual 1960-80	$\dot{R}$	0.07	0.42 (1.70)	0.36 (2.09)	0.001 (0.028)	... ...	-0.071 (5.66)	0.71	2.10	8.8
	Pakistan	Annual 1960-80	$\dot{R}$	0.003	0.21 (0.51)	-0.006 (-0.04)	-0.13 (1.21)	... ...	-0.02 (0.05)	0.02	1.35	1.1
Bilquees, Faiz (1989)	Pakistan	Annual 1960-82	$\dot{R}$	-0.04 (1.26)	0.01 (1.76)	0.0002 (0.15)	-0.0003** (0.19)	0.16 (1.31)	0.05 (1.26)	0.31	...	...
		Annual 1960-82	$\dot{R}$	-0.04 (1.13)	0.01 (1.78)	0.0004 (0.16)	0.01 (0.13)	0.16 (1.30)	0.07 (1.26)	0.41	...	...

Where the rumbers in parenthese are the absolute values of the t-statistics.

* Denotes the numbers in parentheses are the standard errors.

** Denotes the elasticity with respect to inflation rate.

Dependent variable = $R = (R/RM)gR$, R^2 = The coefficient of determination D.W. = Durbin - Watson statistic.

TABLE-2

International Reserve Flow Equation

Equation No.	Constant	Income Elasticity	Price Elasticity	Interest Elasticity	Money Multiplier Coefficient	Domestic Credit Coefficient	Q1	Q2	Q3	R^2	S.E.	D.W.	F
1.01	0.07	0.98	-0.08	-0.04	-0.86	-0.88	...	...	...	0.56	0.09	2.28	7.21
	(1.64)	(0.36)	(0.46)	(0.73)	(1.53)d	(5.92)a							
1.10ii	0.16	-0.22	-0.19	0.11	-1.22	-1.08	-0.07	-0.08	-0.14	0.67	0.08	2.30	6.42
	(2.75)	(0.09)	(1.19)	(0.21)	(2.11)b	(6.30)a	(1.29)d	(1.77)c	(2.79)a				
1.10iii	0.06	0.56	-0.07	0.18	-0.76	-0.86	...	...	...	0.55	0.09	2.26	6.98
	(0.41)	(0.16)	(1.29)d	(0.39)	(1.20)	(1.21)							
1.10iv	0.15	-0.19	-0.21	0.4	-1.16	-1.06	-0.07	-0.08	-0.14	0.67	0.08	2.32	6.46
	(2.44)	(0.08)	(1.25)	(0.39)	(1.91)c	(5.91)a	(1.25)	(1.80)c	(2.90)a				

Where the numbers in parentheses are the absolute values of the t-statistice.

a,b,c, and d denote signigicant at 1 percent, 5 percent, 10 percent and 20 percent level respectively.

Dependent Variable = R = (R/RM) gR

Equations (1.10ii) and (1.10iv) use whole sale price index (1980 = 100) of U.S.A.

R^2 = The coefficient of determination, S.E. = Standard error of the regression and D.W. = Durbin-Watson statistic.

Qi = Dumny variables to take into account seasonal adujstments in the data, i = 1,2 and 3.

TABLE-3

International reserve Flow Equation

Equation No.	Constant	Income Elasticity	Price Elasticity	Interest Elasticity	Money Multiplier Coefficient	Domestic Credit Coefficient	Q1	Q2	Q3	R^2	S.E.	D.W.	F
1.10i	...	4.7	-0.18	-0.02	-0.61	-0.84	...	...	...	0.55	0.09	1.96	8.66
		(2.90)	(0.34)	(0.11)	(1.10)	(5.55)a							
1.1ii	...	2.83	0.97	-0.06	-0.47	-0.80	...	...	...	0.56	0.09	1.98	9.09
		(1.55)d	(1.02)	(0.37)	(0.84)	(5.20)a							
1.10iii	...	5.05	0.14	-0.06	-0.58	-0.84	0.02	-0.01	0.06	0.60	0.09	1.99	4.59
		(2.42)	(0.24)	(0.32)	(1.00)	(5.00)a	(0.46)	(0.63)	(1.55)d				
1.11i	...	2.22	...	-0.003	-0.45	-0.81	...	...	...	0.46	0.10	1.92	8.68
		(1.84)c		(0.20)	(0.77)	(5.08)a							
1.1ii	...	2.78	...	0.06	-0.46	-0.80	...	...	...	0.50	0.10	1.98	10.08
		(2.65)b		(0.40).	(0.86)	(5.42)a							
1.1iii	...	4.44	...	-0.02	-0.58	-0.87	-0.01	-0.03	-0.1	0.58	0.09	1.98	5.42
		(2.15)	(0.13)	(0.98)	(5.23)a	(0.15)	(0.64)	(2.42)b					
1.1iv	...	3.39	...	-0.12	-0.42	-0.81	0.02	-0.02	-0.06	0.57	0.09	2.00	5.32
		(2.16)b	(0.71)	(0.76)	(5.20)a	(0.47)	(0.57)	(1.63)d					

Where the numbers in parentheses are the absolute values of the t-statistic.
a,b,c, and d denote signigicant at 1 percent, 5 percent, 10 percent and 20 percent level respectively.
Dependent Variable = R = (R/RM) gR and R = R − gP
Equations (1.10ii), (1.10iv), (1.11ii) and (1.11iv) use whole sale price index (1980 = 100) of U.S.A.
R^2 = The coefficient of determination, S.E. = Standzrd error of the regression and D.W. = Durbin - Watson statistic.
Qi = Dummy variables to take into account seasonal adjustments in the data, i = 1,2, and 3.

TABLE-4

Interational Reserve Flow Equation

Equation No.	Constant	Money Multiplier Coefficient	Domestic Credit Coefficient	Q1	Q2	Q3	R^2	S.E.	D.W.	F
1.12i	0.03	-1.06	-0.84	---	---	---	0.46	0.10	2.16	13.4
	(1.83)b	(1.90)b	(4.98)a							
1.12ii	0.14	-1.33	-1.09	-0.08	-0.11	-0.18	0.65	0.09	2.14	10.6
	(3.48)a	(2.43)b	(6.17)a	(1.43)d	(2.35)a	(3.67)a				
1.12iii	0.04	-1.04	-0.82	---	---	---	0.50	0.09	2.27	15.8
	(2.37)a	(2.06)b	(5.41)a							
1.12iv	0.13	-1.22	-1.03	-0.06	-0.10	-0.15	0.66	0.08	2.30	10.4
	(3.47)a	(2.39)a	(6.25)a	(1.25)d	(2.32)a	(3.26)a				

Where the numbers in parentheses are the absolute values of the t-statistics.

a,b,c, and d = signigicant at 1 percent, 5 percent, 10 percent and 20 percent level respectively.

Dependent Variable = $\dot{R} = (\dot{R}_2 - gY - gP + 0.2 \text{ or } 0.4\ gi)$

Equations (1.12iii) and (1.12iv) assumes interest lasticity = 0.2.

R^2 = The coefficient of determination, S.E. = Standard error of theregression and D.W. = Durbin - Watson Statistic.

Qi = Dummy variables to take into account seasonal adjustments in the data, i = 1,2 and 3.

5. Conclusion

The empirical results of the restrictive version of the reserve flow equation strongly supports the monetary aspects of the balance of payments under fixed exchange rates which are contrary to the results of Uddin (1985) and Bilquees (1989). The coefficients of the policy variables (money multiplier and domestic credit) are significant and closed to the predicted value of -1. Therefore, we arrive at the following conclusions:

(i) The State Bank of Pakistan cannot control the level of its money stock in the long run.

(ii) The Central Bank could maintain its fixed exchange rate with U.S.A. by expanding domestic credit at a rate equal to the domestic demand for money.

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NOTES

1*. For a complete review of empirical literature regarding developed nations, see Kreinin, M.E. and L.H. Officer (1978).

2*. Her results contrast with the conclusions of Aghevli and Khan. They tested the monetary approach to the balance of payments using cross section data of 39 countries including Pakistan and concluded that reserves movements are explained by this approach.

3*. $P = EP^*$ or $gP = gE + gP^*$

Where E = Exchange Rate P^* = Foreign Price level and g = Growth Rate. Therefore $gP = gP^*$ because under a fixexd exchange rate system gE = o.

***. I wish to thank Dr. Tayyeb Shabir, Research Economist at the Pakistan Institute of Development Economics for helpful comments.

APPENDIX-A.

DATA SOURCES

The data used in this study was mainly obtained from various issues of International Financial Statistics (IFS) published by the International Monetary Fund, Washington D.C. Specification and sources of the variables used in the estimation of international reserve flow equation under fixed exchange rate are given below :

Variables	Specification	Source
International Reserves	Defined as the foreign assets holdings of the State Bank of Pakistan	Line 11 of IFS
Reserve Money	Funds expressly designated by the State Bank of Pakistan	Line 14 of IFS
Domestic Credit	Defined as the difference between reserve money and internaltional reserves holdings of the State Bank of Pakistan.	Line 11 - line 14 of IFS
Nominal Money Stock	Defined as currency plus demand deposits and plus time deposits.	Lines 34 + 35 of IFS
Money Multiplier	Generated from dividing nominal money stock by reserve money.	Lines 34, 35, and 14 of IFS.
Interest rate	Call money rate.	Line 60 of IFS.
Price level	Whole sale price index (1980 = 100.0)	Line 63 of IFS for Pakisatn and U.S.A.
Real income	Gross domestic product at 1980 prices. Quarterly data is generated from annual data (see Appendix-B).	Line 99 of IFS.

APPENDIX-B

ESTIMATE OF QUARTERLY DATA OF REAL INCOME

The estimate of quarterly data of real income has been derived from the annual data on the assumption that the rate of change is the same throughout a given year. Suppose A_t to be the annual data of year t and Q_{it} to be the ith quarterly data of year t, then we may write:

$$A_t = \sum_{i=1}^{4} Q_{it}$$

Let G be the annual rate of change and g be the quarterly rate of change, then we may write :

$$G_t = (A_t - A_{t-1})/A_{t-1}$$

and also

$$1+G_t = (1+g_t)^4$$

Or

$$G_t = g_t [1+(1+g_t)+(1+g_t)^2+(1+g_t)^3]$$

As the annual rate of change in the real income series is positive, therefore we can calculate the data relating to the quarters of year t as follows:

$$Q_{1t} = A_t / \sum_{n=0}^{3} (1 + g_t)^n$$

$$Q_{2t} = Q_{1t} (1 + g_t)$$

$$Q_{3t} = Q_{2t} (1 + g_t)$$

$$Q_{4t} = Q_{3t} (1 + g_t)$$

IMPACT OF FOREIGN AID ON SAVINGS AND ECONOMIC GROWTH IN PAKISTAN

By

DR. MOHAMMAD ASLAM CHAUDHRY*

Introduction

Foreign borrowing and inflow of foreign capital were welcomed by many developing countries. Such inflow of resources was considered big push to boost investment in developing countries, which had limited resources. Thus, it was envisaged to bridge the gap between the country's own resources and its needs for development. Foreign assistance, therefore, was regarded as the panacea for all economic diseases caused by the shortage of domestic resources. This inflow of capital was envisaged an additional source of financing new investment and the purpose was to accelerate economic growth. During the 1960s and 1970s, the developing countries were successful to experience rapid increase in their economic growth. Many of them had the economic growth even higher than those of the developed countries[1]. This increased the creditworthiness of LDCs due to their satisfactory economic performance, As a result, heavy borrowing and lending was encouraged.

The dreams of achieving accelerated economic development through foreign aid started gradually falling apart

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1. The middle income countries grew by 6.2% and 6.1 per cent during 1960's and 1970's, respectively. The growth of Dc's was 5.1% and 3.1% during the same period, respectively. Fo further details see world development reports, 1979 & 1992.

after 1975 when foreign debt turned out to be a growing encumbrance on the foreign exchange earnings of these highly indebted LDCs and perhaps the main cause of their chronic external deficits. During early 1980's, LDCs suffered from several problems i.e. oil price shocks, reduction in primary products prices, rising real interst rates and worldwide recession - which made it impossible for them to service their debts. Besides, the debt was either not used properly or major part of it was highjacked by corruption. As a result, it failed to contribute the desired level to economic growth and turned out to be a burden for many developing countries. It is important to not that during 1982 - 86, the cumulative decline in per capita income reached to the tune of about 17 percentage points for sub - saharan Africa, 10 percentage points for the highly indebted countries and 12 percentage points for the oil importing LDCs. The terms of trade for LDCs as a whole deteriorated by above 14 percentage points, during the same period. The current account deficits of LDCs rose from $30 - 36 billion during 1978 -79 to $59 billion in 1980 and over $100 billion in 1982. The oil importing LDCs current account deficits rose from 2.2 per cent of GNP in 1978 to over 5 per cent in 1981-82. In the face of this deteriorating situation, foreign dependency continued to increase. The debt burden reached to a stage which washed away about 18 percent of their total exports earnings.

In Pakistan, low saving rate, rising demand for imports and the failure of public sector to generate the needed resources for development led to foreign borrowing. Presently, the per capita foreign loans have exceeded Rs. 5000 and overall per capita loans have been reached to Rs. 10, 000/ -. Pakistan's foreign indebtedness has reached to over 33 per cent of its GNP;

2. For more details of the same see : World Development Report, 1979.

i.e. about 17 billion dollars. More than 36 per cent of development budget is washed away by debt servicing[3]; which is about 3 per cent of its GNP. It is expected that by the 21st century, Pakistan may end up by accumulating 70% of its GNP as foreign debt (Appendix-1). Pakistan's GNP has been growing at an average annual rate of over 6 per cent, while external debt and debt service has increased at an annual rate of over 8 and 9 per cent, respectively.[4] It implies that the growth of debt has been much more than the growth of GNP which is an alarming signal for increasing foreign dependency of Pakistan. Such a dependent growth could pose a serious problem to its sustainability in future, if some of the donors cut down their assistance. Such an outcome could cost to reduce about 2 percentage points growth of Pakistan's GNP[5]. Besides, this increasing dependency may also have substituted savings. These resources were not mobilized due to easy financing of deficit, by foreign loans.

In the light of above, it is important to study the impact of foreign assistance on economic growth and savings since the very purpose of such capital inflows was to accelerate economic growth which might had been at stake. To study this issue, this study is organized as follows. Parts two provides theoretical rationale and literature review. Besides, the framework to estimate such impacts is provided in this Section. Part three provides empirical results. Part four is conclusion of the study and possible policy implications for future.

3. These figures are based on 1959 - 60 prices. At current prices, these figures will be even higher.
4. The GNP growth pertains to last thirty years. However, the growht of foreign debt was during 1970's and 1980's. During some years foreign debt even grew by 11 per cent.
5. For dependent growth see Mandle (1982).

PART - II

Theoretical Background and Literature Review

The foreign aid may exert a favourable impact on economic growth providing additional resources to accelerate economic activities. Thus, the funding of investment through foreign loans is expected to contribute towards economic growth since it may add to capital stocks to generate further resources.[6] A country may borrow from external markets as long as its contribution to growth exceeds its cost. Such borrowing generates additional resources and accelerates growth. However, if these resources are not utilized properly it may become a burden on the economy.

It is generally argued that foreign capital inflows substitute the domestic savings by removing pressure on governments to mobilize additional domestic resources. Since the need to finance investment could be met through external resources, the focus on raising domestic savings receives low priority in national policies. As a result the society becomes more consumption oriented since hey do not stretch for savings. However, such a policy may help political leaders who avoid national taxation although, later on such indebtedness may cost much more to the nation.[7] Thus even unproductive loans are taken by the recipient governments to fulfill their needs. Such loans hardly contribute much to the national economic growth. There are several studies which measure the effect of foreign aid on economic growth and savings. However, their results usually may not support each others's. Weisekof (1972) estimated the impact of foreign capital inflow on domestic

6. For details see H.G. Jones (1984), *An Introduction to Theories of Growth.*
7. If these resources are not utilized properly, it will accumulate debt without generating additional resources to pay back such loans. Thus, more taxation may be needed to pay off these loans and debt savings.

savings for 44 underdeveloped countries. He stressed that two kinds of savings i.e. ex ante and ex post must be distinguished because the behavioral function of savings in the two cases is different. His resuls supported the hypothesis that the impact of foreign capital inflow on domestic savings was negative. Moreover, he argued that only in situations characterized by a binding saving constraint, the ex ante and ex post saving functions were similar to each other. On the other hand when a trade constraint was active, the impact of foreign capital inflow on ex post saving was more likely to be positive because in such a case external resources help to relieve the independent limitation on the investment imposed by a shortage of specific required imports. However, his results designed to distinguish among alternative binding constraints suggest that the saving constraint had more often been binding than the trade constraint.

Ther are few studies related to Pakistan. Khan, Hasan and Malik (1982) in their study indicated that, in Pakistan, dependency has significant impact on domestic savings. Mahmood and Qasim (1992) found that savings were substituted to foreign capital inflow in Pakistan. However, such impact was less during the period of import substitution. The impact of foreign capital was insignificant on public savings and significant for private savings. Khan and Rehman (1993) estimated the impact of foreign aid on economic development of Pakistan. They found that foreign aid had negative impact on domestic savings. The Foreign direct investment is inversely related to savings. The foreign loans are negatively related to savings, with siginificant co-efficient. Foreign aid and economic growth was found correlated. Shabbir and Azher Mahmood (1992) found that foreign private investment exert positive impact on GNP growth but this impact becomes insignifincant

when total foreign disbursements are taken into account. The impact of the same was negative on savings.

Papanek (1973) applied cross country regression analysis to thirty four countries for the 1950s and fifty one countries for 1960s to test the impact of foreign aid and foreign private investment on economic growth and savings. His results indicated that savings and the components of foreign capital inflows explain over one third of growth rates; foreign aid to countries with low saving rates and serious balance of payments problems has a more significant effect on growth than savings. He found no correlation between growth and other factors like level of exports, imports, education, per capita income etc. He further explained that the primary exports were correlated with savings. Stoneman (1975) criticises Papanek (1973) on the grounds of its specification of capital flows and neglect of factor payments. He then develops a simple model for testing the impact of foreign capital on economic growth. His results indicated favourable impact of foreign capital on economic growth. The above cited literature and empirical evidences indicated that foreign aid could contribute to economic growth and it may have negative impact on domestic savings. Similarly foreign aid may also have no correlation with economic growth. In the light of above cited literature, we will study how in the case of Pakistan, the foreign loans affected its savings and economic growth. By using simultaneous equations model, the relation between foreign aid, economic growth and savings will be identified.

The Model

The relations between economic growth, savings and foreign aid/loan have been estimated mostly by single equation models. There is hardly any study which has identified such

relation in depth. In Pakistan, not only the studies are limited on this subject matter but the estimations of these studies were also based on single equation models, whereas savings and GNP growth rates are determined simultaneously. Thus, single equation models do not capture the real impacts. The only study which estimated this impact through simultaneous system of equations, was by Shabbir and Azhar M. (1982). This study was also limited in the specification of its variables. Our study analyses the impact of total foreign economic assistance on economic growth and national savings in a system of simultaneous equations. The problems identified in other models are improved by complete specification of the model. Such a model may be developed as follows.

$$GR = do + d_1S + d_2F + d_3X + u \quad ...(1)$$

$$S = b_0 + b_1GR + b_2F + b_3R + b_4S_{-1} + v \quad ...(2)$$

Where

GR	=	Growth of GNP
S	=	Saving/GNP ratio
F	=	Debt/GNP ratio
X	=	Exports/GNP ratio.
R	=	Real rate of interest.[8]
S_{-1}	=	Lagged Savings GNP ratio.
a,b	=	Co-efficients

The exports variables is included in equation (1) to capture the openness of the economy.[8] Similarly, lagged savings are included in equation two on the assumption that people usually change their behaviour slowly and previous consumption affects current consumption and, hence, the

8. The real interest rate is computed by taking in to account the growth rate of CPI.

current level of national savings is determined by previous behaviour.

Part - III

EMPIRICAL FINDINGS

Foreign Loans and Economic Growth

Table 1 provided the findings of equation one. The positive co - efficient for foreign debt (F) indicates the favourable impact of foreign asisance on GNP growth. A one per cent increase in foreign debt leads to only 0.01 percent increase in GNP growth rate. The interesting thing about this result is that this co-efficient is not only small but is also insignificant which seems to suggest that foreign debt may exert a positive effect on economic growth, still its contribution is not very significant. The co-efficients of all other variables i.e. savings (S) and exports (X) were according to the expected signs and significant.

It is interesting to compare these results with those found by Shabbir and Azhar (1992). They also found a positive but insignificant impact of all disbursements on growth rate of GNP but their co-efficient was larger than the one estimated in this study. However, the association is not strong and significant. Thus, there is a loose relation among these variables i.e. foreign loans and economic growth.

Foreign Loans and Savings

The results of equation two are presented in Table 2. The foreign debt variable substitutes domestic savings. The negative co-efficient of (F) indicates that foreign assistance

9. See Balessa (1978) and Tyler (1988). Also refer Relation Income hypothesis.

discourages national savings or in other words, substitutes national savings. The value of (F) co-efficient, -0.06, suggests that a one percent increase in foreign debt leads to a reduction of 0.06 percent in national savings. This negative co-efficient is also significant at the level of 90 per cent. Similarly, the sign of the co-efficients of GNP growth rate, real rate of interest and lagged savings are in conformity with the theory. The co-efficient for lagged savings was also found significant.

Our results are comparable with those of Shabbir and Azhar (1992) who also found a negative impact of all disbursements on national savings. The only difference is that whereas their results turned out to be insignificant, our study confirms that there is significant impact of foreign loans on national savings i.e. it substitutes savings. In other words, it has adverse impact on national savings.

Table 1

Foreign Debt, Economic Growth and Savings

Regressor	Co-efficient	T - Statistics
Constant	0.02	0.52
F	0.01**	1.64
S	0.74*	2.55
X	1.02*	2.09
DW 1.9 F.Stat. 1.6		

** Insignificant

* Significant at 5% level.

N = 32, (1960-91)

Table 2

Savings and Foreign Loans

Regressor	Co-efficient	T - Statistics
Constant	0.03	1.59
GR	0.35	3.08
F	-0.06	1.94*
R	0.04	1.69**
S_{-1}	0.64	4.85*

** Significant at 5% level.
* Significant at 10% level.
N = 32, (1960-91)

PART - IV

Conclusion

The estimated results of the impact of foreign debt on Pakistan's economic growth and national savings seem to suggest that foreign debt does not significantly contribute to economic growth. Its co-efficient was found insignificant. Beside it was found that foreign debt substitutes national savings. It may also be implied that the increase in foreign borrowing increases foreign dependency and does not generate enough returns to repay the loans. Thus, national resources may be washed away by such burden. These findings also suggest that it is important for policy makers to reconsider the idea of achieving economic growth through foreign assistance. It may be important to generate domestic savings for sustainable economic growth. Therefore, dependent growth policies may not lead our economy to sustainable stable growth.

Appendix-I
The Projected Debt and Debt Servicing

(Rs. million, Real)*

Year	Debt Outstanding	Debt Servicing	GNP**	Debt Outstanding As Percentage of GNP	Debt Servicing As Percentage of GNP
1992-93	43015	3914	133585	32	2.9
1994-95	53958	-	122941	35	3.2.
1997-98	67685	6159	187359	39	3.5
2000-01	106503	-	229523	46	4.4
2002-03	133597	12692	262781	51	4.8
2007-08	235444	22367	368564	64	6.1
2009-10	295341	28057	421969	70	6.6

* At 1959-60 prices

** Based on 7 per cent growth rate.

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CARRYING CAPACITY : A CONCEPTUAL APPROACH FOR BALANCING LONG RANGE ECONOMIC GOALS AND THE ENVIRONMENTS

By

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Preamble

Pakistan's population is growing rapidly at an exponential rate of 3%. It was 84 million in 1981, which has risen to 120.84 million by 1993. If this growth rate continues unabated, we may have a population of 312 million by 2025 AD (2,14). Even at this time, all of our resources appear to be over pressurized. Cities, towns and villages are congested, and so are our schools, colleges, hospitals, transportation systems, bazaars and so on. Every thing appears to be over-burdened with the weight of excessive numbers. It is quite apparent that if this run-away state of affairs is not arrested quickly, our whole system may suffer an irreversible collapse.

In this context, the concept of carrying capacity may provide us with the much-needed outlet to strike a balance between our quality of life, conservation of natural resources and economic development. It is high time to think about the number of mouths that can be fed with reasonable food by making best use of the existing land, water and technical inputs and even by maximizing producitivity through optimal

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use of technology. How many schools, colleges and universities we must have and for how many students ? How many houses, roads, vehicles, hospitals we should have and for how many people ? Unless we determine the carrying capacity of our land and endeavor to find an optimal equilibrium between population, economic growth, environments and livability we would not be doing any service to our coming generations.

There is increasing public concern in this country as elsewhere in the world about our rapidly deteriorating environments and the worsening state of pollution. There also appears to be an informal national consensus that our rate of economic growth should continue escalating so that our present and the coming generations are able to enjoy high quality livability. Beyond that there is no consensus ; there is no understanding of the long term effects of the escalating rate of economic growth on the environments and the quality of human life; there is no national consensus on the average mix of material goods that would ensure an acceptable quality of life and above all there is no agreement on how best the environments could be saved from disastrous collapse. Each person, each municipal authority and each government department appears to pursue its own goals.

Hitherto the policy maker and the planner has largely depended on historical trends of economic and population growth to identify future long term goals. This technique may be of some value in short term planning - five to ten years - but it may lead to astoundingly unpleasant consequences in long range goal identification and planning for high quality livability.

Carrying Capacity as Basis for Planning

Policy makers, planners and managers concerned with the renewable resources are quite familiar with the land-use planning and management technique known as the carrying capacity or sustained yield. This technique has successfully been used on scientific grounds for forests, livestock ranching, fisheries, wildlife, and farming in most countries of the world. In essence, the long range goal of this approach is to obtain a periodic or annual output from the given resource equal to the amount that can be produced during the same period without permanently impairing its production potential and the quality of its environments - land , air , water and the outdoor aesthetics (3).

There is common consensus among the experts that the environment -air , water, land - can withstand only a definable amount of pollutants. When this limit is transgressed, the ecosystem becomes unhabitable. It has been established that most species of wild animals, birds and even plants tend to avoid overcrowding through numerous natural processes. They thrive best at less than the maximum density to prevent overcrowding with the available food, space, shelter etc. There is growing evidence that this natural principle of carrying capacity applies as well to human populations. Most problems of the main urban centres of today's world could safely be attributed partly to high density living and partly to revolution of rising expectations.

Limits to Growth

The human race has (wrongfully) been led to believe that technology would provide some magic wand which would ensure unlimited exponential growth to meet the ever

increasing human needs and wants. For example, technologists would expect us to believe that using better seeds, fertilizers, insecticides and irrigation water would ensure more and more agricultural yields. This gross error of inference could have been avoided if it was understood that land, water and air are not only finite but they also can sustain only a certain limited load of human population. The productive potential of the soil has a definite limit beyond which it cannot be enhanced irrespective of the nature and extent of inputs. The same principle applies to other life support systems.

One natural law that is as immutable as the law of gravity is that nothing physical in this would can continue expanding forever. This is particularly true of the land, water and air which are finite by nature and by implication. Thus it can be stated without any fear of contradiction that (3,12) :

(a). Land, water, air and other natural life support system are finite ;

(b). There is definite limit to exponential growth in economy and technology ;

(c). It is physically impossible for the GDP or the population to continue to grow forever ;

(d). A state of equilibrium must be reached eventually between the resource base and the population it should support by providing the desired quality of life ;

(e). Beyond this state of equilibrium further increase in population and GDP would start reducing the quality of life.

Alternative Goals

In view of what has been stated above, it is apparent that in order to provide a sound basis for planning under the carrying capacity concept, various available alternatives must be carefully considered. The main eligible alternatives that would come to one's mind could be :

(i). Freeze the growth rate and adopt a "zerogrowth" policy;

(ii). Adopt the policy of exponential growth ;

(iii). Combine several scenarios of pollution, aesthetics, living space, standard of living and environmental quality with several alternate economic projections.

(iv). Identify sustainable balances between ecology and economy and determine the long range goal of desired livability level keeping in view the carrying capacity of life support systems.

Reorienting Basic Assumptions

Hitherto environmental costs of economic growth have been treated as *externalities* by the economists. The essence of this traditional approach is that population and economic growth would continue increasing exponentially and that the proper course of action would be to provide the requisite infra-structure such as roads, canals, electricity, water, urbanization, hospitals, schools etc to accommodate this growth ; and that any problem that may arise in this process would be overcome by using science and technology.

This approach has become controversial in the circumstances wherein environmental implications of growth

can no more be designated as externalities, being the consequences of our own actions with regard to the ecosystem. Therefore a new frame work of basic assumptions will have to be identified in the context of human concern for preservation of the biosphere. This set of assumptions could be summarized as under.

(i). Many of today's problems are a result of the success defined in yesterday's terms ;

(ii). An extension of the past is not the right prescription for the future ;

(iii). Our major long term goal for economic development should be high quality livability for all the citizens ;

(iv). Science and technology can within limits enhance both the quality and magnitude of the carrying capacity of the biosphere provided its application is harmonious with nature ;

(v). The trade off point for economic growth and preservation of environments can be achieved by common political and social consensus.

Quality of Life Benchmark

In order to find out an appropriate combination of economic affluence, environmental quality and livability we must first understand the present state of quality of environments and other parameters of livability in this country and have before us a discernible benchmark. Human needs can be enumerated into five definite classes : physiological needs, security needs, social needs, ego needs and self-fulfillment needs. These can further be elaborated as under :

(i). Physiological needs : air, water, food, shelter, clothing, sleep, reproduction etc ;

(ii). Security needs : Protection from physical threats, assurance of employment etc ;

(iii). Recognition by others, identity, sense of belonging to a class etc ;

(iv). Self-esteem, independence, confidence etc ;

(v). Sense of achievement, acceptance of new challenges, high interests etc.

A little thought on this hierarchy of human needs would reveal that first and second groups of needs are most vital for human survival whereas utility of other needs decreases in order of ascendency. In a country like Pakistan, where a majority of the population suffers from chronic poverty, hunger, disease and illiteracy, the physiological and security needs are most vital. Thus meeting these needs in respect of all citizens could be taken as the long term goal for Pakistan.

Pakistan falls fairly high in the low income group of nations with average annual per capita income of Rs. 12000 (US $ 390). Because of distortions in income distribution, this average is not truly representative of majority of the wage earners. Let us now try to apportion this income into various categories of expenditure in order to see how it may compare with expenditure pattern of a family of an advance country (2,13,14) :

Average apportionment of expenditure for a family of five in Pakistan and U.S.A. (%)

Expenditure Category	Pakistan	USA
1. Food	39.13	12.80
2. Clothing	5.94	6.00
3. Housing	26.98	16.00
4. Transportation	7.19	9.34
5. Health	6.47	4.26
6. Education	5.40	5.07
7. Rates & Taxes	5.40	20.00
8. Savings, Insurance, & Miscellaneous	0.92	7.48
9. Recreation	1.80	5.33
10. Solid Waste Disposal	1.79	1.47
11. Clean air & water	-	4.13
12. Open Space, Quiet & aesthetics	-	6.39
13. Attractive surroundings	-	1.73

This simple table reveals several things to the reader. For an average Pakistani food and housing are harder to get as compared to an average American. The latter can spare a handsome proportion of his income for expenditure on recreation, clean air and water, attractive surroundings, open space, quite and outdoor aesthetics etc. An average American can also afford nearly 27.5% of his earning to contribute to rates, taxes, insurance, savings etc. which an average Pakistani can hardly afford. This contrasting picture reveals to us the status of livability in two countries situated diagonally across the spectrum of socio-techno-economic development.

Pakistan's Perspective

As mentioned earlier, Pakistan's present resources are already under heavy pressure. Its land, water and air are finite. These can be developed, modified and purified to our benefit, but under no circumstances these can be expanded and enlarged. How many people this land can support without down-grading their livability ? What is the number that can live happily here if we apply full potential of science and technology to increase productivity of its fields and factories ? What will be the cost of maintaining clean environments, providing clean water and air, maintaining the requisite tree cover etc. ? These are the questions we must attend to seriously in order to make this land pleasantly livable for the coming generations.

Let us now examine briefly the present status of various factors effecting our lives in this country and try to interpret them in terms of the future prospects:

Population

As mentioned earlier, Pakistan's population stands at 120.84 million today. With a growth rate of 3% it is likely to go up to 312 million by 2025 AD. Although Pakistan has made rapid progress in agriculture, industry and other sectors over the past 2-3 decades, yet this development is likely to taper off at some stage, particularly in agriculture. It is said that agricultural production can be increased another 2-3 times by using more inputs such as better seeds and tillage, more irrigation water, fertilizers, pesticides, and higher technology. Granted that we achieve this state, then how many people can be ensured better, or even present, living standard ? According to Dr. Rodger Schwass, IUCN Consultant, Pakistan can support

a population of 280 million without declining its present living standards provided agricultural output is increased 2.5 to 3 times with proportionate development in other sectors. Let us be more realistic and assume that the carrying capacity of Pakistan is 225 million people (11). This should stand for a state of equilibrium by the year 2025 AD. The state of equilibrium could be achieved if the rate of population growth is decreased to 1.75-2% by 2050 AD coupled with strict control on immigration of Afghans, Iranians, Bengladeshies and others. Punitive taxation on births exceeding three and incentives for smaller families may be of great help in this regard. We must get rid of the succotash syndrome - the sooner, the better.

Agriculture

Pakistan's total land area is 79.61 million hectares (ha) of which 21.04 million ha (26.43%) is cultivated. This gives us 0.174 ha per person or 0.87 ha per family which is far less than the economic holding of 5 ha per family. There is a cultivable waste of 8.76 million ha which can be brought under cultivation by using proper inputs. If this land is properly developed, the per capita cultivated area will rise to 0.25 ha, or 1.24 ha per family (7,14). Since further expansion of agricultural land is not possible, we must resort to the following measures to increase agricultural production to support a population of 225 million :

(i). Use of higher technology such as sprinkler and trickle irrigation systems in rain-fed, water-deficient and undulating areas ;

(ii). Use of more fertilizers, pesticides and other inputs ;

(iii). Use of high quality seeds ;

(iv). Intensive multi-cropping and better tillage ;

(v). Horticulture and forestry in non-cultivated parts of the farms.

Nutrition

An average Pakistani consumes 2471 calories of food per day compared with world average of 2711 calories, European average of 3433 calories and middle income countries average of 2987 calories. Thus by all standard, we are fairly underfed. Today our daily consumption of nutrition is nearly 296,500 million calories. At the present level of consumption we must produce twice as much food to feed a population of 225 million in 2025 AD. If we wish to equal the world average, then we must produce three times as much food as we produce today. This would entail proportionate increase in investment in terms of technology and finances.

Protein intake in Pakistan is 64.37 gm/capita/day which is about one-half of that consumed in Europe. Of this 5.48 gm is fish, 4.26 gm poultry and the rest is beef, mutton etc. Milk is consumed at the rate of 385 gm/capita/day, which is about one-third of the average consumption in Australia. Every Pakistani consumes 0.12 eggs/day which is almost one-fourth of the consumption in USA.

Pakistan is endowed with vast fisheries and livestock potential. There are 292.4 million heads of animals in this country, of which 18.7 million are buffalloes, 17.8 million cattle, 27.7 million sheep, 40.2 million goats, 182.6 million birds of poultry and the remaining are others (2,7,13,14). The animal products can be increased by :

(i). Adopting high yielding breeds of fish, cattle sheep, goats, buffaloes and poultry ;

(ii). Encourage pisciculture in private sector through package of technology and incentives ;

(iii). Better management of marine fisheries ;

(iv). Improved range management in private and state lands.

Housing

The number of housing units in Pakistan was estimated at 17.80 million (12.80 million rural and 5.00 million urban) in 1991. Shortfall during 1993 was 6.25 million houses of which 4.31 million were rural and 1.91 million urban. The annual demand being 580,000 and production 430,000 houses the backlog is increasing at 150,000 housing units annually. The housing sector is meeting only 40% of the incremental needs resulting in continuous widening of the gap between demand and supply (4). Housing is more expensive in Pakistan than even some advanced countries of the world. Cost of housing should be brought down by adopting reasonable policies towards sizes and designs and research on building materials.

Water Supply & Sanitation

50% of the rural and 85% of urban population is covered by potable water through central water supply or hand pumps. Sanitation is available to 17% rural and 60% urban population. The following table shows the availability of services to the urbanites in this country (2,13):

Access To Services In Urban Areas (%)

Service	Availability	
	1980	1993
Water		
Piped	30	35
Hand pumps	33	30
Electricity	71	75
Latrines		
with flush	22	25
without	61	70

Plans Shuld be developed to provide potable water to 100% and sanitation (central sewage or localized pits whichever is applicable) to at least 90% of the population by the year 2025 AD.

Transportation

Public transport is available to about 40% of the population. About 10% of the population enjoys its own transport facilities (2). The objective should be to provide public transport facility to 90% of the population by the year 2025 AD, reducing dependency on private transport. Private cars should be discouraged particularly those with engine capacity exceeding 1200 cc. Bicycles, motorcycles and scooters should be popularized.

At present there are 179,752 km of roads in this country of which 87,767 km are low-specification and the remaining of high specifications. In future emphasis should be on farm-to market and rural roads rather than on super highways and motorways etc.

Education

The present rate of literacy in Pakistan is 35% (female 21%). The participation rate at primary level is at 65% which decreases to 10% at the college level. The annual development outlay on education is 2.4% of the ADP. There are 124, 171 primary schools, 774 colleges and 23 universities in the country. The following table compares participatory rates over the years (2,14) :

Participation Rates %

Total			Primary			Secondary			Higher		
1960	1981	1993	1960	1981	1993	1960	1981	1993	1960	1981	1993
47	62	74	46	61	65	6	15	20	1	3	10

Emphasis is required to be laid on universal elementary education by 2025 AD, and widespread technical and vocational training. Professional and higher education should be available on merit and selective basis only.

Health

Pakistan enjoys poor health standards and medical facilities as compared with European countries as evident from the following table (2,14) :

Item		Pakistan			Europe
		1963	1983	1983	1990
Life Expectancy at birth (years)	M	47	55	56	78
	F	45	54	55	76

Infant Mortality Rate (0-1 years) 1000 Live Births	140	90	85	30
Child Death Rate (1-4 years)/1000	12	10	8	2
Hospital Beds per 1000 persons	0.35	0.56	0.65	7
Persons/Doctor	10,000	3480	2111	700
Persons/Nurse	-	-	11500	480
Persons/Hosp Bed			1790	650
Persons/Dentist	-	-	83000	1500

Energy

Pakistan is an energy-deficient country. Repeated loadshedding and dependency of about 85% of the population on biofuels (wood, crop residues, cow-dung etc.) for domestic energy is reflective of acute deficiency of electricity and other cleaner sources of energy in this country. Big strides are needed to develop various sources of domestic, commercial and industrial energy to meet the essential needs of 225 million people by 2025 AD. Following brief paragraphs give an over-view of the present state of affairs in the energy sector and its future prospects (2, 14) :

Oil : Total known oil reserves in Pakistan are 143.5 million barrels. The present production is 60,755 barrels per day which is about 48% of the daily consumption. It is imperative that exploration and drilling is increased so that we are able to produce about 350,000 barrels a day by 2025 AD.

Gas : The total gas reserves of Pakistan stand at 661.49 billion m^3. The present production is 10,318 million m^3. A vast potential exists for the expansion and enhancement of gas supply to all major cities of this country. If this resource is exploited fully, it will have a highly positive effect on environments and preservation of biosphere.

Coal : The present production of coal is 250,964 tons per year. This probably could be increased to 500,000 tons per annum but further enhancement may not be feasible.

Electricity : Pakistan has an estimated generation capacity of 38,066 MW of electricity. The present production, however, is 10,598 MW, which meets about two-third of the demand of industrial and domestic consumers exceeding 8 million today. Of the 65,000 Pakistani villages, 43,640 are electrified. Thus big efforts are needed to increase the production of electricity through hydel, thermal, nuclear and other sources to meet the needs of 225 million people in 2025 AD.

Unconventional sources of power generation, such as tidal, wind and solar energy, biogas etc. should also be developed on large-scale.

Environments

Human environments not only include clean and aesthetic surroundings, but also well-forested countryside, safe watersheds, well protected soil and tree-lined fields, canals, roads and habitations. Situation in Pakistan is rather dismal due to prolonged neglect of its biodiversity, continuous erosion and overgrazing. Forests, which hardly cover 4.8% of its land are being deforested rapidly. Range lands, covering 16% of the

country, are badly over-grazed and depleted. Watersheds are critically susceptible to erosion and landslides. Desertification is on the rampage (5,6,7).

This situation needs to be reversed if we are to save our beloved land from total desiccation and desertification. Afforestation, range improvement, watershed engineering and soil protection requires to be incorporated in our national policy and given as much importance as country's defence. After all if our land, water and air are not safe, who would ever think of living here happily ? In nutshell, all-out efforts should be made at all levels to expand and preserve our biosphere and no one should be allowed to harm it under any circumstances. For this purpose, stringent legislative, administrative and social measures are of paramount importance.

The most deleterious factor effecting our environments is the complete lack of land-use classification and zonation control. Cities and industries are being built in prime agricultural areas ; agriculture is being practiced in potential forest areas ; mining is being done in lands susceptible to erosion. It is high time that some measure of sanity is introduced in our land-use practices through Legislation and stringent zonation control.

Cost of Better Livability

The measures suggested in this paper to improve our environments, to reduce ignorance and disease, and to improve the livability in the coming decades would cost much in terms of policy decisions, monetary investment, planning and management and above all hard work. But there is no escape from these costs. We have the opportunity of passing on to our posterity the life styles we happen to have, or better or worse

than these. Let us endeavor to give our posterity a more livable Pakistan, and a better livability.

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THE DEBATE OVER INTEREST

By

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Introduction

Interest lies at the heart of the modern economy because it plays a central role in the allocation of scarce resources among competing uses. Interest has been a highly complex and controversial issue in economic literature. Economists have proposed different theories on the definition, rationale, and role of interest. The purpose of the present paper is to present a succinct review of early and modern theories of interest in order to get a fair idea about the nature and significance of interest in a modern economy and also to provide a detailed discussion of the Islamic theory of interest to find its current relevance.

Western Thories of Interest

Interest was despised and prohibited in tribal and primitive societies. The Greeks, Romans, Jews and the Christian church all condemned usury. In classical times, the writings and teachings of philosophers and moralists were instrumental to the strong opposition to usury. The views of Aristotle, Seneca, and Aquinas provided the foundation for the medieval prohibition of usury. According to Aristotle, money was an "inorganic object" and could not be used as a source of

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augmenting wealth. Money is sterile and barren (Taylor and Evans, 1987, pp. 15-17).

Interest was forbidden in the early days of the Roman Empire but emerged with the rise of the merchant class. It was strictly probibited up to 13th century while the Church was dominant. The reformation movement of the 16th century caused canon law to be reviewed. The concept of interest gained support with the steady decline of the authority of the Church and the rise of secular power. The word "usury" was replaced by "interest". Luther and Zwingle favored the charging of interest "on the plea of human weakness" (Qureshi, 1970, pp. 6-8).

Calvin challenged the Aristotelian views on interest and the writings of such economists as Petty, Kocke, Turgot and Bentham. These developments led to repeal of "anti - usury laws from the Statute-books of Western European countries". The experience was not a success and new anti-usury laws were enacted by the end of 19th century. Today these laws are regarded as "ineffective or positively harmful" because of the market mechanism (Taylor and Evans, 1987, pp. 19-20.

Mercantilists equated money with capital and considered interest on capital as payment for the renting of money. They supported low rates of interest to stimulate trade but failed to regulate the rate of interest (Quershi, 1970, pp. 9-11).

N. W. Senior was the first economist who introduced the importance of time element in the use of capital. He put forward "The Abstinence Theory of Interest". By abstinence he meant refraining from unproductive use of a resource or sacrificing present over future and argued that interest was the

price for the abstinence. Marshall replaced the word "waiting" for abstinence (Qureshi, 1970, pp. 16-18. This theory has been criticized on the grounds that it gives equal weight to sacrifices made by people of different income levels, which implies that different people make different sacrifices. This is true, but each makes a sacrifice whether small or large, and therefore, must be compensated according to the degree of sacrifice. Hence abstinence serves as a rationale for charging interest.

Proponents of the "Productivity theory of interest" regarded productivity as an inherent property of capital and argued that the productivity of capital is the cause of interest. This theory or its widely accepted version, the marginal theory of interest, does not offer a genuine explanation of the rate of interest beccause (1) it assumes a pre-existing rate of interest, "the very thing it has to determine"; (2) it does not explain why interest is charged on consumption goods ; (3) it does not give a proper role to money and expectations; (4) no consideration has been given to changes in the quantity of money; and (5) it is based on static conditions (Qureshi, 1970, pp. 18-20).

These objections carry some weight but the limitations and weaknesses of the theory do not imply that capital has no productivity. Capital produces goods which could not be produced without it. This suggests that capital has a positive return which should be compared with the cost of borrowing - - the rate of interest. Moreover, capital also produces consumption goods, so charging of interest on capital indirectly explains the charging of interest on consumption goods. The concepts of real and nominal rates of interest implicitly take into account the changes in the quantity of money.

"The Austrian Theory of Interest" set forth by Bohm-Bawerk is a very powerful theory of interest. He contributed

two concepts to the theory of interest : (a) the capitalistic mode of production as a time consuming process and (b) capital is nothing but a combination of intermediate goods. He explained the rationale of interest in terms of time preference. Human beings prefer present consumption or comfort to future consumption or comfort. If a person is required to sacrifice present over future, he deserves some reward or compensation known as interest. Close examination of the Austrian theory and the abstinence theory reveals that the two theories do not differ substantially. The rate of interest is determined by the marginal productivity of capital which diminishes as the production period increases (Qureshi, 1970, pp. 20-24).

The rationale of interest furnished by the Austrian theory is not sound and valid because the theory is primarily concerned with "an explanation of the origin of accumulation of capital goods". The rationale provided by this theory cannot be accepted in modern times because today cash capital or "capital funds" are used (Uzair, 1980, p. 40). The suppliers of cash capital or capital funds part with their funds thereby sacrificing present use over future use. Thus they are entitled to remuneration and compensation in the form of interest.

According to smith and Ricardo, interest is the compensation which a borrower pays to the lender for the profit he makes by use of the lender's money (Qureshi, 1970, p. 11). Classical economists argued that saving and investment are both functions of the rate of interest. Saving is an increasing function of the interest rate while investment is inversely related with the rate of interest. The equality between saving and investment is brought about by rate of interest (Ghatak, 1981, p. 10).

Qureshi (1970, p.15) asserts that saving and investment are not influenced by the rate of interest. Though the evidence is not conclusive, a number of studies (Gupta 1970A and 1970B, Brown 1973, Mckinnon 1973), Mckinnon 1973) have concluded that savings are positively correlated with the rate of interest. Similarly, a low rate of interest induces investment though it is not the sole determinant of investment.

The best illustration of the classical quantity theory of money is given by the Fisher's (1911) equation of exchange,

$$MV = PY \qquad ...(1)$$

where M = total quantity of money, V = velocity of money, P = price level, Y = aggregate output, and PY = nominal income. Fisher argued that V is constant since it depends on the institutions in the economy which do not change rapidly over time. This view leads to the quantity theory of money which states that nominal income, PY, is determined exclusively by the changes in the quantity of money, M. This theory is in fact a theory of demand for money because it shows how much money is held for a given level of aggregate income. Equation (1) can be written as

$$Md = K_{PY} \qquad ...(2)$$

where the expression on the left hand side is the quantity of money demanded and k = 1/V. Since V is constant, so is k. This equation tells us that nominal income determines the quantity of money demanded by the people. Thus, Fisher's quantity theory holds that demand for money only depends on income and is insensitive to interest rates. Cambridge economists developed a money demand equation identical to Fisher's equation (2). Their approach differed in that they recognized

the effects of the interest rate on the demand for money (Mishkin, 1989, pp. 413 - 417).

Keynes did not accept the classical view that velocity of money is constant. Keynes argued that demand for money or "liquidity preference" is positively related to income and inversely related to interest rate. His theory implies that V is not constant but instead is positively related to interest rate. Hence, his theory raises doubts about the validity of the classical quantity theory that nominal income is determined by changes in the supply of money (Mishkin, 1989, pp. 410 - 424).

Baumol (1952) and Tobin (1956) independently developed models which revealed that even money balances held for transaction and precautionary purposes are influenced by interest rates. These models implied that there is an opportunity cost associated with the holding of money - foregone interest. Recent studies have supported Keynesian theory. However, efforts "to improve the rationale of Keynes for the speculative demand for money has been only partially successful" (Mishkin, 1989, p. 429).

Using the theory of asset demand, Milton Friedman (1956) developed the theory of demand for money which states that demand for money depends on permanent income and the expected returns on alternative assets relative to expected return on money. Friedman's theory differes from Keynes' in two respects. First, Friedman is of the view that demand for money is stable and second, demand for money is not affected by interest rates. These two differences imply that velocity is predictable which leads to the classical quantity conclusion that nominal income is determined solely by money supply (Mishkin, 1989, pp. 429 - 434).

The above analysis shows that there is disagreement among western economists regarding the rationale and role of interest and this makes interest a complex issue in economics. While discussing the flaws in the various theories of interest Uzair concludes, "perhaps the theory of interest is the least clear part of the entire economic theory. This is so because an effort has been made to explain something which is difficult to justify" (Uzair, 1980, p. 41).

The disagreement among Western economists does not suggest that there is complete consensus on the undesirability of an interest rate. Economic Literature is replete with examples which demonstrate marked difference of opinion among economists. It is sometimes said that when there are two economists, there will be three opinions.

The main thrust of the arguments of Muslim economists who strongly support interest - free banking is to prove that interest does not play any role in the modern economy and thus attempt to provide a theoretical foundation for an interest - free economy. There is disagreement among Muslim economists on the various aspects of Islamic banking (see, for example, Arif 1992). Does this difference of opinion among Muslim economists imply that Islamic banking is "something which is difficult to justify" ? A difference of opinion does not negate the existence of something and in no way suggests that the particular thing is unjustifiable and therefore, should be done away with.

Islamic Theory of Interest

Socioeconomic justice is an important characteristic of a true Muslim society. Islam has attempted to eliminate all sources of exploitation and undue advantage in business transactions. Quran strongly urges Muslims not to acquire each

others' property wrongfully. Obtaining a monetary advantage in a business transaction without giving a fair countervalue is an important source of unjustified earnings. Riba represents a conspicuous source of unjustified benefit in the value system of Islam (Chapra, 1985, p. 55).

In the early period of Islam, the economy was mainly a barter economy and there were no banks and other financial institutions which play a central role in modern economies. The concepts of fair price and just wages were "common themes" in early economic literature. The objective was to prevent any exploitation of poor people in socioeconomic transactions. In actual practice, the ruthless feudal lords and tribal chiefs exploited the poor and weak slaves and serfs (Haque, 1989).

Prohibition of Riba

In recent years the meaning of *riba* has attracted the attention of Muslim scholars. Haque (1989) raises the question what is *riba*? Is it usury, unearned income, interest, or a prefeudal phenomenon irrelevant to modern times? This is a question of increasing importance because an adequate answer will have a significant bearing on the functioning of the modern economy, especially financial institutions.

The prohibition of riba appears in four different revelations :

1. *First Revelation (Surah al - Rum, Verse 39)*

   That which you give as interest to increase peoples' wealth increases not with God ; but which you give in charity, seeking the goodwill of God, multiplies manifold.

2. *Second Revelation (Surah al - Nisa, verse 161)*

And for their taking interest even though it was forbidden for them, and their wrong appropriation of other peoples' property, we have prepared for those among them who reject faith a grievous punishment.

3. *Third Revelation (Surah al - Imran, verse 130 - 2)*

O believers, take not double and redouble interest so that you may prosper. Fear the fire which has been prepared for those who reject faith, and obey God and the Prophet so that you may receive mercy.

4. *Fourth Revelation (Surah al - Baqarah, verses 275 - 81)*

Those who benefit from interest shall be raised like those who have been driven to madness by the touch of the Devil ; this is because they say : "Trade is like interest" while God has permitted trade and forbidden interest.

The first revelation, which was revealed in Mecca, emphasized charity and discouraged interest. The second, in the early Madina period, equated *riba* - takers with those who wrongfully appropriated other peoples' wealth and strongly condemned interest in the way it was forbidden in previous scriptures. The third one, revealed around the second or third year of Hijra (migration from Mecca to Madina), instructed Muslims to refrain from interest for their own welfare. The fourth revelation, near the completion of the Prophet's mission, denounced *riba* - takers and differentiated between *riba* and trade which were regarded by the pagan Arabs as synonymous (Chapra 1985, p. 56).

The order of the revelations shows that *riba* was prohibited gradually and in the most rational way. The Prophet (peace be upon him) also condemned interest in strong words in several authentic *hadiths* (a collection of the acts or sayings of the prophet Muhammad). These sayings severely admonish not only those who dare to violate the Injunctions but also those who help in a *riba* transaction, if only as a scribe or witness.

Meaning of Riba

Riba literally means increase, addition, or growth which "in the pre-feudal and pre-Islamic times was generally an excess or increase in an economic transaction, loan, or sale" (Haque, 1989, p. 7). There are two kinds of *riba, riba al - nasiah and riba al - fadl.*

Riba al - Nasiah. It means to postpone, defer, or wait and it is in this sense that the word *riba* has been used in the Holy Quran and refers to interest on loans. There were diferent forms of loans and business transactions. When a person borrowed food, money, cattle, etc., he would pay back the principal with an increase after an agreed period. This increase was termed by Muslim jurists as *riba al - Nasiah.* According to jurists it was not a fair exchange because the lender exploited the borrower (Haque, 1989, p. 8)

Riba al - fadl. Islam wanted to abolish not only the exploitation inherent in the institution of interest but also to close all doors of unfair and unjust transactions. *Riba al - fadl* deals with all spot transactions involving cash payment and the exchange of other commodities. This kind of *riba* originated

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Chapra (1985, pp. 236 - 245) and Qureshi (1970, pp. 42 - 45 and pp. 61 - 71) have cited a number of hadiths as well as the views of famous Muslim jurists having bearting on *riba, riba al - nasiah* and *riba al - fadl.*

from a saying of the prophet ("If gold, silver, barley, dates and salt are exchanged, they should be exchanged spot and be equal and alike).

There is difference of opinion regarding the nature and extent of *riba al - fadl.* One opinion argues that all saleable commodities would be subject to *riba al-fadl.* A second opinion holds all edible commodities would fall in the category of *riba al-fadl.* A third opinion is that all items that sustain life and are storable are subject to *riba al - fadl.*

However, these opinions ignore the crucial questions : Why is exactly the reciprocal payment required? The answer is to ensure justice and fair play in spot transactions and to close all doors to *riba* because in Islam any means that leads to unlawful is also unlawful. Thus, *riba al - fadl* and *riba al - nasiah* follow from the verse "God has allowed trade and prohibited *riba*". The former concerns trade and is implied in the first part while the latter relates to loans and is prohibited in the second part (Chapra, 1985, pp. 58 - 61).

According to Haque (1989) there was no confusion about *riba al - nasiah* while *riba al - fadl* was ambiguous and controversial, so it was not defined clearly by the jurists. He asserts that Islam was a revolutionary religion which wanted to eradicate all forms of injustice. Therefore, *riba* was annulled in all forms, "whether deferred in time or in direct sales".

Different Interpretations of Riba

It has been asserted by Khan (1986), Ahmed (1985), and Qureshi (1985) that there is consensus among all schools of thought that interest is forbidden in all its forms. This is not true because there is marked difference of opinion concerning

the implications of *riba* in the modern world. One opinion is that *riba* encompasses any return on financial transactions and should be removed. A second opinion holds that only compound interest falls in the category of *riba* ; simple interest does not and therefore only compound interest should be abolished. A third opinion is that *riba* is related to consumption loans because there were no production loans during the Prophet's period. The fourth opinion is that bank interest is not un-Islamic because there were no banks when the *riba* verses were revealed (Ahmed, 1985 ; Haque, 1989).

Muslim scholars have attempted to prove that the above views are not valid. Ahmed (1985, pp. 4 -5) cites verses 276, 278 and 279 (Sura al - Baqara) arguing that the said verses show that simple interest as well as compound interest is forbidden, because Islam allows the taking back of principal only. He also refers to the "unanimity" of prominent jurists on the prohibition of *riba* in all its forms. Qureshi (1970, p. 101) makes reference to the Oxford dictionary which defines usury as the "practice of lending money at exorbitant interest especially at higher interest than is allowed by law" and argues that a rate of interest which is considered exorbitant today, may be considered moderate tomorrow. Qureshi also states (1970, p. 115), "Islam has fixed zero rate of interst and any rate above the zero rate is a usurious rate of interest".

Another argument is that interest was prohibited during the Prophet's days because there were only consumption loans and production loans were non - existent. There is documentary evidence available in research of various scholars that, in the time of prophet, loans were also given for production purposes (Udovitch, 1970, p, 86 ; Ahmed, 1985, p. 6).

The following arguments have been advanced in favour of the prohibition of *riba* :

(1) Through *riba* the lender wrongfully acquires the wealth of the borrower. (2) *Riba* represents an income which is earned without labor which induces the lender to shirk from labor. (3) Debt destroys "one's honor and respect" in society. If interest is abolished people will refrain form "borrowing and squandering". (4) *Riba* makes the lender rich, the borrower poor. If riba is made legal, rich people will take away poor people's resources (Qureshi, 1970, pp. 45 0 48). (5) If interest is charged on basic consumption requirements, it amounts to taking advantage of a man's inferior economic position and is therefore morally abominable and prohibited. (6) The charging of interest on loans for productive purposes is prohibited because when money is invested in a productive undertaking, the magnitude of profit is uncertain and there is also the possibility of loss, while the interest is fixed and certain. Islam, however, does not prohibit taking a return on capital if the provider of the capital funds is prepared to share the risk of the productive enterprise with the entrepreneur. It is for this reason that profit and loss sharing is considered an acceptable alternative to interest in an Islamic economy. This also is the reason that Islam has allowed trade and forbidden interest. (7) Quran and Sunnah have categorically prohibited interest (Chapra, 1985, p. 63 ; Qureshi, 1970, pp. 48 - 53 & 96 - 100).

The person who lends money or any other commodity sacrifices his own needs or comfort. Common sense and justice require that the lender be given adequate *quid pro quo*. The lender does not force the borrower to borrow at interest. If the first argument implies that the lender should give money free of interest to the borrower, then will it not be an exploitation of the lender? Does Islam protect the interest of the borrower only

or are both the lender and borrower protected? If Islam protects the interest of both the lender and the borrower then the lender should also be compensated and interest is the compensation. The major indictment against interest is that it is fixed and predetermined so it is wrong and unjustified. Sharing of risk is true if the borrower uses the capital for productive purposes, but if the borrower borrows for consumption purposes then how will the risk be shared? How will the utility that the borrower will derive from consumption be measured? Moreover., fixed and predetermined return is not confined to money only , there is a same fixed and predetermined return when a landlord rents out his land, house, or shop. What losses does the landlord incur by renting his property against a fixed and predetermined "rent" ? If the property sustains wear and tear or, in the extreme situation, is destroyed by a natural disaster, the same damage could be done if the landlord himself makes use of his property. Then, why is the rent fixed and predetermined? Why should the lender alone bear and share the risk and loss ? Does this stepmotherly treatment of financial capital not constitute exploitation and injustice? Economic theory tells us that in inflation the value of real estate apprecitates while that of money depreciates. The owner of real estate gets increasing, fixed and predeteined return while the owner of financial capital receives decreasing return.

The second argument, that the *riba* - taker becomes indolent and evades labor is not tenable. Why is the same argument not applied to the real estate owner? Qureshi (1970, p. 97) contradicts the labor criterion. He states, "Islam has not illegalized all those transactions which produce income without labor". This discussion reveals that, in the eyes of Islam as interpreted and explained by Qureshi (1970) and other Muslim scholars, financial capital is the major culprit which must be

punished with risk of loss while the physical capital is given a carte blanche.

The third argument, that debt destroys one's honor and respect, is curious and irrational. Qureshi has not explained how debt does so. Even governments borrow from their own people as well as from abroad. The argument that people tend to borrow and squander more if the cost of borrowing is nominal or zero, appears to be more plausible and sound.

The fifth argument is sound on humanitarian grounds. However, indigent and poverty - stricken people can be helped through *zakat* (Islamic wealth tax) and government welfare funds and cannot be used as the principal reason for interest - free consumption loans. With regard to the sixth argument it is pointed out that if sharing of risk is the sole criterion which makes trade and business legal and interest abominable, then why is it that gambling is strictly prohibited in Islam which also involves risk? By virtue of the risk - sharing principle gambling should also be allowed. The main reason governing the principle "trade is allowed, interest is prohibited" in Islam might be due to the fact that trade involves labor and misfortune while interest does not. But it has been shown above that Islam allows income to be earned without labor. Hence even the principle of labor is not universal.

The discussion boils down to the point that *riba* is a highly complex issue, therefore the statements such as "*riba* represent a prominent source of injustice". *Riba* is prohibited in Islam because Islam aims at establishing a socioeconomic order in which there is no exploitation of man - by - man" should be made with extreme caution. Haque (1989) asserts that

> the problem of *riba* is not the problem of declaring interest legitimate or illegitimate, it is the problem of human freedom, equality and a just and an egalitarian order where human beings could live without exploitation, violence, war, slavery, hunger, disease and ignorance (p. 10).

This is no more than an exaggerated and tall claim, which cannot be substantiated - by early as well as contemporary history and the level of socioeconomic development achieved by the Muslim countries. Throughout history Muslim society has never been an egalitarian society ; there have always been glaring inequalities and injustices. *Ṛiba* has to be interpreted in the context of the modern needs and realities. Mere rhetoric will not work.

The last argument that Islam has given a final verdict on the prohibition of riba and thus it is compulsory for every Muslim to desist from riba, is debatable. This raises the question whether Islam and its teachings are "eternal" or restricted to the early period of Islam ? Obviously the teachings of Islam are eternal, because the Prophet Muhammad (peace be upon him) is the last of all the prophets whom Allah (God) appointed for the guidance of humanity.

We are living in the 15th century according to the Hijra (Muslim) calendar. During these fifteen centuries the conditions of life have undergone tremendous and radical changes. We are living in socioeconomic conditions which are radically different from the 7th century conditions of early Islam. The eternal teachings of Islam as well as the changed conditions of present life demand reinterpretation of *riba*.

The discussion of the early theories point to the fact that the prohibition of *riba* is not peculiar to Islam. It was forbidden by Greeks, Christian church, the Jews and primitive societies. But when the conditions of life changed, *riba* was legalized and practised. Taylor and Evans (1987, p. 35) concluded that Islam and other systems have identical vardicts on *riba* in the early times. This argument carries weight.

Conclusion

In early times as well as in the middle ages, the charging of interest was strictly forbidden. However, with the decline in the power of the church and changing needs of the economy, interest started taking root gradually. Economists have offered various theories of interest over time. These theories did not provide a satisfactory explanation of the cause and determination of the rate of interest. Yet every theorey made a valuable contribution to the theory of interest.

The controversy over the role of interest does not imply that interest rate cannot play a part in the functioning of the economy and thus should be abolished as the proponents of the Islamic economic system prescribe. The Islamic theory of interest is diametrically opposed to Western concepts and theories of interest. While Western theories have attempted to explain the rationality and desirability of interest, Islam has given a harsh verdict against interest. The principal reason for the prohibition of interest, as claimed by Muslim scholars, is that Islam purports to establish a socioeconomic order which is based on justice, equity, and fair play and closes all doors to all means and forms of exploition and injustice.

However, the 7th century religious dictates should be adapted according to present economic realities. We are living

in a highly integrated and complex international economy whose needs and preferencec are radically different from the non-agricultural, non-industrial and non-commercial economy of the 7th century. It is appropriate that Muslim scholars reinterpret *riba* in such a way as to enable Muslim countries to run their economies efficiently and smoothly, meeting the demands of the domestic as well as international economy.

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BOOK REVIEW:

WOMEN'S ECONOMIC PARTICIPATION IN PAKISTAN

by Farida Shaheed and Khawar Mumtaz for UNICEF Pakistan. Published by Shirkat Gah, Lahore. Printed by. Pictorial Printers, Islamabad, P W O No.92/41 (1000), 1992, pp 76.

The book "Women's Economic Participation In Pakistan", consists of four chapters or eight sections, with tables having extensive data, at the end of each chapter. There is an executive summary of the text in the beginning while the appendices; glossary of abbreviations, bibliography and special data are at the end of the book. It has a glossy cover with a photograph of an old woman working in the fields on it, sending the message that the women of Pakistan work, even if their economic participation is not recognized officially or socially.

The autors have done their best to bring out all aspects of the problems facing Pakistani women in their economic Life. The stress, and rightly so, is on the sociocultural restraints on the female participation in the work force of the country. The authors have gone to great pains to underline that the problem is not that women in this country do not work, but the problem is that the male oriented society, officially as well as socially, does not want to reocgnize the fact of women's work capabilities and decision making. More so that most of the women do not themselves recognize their own work as economically viable. They have also stressed that ignoring women's role in economic participation has further deteriorated their socioeconomic condition.

Chapter I of the Report consists of section 1 and section 2. It is the Introduction to the book. In Section 1 - The Socioeconomic Overview, the authors have given a summary of Pakistan's economic background, i.e. its population; growth rate; per capita income, compared with other South Asian countries, national calorie intake; the infant mortality rate, seen in the background of the country's real Gross Domestic Production; the employment growth rate and labour absorption; and its illiteracy ratio.

It is pointed out that, the recorded unemployment in Pakistan - male as well as female, has been consistently low, with higher incidence in urban areas than in rural areas. Among the various reasons for low unemployment assessments given, are: minimum cut-off of 15 hours per week as employment criteria and the general omission of women in accounting systems. Also in this section, the employment growth rate of Pakistan in the agricultural, manufacturing, and informal sectors have been discussed. The authors have also touched upon the development resources of the country, and shown that these resources are limited, because most of the national budget is spent on non-development expenditures like debt servicing, defence and administration, which leaves a very small percent of the current budget for development. It is also underlined that the share of education and health in the country's GNP has never exceeded 2% and 1% respectively.

This Section also deals with the girl child and her current and future prospects in economic participation of Pakistan. It is shown that, in Pakistan as elsewhere, more girls are born than boys and girls have a numerical edge over boys under the age of five years, but unequal access to resources and status quickly reverses the sex ratio in favour of males. The reason given is that, a girl child is seen as an economically

unproductive member of the family and therefore a financial liability. Further, the combination of strict moral codes, acute social pressure to marry and the system of gender segregation and male seclusions shows that the girl child is also viewed as a social burden. It is further pointed out that the perception of the Pakistani girl child as an economically unproductive member of society has not been limited to the general population, but such attitudes are also shared by the policy-making tiers of the country.

This section also gives the age and percentage of married females in the country by provinces and discusses factors behind the tendency of early girl marriages in Pakistan. At the end of this section some words have been said by the authors about the Report itself.

Section 2 - Gauging The Economic Participation of Women, deals with the discrepancies; causes of underenumeration; and data gaps in the official surveys. In other words,.this section looks into the statistic problems facing economic participation of women in Pakistan. It is pointed out that most of the official studies and data overlooked or under estimated the participation of women in the country's economic life till as late as the end of the eighties and the beginning of the nineties,. and what ever data exists in the official sources in the country is not consistent, is self contradictory and least equipped to gauge the depth and breadth of women's labour force participation. These sources, according to the authors, consistently record the lowest rates. The authors show that, a review of major sources indicates not only discrepancies between sources but also inconsistencies in different years of the same survey. Further the book gives the causes of women being ignored by the data collectors in Pakistan. They include: conduct of the male enumerators interviewing the respondents,

who are also mainly men; the incorrectness of specific wordings of the questions asked and discrepancies in collection of data itself, the negative valuation of women's work in Pakistan's dominant culture and the tendency to consider it a matter of family's dishonor if the women of a household are working; as well as the work of housewives not considered as an economic category or economically productive activity. This data gaps in the official statistics and surveys, that the authors point out, also include: disregarded data like female hardship in their homes, problems of intra-household income and division of labour etc. Furthermore the problem includes statistics inadequacies which make it difficult to detail women's economic participation in terms of level, income and occupational categories by age, and also to identify the probable causes of differences in participation levels between one class and other. The work of the authors was made more difficult because as they point out in this section there were problems of the same kind regarding provincial and local data sources as well as the data collection from the informal sector of the economy which include the peace work employment etc.

Chapter II or Section Three of the book, is the Female Labour Force. This chapter contains information, data and tables about women and their participation in the labour force in different sectors of the economy as well as most of the reasons of why this participation is the lowest in the world today. It deals with the socio-cultural context, and gives the background to the reasons behind low official figures. It also includes a list on types of work done by women on piece rates. In short, this chapter is an overview, which gives the historical trends of women's participation in the labour force of the country, underlining that tasks and responsibilities traditionally carried out by women and have either been by-passed by technological development or, when innovations have

been introduced, these have often converted erstwhile female tasks into male wage-labour activities. It is also an assessment on women participation rates and their variations in each province of Pakistan. This section also has some words about female participation in the non-agricultural labour force, along with provincial variations, in rural economy, in cottage and small scale industries, formal industrial labour force, informal sector, the professional cadre and government employment etc.

The authors point out that, while women's economic participation is grossly under-enumerated in both rural areas and in the formal sector, there is no doubt that cultural constraints contribute to the under-enumeration of women's economic activities. Gender specific roles are very clearly demarcated by culture: women are responsible for the reproduction of the society and serving this collective within the home, men are responsible for their families financial and physical needs and carrying out chores outside the household, Gender specific roles and the concept of honour and purdah, along with early girl marriages are the predominate circumstances that women's mobility is greatly restricted. Preferably women do not work in remunerated activites. Economically active women are largely confined to working as unpaid family helpers on their own land or households and family businesses. They further add that, traditionally Pakistani female occupations revolve around either agriculture and livestock production or in the social services like birth attendants, domestic servants etc. Breaking out of family and social restrictions has been easiest for professionally qualified women, while of necessity, restrictions have never been enforced among the poorest strata which simply cannot afford the luxury of forgoing the extra income earned by women. With respect to classes, the authors underline that, in both rural and urban areas, the poorest women work because they have to,

whereas the urban upper and professional middle class women have most successfully overcome traditional constraints to professional cadre. Women who fell between these two classes confront the greatest social restrictions. Usually women who work outside their homes, the preference is for them to work in areas where they serve a female clientele which explains the early entry and currently high proportion of women in the health and education sectors. As a result, they say, Pakistani women are largely excluded from occupations in market places, restaurants etc.

Chapter III, is Constraints, Policies and Initiatives. In Section Four, it deals with constraints in education, information systems, and organizational support. This section underlines the constraints on low female productivity. Specific restraints discussed in the section relate to basic education, skills, technology, credit and makreting information as major hitches to women's full and effective participation in economically productive activity. With women's role defined as providers of services to the family the gender division of labour is reinforced on the one hand, and the need for women's education and employable skills rendered irrelevant on the other, as women are not expected to enter the wage market, incentives for investing in women's education or training are therefore nonexistent. Similarly low value placed on women's work prevents development of technology that would alleviate the severe burden of women's household work. In the views of the author, all these factors combined to keep women deprived of basic education, with no or limited access to resources like land, credit, finance, technology, information, availability of work and decision making.

In Section Five the authors look into how the government of Pakistan has dealt with the problems of female

participation in economic life of the country in the Sixth and Seventh Plans and Policies. They include, policies for women, as well as policies on education, training and employment regarding women.

In Section Six the authors deal with numerous initiatives which have been taken in Pakistan for enhancing women's economic participation with varying levels of success. The chapter has the summary of government polocies on women starting from the First Five year Plan 1955 to the Seventh plan and the Prospective Plan ending year 2003.

Chapter IV is the Conclusion and is dealt with in Section Seven and Eight, comprising conclusion and recommendations respectively. In their conclusions, the authors note that women are an integral part of the economic process of the country, within and out side their homes, in formal and informal sectors of urban as well as rural areas. But the move towards modernization and cash economies has combined with strong cultural norms to hide the nature and extent of their economic contributions to the household, community and country. Development processes have effected male and female participation unequaly in favour of the males in Pakistan. Paradoxically, alleviating women's economic participation first requires an acknowledgement of their current participation. Social recognition of women's economic contributions will both improve their status and put them on the agenda for major initiatives, instead of the stop-gap and piece-meal measures normally instituted to date. In this respect the authors underlined that it should be in mind that women do carry out their own micro-level planning, even if this is at an informal and sometimes unconscious level. They further note, that urgent action needs to be taken in a number of fields, notably in data collection, appropriate technology research, and policies

capable of addressing the multiple needs of women's economic participation.

In Section Eight the authors have given a six page recomendations of what they think should be done to improve the role of female participation in the economic life of the country. They include improving data on women's economic participation, their education and training for more productive economic participation, improving their social environment, increasing rural and urban income and productivity, strengthening support services as well as programmes and project incentives for their more feasible and greater participation in economic activity of the country.

The book "Women's Economic Participation in Pakistan", is a keenly researched and thoroughly written Report. It is an asset to keep in one's stock of economic literature on Pakistan. It contains what ever data there exists in this country about women and their economic participation or non-participation as the case may be. It has made a good attempt to pinpoint the problems of the women - a sector of economic and social literature till recently ignored by official and non-official economists, intellectuals and sociologists in the country. The arguments and conclusions behind this data are to the point and well documented. The report is a credit to the authors for a well research publication.

The problem with all economists, and sociologists researching about women problems, whether supporting the cause, or writing against it, is that they see them out of context of the overall socioeconomic conditions and class conflicts in the country. The authors have tried their best and partially succeeded in not making this mistake.

It should not be forgotten that Pakistan is a agricultural, and highly defined class society, where the living of about 80% of the population - male or female is near or below the poverty line and are illiterate, economically and socially dependent on the religious and feudal elite. The problems of women put forward in the book are as acute as for their men, in the lower strata of the society. When these poor people who have no work, no property, nor education suppress their women the plight and exploitation of females in the country multiply - first, by the richer sections of the society, and then, by the males of their own class, totally ignored by the policy makers at all levels.

The answer to the problem along with what has been noted in the recommendations of the Report, lies in modernization and industrialization of the country's economy and social structures. When there will be enough jobs for the men and women in Pakistan, they can be educated to get social independence from their religious and cultural bonds in the society. It is only then the males - educated and uneducated alike, will not grudge their women education, work or self respect. The answer also lies in reforming the cultural and social basis of the society where men and women have to be conceived equal rather than two uneven wheels of the same cart. For this the book has come up with many recommendations.

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