# The Underground Economy and Tax Evasion in Pakistan: A Fresh Assessment

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The Size of the Underground Economy and Tax-

#### I. INTRODUCTION

The underground economy and tax evasion have been a source of serious concern in Pakistan. This concern arises from the persistently low tax base and low tax elasticity and buoyancy, and consequently mounting fiscal deficit. Recently, not only economists also sociologists, political leaders, policy-makers, nongovernmental organizations, and the press are taking a lively interest in the size of the underground economy and tax evasion in Pakistan. In the literature, the other terms used for this special type of economy are "Secondary Economy", "Hidden Economy", "Irregular Economy", "Black Economy", "Informal Economy", "Other Economy", "Unofficial Economy", "Subterranean Economy", "Shadow Economy", "Parallel Economy", "Twilight Economy", "Unobserved Sector of the Economy", "Fourth Sector of the Economy", etc. The definition of the term may differ depending on the objective and approach used in the literature. However, by these terms, it is generally meant that the economy which goes unrecorded in official statistics. In this paper, the term "Underground Economy" is used to indicate those activities which are concealed from the tax authorities in an attempt to evade various direct and indirect taxes. This definition, therefore, does not include illicit transactions such as drugs income and incomes from felonious activities and gambling because such activities are mainly unrecorded in official statistics.

It is generally accepted that the underground economy has always existed in Pakistan, the growing interest in this area has emerged because of current rising socio-economic problems, in particular, persistent increasing fiscal deficit. In other words, a large underground economy reflects a direct loss in public tax revenues. The government fiscal position may be even more worse when the underground economy grows faster than the formal economy because government expenditures grow with the overall economy (formal and underground) while public revenues grow at the slower rate of the formal economy from which the government collects taxes. Furthermore, the accurate assessment of the underground economy in Pakistan is important because of its possible influence on other socio-economic indicators, in particular, national accounts, the unemployment rate, and the rate of inflation. A large and overtime growing underground economy may also misguide policy- makers.

The main purpose of this paper is to estimate the size and trend in the growth of the underground economy and tax evasion in Pakistan over the period 1973-96. This paper attempts to measure not only the overall underground economy but also its various sectoral composition such as the domestic tax sector, the foreign trade tax sector and the non-tax sector. Obviously, there are considerable obstacles preventing the exact assessment of the underground economy and tax evasion, this paper aims to provide relatively accurate estimates. Causes and consequences of the existence of the large underground activities in Pakistan is an important policy issue. We attempt to provide a short discussion on this aspect as well. The paper is organized in six sections. Section II presents the methodology used to estimate the size of the underground economy. The monetary approach developed by Tanzi (1980, 1983) has been adapted to suit the specific situation prevailing in Pakistan. Section III presents main results. Section IV provides estimates of the underground economy and tax evasion in Pakistan for the period 1973-96. Causes of the emergence of the underground economy and some of their important consequences are presented in Section V. The concluding section summarizes the results and draws policy implications.

#### II. METHODOLOGY

The definition of the underground economy and its measurement has been the subject of intense debate in the literature but progress is being made. Some authors have used direct methods while others have attempted indirect assessment of the underground economy. In this paper, we use indirect method known as monetary approach, which has been more common in the literature, for example, Gutmann (1977), Fiege (1979), Tanzi (1980, 1983), Martino (1981), O'Higgins (1981), Mirus and Smith (1981), Matthews (1982), Tucker (1982), Norman (1982), Kirchgassner (1983), Boyle (1984), Porter and Bayer (1984), Klovland (1984), Schneider and Lundager (1986), Ahmed and Qazi (1995), and Shabsigh (1995), who all used the monetary approach to assess the underground economy in many developed and developing countries. This paper does not intend to provide a critical survey on various methodologies. The monetary approach suggests that the underground economy manifests itself in terms of the demand for holding currency from which attempts are made to infer the size of the underground economy and tax evasion. The underlying idea in the monetary approach is to specify a demand for currency equation and then to infer the impact of a change in the level of taxes on that demand. However, this approach is based on two key assumptions: first, the underground economic activities are the direct consequence of high taxes and second, currency is used mainly for carrying out such transactions or for storing wealth generated from activities in the underground economy. The method we use is in essence that of Tanzi (1980, 1983) and later used by Ahmed and Qazi (1995) and Shabsigh (1995) to estimate the size of the underground economy in Pakistan for the periods 1960-90 and 1975-91, respectively. However, we have adapted the model somewhat with four major

For a comprehensive critical survey on various methodologies, see Pyle (1989).

differences: (i) the specified equation for the demand of currency includes more relevant explanatory variables; (ii) two components of total tax revenues (i.e. domestic tax revenues and foreign trade tax revenues) are used instead of one measure of total tax revenues; (iii) the sectoral composition of the underground economy is also estimated; and (iv) we attempt to provide latest estimates of the underground economy and tax evasion in Pakistan over the period 1973–1996.

The extended model used is as follows:

$$CC/M_2 = \beta_0 + \beta_1(DT/Y)_{t-1} + \beta_2(TT/Y)_{t-1} + \beta_3BS + \beta_4IRR + \beta_5Y_g + \beta_6D + \beta_7(CC/M_2)_{t-1} \dots (1)$$

Where

CC = Currency in circulation

 $M_2$  = Money supply (standard definition of  $M_2$ )

DT = Domestic direct and indirect taxes

TT = International trade taxes

Y = Gross domestic product

BS = Banking services (defined as ratio of bank deposits to total number of bank accounts)

IRR = Real interest rates on time deposits (defined as nominal interest rate minus inflation rate)

 $Y_g$  = Growth rates in real per capita GDP

D = Dummy variable (D = 1 for 1988-96 and 0 for otherwise)

The methodology involved in the estimation of the underground economy and tax evasion in Pakistan is as follows. In Equation (1), the ratio of currency in circulation (CC) to money supply (defined as M<sub>2</sub>) is taken as the dependent variable. The explanatory variables are two components of total tax revenues namely domestic tax revenues (DT) and taxes on international trade

- (TT). These tax components are used in the estimating equation as a ratio to gross domestic product (GDP). The other independent variables are the development of banking services (BS), the real interest rate (IRR), the growth rate in real per capita GDP  $(Y_g)$ , the dummy variable (D), and the lagged dependent variable. The following paragraphs briefly describe the theoretical justification for the inclusion of certain explanatory variables in the above specified function.
  - (i) In this paper, it is hypothesized that as the level of taxation rises, people are encouraged to engage in tax-evading activities that are facilitated by the use of currency and thus raises the demand for currency and consequently, the ratio of currency holdings to money (CC/M<sub>2</sub>) is expected to rise. Thus, the signs of lagged domestic taxes (DT/Y)<sub>t-1</sub> and foreign trade taxes (TT/Y)<sub>t-1</sub> are expected to be positive in the currency demand equation.
  - (ii) Following Shabsigh (1995), improvement in banking services is defined as the per capita ratio of bank deposits to total number of bank accounts (BS). It is expected that an improvement in banking services may lower the demand for currency for transaction purposes. Improved banking facilities, therefore, may lead to a fall in CC/M<sub>2</sub> ratio.
  - (iii) According to a priori expectation, a higher real interest rate (IRR) may increase the opportunity cost of currency holdings and hence leads to a fall in its demand. Therefore, the effect of an increase in real interest rate on the demand for currency is expected to be negative. In this paper, real interest rate is defined as nominal interest rate on time deposit minus inflation rate.
  - (iv) A higher level of economic development defined in terms of annual growth rate in per capita real gross domestic product (Yg) is expected to decrease the demand for currency as

- economic development is assumed to replace currency by checks and other emerging financial instruments. If so, we expect a fall in CC/M<sub>2</sub> ratio when the economy experiences rapid economic growth.
- (v) In the above specified currency demand function, a dummy variable for the period 1988–96 is included to take account the effect of structural adjustment programmes on CC/M<sub>2</sub>. In this paper, it is expected that various structural adjustment policies implemented in Pakistan have increased the rate of inflation and the absolute poverty and, hence, have raised the demand for holding currency. If so, the sign of the dummy variable is expected to be positive in the estimating currency demand equation.
- (vi) Lagged currency-money ratio (CC/M<sub>2</sub>)<sub>t-1</sub> is included as an explanatory factor to account for the inertia in the money market. In addition, the lagged dependent variable also takes account of any lags in the adjustment of the actual currency ratio to its desired level.

#### III. EMPIRICAL RESULTS

The data used for the analysis cover the period 1970–96. All the data series are taken from Pakistan Economic Survey (various issues) and Annual Report, State Bank of Pakistan (various issues). Equation (1) for the demand for currency has been estimated by ordinary least squares (OLS) estimation technique. The results are reported as follows:

$$CC/M_2 = 0.095 + 1.064(DT/Y)_{t-1} + 1.539(TT/Y)_{t-1} - 5.057E-06BS$$

$$(1.99)!!! (2.30)!! (4.19)! (-5.61)!$$

$$- 0.001IRR - 0.003Y_g + 0.025D + 0.290(CC/M_2)_{t-1} ... (2)$$

$$(-1.73)!!! (-1.89)!!! (2.81)! (2.50)!!$$

$$R^2 = 0.90 \quad R^{-2} = 0.85 \quad D.h. = 0.54 \quad F = 19.86$$

The numbers in parentheses are t-values of the respective coefficients. One asterisk (!), two asterisks (!!), and three asterisks (!!!) indicate statistically significance at one percent, 5 percent, and 10 percent levels, respectively. The results are satisfactory in the sense that the signs of the estimated coefficients are generally in accordance with our expectations and all coefficients are statistically significant. The adjusted R<sup>2</sup> is reasonably high (i.e. 0.85), implying that most of the variation in the demand for currency is explained by the estimated equation. The D.h. statistic (0.54) indicates no autocorrelation. A brief commentary on the results is offered in the following paragraphs.

The coefficients of lagged domestic taxes (DT/Y)t-1 and foreign trade taxes (TT/Y)t-1 have expected positive signs and both are statistically significant at 95 percent and 99 percent level of confidence, respectively. This finding seems to confirm the main hypothesis that as the levels of domestic taxes and foreign trade taxes rise, people are encouraged to engage in tax evading activities that are facilitated by holdings of more currency. The coefficients of banking services (BS) and annual growth rates in real per capita GDP (Yg) are negative (as expected) and both are statistically significant. It implies that improving banking services and rising level of economic development may lower the demand for currency holding. Similarly, the coefficient of real interest rate (IRR) also possesses expected negative sign, implying that an increase in real interest rate may raise the opportunity cost of holding currency and hence leads to reduce its demand. The coefficient of dummy variable (D) is positive and statistically significant, suggesting that various structural adjustment programmes have increased the demand for holding currency during the adjustment period. This finding also follows Kemal (1994) and Anwar (1996), who argue that various adjustment policies such as expenditure reducing measures, revenue raising measures, foreign trade policies, and pricing policies have increased unemployment and absolute poverty during the period of adjustment in Pakistan. Finally, the lagged dependent variable as an explanatory variable possesses the hypothesized positive sign and is statistically significant at 99 percent level of confidence, indicating the strong relevance of current demand for holding currency with its previous years' demand.

After the estimation of currency demand equation, the size of the underground economy and tax evasion were calculated as follows. For each year, the predicted levels of currency ratio with tax variables (CC/M<sub>2</sub>)<sub>t</sub> and without tax variables (CC/M<sub>2</sub>)<sub>wt</sub> are calculated by using the above estimated regression equation. The difference between (CC/M<sub>2</sub>)<sub>t</sub> and (CC/M<sub>2</sub>)<sub>wt</sub> gives an indication of how much currency holding is tax-induced. In other words, it indicates the extent to which higher levels of direct and indirect taxes induce people to hold larger amount of currency. The level of increased demand for currency is presumed to indicate the magnitude of tax evasion, which in the literature has been defined as illegal money (IM). Mathematical expression for the level of illegal money can be written as follows:

$$IM = [(CC/M_2)_t - (CC/M_2)_{wt}] \times M_2 \dots$$
 (3)

Following Tanzi, the difference between the sum of currency and demand deposits (i.e. total money supply defined as  $M_1$ ) and the estimated illegal money yields legal money (LM). Mathematical expression for legal money can be written as follows:

$$LM = M_1 - IM \qquad \dots \qquad \dots \qquad \dots \qquad (4)$$

Dividing gross national product (GNP) by legal money gives an estimate of the income velocity of legal money (IV). Mathematically, income velocity of money can be written as follows:

Assuming that the velocity of illegal money is same as that of legal money, an estimate of the underground economy (UE) can be obtained by multiplying illegal money by the income velocity of money. The mathematical expression for the underground economy is as follows:

$$UE = IM \times IV$$
 ... (6)

The level of total tax evasion (TE) in Pakistan can also be calculated by multiplying the estimates of the underground economy with the ratio of overall taxes (T) to GNP. Mathematically, the estimate of the level of tax evasion can be written as follows as:

$$TE = UE \times (T/GNP)$$
 ... (7)

The sectoral composition of the underground economy (i.e. underground incomes from domestic activities and foreign trade activities) can also be calculated using the similar procedure. Following Shabsigh (1995), if the model captures all the sources of the underground economy, then the total estimated underground economy should be equal to the sum of underground incomes from domestic and foreign trade activities. Since the above specified model does not capture all the underground activities in Pakistan, the estimated residuals can, therefore, be used as a proxy for those underground activities which are not captured in the above model. The estimated residuals are named as underground incomes from the "Non-Tax Sector".

## IV. ESTIMATES OF THE UNDERGROUND ECONOMY AND TAX EVASION

#### The Size of the Underground Economy and Tax Evasion

The annual estimates of the level of the underground economy and tax evasion for the period 1973-96 are reported in Table 1 and

these estimates are also depicted in Figure 1 and Figure 2. The results show that since 1973, a remarkable size and an upward trend in the underground economy and tax evasion are noticeable. Clearly, these estimates indicate the magnitude of the problem in Pakistan. The results in Table 1 indicate that the underground economy grew rapidly from about Rs 15 billion in 1973 to Rs 1115 billion in 1996. Column (5) shows that the underground economy as a proportion of GDP was about 20 percent in 1973, which increased to 51 percent in 1996. Table 1 also indicates the annual average underground economy for three sub-periods: 1970s, 1980s, and 1990s. It shows that the underground economy as a percentage of GDP was 26 percent in 1970s, which increased to 37 percent in 1980s and further increased to 42 percent in 1990s. This trend is also presented in Figure 1.

Figure 1

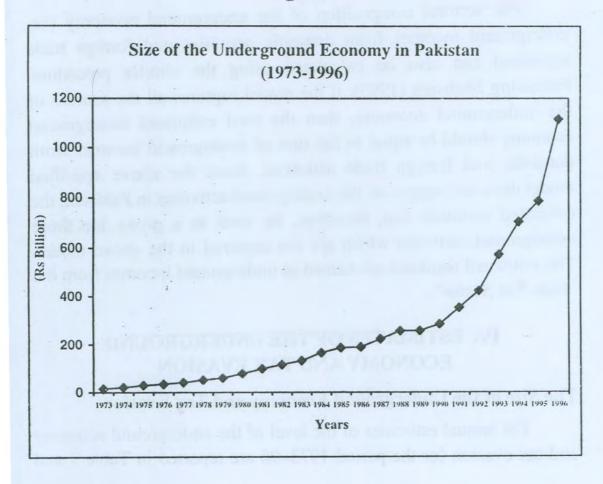


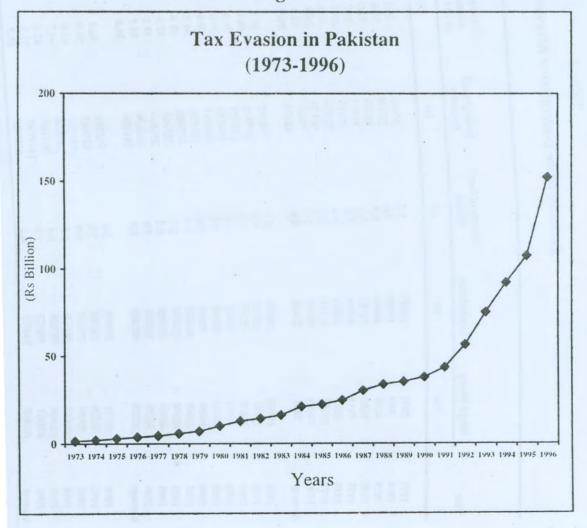
Table 1

Estimates of the Underground Economy in Pakistan

⁄ear .	Illegal Money	Money Legal Money	Velocity of Legal Money	Underground Economy (4)	Underground Economy (% of GDP)	Tax Evasion (6)	Growth Rate of Underground Economy (%)	Growth Rate of GDP (%)
			(3)					
		14629	5.2	15045	20.2	1452		7 9 2
1973	2921		5.6	20709	21.6	2117	37.6	28.4
1973	3693	17069 18043	6.7	28556	24.0	2847	37.9	24.4
1975	4281		6.3	33399	24.2	3701	17.0	16.1
1976	5283	22188	5.8	41175	26.2	4526	23.3	13.9
	7115	27914	5.9	51668	28.2	5755	25.5	16.5
1977	8823	33089	- 5.2	60124	29.8	7050	16.4	9.8
1978	11551	41111	5.4	78692	32.9	10021	30.9	18.8
1979	14453	46885	5.8	41171	25.9	4684	26.9	18.3
1980	7265	27616	5.0		20.7	1001		1010
rerage			5.5	99357	35.7	12827	26.3	16.3
	18119	54870	5.8	117048	36.1	14401	17.8	16.5
1981	20151	60171	5.6	133395	36.6	16198	14.0	12.4
1982	23838	72157		166350	39.6	21133	24.7	15.2
1983	27314	75432	6.1 5.9	186893	39.6	22413	12.3	12.5
1984	31685	86541		189751	36.9	24721	1.5	9.0
1985	34088	99865	5.6	222663	38.9	30327	17.3	11.3
1986	42449	116075	5.3					
1987	48970	134782	5.2	255961	37.9	33955	15.0	18.0
1988	48993	152408	5.2	256447	33.3	35470	0.2	14.0
1989	56676	178095	5.0	284134	33.2	38008	10.8	11.2
1990	35228	103040	5.5	191200	36.8	24945	14.0	13.6
Average .	35440			2.522.54	24.5	12720	210	
	65121	193098	5.4	352254	34.5	43720	24.0	19.2
1991		220705	5.6	422842	34.9	56765	20.0	18.7
1992	76250	226162	6.0	571351	42.6	75410	35.1	10.8
1993	95604	243326	6.5	703810	44.7	92135	23.2	17.2
1994	108613	293728	6.4	787188	42.2	107483	11.8	18.6
1995	122948	291272	7.5	1114949	51.3	152484	41.6	16.6
1996	148411	244715	6.2	658732	41.7	88000	26.0	16.9

Column (6) in Table 1 shows the level of tax evasion in Pakistan for the period 1973–96. It indicates that the level of tax evasion was about Rs 1.5 billion in 1973, which tremendously increased to Rs 152 billion in 1996. Regarding the three sub-periods, Table 1 shows that annual average tax evasion during 1970s was about Rs. 5 billion, which increased to Rs. 25 billion and Rs. 88 billion during 1980s and 1990s, respectively. This trend can also be seen from Figure 2. The estimates of tax evasion are derived based on a strong assumption that incomes in the underground economy would have been taxed at the same rate as incomes in the formal economy.

Figure 2



Comparing growth rates of the underground economy and the formal economy, Column (7) and Column (8) indicate that the underground economy grew faster than the formal economy. It shows that the underground economy grew annually at the rates of about 27 percent, 14 percent, and 26 percent in 1970s, 1980s, and 1990s, correspondingly, while growth rates in the formal economy for the same sub-periods were about 18 percent, 14 percent, and 17 percent. The comparatively faster growth rate of the underground economy seems to be an important factor of mounting public sector deficit because government expenditures grow with the overall economy (formal and underground) while public revenues grow at the slower rate of the formal economy.

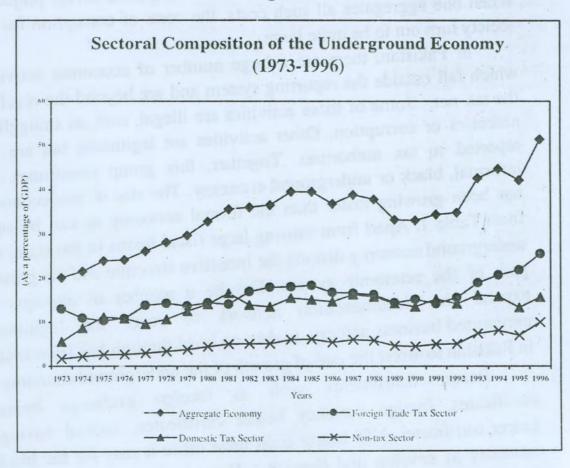
#### Sectoral Composition of the Underground Economy

In this paper, more clues are provided by looking at the estimates of various components of the aggregate underground economy in Pakistan. The results shown in Table 2 indicate the size of various components of the underground economy and their shares as a percentage of the formal GDP for the period 1973-96. Clearly, the results show that incomes from underground activities in the foreign trade tax sector were higher than the domestic tax sector and the non-tax sector throughout the period under analysis. In the foreign trade tax sector, the underground incomes as a proportion of the formal GDP were about 13 percent in 1970s, which increased to about 17 percent in 1980s and 20 percent in 1990s. The underground incomes in the domestic tax sector as a percentage of formal GDP were about 10 percent in 1970s and 15 percent in 1980s and 1990s while for the non-tax sector these shares were 3 percent, 5 percent, and 7 percent of the formal GDP for the same sub-periods, respectively. These trends are also depicted in Figure 3.

Table 2
Sectoral Composition of the Underground Economy in Pakistan

		rground Ec		Underground Economy (% of GDP)			
Years	Domestic Tax Sector	Foreign Trade Tax Sector	Non-Tax	Domestic Tax Sector	Foreign Trade Tax Sector	Non-Tax Sector	
1973	4139	9731	1175	5.5	13.0	1.6	
1974	8280	10430	2000	8.6	10.9	2.1	
1975	13264	12268	3025	11.1	10.3	2.5	
1976	14957	14889	3553	10.8	10.8	2.6	
1977	15001	21643	4531	9.5	13.8	2.9	
1978	19435	26262	5970	10.6	14.3	3.3	
1979	25119	27612	7393	12.5	13.7	3.7	
1980	33653	34531	10508	14.1	14.4	4.4	
Average	16731	19671	4769	10.4	12.7	2.9	
1981	46157	39191	14009	16.6	14.1	5.0	
1982	45205	55179	16664	13.9	17.0	5.1	
1983	49313	65455	18628	13.5	18.0	5.1	
1984	65145	75812	25394	15.5	. 18.1	6.0	
1985	71431	86741	28720	15.1	18.4	6.1	
1986	75821	86353	27577	14.7	16.8	5.4	
1987	93281	94963	34419	16.3	16.6	6.0	
1988	106607	110011	39343	15.8	16.3	5.8	
1989	109875	111061	35510	14.3	14.4	4.6	
1990	115348	129885	38900	13.5	15.2	4.5	
Average	77818	85465	27916	14.9	16.5	5.4	
1991	156168	145308	50778	15.3	14.2	5.0	
1992	172078	188578	62186	14.2	15.6	5.1	
1993	217114	254998	99239	16.2	19.0	7.4	
1994	249358	327679	126774	15.9	20.8	8.1	
1995	248188	408586	130413	13.3	21.9	7.0	
1996	341370	555933	217647	15.7	25.6	10.0	
Average	230713	313514	114506	15.1	19.5	7.1	

Figure 3



## V. PROFILE, CAUSES, AND CONSEQUENCES OF THE UNDERGROUND ECONOMY

The underground economy arises when economic agents evade taxes and indulge in illegal activities. Almost all societies are plagued with the problem of official corruption. Of late, the scale and the intensity of corruption in Pakistan has emerged as a major issue. The large size of the underground economy implies, by definition, loss in tax revenues while it puts demand on public services. From the perspective of the private sector, corruption introduces a potentially large and uncertain cost element and diverts resources towards non-productive policy-induced rents. Corruption also causes considerable inefficiency in public administration. It is a

major source of time and cost over-runs for public sector projects. When one aggregates all such costs, the costs of corruption for the society turn out to be quite large.

In Pakistan, there are a large number of economic activities which fall outside the reporting system and are beyond the reach of the tax net. Some of these activities are illegal, such as smuggling, narcotics or corruption. Other activities are legitimate but are not reported to tax authorities. Together, this group constitutes the informal, black or underground economy. The size of this economy has been growing faster than the formal economy as can be seen from Table 1. Apart from causing large fiscal losses to the state, the underground economy distorts the incentive structure and the growth path of the economic system. Despite a number of attempts to expand the documentation network to cover the legitimate unreported business activity, to date no breakthrough has been made in Pakistan to arrest the rate of growth of the underground economy.

Bearer instruments such as foreign exchange bearer certificates, foreign currency bearer certificates, special savings bearer certificates, NIT bearer units have made it easy for the black economy to develop and flourish. These instruments are exempt from tax obligations and reporting requirements. While they have helped mobilise resources for the government, the possibility of wealth remaining outside the purview of easily detectable forms of wealth has been made easy by the existence of these instruments.

#### VI. CONCLUSIONS AND POLICY IMPLICATIONS

The paper has demonstrated the existence of large underground economy and higher tax evasion in Pakistan over the period 1973–96. The main conclusions can be summarised as follows. (1) The size of the overall underground economy has remarkably increased from Rs 15 billion in 1973 to Rs 1115 billion in 1996. The underground economy, expressed as a percentage of GDP, was 20 percent in 1973, which has tremendously increased to 51 percent in

1996. (2) The total tax evasion in Pakistan in 1973 was Rs 1.5 billion, which has peaked to Rs 152 billion in 1996. (3) The estimates of the various components of the underground economy over the period 1973-96 show that incomes from underground activities in the foreign trade tax sector have been higher than the domestic tax sector and the non-tax sector. (4) The evidence also suggests that the rate of growth in the black economy has been higher than the rate of growth of the formal economy. The estimates of the underground economy presented in this paper are closer to the ones found ir. Ahmed and Oazi (1995). However, our estimates of the underground economy are much higher than the ones found by Shabsigh (1995). The difference is due to the different definitions of the dependent variables used and the explanatory variables taken in the two studies. Following Tanzi we have defined the dependent variable as the ratio of currency to money supply (M2) while Shabsigh defined it as the ratio of currency to bank deposits only. However, the results obtained in this paper should be treated carefully because they are sensitive to the assumptions made, equations specified, and data used.

The cost to society of the large and growing size of the underground activities must be immense. The loss of tax revenues and the demand on public services by underground activities should be an important contributing factor for the high fiscal deficit. The high and uncertain cost of doing business, when the element of discretion exercisable by the public officials is pervasive, should be an important constraint for the private sector-led development strategy.

In view of the limited analytical work, it is not possible to present a detailed plan to reduce the size of black economy. Economic liberalization, fiscal discipline, enhanced space for the private sector, tax reforms comprising of low rates and broad tax base and transparent decision-making are some of the areas in which policy changes need to be made. Isolated punitive actions would not

be helpful. A comprehensive package of reforms to reduce corruption should be an essential element in the overall structural reforms of the government.

#### REFERENCES

Ahmed, M., and M. A. Qazi (1995) Estimation of the Black Economy of Pakistan through the Monetary Approach. *The Pakistan Development Review* 34:4 791–807.

Anwar, T. (1996) Structural Adjustment and Poverty: The Case of Pakistan. Paper presented in the Twelfth Annual General Meeting of the Pakistan Society of Development Economists, held on 14-16th December, Islamabad.

Boyle, G. E. (1984) In Search of Ireland's Black Economy. *Irish* \*Banking Review (March) 32–42.

Fiege, E. (1979) How Big is the Irregular Economy? *Challenge* 22: 5–13.

Gutmann, P. M. (1977) Subterranean Economy. *Financial Analysis Journal* (November) 26–27.

Kemal, A. R. (1994) Structural Adjustment, Employment, Income Distribution, and Poverty. *The Pakistan Development Review* 33:4 901–914.

Kirchgassner, G. (1983) Size and Development of the West German Shadow Economy. *Journal of Institutional and Theoretical Economics* 139: 197–214.

Klovland, J. T. (1984) Tax Evasion the Demand for Currency in Norway and Sweden: Is there a Hidden Relationship? *Scandinavian Journal of Economics* 86: 423–439.

Martino, A. (1981) Measuring Italy's Underground Economy. *Policy Review* 16: 87–106.

Matthews, K. G. P. (1982) Demand for Currency and the Black Economy in the UK. *Journal of Economic Studies* 9: 3–22.

Mirus, R., and R. S. Smith (1981) Canada's Irregular Economy. *Canadian Public Policy* 7: 444–453.

Norman, N. R. (1982) The Economics of Tax Evasion. Paper presented to the 11th Conference of Economists, Adelaide.

O'Higgins, M. (1981) Aggregate Measures of Tax Evasion: An Assessment-I. *British Tax Review* 286–302.

Porter, R. D., and A. S. Bayer (1984) A Monetary Perspective on Underground Economic Activity in the United States. *Federal Reserve Bulletin* 70: 177–89.

Pyle, D. J. (1989) *Tax Evasion and The Black Economy*. Macmillan, London.

Schneider, F., and J. Lundager (1986) The Development of the Shadow Economies for Denmark, Norway, and Sweden: A Comparison. University of Aarhus, *memo*.

Shabsigh, Ghiath (1995) The Underground Economy: Estimation, and Economic and Policy Implications—The Case of Pakistan. *IMF Working Paper*.

Tanzi, V. (1980) The Underground Economy in the United States: Estimates and Implications. Banca Nazionale Del Lavaro.

Tanzi, V. (1983) The Underground Economy in the United States: Annual Estimates 1930–1980. *IMF Staff Papers* 30: 283–305.

Tucker, M. (1982) The Underground Economy in Australia. In Tanzi V. (ed) *The Underground Economy in the United States and Abroad*. Lexington: Lexington Books.

## ABSTRACT

This paper assesses the size of the underground economy and tax evasion in Pakistan for the period 1973-96. Using monetary approach, the results confirm the existence of large underground economy and higher tax evasion over the period under analysis. The overall underground economy has remarkably increased from 20 percent of GDP in 1973 to 51 percent of GDP in 1996. The evidence also suggests that the rate of growth in the underground economy has been higher than the rate of growth of the formal economy. The estimates of various components of the black economy indicate that incomes from underground activities in the foreign trade tax sector have been higher than the domestic tax and non-tax sectors. Furthermore, total tax evasion has peaked from Rs 1.5 billion in 1973 to Rs 152 billion in 1996. Finally, the paper concludes that the loss of public revenues and the increasing demand on public services by underground activities are important contributing factors for the mounting fiscal deficit in Pakistan.