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Working Paper

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Estimates of the Unreported Economy
in India

By

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Estimates of the Unreported Economy
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Abstract

This paper presents estimates of India's unofficial economy on a yearly basis for the period 1967 to 1978. These estimates implicitly revise the GNP, per capita and other related statistics for this period. The technique employed has been recently used to determine the size of the unreported economies in U.S.A. and Canada.

The results indicate that the unreported activity as a proportion of official GNP has grown from 9.5 per cent in 1967 to nearly 49 per cent by 1978. High taxes have contributed significantly to the growth of the unofficial economy. A 1 per cent increase in overall taxes leads to more than 3 per cent increase in the unofficial economy relative to the official economy.

I. Estimates of the Unreported Economy in India

Unreported activity[1] exists in all economies though in varying sizes. But surprisingly, its estimates are available only for a few countries[2] and that too for a single year. While in developed countries an awareness of its existence is relatively recent, in India it has been widely discussed for more than a decade. Despite the general concern, to date there are no systematic estimates of the "illegal" economy in India. In this paper we attempt to compute its magnitude on a yearly basis for the period 1967 to 1978. By doing this, we implicitly revise the GNP, per capita income and other related statistics for India. We employ a technique which has recently been used for estimation of irregular economies in U.S.A. and Canada.

The paper is organised as follows. We first discuss the need for such estimates, especially on an annual basis. We then summarize the method and report the estimates obtained from it for India. These estimates are then compared with those for Canada and U.S.A. to put them into proper perspective. An attempt is also made to explain the contribution of taxes to the size of such an economy. In the concluding section, implications of the assumptions of the technique employed are discussed. Finally, the policy relevance of the study is highlighted.

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[1] The terms, unreported, black, underground, irregular, illegal, subterranean and unofficial have been used interchangeably.

[2] For instance, see Feige (1979) for U.S. estimates and Mircus and Smith (1981) for Canadian estimates. Independent calculations for India were given by Wanchoo Committee and D.K. Rangnekar. For details, see Gupta and Thavaraj (1974), p. 61.

II. Need for Black Market Estimates

Exclusion of black market activity biases all the important indicators of economic activity in any society. The official statistics on income grossly underestimate the true size of the economy. Hence, calculations of effective average and marginal tax rates are overstated. Since that part of income which accrues in the "illegal" economy is not included, the estimates of savings and consumption calculated as proportions of official GNP are also biased. Moreover, the true growth rate of the economy is undetermined. In India where substantial resources go into the planning process, the implications of bias in economic indicators are graver than for market oriented economies because the allocation of economic resources and formulation of development policies are then based on a wrong perception of reality.

The bias in the average and marginal tax rates raises the issue of "fairness" of the tax system. A higher tax rate must be applied to people operating in the "legal" sector in order to raise tax revenue. Since people in the irregular economy escape taxation there are implications for income distribution. Exclusion of unofficial GNP also generates larger forecast errors and affects adversely all empirical analysis.

By correcting basic statistics for the unreported sector, the danger of false response could be minimised. The Central Bank would be able to exercise greater monetary control,

planning and policy formation could be carried out more
effectively. Finally, estimates of the size of the black market
would create greater awareness of wrong government policies
in the form of an irrational tax structure and excessive controls.

III. Methodology

Gutmann (1977) suggested a simple procedure for calculating
the magnitude of illegal activity in the United States. He
chose a base period (1937-41) when the incentive to avoid taxes
was minimal, because of the low tax rates prevailing at that time.
For this period he estimated the ratio of currency outside banks
to demand deposits. He then assumed that this ratio would have
remained unchanged except for changes induced by the growth
of the irregular economy. This was based on the assumption that
only cash was employed in illegal transactions. He multiplied
this ratio by the 1976 level of demand deposits to give the
currency required in 1976 for "legal" transactions. The difference
between the currency required and actual currency held outside
banks gave an estimate of cash used for "illegal" activities.
If the amount of income produced by a unit of currency in the
unreported sector was identical to the amount of income produced
by this unit in the official sector then, he argued, the income
generated by the estimate of illegal cash could be easily
estimated.

In India, the ratio of currency to demand deposits has decreased from an assumed base of 1950. It is, however, well known that the absolute size of the black economy has increased. The currency/demand-deposit ratio is effected by a number of variables only one of which is irregular activity.[3] While the growth of unreported activities could have increased the currency-demand deposit ratio, other factors, such as the cost of holding currency and demand deposits may have worked to decrease it in India, with the fall outweighing the increase. Moreover,payments for "illegal" purchases can be made by cheques. It is not correct to assume as Gutmann's approach does, that only currency is used as a means of payment in the black economy. Since, Gutmann's method suffers from many short-comings it has not been used for estimating the size of the unreported economy in India.

Feige (1979) developed a more sophisticated method for estimating the magnitude and growth of the black market. He used Irving Fisher's idea that if all the transactions paid for by cheque and by cash were added up then the value of total transactions would represent total economic activity in any society. Feige assumed that the ratio of total transactions to total income was relatively stable.This proportionality between transactions and income has been extensively used in monetary economics and in the empirical work on demand for money function.

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[3] For a description of other factors affecting the ratio of currency to demand deposits, see Garcia (1978).

The total volume of transactions includes both legal and illegal transactions. Total income or GNP as officially given measures only legal economic activity. Thus, if a proportional relationship exists between transactions and income then significant increases in this ratio would be due to the growth of illegal activity.

To apply Feige's methodology one needs estimates of the total value of chequing transactions and currency transactions. Transactions supported by cheques are equal to the average stock of demand deposits multiplied with their turnover rate (that is, average number of times the demand deposits turnover). Transactions supported by currency (or cash) can be estimated by calculating the turnover rate of a unit of currency and then multiplying it by the total currency with the public. Once total transactions have been calculated this method requires that a benchmark year be chosen where it can be assumed that there was no irregular activity. For this base year the ratio of trans-actions to GNP is first obtained. Then we get estimates of the magnitude of legal and illegal activities in the succeeding years by dividing the total volume of transactions in each year by the base year ratio. Substracting measured GNP leaves estimates of income generated in the black economy in these years. In the following section Feige's procedure is applied to India.

IV. Estimates for the Indian Economy

For India, the ratios for three years 1949/50, 1950/51 and 1951/52 were averaged and used as the reference point for estimating the size of the black economy for the years 1967/68 to 1978/79. The period 1949/50 to 1951/52 was chosen because it immediately preceded the planning era and the establishment of numerous controls on various sectors of the economy. We felt that in the pre-planning years the underground economy was relatively small. The choice of the base years was also guided by the division of British India into India and Pakistan in 1947.[4]

GNP, demand deposits, and currency with the public are available for all years. However, figures for the demand deposit turnover rate were published in only some years. Data for the base years, 1967/68 to 1978/79 and their sources are given in table 1. Since currency turnover rates or the information which can be used to calculate them are not systematically published, we had to use proxies from other studies.

To estimate how frequently currency notes turnover on the average, we needed information on the lifetime transactions and the normal life of currency notes of various denominations. The lifetime transactions are the number of transactions that a unit of currency can sustain before its quality deteriorates and it has to be retired from circulation. Division of life-time transactions by the average length of life yields an estimate of the currency turnovers performed per year. If the length of life of notes of all denominations in circulation is known, then the estimate of currency turnovers for each

[4] Before partition the figures for all relevant variables refer to British India. After partition, the statistics are given separately for India and Pakistan. So GNP, money supply and other relevant data after 1947 is not comparable with earlier figures because of differences in geographical coverage.

Table 1 -   - 7 -

Basic Statistics Used in Estimating the Size of the Black Economy

Year	(a) GNP (market prices) (crores of Rs)*	(b) Demand Deposits (crores of Rs)	(c) Currency with Public (crores of Rs)	(d) Demand Deposit Turnover	(e) Lifetime Transactions
1949/50	9806.97	594.69	1200.24	28	125
1950/51	10354	604.03	1205.14	28	125
1951/52	10919	592.31	1217.05	28	125
1967/68	32036	1779.25	3198.67	46.24	125
1968/69	33024	1927.23	3436.24	47.52	125
1969/70	36580	2186.57	3765.35	48.83	125
1970/71	40177	2700.42	4143.08	50.17	125
1971/72	43266	3130.25	4559.67	51.6	125
1972/73	47750	3771.83	4946.50	51.6	125
1973/74	58863	4498.42	5821.50	52.05	125
1974/75	69755	5229.17	6291.83	52.5	125
1975/76	72698	5893.38	6523.86	52.5	125
1976/77	76937	7093.17	7197.42	52.5	125
1977/78	86860	8419.58	8235.92	52.5	125
1978/79	96080	10319.66	9460.42	52.5	125

*1 crore = 10 million

Notes:

(a) For 1949/50 to 1951/52 estimates for consumption of fixed capital (CFC) are from Economic Survey (1979/80), where CFC = GNP (factor cost) - NNP (factor cost). The 1949/50 CFC figure is average of 1950/51 and 1951/52 estimates. The NNP (market prices) is taken from the National Accounts Statistics, Central Statistical Organisation, New Delhi.
For 1967/68 to 1975/76 the source is again National Accounts Statistics, Central Statistical Organisation, New Delhi, and for 1976/77 to 1978/79 it is International Financial Statistics, Washington, D.C. (1980).

(b) and (c) are averages of the latest monthly figures.
The figures for 1949/50 to 1951/52 are from Banking and Monetary Statistics of India, Reserve Bank of India, Bombay.
The data for 1967/68 to 1978/79 are from Reserve Bank of India Bulletin, Bombay, (various issues). From 1970/71 the revised series are used.
The demand deposits are defined as net total demand liabilities of scheduled, non-scheduled and State cooperative banks.
The currency with public is net of return of Rs 43 crores retired from circulation from Pakistan.

(d) The 1949/50 to 1951/52 figures are adjusted for cash credits and overdrafts. The adjustment is carried out as follows:
Ratio of debits to cash credits and overdrafts to total debits (cash credits, overdrafts and current deposits) rose from 0.33 in 1962-66 to 0.416 in 1974-75, growth of 25 %. (See Reserve Bank of Indian Bulletin, Bombay, January 1978).

We assume that there was a similar percentage increase between 1950 and 1962-66. The figure for cash credits and overdrafts for 1950 is substracted from total debits and divided by current deposits to get the turnover rate of current deposits for 1950. (See Reserve Bank of India Bulletin, Bombay, March 1970). Same turnover rates for 1949 and 1951 are assumed.

For 1967/68 to 1978/79 turnover rates are available only for 1966, 1971-72 and 1974-75. These are 45,51.6 and 52.5 respectively. (Reserve Bank of India Bulletin, Bombay, March 1970 and January 1978). The compound rate of growth formula is used to estimate rates for the intervening years. From 1975/76 the turnover rate is assumed to be 52.5 for all years.

(e) Robert Laurent's estimate for the United States during the period 1890-1965. (Robert Laurent, Currency Transfers by Denomination, Unpublished Ph.D. Thesis at the University of Chicago, 1970).

denomination can be derived. Currency transactions with Re 1,
Rs 2, Rs 5, Rs 10, Rs 20, Rs 50, Rs 100 and other higher
denomination notes can be separately estimated by multiplying
the turnover rate of each denomination by the value of bills
of that denomination in circulation with the public. Individual
estimates can then be aggregated to give total currency transa-
ctions.

An example will clarify how currency transactions with
different denomination bills can be estimated. Consider a
Rs 10 note. Suppose its average life is 3 years and its life-
time transactions are 125. Turnover rate per year would be
125/3. If there are 50 crores (1 crore = 10 million) worth of
such notes in the hands of the public then 50 crores x 125/3
gives the value of transactions supported by the stock of Rs
10 notes.

Estimates of lifetime transactions used in this study
are also given in Table 1. Table 2 presents the percentages
of all denomination notes to the total currency in circulation.

Information on average normal life of notes was not
available except for the one rupee note which is approximately
11 months.[5] We assumed the same lifetime for the Rs 2 note.
For Rs 5, Rs 10, Rs 20, Rs 50, Rs 100 and Rs 1000 notes, the
estimates for average life were proxied by those for Canadian
notes.[6] Mirus and Smith (1981) reported that for $ 1, $ 2 and
$ 5 notes the average lifetime is slightly over one year.
For a $ 20 note it is 3 years and for $ 100 notes it is 9 years.
Thus, we assumed lifetimes of 1.1 years for the Rs 5 notes,
3 years for Rs 10 and Rs 20 notes, 9 years for Rs 50 and
Rs 100 notes. For Rs 1000 and Rs 5000 notes, we assumed
a lifetime of 22 years. This was Feige's estimate for a

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[5] See Reserve Bank of India Bulletin, September, 1958.
[6] Since the quality of notes world over is more or less the same, this
approximation was judged to be satisfactory.

Table 2 - Percentages of Notes to Total Currency in Circulation[*]

Year	Re1	Rs2	Rs5	Rs10	Rs20	Rs50	Rs100	Rs1000	Rs5000
1949/50	0.024	2.0	13.3	36.0	-	-	31.5	-	-
1950/51	0.022	1.8	12.0	34.9	-	-	36.1	-	-
1951/52	0.023	1.9	11.5	34.9	-	-	36.6	-	-
1967/68	5.08	1.2	7.7	38.6	-	-	40.4	1.6	0.6
1968/69	4.8	1.3	7.2	37.0	-	-	43.0	1.3	0.7
1969/70	5.06	1.5	7.0	34.6	-	-	45.8	1.3	0.5
1970/71	4.86	1.5	7.0	34.4	-	-	46.6	1.2	0.3
1971/72	4.75	1.5	6.7	33.8	-	-	47.8	1.0	0.5
1972/73	4.61	1.3	6.4	33.7	-	-	48.8	0.7	0.4
1973/74	4.53	1.2	6.5	30.6	2.7	-	49.6	0.8	0.3
1974/75	4.24	1.2	6.2	29.7	5.7	-	48.2	0.5	0.4
1975/76	4.28	0.8	6.4	29.0	6.1	-	48.5	0.5	0.4
1976/77	4.1	1.6	7.4	26.3	5.9	1.2	47.9	1.2	0.3
1977/78	3.28	1.5	6.4	23.5	6.6	8.8	94.5	1.3	0.2
1978/79	2.95	1.6	6.2	19.8	7.5	10.8	46.7	0.6	0.2

[*]Inclusive of Rs 43 crores retired from Pakistan.

Notes:

The data on currency denomination proportions is collected from the Reserve Bank of India Bulletin, Bombay (February, 1971) and various issues of the Report of Currency and Finance, Reserve Bank of India, Bombay.

For the years 1967/68 to 1978/79, the proportions are for March 1967, March 1968 and so on. This is because the proportions are decided at the beginning of the financial year.

$ 100 note in the United States. Rs 10,000 notes were ignored

alltogether because in all years the percentage of these

notes in the total currency in circulation was well below

0.5 %.

With the above average normal lives of notes and

lifetime transactions of 125 the yearly turnover rates are,

for Re 1 and Rs 2 125/0.9166 or 136.37, for Rs 5 125/1.1

or 113.6, for Rs 10 and Rs 20 135/3 or 41.7, for Rs 50 and

Rs 100 125/9 or 13.9 and for Rs 1000 and Rs 5000 125/22

or 5.7. Since currency notes higher than Rs 100 were

demonetised on January 12, 1946 currency transactions with Rs

1000 and Rs 5000 notes were not estimated for the base years.

Higher denomination notes were however re-introduced by the

Reserve Bank of India in April 1954 so for 1967/68 to

1977/78 currency transactions with Rs 1000 and Rs 5000 bills

were included. In January 1978, Rs 1000, Rs 5000, and Rs

10,000 bills were again demonetised so for 1978/79

currency transactions supported by Rs 1000 and Rs 5000 notes

were excluded.

Total currency transactions (sum of transactions supported

by each denomination), total demand deposit transactions, the

ratio of economy wide transactions to GNP, the absolute size

of the black market in India and its proportion to official

GNP are given in table 3.

Table 3   - 11 -

Year	Currency Transactions (Crores of Rupees) (1)	Demand Deposit Transactions (Crores of Rupees) (2)	(1) + (2) (Crores of Rupees) (3)	(3) GNP (4)	Size of the Black Economy (Crores of Rupees) (5)	Percentage of (5) to Official GNP
1967/68	127974.475	82272.404	210246.879	6.56	3034.372	9.5
1968/69	133399.314	91582.008	224981.322	6.813	4504.1605	13.64
1969/70	145252.795	106769.96	252022.755	6.89	5458.825	14.92
1970/71	158738.685	135479.90	294218.585	7.323	8900.329	22.15
1971/72	171925.87	161520.90	333446.77	7.707	12354.812	28.56
1972/73	182731.738	194626.598	377358.336	7.903	15195.511	31.82
1973/74	214030.91	234142.584	448173.497	7.614	15894.881	27.00
1974/75	230685.724	274531.247	505216.971	7.243	14518.056	20.81
1975/76	237077.44	309402.65	546480.09	7.52	18457.978	25.39
1976/77	268784.86	372391.425	641176.285	8.334	30014.841	39.01
1977/78	284537.149	442027.95	726565.099	8.365	34335.179	39.53
1978/79	315184.262	541782.15	856966.412	8.92	46866.858	48.78

Notes: Average of 1949/50 to 1951/52 ratios is 5.995.

Division of yearly figures in column (3) by 5.995 and then substraction of measured GNP gives column (5).

Table 3 shows that the absolute size of the black market in India increased from Rs 3,034.37 crores in 1967/68 to Rs 46, 866.86 crores in 1978/79, that is, by more than 15 times. In percentage terms, in 1967/68 the underground economy formed nearly 9.5 per cent of measured GNP. By 1978/79,it had jumped to 48.78 per cent. Thus, currently almost half of the official income is being produced outside the "legal" sector. Not only is the black economy a substantial proportion of the regular economy but it has also grown at a rate faster than that of the official economy.

The last column of table 3 shows that the proportion of black economy to GNP fell in 1974-75. This can be attributed to the fact that the government lowered the marginal income tax rates and also allowed the people to declare unaccounted money without any penalty within a specific time period.

The Wanchoo Committee[7] estimated that for the year 1968-69, the absolute size of black market in India was Rs 1400 crores. However, estimates for the same year by D.K. Rangnekar[8] put the size at twice this figure. Our calculations show that even the latter is an underestimate of the true size, the actual estimate being three times the Wanchoo committee figure.

Feige (1979) estimated that in the U.S. income produced in the "illegal" sector was $ 225.5 billion (or 13 per cent of GNP) in 1976. For the same year, Mirus and Smith (1981) credited the irregular economy in Canada with 21.9 per cent

[7] See Gupta and Thavaraj (1974), p. 61.
[8] Ibid.

of total economic activity ("legal" plus "illegal"). In
contrast, 39 per cent of GNP was produced in the black economy
in India in 1976/77. Canadian and U.S. estimates clearly show
that it is not India alone which is characterised by a large
unreported sector. Advanced economies, with fewer controls
as compared to India, also have a large and growing unofficial
economy. As a percentage of measured income, however, the
size of this economy is smaller in Canada and U.S.

Though a significant proportion of economic
activity is accounted for by the underground economies in
Canada, India and U.S.A., the nature of this economy is
somewhat different in North America as compared to India.
The irregular sector in North America includes illegal trans-
actions in narcotics trade, gambling and loan sharking. It
has grown partly because of increased income tax burdens
and government regulations like unemployment insurance. The
provision of liberal unemployment benefits has led to the
practice of unemployed persons claiming unemployment insurance
but working "off the books" for cash. In India trade in prohibited
drugs, gambling etc. forms a negligible portion of the black
market. Underground economy has grown due to high taxes
not only on income but also on commodities. Extensive controls
in all sectors of the economy, domestic as well as foreign, have
diverted a large part of economic activity to the "illegal"
sector. Black markets in commodities like sugar, oil and in
foreign exchange,[9] nonexistent in North America are well known
in India.

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[9] For a study on the determinants of the black market exchange rate in
India, see Gupta (1980). For a discussion on the nature of this market,
see Gupta (1981).

V. Contribution of Taxes

To examine the effect of rising taxes on the development
of the "illegal" sector in India, we regressed the average
tax rate on the estimated size of black market (BM) relative to
official activity (GNP). We collected two sets of taxes: total
tax revenue (TT) and the sum of taxes (TS) which divert
economic activity to the irregular economy. These taxes com-
prised of income, corporation, wealth, gift, customs, union
sales and state excise taxes.[10] For instance, high income and
corporation taxes create incentive to evade and avoid them.
With high excise and sales taxes, incentive exists to produce
and sell output outside the purview of the official market.

The variable (TT) and (TS) as a proportion of GNP
were regressed separately on $(\frac{BM}{GNP})$ variable. We ran both linear
and log linear forms. Though, the overall results for both forms
were similar in terms of various criteria of statistical
significance, we report results only for the log linear version.
This is mainly because coefficients from the latter can
easily be interpreted as elasticities.

$$\ln\ (\frac{BM}{GNP})\ =\ 5.60\ +\ 3.51\ \ln\ (\frac{TT}{GNP}) \tag{1}$$
$$(4.45)\ \ (5.58)$$

$$R^2 = 0.757,\ \bar{R}^2 = 0.73,\ F(1,10) = 31.16,\ D.W.= 0.976\ ,\ 1967\text{-}78$$

$$\ln\ (\frac{BM}{GNP})\ =\ 6.25\ +\ 3.165\ \ln\ (\frac{TS}{GNP}) \tag{2}$$
$$(4.96)\ \ (6.09)$$

$$R^2 = 0.788,\ \bar{R}^2 = 0.766,\ F(1,10) = 37.09,\ D.W = 1.064\ ,1967\text{-}78$$

Note: (the t - values are in parentheses).

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[10]The total tax receipts (TT) have been collected from the National Accounts
Statistics, Central Statistical Organisation New Delhi and from the Econo-
mic Survey, 1979-80, Ministry of Finance, New Delhi. The taxes comprising
variable TS come from the various issues of the Report of Currency and
Finance, Reserve Bank of India, Bombay.

The F statistic from the above regressions suggests that the equations are significant at one per cent level. Seventy-five per cent and more of the variation in the dependent variable has been explained and individual coefficients are significant at the one per cent level. The D.W. is somewhat low indicating the omission of some other variables which influence the size of the black market.[11] This is not surprising considering that the existence of various controls also affect it. However, we could not devise any proxy to capture the effects of controls. Nevertheless, the above equations clearly indicate that rising average tax rates are associated with an increasing relative size of the underground economy. For instance, equation (2) implies that when average tax rates of the type TS increase by 1 per cent, the size of the unofficial economy relative to official economy increases by 3.16 per cent. The above results also indicate that confidence can be placed in our estimates of the size of the black market for India.

VI. Possible Sources of Under- and Over-Estimation

The assumption of a constant transaction to GNP ratio is plausible if strictly financial transactions are excluded from the numerator. Inclusion of transactions financial in nature would result in a continuously increasing ratio even if the size of the irregular economy has remained unchanged. Failure to adjust for financial transactions would thus lead to over-estimation of the size of the black market. Financial transactions can be excluded from the estimate of total trans-

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[11] The D.W. in equation (1) and (2) was corrected by employing the Cochrane-Orcutt iterative technique, though we do not report the results here. It is worth noting, however, that the coefficients attached to the tax variables nonetheless stay statistically significant.

actions by choosing an average turnover rate of demand deposits
that excludes the turnover in major financial centres. In
case of India, this adjustment was not required because the
turnover rate in Bombay and Calcutta is not higher than the
rate in other cities. Moreover, the turnover in these two
centres did not increase substantially overtime.

For India, we chose 1949/50 to 1951/52 as the base
period assuming that the irregular economy was close to zero
in this period. It is quite doubtful that all the economic
activity was confined to the "legal" sector. If the size
of the black economy was positive in the reference period,
then by assuming zero size we have underestimated the subse-
quent magnitude and growth of the underground economy.

The calculations assume that income velocity in the "legal"
economy was the same as that in the "illegal" economy. If
however, income velocity was higher in the "illegal" sector,
for example, because of possible greater integration, then the
resulting estimates of income generated in the subterranean
economy would be higher.

In our estimates the average lifetime transactions a
currency can perform was unchanged at 125 between the years
1949/50 and 1978/79. This assumption is plausible if the
quality of the paper used was the same, for if there were
improvements in the paper used for printing currency then
the lifetime transactions would be higher in the later years.

For U.S., Feige found evidence that from mid-sixties the durability of printing paper had nearly doubled, so that the average lifetime transactions supported by a unit of currency were far greater than 125. For India, we could find no such evidence and therefore no adjustments were made.If we increase the lifetime transactions on the assumption that the quality of paper used in India to print rupees has also improved then this would raise the estimates of the size of the black economy.

The demand deposit turnover data in India is available only up to 1974/75. We assume the same turnover rate for the years up to 1978/79. This assumption underestimates demand deposit transactions for the years 1975/76 to 1978/79 because the turnover was probably higher than the 1974/75 rate, if past trend is a guide to future expected turnover rates. Under-estimation of demand deposit transactions results in under-estimation of the size of the underground economy for the period 1975/76 - 1978/79.

Feige's method estimates only the size of the monetary component of the subterranean economy. No account has been taken of barter transactions. While these are not probably substantial, nevertheless, their exclusion gives smaller estimates of the black economy.

VII. Concluding Comments

In this paper, we attempted to estimate the size of the black economy in India on an annual basis. For this purpose, the technique suggested by Feige was employed. Our results show that for the years 1967-68, the black economy constituted 9.5 per cent of the official GNP. However, by 1978-79 the size had jumped to nearly half of the official GNP. These estimates tend to reflect the extent and severity of taxes and controls in the Indian economy.

The results further indicate that 1 per cent increase in overall taxes leads to more than 3 per cent increase in the black economy relative to the official economy. Thus taxes do not necessarily lower the level of overall economic activity (as argued by supply side economists like Arthur Laffer)[12] but help divert a part of it to the unofficial sector, especially in economies where there exists a well developed underground economy.

Our estimates show that when government lowered the marginal tax rates in 1974/75 and coupled this with incentives to declare unaccounted money, the size of the unofficial sector fell. Thus, one implication that emerges from this study is that the government in India should lower the taxes and remove as many controls as possible on different sectors of the economy. As the size of the black economy was only marginally affected by declaration of emergency in India in June 1975 and introduction of stiff laws to

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[12] These economists assert that after a certain level, there is a negative relationship between taxes and economic activity.

prosecute people operating in this market, it is unlikely
that higher penalties in future will affect its size.

Given the size of unreported economy in India, it would
seem that policy makers and researchers while employing
official statistics should adjust for its magnitude. The
official growth rate statistics, for example, are biased
downwards, especially when the black economy is growing at
a rate faster than the official economy. Furthermore,
depending on the tax laws and severity of controls, some
economic activity is likely to shift in and out of the "legal"
sector from time to time. All this implies that statistical
agencies in India must prepare estimates of reported and
unreported sector for an accurate picture of the economy.
To this end, they could use or refine the method used in this
study.

Finally, the results presented in this study should
paradoxically comfort the Indian policy maker. After all,
the economy has not done all that badly when the irregular
activity is taken into account.

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