

TAX EVASION IN THE PHILIPPINES, 1981-1985

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Introduction

Just as death and taxes are certainties in this world, so are ways and means to minimize if not eliminate altogether one's tax liabilities. Attempts to escape the tax net may take any one of two forms: tax evasion and tax avoidance. Tax evasion may be defined as the act of reducing taxes by illegal or fraudulent means.¹ Common practices of tax evasion include: under-reporting of income, over-statement of expenses, use of fictitious receipts, the keeping of double sets of books, false or fictitious entries in books, fictitious transactions in the name of dummies, non-recording of sales, and others. Tax avoidance, on the other hand, involves the legal rearrangements of one's economic activities in order to lower the tax liability. This is done by moving capital or labor to areas, geographical or otherwise, where tax rates are lower and/or by manipulating the tax parameters through the legal means to spread or defer the tax liability over time thereby effectively reducing the tax rate. Tax evasion is done by a taxpayer either singly or in collusion with some tax collection functionary, while tax avoidance is done singly or with the help of some tax expert like a lawyer and an accountant. As such, evasion and avoidance are interdependent activities. Significant and well-known tax avoidance could induce increased evasion. On the part of the individual taxpayer, evasion can substitute for avoidance when increasing the cost of tax avoidance may increase tax evasion. But the impact on the economy of both are the same: loss of government revenue, increase in taxpayer's after-tax income, and perverse effects on the equity and efficiency goals of the tax system.

From the administrative and policy perspective, determining the magnitude of tax evasion and an analysis of tax evasion levels are

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1. Philippine tax jurisprudence has no general definition of the term "tax fraud." However, the Bureau of Internal Revenue (BIR) Handbook for Special Agents defines fraud as "deception brought about by misrepresentation of material facts, and silence when good faith requires expression, resulting in material damage to one who relies on the same and has the right to do so." (National Tax Research Center 1980).

imperative, particularly if undertaken in a disaggregative fashion where the type of tax evaded as well as the group of taxpayers with high propensity to evade are identified. This exercise will be useful in evaluating the success or failure of the enforcement mechanism. It may indicate to the policy-maker the manner by which tax evasion impairs the distributional quality of the tax system, skew the allocation of resources towards less productive activities in the economy, decrease tax revenue and, consequently, undermine fiscal and monetary policy.

Review of Literature

Tax non-compliance has been studied extensively in recent years. Two aspects of this phenomenon had received focus: (a) an analysis of the factors behind tax evasion activities, and (b) the measurement of revenue loss resulting from tax non-compliance.

The seminar paper of Allingham and Sandmo (1972) presented a theoretical economic analysis of tax evasion. The taxpayer is viewed as choosing the level of declared income, X , so as to maximize his expected utility, U .² The expression for expected utility is:

$$E(U) = (1-p) U(W-tX) + p U[W-tX-r(W-X)] \quad (1)$$

where p is the probability of the authorities detecting tax evasion, W is actual income, t is the tax rate and r is the penalty rate.

This model implies that the taxpayer will evade taxes by declaring less than his actual income, if expected tax payment on unreported income is less than the regular tax rate. The incorporation of non-pecuniary factors in the taxpayer's decision function, e.g., value of one's reputation, would reduce the scope for "profitable" tax evasion. The analysis also suggests that the level of evasion is dependent on the probability of detection and the penalties imposed on detected evaders. The higher the probability of detection, the lower will be the level of evasion. The higher the penalty rate, the higher the amount of declared income. The model, however, yields ambiguous results regarding the impact of changing the values of the tax rate and actual income on the level of evasion. The results would depend on whether absolute risk aversion is decreasing, constant, or increasing.

Srinivasan (1974) showed that if the probability of detection is an increasing function of the actual income, then the degree of evasion decreases as income increases. But if the probability of detection is independent of income, then evasion is positively related to the level of income. On the other hand, Yitzhaki (1974) pointed out that if the penalty rate

2. Alternatively, the taxpayer may be viewed as minimizing expected taxes and penalties given pre-tax income, or as maximizing expected income after taxes and penalties.

is a fine levied on the amount of tax evaded, then the level of declared income unambiguously increases with the tax rate.

Spicer (1986) enriched further the works of earlier writers by incorporating the impact of social norms supportive of tax compliance in the economic model of tax evasion. He achieved this by introducing the psychic cost of evasion in the taxpayer's objective function. Psychic costs were postulated to depend on the evasion behavior of other taxpayers, the perceived equity of the tax system, informal sanctions, attitude towards risk, etc. In this model, an act of evasion is committed only when the expected gains from taxes evaded exceed expected losses from fines imposed and psychic cost. Congruent with previous results, this analysis predicts that the probability of being caught and the fine rate are inversely related to evasion. It also indicates that the incidence of evasion increases as the tax rate increases.

The results of the formal economic analysis of Allingham, Sandmo, and others are consistent with the empirical evidence based on survey studies that the fear of sanctions deter evasion and that increased opportunities for evasion (in the form of higher incomes or greater proportion of non-labor income, and others, increase the incidence of evasion (Mason and Calvin 1984, Clotfelter 1983). But while economic analysis yields an indeterminate sign for the impact of higher tax rates on evasion, empirical studies provide evidence of a positive relationship between these two variables (Clotfelter 1983; Friedland, Maital, and Rutenberg 1978). The implied policy prescription of these various studies is obvious: find the appropriate mix of enforcement activities and penalties subject to the financial constraints (costs/budget on the level of enforcement activities).

Quite independent of these investigations on the determinants of tax evasion, the measurement of the impact of tax non-compliance on government revenues has also received considerable attention.

Using Argentinian data, Herschel (1978) illustrated the application in developing countries of various techniques of measuring tax evasion. Tanzi (1982) estimated the size of the underground economy in the United States and its implications on tax evasion. Richupan (1984), and Peacock and Shaw (1982) provided excellent critiques of the various approaches to quantify tax evasion.

The National Tax Research Center (NTRC 1986) made an attempt to estimate tax evasion in the Philippines for the year 1984. Their estimated amount of tax evaded range from ₱3.9 billion to ₱1.4 billion. This wide band indeed reflects the many difficulties entailed in quantifying tax evasion. The discussion in the following paragraphs will highlight these problems. Moreover, the data base and the estimation procedures used by NTRC require some refinement, particularly in the following: the use of the Department of Labor and Employment (DOLE) employment data to arrive at potential individual

taxpayers, the very arbitrary 20-30 percent deduction for the sum of imputed rent, interests, and others, and the use of the gap approach for the corporate tax.

Methodology

There are several approaches to measure tax evasion: the gap approach, tax elasticity approach, special amnesties approach, audit approach, and underground economy approach.

Gap Approach

In the gap approach, which is typically applied to the individual income tax in earlier studies, aggregate personal income reported in the tax returns (ITR) is compared with personal income derived from the national income accounts (NIA). The difference in these two estimates of personal income is presumed to be the income evaded for tax purposes. But for the comparison to be meaningful, adjustments to account for the conceptual differences in ITR and NIA definitions of personal income have to be made. For instance, personal income in the ITR excludes personal exemptions and allowable deductions while that based on the national accounts does not. These two concepts also differ in the treatment of transfer payments, capital gains, imputed rents, and others. Conceptually, though, national accounts data could also be used to cross check other broad-based taxes like sales, excise, imports, exports, and other corporate income taxes. The major difficulty with this approach is the scarcity of available data on capital gains, imputed rents which are a pre-requisite before necessary adjustments can be made. But where these information are available, the gap approach is deemed superior to the other procedures discussed below.

Elasticity Approach

In the elasticity approach, the potential tax revenue is estimated based on some average tax function in which tax collection is regressed econometrically on various determinants like tax base and discretionary changes in tax structure. The typical regression equation used is:

$$\ln T = a + b \ln Y \quad (2)$$

where T is tax revenue and Y is the tax base. The difference between projected tax revenue derived from (2) and actual tax revenue may be used as a measure of tax evasion. This approach assumes that there is no significant change in the composition of the GNP or the tax base. With either a tax rate increase or a change in composition of tax base that warrants an increase in taxes, this technique tends to underestimate tax evasion.

Richupan (1984) asserts that this procedure does not measure total tax evasion but it does provide a good estimate of additional tax evasion and the deterioration of tax administration, valued in terms of the estimation period's mean level.

Special Amnesties/Tax Audit Approach

In contrast with the two techniques above, the special amnesties approach measures tax evasion using information derived from tax amnesties returns that are voluntarily supplied by the taxpayers. In the Philippines, as in other countries, special tax amnesties have been offered more than once in recent history. Taxpayers are induced to declare their actual incomes in exchange for withdrawal of their liability to fines and penalties. It is thus possible to measure tax evasion using data from these special amnesties. However, this procedure measures only part of the taxes evaded because some taxpayers prefer to make limited use, if at all, of these amnesties; their reasons are varied: they prefer to remain outside the tax net, they are waiting for another amnesty, or they under-report income while availing of the amnesty.

Closely related to the special amnesties approach is the audit approach. It uses the results of the closer audit revenue examiners make on tax returns. The weakness of this technique stems from the fact that the revenue agency's audit capability is usually limited and from the possibility that corruption in the ranks of tax enforcers usually lead to lower estimates of tax evasion.

Underground Economy Approach

The underground economy approach employs estimates of the so-called parallel economy to arrive at a quantification of the amount of taxes evaded. There are various ways of measuring the size of the underground economy: the currency equation procedure, the physical input technique, and the labor market approach.

Currency equation procedure. This procedure (Tanzi 1982) assumes that underground activities are the direct result of high taxes and that underground transactions are carried out mainly with the use of cash. It starts with the estimation of a demand for currency equation that permits one to determine the effect of tax changes on that demand. Thus:

$$\ln C/M = a + b \ln T + c \ln W/Y + d \ln r + e \ln y \quad (3)$$

where C is currency holding, M is money supply, T is income tax rate, W/Y is the ratio of wages and salaries to GNP, r is the rate of interest on time deposits and y is the real per capita income.

Based on equation (3), two estimates of currency holding are made, one when the tax variable is assumed to be zero the other when it is not. The difference between these two is called "illegal money" while the difference between M and "illegal money" refers to "legal money." The size of the parallel economy is obtained by multiplying illegal money by the velocity of legal money (which is equal to GNP divided by legal money). Finally, the amount of tax evasion is computed by applying the average tax rate to the size of the underground economy. Tanzi (1982) asserts that this approach underestimates tax evasion because it considers only evasion associated with both currency use and the underground economy. It does not include evasion arising from the claiming of exaggerated deductions, for instance. Similarly, it does not take into account income from illegal activities.

Physical input technique. This assumes a stable relationship between some physical input in the production process and national output abstracting from changes in technology and output composition. This relationship is then used to estimate GNP. The difference between this figure and the official estimate of GNP is attributed to the black economy. Gupta and Mehta (1982) applied this procedure to India assuming a stable relationship between electric power and GNP. The difficulty associated with identifying an input which has a stable relationship with GNP stands as the drawback of this technique.

Labor market approach. The approach estimates the size of the parallel economy on the basis of unreported employment figures and the average productivity of labor (Contins 1981). The major difficulty with this technique stems from the reliability of the estimate of unaccounted unemployment as well as that of labor productivity.

All three variants of the underground economy approach share some common shortcomings when used to estimate tax evasion: a) they involve some overestimation in that they include income legally not subject to tax, and b) they also involve some underestimation by excluding unreported income from "aboveground" activities.

Given the numerous pitfalls in determining the degree of tax evasion, it is essential to use different approaches instead of concentrating on a simple procedure so that one gets a range of estimates rather than a point estimate. Despite these shortcomings, however, we re-emphasize the need to present these indicators no matter how tentative the results.

Estimates of Tax Evasion

Individual Income Tax

In this study, three of the five alternative techniques that are commonly used in quantifying tax evasion were applied to the individual income tax, namely: gap approach, audit approach, and elasticity approach.

Gap Approach. In this procedure, we first determine the "true" tax base for the individual income tax. Next, we compute the tax due on this income. The potential tax is then compared with the actual tax yield to arrive at the level of tax evasion.

As such, aggregate personal income (also referred to as "compensation of employees and entrepreneurship and property income of persons") as reported in the National Income Accounts (NIA) serves as the basis for computing the potential taxable base. It is adjusted by subtracting, first, items that are included in the national accounts definition of personal income but do not actually accrue to the household sector and, second, items that are not taxable given the individual income tax statutes. The former list includes the employer's share of social security contribution and the income of private, non-profit enterprises. The latter list includes dividends, interest receipts, and imputed rent of owner-occupied dwelling units. Time series data on these excluded items are not readily available. The employer's share of social security contributions is approximated by taking half of the total social security contribution figures provided in the NIA.

Income of private, non-profit enterprises for 1985 was estimated as equal to one-half of the difference between NIA aggregate personal income and the 1985 Family Income and Expenditure Survey (FIES) total household income, exclusive of gifts and social security benefits.³ The level of private, non-profit enterprise income thus derived for 1985 was expressed as a proportion of the NIA personal income. The resulting ratio was then used to estimate the levels of income of private, non-profit enterprises in the other years. The 1985 FIES also provided estimates of dividends, interest receipts, and imputed rents accruing to households. Again, these were expressed as a proportion of NIA personal income and the results were employed to generate estimates of dividends, interest receipts, and imputed rents in the other years.

Adjusted gross personal income for the years 1981-1985 was derived by subtracting estimates of the five above-mentioned items from the NIA aggregate personal income. After making further adjustments for personal exemptions and allowable deductions, the measure gave results comparable to the legally taxable personal income. The distribution of income by income class, by size of household, and by type of income (compensation vs. business income) based on the 1985 FIES was applied to the estimates of adjusted gross personal income to obtain estimates of personal and additional exemptions, and compensation and business incomes. Potential tax due on compensation income was derived by multiplying adjusted gross compensation income less personal exemptions by statutory modified gross

3. The difference between the NIA and FIES estimates of personal income is attributed by experts to a combination of: a) statistical discrepancy arising primarily from under-reporting of household income in the FIES, and b) income of private, non-profit enterprises. We decided to arbitrarily allocate this difference equally to these two items.

income tax (MGIT) rates. Potential tax revenue from business income was similarly derived by applying statutory business income tax rates to adjusted gross business income less personal exemptions and allowable deductions. The levels of allowable business deduction were computed based on the average deductions to gross income ratios derived by the NTRC from a sample of 23,665 income tax returns of individuals engaged in business or trade (NTRC 1987).⁴

The resulting estimates of levels of evasion of individual income tax in 1981-1985 totalled ₱17.3 billion (Table 1). The figures represented 44.7 percent of the potential tax from this source. In other words, only 55.3 percent of potential tax revenue were actually collected by the Bureau of Internal Revenue (BIR). The results also showed evidence of a dramatic reduction in tax evasion in 1982 with the introduction of the modified gross income tax system in that year. However, the amount of evaded taxes shot up once more in the succeeding years reflecting perhaps the ingeniousness of taxpayers in finding new ways to evade taxes.

Table 1
GAP APPROACH ESTIMATES OF INDIVIDUAL INCOME
EVASION, 1981-1985
(In ₱ million)

Year	Potential Tax Yield	Actual Tax Collection ^a	Evaded Taxes
1981	8185	3604	4581
1982	3935	3878	57
1983	4768	3869	899
1984	10826	4476	6350
1985	11015	5594	5421
TOTAL	38729	21421	17308

a/ Based on NTRC data.

Tax audit approach. Under the audit approach, actual income tax revenue is multiplied by an adjustment factor that accounts for deficiency tax collected through tax audit to arrive at the amount of evaded taxes. For the above given data, the BIR assessed the ratio of deficiency corporate income tax collected after tax audit to the amount of taxes paid before tax audit to

4. The procedure described above was used for 1982-1985. For 1981, when a global income tax system was still in force, the potential tax was computed by applying effective tax rates (from the BIR 1983 study) to adjusted gross income.

be .4121 in 1984 (NTRC 1987). Based on this, the adjustment factor employed in the study was .4121 for the high estimate and .2060 for the low estimate.⁵

In using the average tax audit ratio, we implicitly assumed that both the tax effort and the tax evasion rate in the year the tax audit ratio was derived were representative of those of the other years. Furthermore, while it might be argued that actual tax collection already takes the audit adjustment into account, we tended to view the audit ratio reported by the BIR as understated due to the fact that not all delinquent taxpayers were caught and due to the collusion between the investigated taxpayers and some BIR examiners.⁶

The caveats raised above should be borne in mind when one assesses the tax evasion estimates based on tax audit approach presented in Table 2. Estimated income tax evasion based on the tax audit ratio ranged from ₱4.4 billion to ₱8.8 billion in 1981-1985. These constituted 17-29 percent of potential tax. The estimates are considerably lower than gap approach estimates and do not mirror the trend observed when the gap procedure was used.

Table 2
TAX AUDIT APPROACH ESTIMATES OF INDIVIDUAL
TAX EVASION, 1981-1985
(In ₱ million)

Year	Actual Tax Collection ^a	Potential Tax Yield		Evaded Taxes	
		High Estimate	Low Estimate	High Estimate	Low Estimate
1981	3604	5089	4346	1485	742
1982	3878	5476	4677	1598	799
1983	3869	5463	4666	1594	797
1984	4476	6321	5398	1845	923
1985	5594	7899	6746	2305	1152
TOTAL	21421	30248	25833	8827	4413

^{a/} Based on NTRC data.

Tax elasticity approach. Following the elasticity approach, an average individual income tax function was estimated based on the dummy variable

5. There was no available estimate for the individual income tax so we utilized the ratio for corporate income tax. Also, it would have been ideal if adjustment ratios specific to different income classes were used given that average deduction ratios have been observed to increase with income. Again, no such information was available.

6. Anecdotal stories to this effect abound. The good number of individuals who took advantage of the tax amnesty in 1986 substantiate these claims.

technique.⁷ Alternative specifications were regressed, but the best equation was:

$$\ln IIT = -13.56 + 1.81 \ln DPY + 8.27 D80 - 0.72 D80^* \ln DPY \quad (4)$$

(-3.46) (5.40) (1.86) (-1.92)

$$R^2 = .96 \quad D.W. = 1.81 \quad RMSE\% = .129 \quad 1975 - 1986$$

where the numbers in parenthesis are the t-statistics, IIT is individual income tax revenue inclusive of tax on passive income,⁸ DPY is disposable personal income, (i.e. current personal receipts less direct taxes and social security contributions) and D80 = 0 for 1975-1979 and 1 for 1980-1986.⁹ Equation (4) was then used to project potential tax yield for 1981-1985 (Table 3).

The difference between potential tax revenue and actual collections is a measure of additional tax evasion and the deterioration in tax administration relative to average level in the estimation period. The mean level of evasion for the period is high as suggested by our gap approach estimates. The estimates indicate that incremental evasion was negative in 1981 and 1985 while it was positive but lost in 1982. In 1983 and 1984, there was a surge in evasion consistent with our gap approach estimates. The estimated decline in evasion levels in 1985, on the other hand, may simply reflect the tendency of the elasticity approach to under-state tax evasion towards the latter part of the estimation period due to bracket creep.

Table 3
ELASTICITY APPROACH ESTIMATES OF INCREMENTAL INDIVIDUAL TAX AND PASSIVE INCOME TAX EVASION, 1981-1985
(in ₱ million)

Year	Actual Collection ^a	Projected Revenue	Incremental Evasion
1981	3993	3599	- 107
1982	4064	4048	55
1983	5508	4631	566
1984	9214	7146	1637
1985	9678	8135	- 2627

^{a/} Based on NTRC data.

7. There are three ways of estimating the elasticity, namely: a) constant rate structure method; b) proportional adjustment method; and c) dummy variable method. Manasan (1987) used the two latter procedures with the Department of Finance tax series and came up with consistent results. The former technique was not used for lack of data.

8. Our tax variable in equation 4 includes both the individual income tax and taxes on passive income because from 1975-1980 these two taxes were collected jointly.

9. A dummy variable to represent the introduction of final withholding tax on passive income in 1980 was included in the equation.

Taxes on Passive Income

The gap approach was applied to appraise the tax evasion level on passive income, i.e., taxes on dividends and interests. Dividends are estimated as equal to 10 percent of after-tax income of corporations.¹⁰ Data on corporate income tax after tax and dividends were obtained from the NIA. Dividends received by households came from the section on individual income tax while dividends received by corporations were derived as residual. Applying the legal tax rates of 15 and 10 percent, respectively, on these figures, potential tax revenue was arrived at. Evasion of tax on dividend in 1981-1985 was calculated to be ₱711 million or 85 percent of potential revenue (Table 4).

Table 4
EVASION OF TAX ON DIVIDENDS, 1981-1985
(In ₱ million)

Year	Potential Tax	Actual Tax ^a	Evasion
1981	189	9	180
1982	177	11	166
1983	197	18	179
1984	181	27	154
1985	83	51	32
TOTAL	827	116	711

^a Based on NTRC data.

On the other hand, data on interest expense of the banking system (i.e., interest income of households and the business sector) came from the *Factbook of the Philippine Financial System*. Interest on deposit substitutes of non-banks was derived by multiplying deposit levels by the average interest rate for the year. These interest figures were then multiplied respectively, by .175, the average tax rate on interest on savings and time deposits and .2, the tax rate on interest on deposit substitute to get potential tax revenue. Evasion of tax on interest totalled ₱18.5 billion in 1981-1985 (Table 5). This represents 78.9 percent of potential tax. A higher compliance rate (52 percent) is observable in 1985. This may be attributed to the elimination of the tax exemption of interest income of ₱1,000/annum starting in 1984.

10. The ratio of .10 is arbitrarily chosen.

Table 5
EVASION OF TAX ON INTEREST, 1981-1985
(in ₱ million)

Year	Potential Tax	Actual Tax ^a	Evasion
1981	2758	93	2665
1982	3992	104	3888
1983	4494	177	4317
1984	5428	1004	4424
1985	6803	3569	3234
TOTAL	23475	4947	18528

^{a/} Based on NTRC data.

The very high levels of tax evasion on passive income, despite the fact that these taxes are final and withheld at source, suggest that the legislation as well as the implementing regulations are not fool-proof.

Corporate Income Tax

The gap tax audit and the elasticity approaches were used to assess the level of corporate income tax evasion.

Gap approach. While NIA estimate of corporate income is the first candidate that comes to mind when searching for a measure of corporate income tax base that is independent of that found in the income tax returns (ITR), closer examination of NIA estimation methodology reveals that NIA figures are in fact sourced from ITR data. The Securities and Exchange Commission (SEC), however, has information on the number of active registered stock corporations while the BIR has data on the number of corporate income tax filers. The NTRC (1986) computed the compliance ratio to range from .31 to .40 in 1981-1984.

The present study evaluated corporate income tax evasion first by applying the average amount of taxes paid per corporate tax filer by the number of active stock corporations (adjusted by a factor to account for the possibility that some of those who did not file are tax-exempt) to derive tax potential. Arbitrarily, this adjustment factor was set at one-half. Using this methodology, the evasion level for 1981-1985 reached ₱11.6 billion or 27.9 percent of tax potential (Table 6). We should emphasize that the procedure used assumes that the distribution of tax burdens of those who filed tax returns is identical to that of non-filers.

Table 6
GAP APPROACHES ESTIMATES OF CORPORATE INCOME
TAX EVASION, 1981-1985
 (in ₱ million)

Year	Potential Tax	Actual Tax ^a	Tax Evaded
1981	5117.4	3939	1178.4
1982	5625.6	4503	1122.6
1983	6029.2	4799	1230.2
1984	13311.5	8208	5103.5
1985	11406.6	8441	2965.6
TOTAL	41490.3	29890	11600.3

^{a/} Based on NTRC data.

Tax Audit Approach. The procedure followed here is analogous to that discussed under the section on Individual Income Tax (Tax audit approach). The adjustment factors used are .4121 and .2060 (based on the average rate of increase in actual tax collected through the deficiency audit of the BIR) for the high and the low estimate, respectively, of potential corporate income tax. The projected levels of evasion ranged from ₱6.1 billion to ₱12.3 billion in 1981-1987 (Table 7). As a proportion of tax potential, these figures vary from .17 to .29.

Table 7
TAX AUDIT APPROACH ESTIMATES OF CORPORATE
TAX EVASION, 1981-1985
 (in ₱ million)

Year	Actual Tax Collected ^a	Potential Tax Yield		Evaded Taxes	
		High Estimate	Low Estimate	High Estimate	Low Estimate
1981	3939	5562.3	4750.4	1623.3	811.4
1982	4503	6358.7	5430.6	1855.7	927.6
1983	4799	6776.7	5787.6	1977.7	988.6
1984	8208	11590.5	9898.8	3382.5	1690.8
1985	8441	11919.5	10179.8	3478.5	1738.8
TOTAL	29890	42207.7	36047.2	12317.7	6157.2

^{a/} Based on NTRC data.

Elasticity Approach. As indicated by the elasticity approach, the following equation was used to project tax revenues:

$$\ln \text{CIT} = 6.65 + .10 \text{GVANA} - 13.16 \text{D80} + 1.10 \text{D80}^* \ln \text{GVANA} \quad (5)$$

(1.94) (-7.03) (7.34)

R² = .97 D.W. = 1.16 1975-1986

where the numbers in parentheses are the t-statistics, CIT is corporate income tax, GVANA is gross value added in non-agricultural sectors and D80 is 0 for 1975-1979 and 1 for 1980-1986. This was the equation that exhibited the best fit among various specifications that were investigated.

As have been pointed out, the elasticity approach measures the incremental evasion rather than the level of evasion. Additional evasion was positive in all years except in 1984 (Table 8). The negative figure obtained in 1984 may be simply indicative of the fact that the tax elasticity in that year is lower than the average for the estimation period, given that it is a recession year.

Table 8
ELASTICITY APPROACH OF CORPORATE INCOME
TAX EVASION, 1981-1985
(in ₱ million)

Year	Potential Tax	Actual Tax ^a	Incremental Tax Evaded
1981	4064	3939	125
1982	4579	4503	75
1983	5342	4799	543
1984	7441	8208	- 767
1985	8468	8841	27

^{a/} Based on NTRC data.

Sales Tax. Using the gap approach, the potential sales tax base was assessed on the basis of the NIA data on merchandise exports and gross value added (GVA) in manufacturing by industry group. First, gross value added in manufactures of tobacco; petroleum and coal; alcoholic beverages;¹¹ and crude coconut, vegetable and animal oils, rice/corn milling and sugar milling¹² was subtracted from the total manufacturing GVA

11. Gross value added in the manufacture of alcoholic beverages was assumed to be .544 of GVA in manufacture of all beverages based on 1983 Input-Output data.

12. Crude coconut, vegetable and animal oils, rice/corn milling and sugar milling are all assumed to account for .38 of GVA in all food manufactures. This ratio is based on the finer disaggregation available in the 1983 Input-Output Tables.

because the aforementioned commodities are subject to either a specific tax or miller's tax, and are thus exempted from sales tax. *Second*, gross value added of manufactured merchandise exports was also deducted from total manufacturing GVA. GVA of manufactured exports was obtained by multiplying by .31 the difference between FOB value of total merchandise exports and the sum of the FOB value of exports of crude coconut oil, copper concentrates, centrifugal sugar, gold, banana, desiccated coconut, copra oil, cake and meal, coffee, shrimps, prawns, and logs. This ratio is the average GVA to output ratio in manufacturing, based on the 1983 I-O Table. *Third*, total manufacturing GVA is further reduced by GVA in tax-exempt manufactured products of pioneer enterprises registered with the Board of Investments (BOI) and the National Cottage Industry Development Authority (NACIDA) which was assumed to be equal to 10 percent of total GVA in manufacturing.¹³ *Fourth*, an estimate of the statutory sales tax base was derived by adding supplies and other intermediate inputs for which no tax credit may be claimed to the adjusted manufacturing GVA obtained after the first three adjustments were undertaken. The 1983 I-O coefficients suggest that these non-deductible supplies and intermediate inputs account for 10 percent of manufactured output, 29 percent of manufacturing GVA on the average. The sales tax potential was then derived by multiplying the taxable base by .1, the weighted average sales tax rate.

The evasion of the sales tax amounted to ₱21.6 billion in 1981-1985 (Table 9). This is equal to 63.1 percent of tax potential. The evidence from Table 9 indicates that the evasion rate rose from 59 to 68 percent in the period.

Table 9
GAP APPROACH ESTIMATE OF SALES TAX EVASION, 1981-1985
(in ₱ million)

Year	Tax Potential	Actual Tax ^{a/}	Evaded Tax
1981	4870	2242	2623
1982	5540	2200	3344
1983	6167	2258	3909
1984	8274	2947	5329
1985	9428	2996	6432
TOTAL	34283	12643	21640

^{a/} Based on NTRC data.

13. This ratio was based on the estimated share of BOI output to total output in Tan (1979) and on the estimated share of small, medium and cottage enterprises in manufacturing GVA in World Bank (1980).

Advance Sales Tax and Compensating Tax

The gap approach was utilized to evaluate the levels of evasion on advanced sales and compensating tax. The potential tax base was appraised using the FOB import values from the National Census and Statistics Office (NCSO). *First*, imports of petroleum products and alcoholic beverages¹⁴ were subtracted from total FOB import values since these goods, being subject to excise tax, are exempt from the advance sales and compensating tax. *Second*, imports of capital equipment of BOI-registered firms, imports on consignment and imports of certain government agencies and private organizations were also deducted from total imports since these are tax-exempt. The first was estimated based on incentive availment data of the BOI. The second was obtained from the NIA accounts. The last item was extrapolated based on their actual values in 1983 and 1984 as reported in Muten (1985). *Third*, the adjusted FOB import values were transformed to CIF import values by multiplying the former by 1.05, the conversion factor used by the NIA. *Fourth*, the adjusted CIF import values were multiplied by one plus the average tariff rate to get the estimates of the landed cost of imports subject to advance sales and compensating taxes.¹⁵ These represent the potential tax base of advance sales and compensating taxes. Twenty percent of the aggregate potential tax base was assumed to be subject to compensating tax while the remainder was assumed to be subject to advance sales tax based on their relative shares in 1981-1984 (Muten 1985). The potential tax from compensating was derived by multiplying its base by .1, the average compensating tax rate. On the other hand, the potential tax from advance sales was obtained by multiplying its tax base by one plus the mark-up (on average, this was assumed to be .3 in 1981-1982 and .25 in 1983-1985), and by the average tax rate of .1.

Estimates of evasion levels of advance sales and compensating taxes reached ₱26.0 billion in 1981-1985, amounting to 61.2 percent of the tax potential (Table 10).

License and Business Taxes

The tax elasticity technique was used to determine incremental levels of evasion of license and business taxes (the aggregate of fixed, sales, compensation, advance sales, and other percentage taxes). Of the various equations estimated, the specification that had the best fit is:

14. Imports of alcoholic beverages were assumed to account 70 percent of total beverage imports.

15. The average tariff rates for 1981-1985 are .255, .221, .240, .265 and .265, respectively (Muten 1985)

Non-filing of Tax Return

A comparison of the actual number of individual income tax filers and the potential number of income tax filers reveals that outright non-filing of tax returns is a major source of individual income tax evasion (Table 12). In 1981-1985, only 28.9 percent of potential tax filers actually filed their return on the average.

Table 12
POTENTIAL AND ACTUAL NUMBER OF INDIVIDUAL INCOME TAX FILERS
1981-1985

Year	Potential Number ^a	Actual Number ^b	Compliance Ratio (%)
1981	8,923,437	2,748,921	30.8
1982	9,061,911	2,574,888	28.4
1983	9,289,441	2,719,337	29.3
1984	9,610,340	2,849,623	29.7
1985	9,024,690	2,389,946	26.5
Average			28.9

^aThe potential number of tax filers was calculated based on the 1985 FIES distribution parameters and the estimated number of households and aggregate personal income. Our estimate is understated to the extent that the household is of the extended family type and includes other income earners in addition to the husband and/or wife.

^bBIR data

There is also a wide disparity in the number of actual corporate taxpayers and in the number of active stock corporations registered with the Security and Exchange Commission (SEC). In 1981-1984, the BIR has been able to capture only 38.3 percent of potential corporate tax filers on the average. The rest has been able to elude the tax net successfully (Table 13).

The problem of non-filing of tax return and, consequently, of outright non-reporting of income is a natural result of the present system which relies on voluntary self-assessment of taxes. BIR enforcement activities are largely focused on audit and investigation of tax returns in their possession. Among taxpayers, therefore, there is a widespread belief that one is in a better position to make taxes by not filing income tax returns at all. The problem may be addressed in two ways. *First*, increased computerization should enable the BIR to more aggressively seek out potential

Table 13
POTENTIAL AND ACTUAL NUMBER OF CORPORATE
INCOME TAX FILERS, 1981-1984

Year	Number of Active ^a SEC-Registered Corporations	Number of Actual ^b Corporate Tax Filers	Compliance Ratio (in %)
1981	75,994	30,192	39.7
1982	79,431	29,228	36.8
1983	83,093	31,790	38.2
1984	86,033	33,069	38.4
Average			38.6

^{a/} SEC data as reported by NTRC (1986).

^{b/} BIR data.

taxpayers. For instance, a corporation has to pay certain fixed and percentage taxes before it is allowed to operate. With an improved information system in the BIR, these transactions should enable the BIR to beef up their list of taxpayers. The point here is that individuals and corporations cannot totally avoid touching base, albeit indirectly, with the BIR in any given year; with increased computerization, the BIR should be able to construct a masterfile of taxpayers that has a wider coverage than what they have at present. With this masterfile, BIR collection activities should then move from the more passive stance it now takes. Additional legislation enabling the BIR to assess (in contrast to audit) taxes due might be necessary. *Second*, Muten *et al.* (1985) has pointed out that "hijacking" of returns is very much a part of the system. Hijacking, in this sense, refers to the loss of the tax return before the BIR has established firm control over them. This problem has been traced to the highly centralized procedures in the BIR (e.g., returns have to be forwarded to regional offices from district offices for numbering and control) and to the low level of computerization.

Overstatement of Deductions

Another important source of evasion is the overstatement of expenses and allowable deductions in the case of trade/business, professional income tax filers. The NTRC (1986) reported a wide dispersion of ratio of deduction claimed to gross income indicating that overstatement of deductions is a prevalent practice. Consistent with results of studies in other countries, there is some evidence that evasion tends to increase with the

level of marginal income and by implication with marginal tax rates. Using group data generated by NTRC (1987) from a sample of business income tax returns in 1985, we regressed the ratio of tax deduction claimed to gross income on gross income levels; we then found a statistically significant positive relationship between the two variables. An investigation of more disaggregated data indicated more sectoral variation in the results. In particular, a positive and significant relationship between deductions to gross income ratio and gross income levels can be found in all sectors except electricity, gas and water, wholesale and retail trade, social community and personal services (Table 14).

Table 14
RESULTS OF REGRESSIONS OF DEDUCTION RATIOS TO GROSS INCOME LEVELS OF INDIVIDUAL BUSINESS INCOME TAX FILERS, 1985^a

Sector	Constant	Coefficient	T-Statistic	R ²
TOTAL	76.72	5.65 D-06	7.09	.30
Agriculture	78.15	7.32 D-06	2.59	.40
Mining	75.51	1.64 D-05	3.80	.67
Manufacturing	75.54	8.37 D-06	3.30	.50
Electricity, gas, & water	72.36	3.59 D-05	1.85	.46
Construction	75.90	6.58 D-06	4.06	.58
Wholesale/retail trade	76.81	1.20 D-06	.44	.02
Transportation	82.52	4.82 D-06	3.12	.45
Finance	67.10	9.10 D-06	4.23	.62
Services	82.50	2.98 D-06	1.63	.18
NEC	71.85	8.97 D-06	2.94	.46

^a For basic data, see Annex 4-B of NTRC (1987).

Our results suggest that expected returns from more intensive tax audit/investigation are higher in upper income brackets and in the sectors where significant direct relationship between deduction and income levels is found.

On the other hand, regressions using group data generated by the NTRC from a sample of corporate income tax payers yielded insignificant results (Table 15). This may be due to the fact that the corporate income tax is not progressive like the individual income tax with graduated marginal tax rates schedule.

For corporations, what is notable is the positive correlation between the percentage increase in tax after audit and the ratio of deduction claimed to gross income when sectoral data are used (Table 16). While there is an element of the chicken and egg paradox in the relationship of defi-

Table 15
RESULTS OF REGRESSION OF DEDUCTION RATIOS TO GROSS INCOME
LEVELS OF CORPORATE TAX FILERS, 1985^a

Sector	Constant	Coefficient		T-Statistic	R ²
TOTAL	87.82	-3.15	D-07	-.44	.002
Agriculture	90.32	4.51	D-07	.80	.05
Mining	85.17	-1.20	D-05	-1.18	.26
Manufacturing	88.34	-5.76	D-07	-1.01	.08
Electricity, gas, & water	96.99	-1.05	D-06	-.92	.30
Construction	87.90	-1.22	D-07	-.90	.06
Wholesale/retail trade	89.19	5.04	D-08	.10	.008
Transportation	93.09	2.56	D-07	.52	.02
Services	90.72	1.12	D-07	1.46	.15
NEC	93.96	-1.24	D-05	-2.77	.43

^{a/} For basic data, see Annex 4-A of NTRC (1987).

Table 16
DEFICIENCY TAX AND DEDUCTION RATIOS FOR CORPORATIONS, 1984^a

Industry	Ratio of Deficiency Tax to Actual Tax	Ratio of Deduction to Gross Income
Agriculture	.268	.400
Mining	.268	.603
Manufacturing	.259	.728
Electricity, gas, & water	.610	.914
Construction	.412	.966
Wholesale/retail trade	.259	.198
Transportation	.412	.913
Services	.412	.933
Financing	.512	.773
NEC	.412	.486

^{a/} SOURCE: NTRC (1987).

ciency tax rates and reduction ratios, it cannot be denied that deduction ratio is an important indicator of evasion levels.

In this light, we recommend legislation that will institute statutory limits on allowable deductions.

Complicated Tax Rules

Muten, *et al.* (1985) reported that BIR officials stressed the difficulty of administering various portions of the sales taxes due to the very many rates imposed as well as the tax credit system used. It is a well known rule in public administration that more complicated rules are more difficult to enforce than simpler ones. The recently signed Executive Order on the value added tax (VAT) will simplify the sales tax system by reducing the number of rates from five to two. The present system which has a very wide coverage dissipates the tax collection efforts. The new EO, by allowing for the exemption of enterprises with gross sales below ₱200,000 per annum should help the BIR in giving their work sharper focus. However, experiences in other countries show that adequate computer support is essential in the successful operationalization of a value added system particularly in the area of invoice matching. Furthermore, the experience of South Korea and Taiwan which had encouraging success in VAT implementation suggests the importance of adequate lead-in time spent in extensive information campaigns. The Philippines' lack in this regard might explain the general confusion that accompanied the introduction of VAT and the poor revenue showing of VAT in the country in its first year.

Bank Secrecy Act

It has been pointed out elsewhere (Muten, *et al.*, 1985, Paz and Pitargue 1986) that RA 1405 which prohibits disclosure of bank accounts is a major impediment in the investigation of tax evasion cases. An amendment of this law, is therefore, in order.

Penalties

The theoretical literature suggests that high penalty rate and high probability of detection are major deterrents to tax evasion. The prevalence and the magnitude of tax evasion in the country suggest that existing penalties and the likelihood of being caught and punished are not high enough to discourage evasion. This calls for, first, a review of the present penalty provisions which had been described by Muten, *et al.* (1985) as a "low maximum fine being merely a slap on the wrist and/or a prison sentence that is in virtually all cases regarded as too harsh ever to be imposed," and, second, higher visibility of the BIR's enforcement activity so as to instill some fear in the hearts of taxpayers. The publication of taxpayers and BIR personnel penalized in relation to tax evasion cases should help in this regard.

Corruption in BIR

Corruption in the BIR, or at least, the public's perception that there is corruption in the BIR, would tend to erode tax compliance behavior among taxpayer by reducing the fear of sanctions. Anecdotes of corruption in the BIR are many but Briones' (1979) is one of the few that documents such negative bureaucratic behavior in the agency. She asserted that legal and administrative sanctions are not enough to control this practice because the administrative culture in the BIR encourages it. The solution lies in the reeducation of the BIR personnel, higher wages for BIR employees, leadership by example, and the reduction of opportunities for graft and corruption by reducing the discretionary authority of BIR agents.

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