An Empirical Analysis of the Impact of Government Tax and Auditing Policies on the Size of the Underground Economy: The Case of the United States, 1973-94

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An Empirical Analysis of the Impact of Government Tax and Auditing Policies on the Size of the Underground Economy:

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ABSTRACT. This study empirically examines the impact of federal *income tax* rates, IRS penalties on unpaid tax liabilities, and audit rates of the *Internal Revenue Service* on the size of the *underground economy* in the United States. Recent data generated by *Edgar Feige* are used to measure the size of the underground economy. Based on ordinary least squares estimates, it is found that the maximum marginal personal *income tax rate* raises the size of the underground economy. In addition, the size of the underground economy is found to be a decreasing function of both the percentage of *tax returns* audited and the penalties imposed by the IRS on unpaid taxes.

I

Introduction

THERE IS AN EXTENSIVE LITERATURE addressing the determinants of tax evasion behavior. Aside from a variety of principally theoretical models of tax evasion behavior (Falkinger, 1988; Allingham and Sandmo, 1972; Klepper, Nagin, and Spurr, 1991; Das-Gupta, 1994; Pestieau, Possen, and Slutsky, 1994), there are a number of studies of such behavior using (a) questionnaires or experiments (Spicer and Lundstedt, 1976; Friedland, 1982; Spicer and Thomas, 1982; Benjamini and Maital, 1985; Alm, Jackson, and McGee, 1992; Baldry, 1987; De Juan, 1989; Thurman, 1991), or, in a few cases, (b) what De Juan, Lasheras, and Mayo (1994) refer to as "official data" (Clotfelter, 1983; Slemrod, 1985; Pommerehne and Weck-Hannemann, 1989; Erard and Feinstein, 1994). Indeed, the issue of the size of the underground economy, which consists essentially of economic transactions (or income) that are not reported to the government tax-collection authority, was the subject of an entire recent issue of the journal *Public Finance/Finances Publiques* (Supplement to Volume 49/1994).

It is generally accepted that the size of the underground economy may be affected by income tax rates (Clotfelter 1983; Slemrod, 1985; Pommerehne and Weck-Han-

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nemann, 1989). Clearly, the higher the pertinent marginal tax rate, the greater the benefit (in terms of a reduced tax liability) from not reporting taxable income. It is also commonly found that the greater the risk associated with participating in the underground economy, the less the degree to which economic agents will choose to either not report, or to underreport their taxable income [Friedland (1982), Spicer and Thomas (1985), De Juan (1989), Alm, Jackson, and McKee (1992)].

The contribution of this study is fundamentally empirical. In particular, based on new, improved data (available directly from Professor Edgar Feige) through 1994 on the size of the underground economy in the United States, this study empirically seeks to provide new, updated insight into the determinants of the size of the underground economy. Relying on tax evasion theory [Pestieau, Possen, and Slutsky (1994, 20)], the analysis uses the Feige data and "official data" from the Internal Revenue Service (IRS) to determine the impact of (1) government-tax-rate policies, (2) IRS audit probabilities, and (3) IRS penalty assessments on the **relative** size of the underground economy in the United States.

In this study, income-tax-rate policies are principally reflected by maximum marginal federal personal income tax rates and federal corporate income tax rates. In addition, unlike most previous studies, in three of the six estimates provided in this study, measures of the social security tax rate are also included. To reflect the probability of IRS audits, past actual audit rate data are used. Finally, unlike in previous related studies, to reflect IRS penalties, here actual IRS data is used that indicate the total penalty assessed by the IRS per dollar of adjusted gross income.

II

Model

LET THE ECONOMY consist of n economic agents. These economic agents generate economic value: income, and have a choice as to whether or not to report their income to the tax-collecting authority. To the extent that said income is reported to the tax-collecting authority, a tax liability is incurred.

The relative probability that the representative economic agent will not report its taxable income to the tax authority is an increasing function of the expected gross *benefit* to the agent of not reporting income, eb, and a decreasing function of the expected gross *costs* to the agent of not reporting income, ec. Thus, the ratio of the *probability* of not reporting income, pnr, to the probability of reporting income, (1 − pnr), is described for the representative economic agent by:

$$pnr/(1 - pnr) = f(eb, ec),\ f_{eb} > 0,\ f_{ec} < 0 \qquad [1]$$

In turn, the expected gross benefits from *not* reporting income are antici-

pated to be an increasing function of the income tax rate (Cagan, 1958; Bawley, 1982; Tanzi, 1982 and 1983; Clotfelter, 1983; Slemrod, 1985; Pyle, 1989). Presumably, the income tax rate may take at least two forms, the *personal income tax rate* (PT) and the *corporate income tax rate* (CT), such that:

$$eb = g(PT, CT),\ g_{PT} > 0,\ g_{CT} > 0 \qquad [2]$$

Furthermore, the expected gross costs of not reporting income are likely to be an increasing function of the risks thereof, which can include penalties (Pestieau, Possen, and Slutsky, 1994) such as fines, interest on unpaid past tax liabilities, an increased likelihood of tax audits in the future (Pestieau, Possen, and Slutscky, 1994), and/or imprisonment, as well as potential fees resulting from legal or other representation. In the United States, these risks are presumably enhanced by an increase in AUDIT, the *percentage of income tax returns* that is audited by the IRS. In addition, in this study, to the representative economic agent in the society, the expected penalty from not reporting taxable income, if one is audited by the IRS, is proximately measured by the *total pecuniary penalty* assessed by the IRS per dollar of adjusted gross income (EPEN):

$$ec = h(AUDIT, EPEN),\ h_{AUDIT} > 0,\ h_{EPEN} > 0 \qquad [3]$$

Substituting from equations [2] and [3] into equation [1] yields:

$$pnr/(1 - pnr) = b(PT, CT, AUDIT, EPEN),\ b_{PT} > 0,$$

$$b_{CT} > 0,\ b_{AUDIT} < 0,\ b_{EPEN} < 0 \qquad [4]$$

Let AGI represent the *true value of the total actual adjusted gross income* in the economy, i.e., AGI = UGE + RAGI, where UGE is the *dollar size of the underground economy*, i.e., the dollar size of the *unreported* AGI, and RAGI is the dollar size of the *reported* AGI. Thus, it follows that:

$$UGE = (pnr)^*AGI \qquad [5]$$

and

$$RAGI = (1 - pnr)^*AGI \qquad [6]$$

It then follows that:

$$UGE/RAGI = (pnr)^*AGI/(1 - pnr)^*AGI = (pnr)/(1 - pnr) \qquad [7]$$

From [4] and [7], we obtain:

$$UGE/RAGI = b\ (PT, CT, AUDIT, EPEN),$$

where

$$b_{PT} > 0,\ b_{CT} > 0,\ b_{AUDIT} < 0,\ b_{EPEN} < 0 \qquad [8]$$

III

Empirical Framework

THE ANALYSIS NOW seeks to provide empirical estimates based on the above model. To begin with, two different tax rate measures are introduced, the *maximum marginal federal personal income tax rate* (MMPIT) prevailing in a given year and the *average effective federal corporation income tax rate* (ACIT) prevailing in a given year. In addition to MMPIT and ACIT, the variable AUDIT, which is the percentage of federal tax returns that has actually been subjected to an IRS audit in any given year, is included as a measure of the expected likelihood of being subjected to an IRS audit. Finally, the variable EPEN, which is the total pecuniary penalty assessed by the IRS per dollar of AGI in any given year, is included to reflect the expected penalty from not reporting AGI if one is audited.

There are certainly other possible measures of the federal personal income tax rate that could have been adopted in lieu of MMPIT, including perhaps the *average effective federal personal income tax rate* (AEPIT). Nevertheless, MMPIT is adopted in lieu of AEPIT for a number of reasons. To begin with, AEPIT may not usefully reflect the degree of progressivity in the U.S. Internal Revenue Code since if everyone fully reported/disclosed his AGI, the average tax rate paid would be observably higher than AEPIT since so many more people would be thrust into higher and higher tax brackets. Because of this phenomenon, for those informed and enlightened persons who choose to underreport their incomes, the rational expectation of a relevant income tax bracket would tend to be underestimated by AEPIT since they know full well of its not reflecting their income and would-be tax liability circumstances, given the progressivity of the tax structure. In other words, AEPIT is misleading since its value would be so different in the presence of more fully disclosed incomes. Moreover, AEPIT reflects so many factors other than simply marginal tax rates, e.g., exemptions and a myriad of deductions, that the degree to which it can represent tax rate progessivity is very questionable. Furthermore, the federal income tax system in the United States typically consists of a large number of tax brackets. For instance, until the Tax Reform Act of 1986, there were 15 marginal tax rates. In such a context, what single rate, other than MMPIT, could possibly more usefully reflect the system's progressivity, especially in light of the shortcomings of AEPIT?

Indeed, the maximum marginal personal income tax rate (MMPIT) is a very useful measure of tax rate progessivity since it directly measures the most progessive rate. Furthermore, since it applies to all taxable income above a certain level, MMPIT thereby represents a relevant potential "worst-case scenario" for all higher income persons choosing to underreport income.

The choice of ACIT as the measure of the federal corporate tax rate is, perhaps, a simple decision. To begin with, in the United States, larger corporations tend to be publicly owned; consequently, they are subject to far more scrutiny than smaller, privately owned corporations. The larger corporations typically are thus less likely candidates for not reporting income. Furthermore, officers at the publicly-owned corporations tend to have incentives to report income fully in order to provide a record of good performance to their stockholders. Smaller corporations, more often are privately owned and have no such incentives, and are not subject to the public scrutiny that publicly-held corporations are. Thus, it is often much less difficult for these smaller privately owned firms to underreport their incomes. Moreover, to these smaller firms, the lower rates in the federal corporate income tax structure would certainly tend to be more relevant than to the larger corporations. Since the maximum rate may also be relevant to at least some of these smaller firms, it is clear that an average effective corporate income tax rate (ACIT) is a reasonable tax rate for measuring gross benefits expected to be garnered from underreporting income. The maximum corporate income tax rate might be more appropriate than the ACIT if all or most corporations were large and publicly owned, especially since the maximum corporate tax rate applies at a relatively modest net income level, but since so many corporations in the United States are private, smaller firms, the average may nevertheless be more useful.

To measure AUDIT and EPEN, respectively, data indicating the percentage of federal income tax returns in any given year that were actually audited by the IRS and the total penalty (penalties plus interest) assessed by the IRS per dollar of AGI were obtained from the IRS *Annual Reports.*

Finally, the data for measuring the relative magnitude of the underground economy need to be addressed. A number of authors have estimated the size of the underground economy over the years. Among the well known past major contributions in this area in terms of the United States are those by Tanzi (1982; 1983), Feige (1994), Bawley (1982), and Pyle (1989).

Most recently, Feige has generated updated estimates for the United States of aggregate unreported income as a percent of adjusted gross income based on the General Currency Ratio (GCR) Model, employing an IRS estimate of unreported income for 1973 as the base year. These data are available for the years 1973-1994 and since they appear to be the most recent, updated data set currently available on the relative size of the underground economy, they become the dependent vari-

able (UGE/RAGI) in the empirical estimates provided below. These data are provided in column (a) of Table 1.

All of the data used in this analysis are annual and are available for the entire 22 year period, 1973 through 1994. All of the time series variables were examined for non-stationarity using the Augmented Dickey-Fuller (ADF) test. The ADF test results reveal that the variables (UGE/RAGI) and MMPIT are not stationary in levels but are stationary in first differences. According to the ADF test, the remaining variables, ACIT, AUDIT, and EPEN, are stationary in levels.[1]

IV

Empirical Estimates

BASED ON THE MODEL and data described above, we initially estimate the following reduced-form equations:

$$(UGE/RAGI)_t = a0 + a1\ MMPIT_{t-1} + a2\ ACIT_{t-1} + a3\ AUDIT_{t-1} + a4\ EPEN_{t-1} + a5\ TREND + u \quad [9]$$

$$(UGE/RAGI)_t = b0 + b1\ MMPIT_{t-1} + b2\ AUDIT_{t-1} + b3\ EPEN_{t-1} + b4\ TREND + u' \quad [10]$$

$$(UGE/RAGI)_t = c0 + c1\ MMPIT_{t-1} + c2\ ACIT_t + c3\ AUDIT_{t-1} + c4\ EPEN_{t-2} + c5\ TREND + u'' \quad [11]$$

where:

$(UGE/RAGI)_t$ = the updated Feige GCR estimates of the underground economy as a percent of aggregate adjusted gross income in year t, t = 1973,...,1994;

a0, b0, c0 = constants;

$MMPIT_{t-1}$ = the maximum marginal federal personal income tax rate in year t − 1, as a percent;

$ACIT_{t-1}$, $ACIT_t$ = the average effective federal corporate income tax rate in year t − 1 (year t), as a percent;

$AUDIT_{t-1}$ = the percentage in year t − 1 of filed federal income tax returns that was subjected to an IRS audit;

$EPEN_{t-1}$, $EPEN_{t-2}$ = the expected average penalty from underreporting income to the IRS, year t − 1 (year t − 2), computed as the total dollar penalty (on unreported income) assessed by the IRS per dollar of reported AGI;

TREND = a simple linear trend variable, TREND = 1,...,22

u, u′ u″ = stochastic error terms.

The MMPIT data were obtained from the IRS (1972-1994); the ACIT data were computed from the *Economic Report of the President, 1995*, Table B-90; data for variables AUDIT and EPEN were obtained from the IRS (1972-1994); the estimated data for the UGE/RAGI data come from Feige.

The ordinary least squares (OLS) estimates of equations [9], [10], and [11] are provided in equations [12], [13], and [14], respectively:

$$\delta(\text{UGE/GDP})_t = 12.42 + 0.145\ \delta\text{MMPIT}_{t-1} + 0.051\ \text{ACIT}_{t-1} - 4.42\ \text{AUDIT}_{t-1}$$
$$(+3.73) \qquad (+0.47) \qquad (-3.89)$$
$$- 0.665\ \text{EPEN}_{t-1} - 0.406\ \text{TREND}$$
$$(-3.44) \qquad (-4.36)$$

$$R^2 = 0.61,\ \text{DW} = 1.80,\ \text{Rho} = 0.07,\ \text{F} = 4.61 \qquad [12]$$

$$\delta(\text{UGE/GDP})_t = 14.71 + 0.139\ \delta\text{MMPIT}_t - 4.373\ \text{AUDIT}_{t-1}$$
$$(+3.66) \qquad (-3.91)$$
$$- 0.701\ \text{EPEN}_{t-1} - 0.425\ \text{TREND}$$
$$(-4.66) \qquad (-3.77)$$

$$R^2 = 0.60,\ \text{DW} = 1.76,\ \text{Rho} = 0.08,\ \text{F} = 6.05 \qquad [13]$$

$$\delta(\text{UGE/GDP})_t = 10.33 + 0.164\ \delta\text{MMPIT}_t + 0.276\ \text{ACIT}_t - 7.579\ \text{AUDIT}_{t-1}$$
$$(+3.93) \qquad (+2.16) \qquad (-2.50)$$
$$- 0.619\ \text{EPEN}_{t-2} - 0.57\ \text{TREND}$$
$$(-2.08) \qquad (-2.40)$$

$$R^2 = 0.57,\ \text{DW} = 1.76,\ \text{Rho} = 0.06,\ \text{F} = 3.67 \qquad [14]$$

where terms in parentheses are t-values and δ is the first-differences operator that applies for the variables that are stationary in first differences.

In equations [12]-[14], all 11 of the estimated coefficients on the non-TREND time series have the expected signs; ten of these 11 coefficients are significant at the five percent level or beyond. The Durbin-Watson and Rho statistics reveal the absence of any serious serial correlation problems. The coefficients of determination run in the 0.60 range, so that the models explain roughly 60 percent of the variation in the dependent variable.

Based on equations [12]-[14], the estimated coefficients on variable δMMPIT are all positive and significant at the one percent level. Thus, it appears that the higher the maximum federal personal income tax rate, the larger the relative size of the underground economy. This finding is consistent with the study of data from audits of individual tax returns by Clotfelter (1983), who finds underreporting of income to be an increasing function of marginal tax rates. The results in the present study are also consistent with the findings based on "official data" in Slemrod (1985) and Pommerehne and Weck-Hannemann (1989), as well as the findings based upon experimentation in Baldry (1987), Alm, Jackson and McKee (1992), and Benjamini and Maital (1985).

As for the corporate income tax rate variable, the results are somewhat mixed. In equation [12], the coefficient is insignificant, whereas in equation [14] it is significant at the five percent level. Thus, the evidence in equation [12] implies that this variable has no effect on the relative size of the underground economy; on the other hand, the evidence in equation [14] implies that it does act to increase the size of the underground economy.

Next, the estimated coefficients on variable AUDIT in equations [12] and [13] are negative and significant at the one percent level, whereas the coefficient for AUDIT in equation [14] is significant at the three percent level. Thus, as tax evasion theory predicts (Pestieau, Possen, and Slutsky, 1994), all of these estimates imply that the higher the IRS audit rate of filed federal income tax returns, the smaller the relative size of the underground economy. This finding is in principle consistent with the experimental results found in Friedland (1982), Spicer and Thomas (1982), and Spicer and Lundstedt (1976). Finally, in equations [12] and [13], the estimated coefficients on the EPEN variable are negative and significant at the one percent level, whereas the coefficient on this variable is significant at the five percent level in equation [14]. Thus, as tax evasion theory predicts (Pierre, Possen, and Slutsky, 1994), the greater the expected penalty from underreporting AGI, as measured by variable EPEN, the smaller the relative size of the underground economy.

Having provided and summarized the results expressed in these estimated equations, this study notes that the latter can be used to indicate the size of the underground economy implied therein. Solving and extrapolating from equation [12], which is the basic equation most directly flowing from the model in equation [8], column (b) of Table 1 provides the size of the underground economy implied by the results. As shown in column (b) of Table 1 and by the residuals provided in column (c), the model provides a reasonably accurate measure of the size of the underground economy as estimated by Feige, i.e., the estimated values for the size of the underground economy shown in column (b) are remarkably close to the values shown in column (a).

Table 1

FEIGE ESTIMATES OF AGGREGATE UNREPORTED INCOME AS A PERCENT OF ADJUSTED GROSS INCOME

Year	Feige Estimate as a Percent (a)	Regression Estimate (b)	Residual (a)-(b) (c)
1973	14.84	--	--
1974	18.21	--	--
1975	20.87	25.619	-4.749
1976	24.17	27.306	-3.136
1977	26.20	27.802	-1.602
1978	26.90	27.122	-0.22
1979	28.36	26.833	1.526
1980	30.04	26.943	3.096
1981	29.04	26.063	2.977
1982	27.95	25.9	2.05
1983	26.01	24.376	1.634
1984	26.56	23.531	3.028
1985	25.39	22.999	2.391
1986	21.99	22.944	-0.954
1987	20.03	22.776	-2.74
1988	21.73	23.501	-1.771
1989	24.20	23.129	1.071
1990	25.08	22.47	2.61
1991	24.77	22.794	1.976
1992	21.46	22.862	-1.402
1993	19.79	20.04	-0.25
1994	20.71	21.15	-0.44

Arguably, aside from tax variables such as MMPIT and ACIT, social security taxes could also contribute to the size of the underground economy. Consider, for example, the case of the self-employed, who in many instances may have a considerable degree of latitude in terms of how much of their income they report.[2] By underreporting their incomes, the self-employed can potentially avoid not only income tax liabilities but also social security tax liabilities. Moreover, people who labor for others "off the books" can presumably avoid not only income taxes but also social security taxes by not reporting or by underreporting their incomes. In such cases, the higher the social security tax rate, the greater the incentive to underreport income.

Determining "the" applicable social security tax rate for any given year is not a simple matter. For example, social security tax rates payable by the self-employed

are generally much greater than for employees per se. Indeed, not only have the self-employed been subject to higher social security tax rates, but they also have faced a much more rapidly rising rate. Moreover, in 1990, self-employed individuals were subject to a 15.3% social security tax rate, twice the rate that applied for employees; however, beginning with 1990, half of the tax became deductible for income tax purposes and for computing self-employment income subject to social security taxation. Thus, the social security tax rate payable by the self-employed (SELFT) can be used as the measure of "the" social security tax rate, but it is clearly an imperfect measure. Likewise, since the social security tax rate payable by employees (EMPLT) is so different from that payable by the self-employed, it too is an imperfect measure of "the" social security tax rate.

Clearly, identifying "the" effective social security tax rate is a complex matter. As an alternative to using the variable SELFT or the variable EMPLT as the proxy for the social security tax rate, this study suggests that the effective social security tax rate in any given year could be proximately measured as the ratio of the total social security taxes collected in that year to the total reported AGI in that year. This ratio, expressed as a percent, is an estimate (albeit somewhat crude) of the average effective social security tax rate (AVESST) in the year.

Based on the reduced-form model expressed in equation [9], each of these three proxies for the social security tax rate has been examined. In the following three estimates, variable $SELFT_{t-1}$ is the social security tax rate that applies to the self-employed in year $t - 1$, expressed as a percent; variable $EMPLT_{t-1}$ is the rate that applies to employees in year $t - 1$, as a percent; and variable $AVESST_{t-1}$ is the level of social security payments in year $t - 1$ divided by total reported AGI in year $t - 1$, expressed as a percent. Using the ADF test, variables $SELFT_{t-1}$, $EMPLT_{t-1}$, and$ESST_{t-1}$ were all found to be non-stationary in levels but stationary in first differences.

OLS estimates of equation [9], inclusive of each of these proxies for "the" social security tax rate, are provided in equations [15]–[17]:

$$\delta(UGE/RAGI)_t = 19.72 + 0.147\ \delta MMPIT_{t-1} + 0.021\ ACIT_{t-1} - 5.95\ AUDIT_{t-1}$$
$$(+4.32) \qquad (+0.20) \qquad (-3.57)$$
$$- 1.05\ EPEN_{t-1} - 0.50\ TREND + 1.11\ \delta SELFT_{t-1}$$
$$(-2.64) \qquad (-4.00) \qquad (+2.19)$$
$$R^2 = 0.63,\ DW = 1.79,\ Rho = 0.06,\ F = 3.91 \qquad [15]$$

$$\delta(UGE/RAGI)_t = 14.0 + 0.137\ \delta MMPIT_{t-1} + 0.0395\ ACIT_{t-1} - 4.91\ AUDIT_{t-1}$$
$$(+3.52) \qquad (+0.40) \qquad (-4.09)$$

$$- 0.75\ \mathrm{EPEN}_{t-1} - 0.43\ \mathrm{TREND} + 1.34\ \delta\mathrm{EMPLT}_{t-1}$$
$$(-3.76) \qquad (-4.66) \qquad (+1.17)$$

$$R^2 = 0.62,\ \mathrm{DW} = 1.80,\ \mathrm{Rho} = 0.05,\ \mathrm{F} = 3.80 \qquad [16]$$

$$\delta(\mathrm{UGE/RAGI})_t = 8.50 + 0.156\ \delta\mathrm{MMPIT}_{t-1} + 0.068\ \mathrm{ACIT}_{t-1} - 3.57\ \mathrm{AUDIT}_{t-1}$$
$$(+3.59) \qquad (+1.97) \qquad (-2.32)$$
$$- 0.68\ \mathrm{EPEN}_{t-1} - 0.47\ \mathrm{TREND} + 0.243\ \delta\mathrm{AVESST}_{t-1}$$
$$(-3.68) \qquad (-2.67) \qquad (+ 1.90)$$

$$R^2 = 0.61,\ \mathrm{DW} = 1.78,\ \mathrm{Rho} = 0.06,\ \mathrm{F} = 3.65 \qquad [17]$$

The results in these estimates are entirely consistent with those in equations [12]–[14]. Thus, once again there is empirical support for the arguments that the relative size of the underground economy is an increasing function of the maximum marginal personal income tax rate and a decreasing function of both the IRS audit rate and IRS penalty assessments for unpaid taxes. The role of the corporate income tax apparently remains very modest.

All three measures of the social security tax rate exhibit the expected positive signs. In equation [15], the coefficient is significant at the five percent level, whereas the coefficient is not significant at an acceptable level in equation [16] and is significant at the eight percent level in equation [17]. Thus, there appears to be modest evidence that the social security tax rate payable by the self-employed may have contributed to the size of the underground economy.

V

Conclusion

THIS STUDY constructs a simple model for examining the impact of government income tax rates, IRS audit probabilities, and IRS penalty policies on the relative size of the underground economy in the United States. Using updated data from the GCR model on the underground economy for 1973–1994 from Feige, six reduced-form equations are estimated. The findings indicate that: the relative size of the underground economy (UGE/RAGI) is (1) an increasing function of the maximum marginal federal personal income tax rate; (2) a decreasing function of the expected IRS penalty from underreporting income; and (3) an decreasing function of the probability of being audited. In addition, there is limited evidence that the size of the underground economy may be an increasing function of the level of the social security tax rate payable by the self-employed.

Thus, among other things, it appears that the size of the underground economy might be diminished by increased IRS audits and penalties. It also appears that restraint from further increases in maximum marginal personal income tax rates might help to at least restrain the growth of the underground economy.[3]

Notes

1. These ADF test results will be supplied upon written request.
2. The self-employed might be categorized as being among the "hard-to-tax" (Das-Gupta, 1994).
3. The findings in Clotfelter (1983) are worth noting here. Clotfelter's simulations based on actual audited individual tax returns show that tax bills resulting in marginal tax rate reductions will be expected to decrease tax evasion.

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