

Pommerehne, Werner W.; Frey, Bruno S.

Working Paper

The effects of tax administration on tax morale

Diskussionsbeiträge - Serie II, No. 191

Provided in Cooperation with:

Department of Economics, University of Konstanz

Suggested Citation: Pommerehne, Werner W.; Frey, Bruno S. (1992) : The effects of tax administration on tax morale, Diskussionsbeiträge - Serie II, No. 191, Universität Konstanz, Sonderforschungsbereich 178 - Internationalisierung der Wirtschaft, Konstanz

This Version is available at:

<https://hdl.handle.net/10419/101488>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

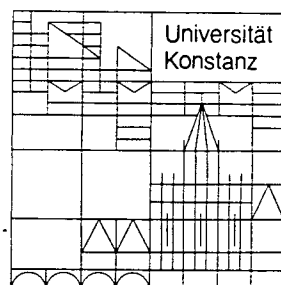
Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Sonderforschungsbereich 178
„Internationalisierung der Wirtschaft“

Diskussionsbeiträge

Juristische
Fakultät

Fakultät für Wirtschafts-
wissenschaften und Statistik

Werner W. Pommerehne
Bruno S. Frey

**The Effects of Tax Administration
on Tax Morale**

**THE EFFECTS OF TAX ADMINISTRATION
ON TAX MORALE**

Werner W. Pommerehne

Bruno S. Frey

Serie II - Nr. 191

September 1992

THE EFFECTS OF TAX ADMINISTRATION ON TAX MORALE

by

Werner W. Pommerehne

and

Bruno S. Frey

ABSTRACT

Econometric analyses of the standard model of tax evasion overwhelmingly reveal that auditing rates and fines do not have the expected, systematic and sizeable deterrence effect on tax evasion. It is shown that tax morale may be the missing factor. In Swiss cantons, characterized by referendum democracy, tax morale seems to be significantly higher than in cantons with representative democracy. As an increase in tax auditing is known to citizen in referendum democracy to undermine tax morale more strongly than in representative democracy, they rationally choose a lower level of auditing than politicians do in a representative democracy; on the other hand, the fines for detected taxpayers are set higher.

JEcLit-Classification: H26 (Tax Evasion)

THE EFFECTS OF TAX ADMINISTRATION ON TAX MORALE

by

Werner W. Pommerehne

(Universities of Saarbrücken and Zurich)

and

Bruno S. Frey

(Universities of Zurich and Basle)*

I. Determinants of Tax Evasion

1. Standard Approach

The standard economic theory of tax compliance, as first formulated by Allingham and Sandmo (1972)¹, has directly evolved from Becker's (1968) pioneering model of criminal choice. The individual is assumed to maximize the expected utility (EU) of the tax evasion gamble by weighting the uncertain benefits of successful non-compliance against the risky prospect of detection and punishment

$$\text{Max EU} = p U(Y_c) + (1-p) U(Y_{nc}),$$

where $Y_c = Y - r \cdot Y_d - f[r(Y - Y_d)]$ is an individual's income if he or she is caught underreporting (p represents the probability of getting detected, Y true income, assumed to be exogenous, Y_d the income declared to the fisc, r the tax rate and f the fine or penalty tax rate applied to the amount of money he or she was supposed to pay in taxes, but did not pay), and $Y_{nc} = Y - r \cdot Y_d$ is the income if he or she is not caught.

* We are grateful for helpful comments to Joel Slemrod, Daniel Rubinfeld, Albert Hart and the participants of the Workshop on International Political Economics of Taxation (SFB 178) at the University of Constance (F.R.G.).

¹ Reviews of the theoretical developments of microeconomic models of tax (non-)compliance are provided, e.g., in Cowell (1985, 1990), Jackson and Milliron (1986), Roth, Scholz and Witte (1989) and Pyle (1990) with a large number of references to the literature. A stronger psychological orientation is given in Robben et al. (1990) and Elffers (1991).

The optimization generates a first-order condition where the individual equates the expected marginal utility of declared income in the two states of the world, one in which the evader is caught and one in which he/she is not. The first-order condition can also be applied to determine reactions in the reporting behaviour of the individual to changes in the various policy parameters. Nearly all models of this kind subscribe to the notion underlying the economics of crime: An increase in the probability of detection and in the penalty tax rate unambiguously decreases non-compliance as individuals rationally react to the higher cost of tax evasion by evading less. On the basis of these generally accepted notions it is hypothesized that deterrence works.

Changes in the tax rate and in income have uncertain effects on declared income, effects which depend upon the individual's attitude towards risk: Under the usual assumption of decreasing absolute risk aversion, increasing the tax rate will decrease non-compliance, whereas a rise of income will increase non-compliance. This is true when non-compliance is measured by the absolute amount of income not declared. When underreporting is measured by the share of (true) income concealed, a negative effect of income on non-compliance is expected, given decreasing absolute risk aversion and provided that the relative risk aversion rises as income increases (Fishburn 1981).

The model of tax evasion sketched has undergone a number of refinements since its first presentation; yet, its basic features are retained in recent theoretical and empirical applications.

2. Estimates for Switzerland

(a) Model Specification

In order to examine these hypotheses for the 25 cantons of Switzerland, the following estimation equation is postulated

$$(1) Y_{nd_{it}} = a_0 + a_1 p_{it} + a_2 f_{it} + a_3 r_{it} + a_4 Y A_{it} + a_5 Y_{it} + a_6 N Y_{it} + a_7 A_{it} + e_{it}$$

where $Y_{nd_{it}}$ refers to the share of true income which is not declared to the fisc in the canton i ($i = 1, \dots, 25$) at time t ($t = 1965, 1970, 1978$). The other variables correspond to those mentioned or refer to institutional and structural factors to be explained in the following section.

(b) Data

Y_{nd} denotes the gross household income gap compiled for each Swiss canton as the difference between adjusted gross household income (derived from figures presented by cantonal tax authorities) and gross household income on a national account base calculated independently from tax authorities by Fischer, Altermatt and Resegatti (1981).² Due to these calculations, the data set only refers to 1965, 1970 and 1978.

As an approximation for the probability of detection (p), the number of (individual income) tax audits per 1000 taxpayers in each canton is used. This proxy takes into account that individuals' subjective evaluation of the probability of being detected will depend on the number of acquaintances recently audited by the fisc. The penalty tax rate, or fine f , is approximated by the standard penalty tax rate, which is expressed as a multiplicative factor of taxes evaded. The average marginal tax rate (r) is compiled from tax authority information delivered to taxpayers; it refers to the federal and cantonal/local income tax due at the true average income (per taxpayer in each canton and in the respective year). Under a (linear-)progressive tax schedule, which characterizes the Swiss case, not only the marginal tax rate, but also other factors related to the tax system such as low income allowances/deductions (YA) will affect compliance behaviour (see Crane and Nourzad 1987); the amount of income allowances (in relation to household income) should have the opposite effect than that of the tax rate.

Institutional and structural factors, too, will influence non-compliance. We include the share of non-wage income (NY), which is expected to positively influence non-compliance, since this component of income is less observable than wage income. A factor often used in tax evasion analyses³ relates to taxpayers' age (A). Its influence on compliance cannot be predicted a priori; elderly people may be more experienced in tax matters, which would result in a positive impact on non-compliance. But a large part of their income comes from the public purse (pensions, subsidies); thus, if they fear some

² Both income measures do not conceptually coincide because gross household income (GHI) includes realized capital gains, whereas personal income derived from national income accounts does not. However, realized capital gains are taxed separately (by the cantons); they are deducted from GHI. Furthermore, personal income includes all residents, while GHI excludes low-income earners and foreigners. Their population share and their gross income have been computed with the help of an econometric model using information from various sources (see Weck-Hannemann and Pommerehne 1989 for a detailed description). A problem with the use of a non-compliance estimate based on the difference between these two income measures may arise from the fact that national income estimates partially depend on information from tax returns. Yet, the fraction of national income estimates based on information from tax authorities is less than five percent. In addition, when using this proxy, only evasion by understating income is considered; evasion by overstating deductions is disregarded.

³ See Pommerehne (1985) for a review of these studies.

information exchange between the respective public authorities, a negative effect on tax cheating can also be expected.

(c) Empirical Results

Most empirical studies assume that tax compliance is influenced by the probability of detection and the perceived penalty tax rate, both of the same period. Yet, both deterrent measures may in turn be influenced by the extent of tax evasion in the same and/or the preceeding years, i.e. they are endogenous. Thus, a simultaneous equation system has been estimated, where Y_{nd} , p and f represent the endogenous variables.⁴

The results of the pooled cross-section/time series analysis for the share of (true) income which is not declared (in percent), is (t-statistics in parentheses)⁵

$$(2) Y_{nd} = 1.02 - 2.79(*) p - 2.45 f + 0.78(*)r - 0.41**YA$$

$$(0.69) \quad (-1.68) \quad (-0.65) \quad (1.99) \quad (-3.21)$$

$$-3.23 \ln Y + 0.63** NY - 0.92* A$$

$$(-0.39) \quad (2.97) \quad (-2.24)$$

$$R^2 = 0.67; \bar{R}^2 = 0.62; d.f. = 42; F\text{-value} = 12.01.$$

The coefficients of p and f both show the expected negative sign; however, only that of the probability of detection barely reaches the level of statistical significance,⁶ suggesting that the cantonal tax authorities mainly react to non-compliance by variations

⁴ The probability of detection, the penalty tax rate, and the share of income concealed, each depends on the other (endogenous) variables in the same time period, as well as on exogenous variables and on the variable itself in the previous period. The calculated values of the endogenous variables are then used to get unbiased estimates in equation (2). The time index only refers to the years 1970 and 1978, as the observations for 1965 are exhausted for the first step of the estimation procedure. The income variable is included as logarithm in order to make it compatible with other share variables.

⁵ Two asterisks (one asterisk, one asterisk in parentheses) indicate(s) statistical significance at the 99%-(95%-, 90%- respectively) confidence level, using a two-tailed test; R^2 (\bar{R}^2) is the coefficient of determination (corrected by the degree of freedom, d.f.); the F-value refers to the statistical significance of the total estimate.

⁶ The same holds if the probability of detection is approximated by other indicators such as the number of audit and appeal processes or the number of tax auditors (each per 1000 taxpayers) and if the standard penalty rate (applied in 90% of all cases) is replaced by some (weighted) combination of the minimal, standard and maximum penalty tax rates. These results make another hypothesis doubtful, which is derived in the standard literature (Singh 1973, Cowell 1987), namely that these two policy measures are perfect substitutes.

of the audit intensity.⁷ However, the quantitative impact of p is rather small: even doubling the probability of detection would decrease the share of concealed income *ceteris paribus* by only somewhat more than two percentage points.

Concerning the marginal tax rate (r), the results indicate an unexpected positive and significant effect on income underreported, but it is in accordance with other empirical findings.⁸ The significant negative impact of low income allowances (YA) is unexpected, too; however, it is in line with the opposite effect of r . The higher the proportion of less well documented income (NY), the higher non-compliance (significance at the 99%-confidence level). The proportion of old-age taxpayers (A) exerts a negative impact on tax evasion suggesting that the fact that a significant part of their income originates from public funds dominates the countervailing impact of more experience.

These results do not change when, as the dependent variable, the absolute amount of income concealed (per capita of taxpayers) is chosen⁹ and/or when a number of further potentially relevant determinants of tax evasion (such as additional control measures by the fisc) and structural variables such as sex, language, culture (such as the difference between the German and French speaking parts of Switzerland), religion (such as the difference between the Protestant-Calvinist and the Catholic parts of Switzerland), size of community or proportion of unemployment are considered. It turns out that these factors exert no significant effect.

3. Generalization

Recent econometric research for the U.S. comes to essentially the same general results:¹⁰ Higher penalty tax rates have almost no significant impact, and an increase in

⁷ This conclusion is confirmed by a comparison of these results with corresponding OLS-estimates: The instrumental estimates perform better than the OLS-estimates, and only the coefficient of p increases in size and reaches significance. In addition, this conclusion is also plausible for institutional reasons, since the decision about penalty tax rates is made by the cantonal government/parliament and, for various reasons, politicians may be reluctant to quickly change this (presumably deterring) instrument.

⁸ Most of them refer to the U.S.; see Clotfelter (1983), Witte and Woodbury (1985), Slemrod (1985), Alexander and Feinstein (1987), who used individual data for individual years (though some studies report difficulties in disentangling the effects of the tax rate and income); Crane and Nourzad (1986), who applied time-series analyses with aggregate data; and experimental studies which are reviewed in Elffers (1991).

⁹ The only exception is the coefficient of the income variable, which becomes, as is to expect, positive and statistically significant; in turn, the coefficient of p loses its significance.

¹⁰ See the econometric work by Witte and Woodbury (1985), Crane and Nourzad (1985, 1987), Poterba (1987), Dubin and Wilde (1988), Dubin, Graetz and Wilde (1987, 1990), Beron, Tauchen and Witte (1988, 1990), Tauchen, Beron and Witte (1990).

auditing rates slightly reduces tax evasion (if at all, but only in some audit groups and where the audit discovers all unreported income and the taxpayer considers the outcome to be fair; see Roth, Scholz and Witte 1989, p.5, p.102-6). Indeed the size of the deterrent effect is not only small, but also less consequential (according to the β -value) than the impact of other factors (see e.g. Paternoster 1989). Calculations based on empirical magnitudes for the U.S. show that taxpayers would have "to exhibit risk aversion far in excess of anything ever observed for compliance predicted by expected utility theory to approximate actual compliance" (Alm, McKee and Beck 1990, p. 24).

This is also true for Switzerland when - for sake of comparison - the same procedure is chosen as in Alm, McClelland and Schulze (1989, p. 6): Assume that the utility function of the individual is $U(Y) = Y_j^{1-\xi} / (1-\xi)$, where j refers to the two states of the world (c = captured and nc = not captured by the fisc) and ξ is a measure of the individual's relative aversion to risk, for simplicity taken to be constant. Applying the definitions of Y_c and Y_{nc} as given above, the maximization of the expected utility can be solved for the optimum amount of concealed income (Y_d). The solution reads

$$Y_d = Y (f \cdot r + c) / [r(f + c)], \text{ where } c = \{[p(f-1)/(1-p)]^{1/\xi} - 1\}$$

which can be computed for specific values of the parameters p , f , r and ξ . Or, taking the respective mean values from our sample ($p = 0.01$, $f = 1.16$, $r = 0.21$), we may ask under which value of ξ the individual will optimally declare what share of his income. For instance, when $\xi = 1$, all income will be concealed; or inversely, you need a coefficient of relative risk aversion in the order of 122 for achieving a compliance rate of 82.5 percent (of true income), as it prevailed in our sample. Field evidence on ξ for Switzerland (Szpiro 1986), however, suggests that it ranges between 1.5 and 2.¹¹ Thus, in Switzerland, too, an incredibly high level of risk aversion has to be assumed to approach the actual compliance behaviour.

As a reaction to such calculations for different periods (and for the United States), other authors go so far as to state that "most of the theoretical work to date is not particularly useful either for policy analysis or empirical study" (Graetz and Wilde 1985, p. 357). Such conclusions present a riddle in view of the fact that microeconomic analysis has performed well in a great many areas, so well in fact that other social sciences are afraid of "economic imperialism" (Stigler 1984, Hirshleifer 1985) and/or adopt the rational choice paradigm (for law, see Posner 1986, for sociology, Coleman 1990, and, in general,

¹¹ Similar results are found in other countries like the U.S.; see Friend and Blume (1975), Morin and Suarez (1983).

Frey 1992). The empirical findings that deterrence does not seem to work in the case of tax evasion should be understood as a challenge for economists. The need to find a satisfactory explanation is exacerbated by the fact that "Congress explicitly embraced the economic approach to the noncompliance model" (Graetz, Reinganum and Wilde 1986, p. 3) and since 1981, legislation has tightened auditing and raised penalties.

4. Problem

This paper argues that a crucial reason why the standard economic model of tax evasion does not perform very well in empirical analysis may be due to the fact that an important factor influencing tax compliance, namely tax morale, is disregarded. Section II looks at the existing literature dealing with tax morale, and establishes a relationship with institutions, i.e. with different types of democracy. Section III considers the potential damaging effect of deterrence on tax morale and tax evasion. The propositions, developed in each section, are empirically tested, using, again, data from Switzerland. The last section (IV) contains some concluding remarks.

II. The Role of Tax Morale

1. Relevance of Tax Morale

In the 1960s, Schwartz and Orleans (1967) published a much quoted article in which they claim that moral appeals have a positive effect on tax compliance. A large number of further studies¹² have stressed the importance of tax morale and have empirically established a (negative) relationship to tax evasion. Experimental tax compliance research¹³ has produced additional support for the significance of ethical motivations for explaining taxpayers' behaviour. However, experiments report much higher rates of tax evasion than observed in reality. This can be attributed to the laboratory setting of inviting subjects to play an income-maximizing "game", while in real life people are restrained by moral considerations (see Friedland 1982, Webley and Halstead 1985).

¹² See Mason and Calvin (1978, 1984), Tittle (1980), Dean, Keenan and Kelly (1980), Westat (1980), Scott and Grasmick (1981), Lewis (1982), Wärneryd and Walerud (1982), Grasmick and Scott (1982), Maital (1982), Yankelovich, Skelly and White (1984), Mason and Lowry (1984), Webley, Morris and Amstutz (1985), Kaplan and Reckers (1985).

¹³ In addition to Schwartz and Orleans (1967), see e.g. Friedland, Thibaut and Walker (1973), Thibaut, Friedland and Walker (1974), Spicer and Becker (1980).

Using data from the Internal Revenue Service and econometric methods, Witte and Woodbury (1985) find that taxpayers' attitudes have a significant effect on compliance. Introducing the self-imposed cost of shame or feelings of guilt which individuals may experience when they engage in behaviour they consider morally wrong, Grasmick and Bursick (1990) are able to show (within a subjective expected utility framework) that these costs have a statistically significant and robust deterrent effect on tax evasion (as well as on other types of crime). Graetz and Wilde (1985), exploiting IRS' Taxpayer Compliance Measurement Program, conclude that "the high compliance rate can only be explained either by taxpayers' (...) commitment to the responsibilities of citizenship and respect for the law or lack of opportunity for tax evasion" (p. 358), and the same authors (with Reinganum 1986) attribute the observed falling tax compliance to the erosion of tax ethics. Even the ruthless adviser Machiavelli was convinced that no prince can remain in power over an extended period of time unless most subjects willingly obey the laws of the land, including the tax laws (see Roth, Scholz and Witte 1989, p. 118).

There have been efforts to directly measure the concept of tax morale despite the obvious problems involved. A pioneering study comparing the tax morale of various European countries was undertaken in the 1960s by Schmolders (1970) and Strümpel (1969) at the University of Cologne. Song and Yarbrough (1978) measured the tax ethics among residents of a North Carolina city, but their measure is absolute and doesn't allow any comparison to other moral considerations.

More indirect evidence that tax morale may be important for explaining tax compliances is the observation that a significant share of taxpayers "overreport", i.e. pay more taxes than they are obliged to (Kinsey 1984), which is consistent with the existence of tax morale. Clearly, this may be due to mistakes on the part of the taxpayer, or to rational calculation when the fixed costs of monitoring are sufficiently high, but it can also be attributed to "the personal and moral cost of violating a social rule" (Rice 1990, p. 4). Such an interpretation goes well with the observation that a substantial part of individual taxpayers are "habitual compliers" who do not exploit the possibilities available to cheat on taxes (Graetz, Reinganum and Wilde 1986, p. 7).

2. Relationship to Types of Democracy

About twenty years ago, Kolm (1973) argued that the standard portfolio selection model of tax evasion fails to specify how raised taxes are used by the government in a democracy. Indeed, tax evasion is analyzed as a "game against nature", disregarding that the revenue is spent in the form of public expenditure. However, from the viewpoint of

the individual taxpayer, public expenditures are given. Thus, the compliance behaviour of an individual can be taken to be independent of public spending. Individuals will try to freeride, which would justify that the traditional approach only considers the financing of public spending. In reality, however, there is far less freeriding than theoretically expected, with the consequence that this justification does not really hold:

First, there is indeed a large number of empirical work indicating that under many different conditions, both in the context of hypothetical experiments¹⁴ and in a quite realistic framework¹⁵, individuals do not seem to behave as "strong" freeriders. Instead, on average, some 40 to 60 percent of the true willingness to pay (for a public good) are revealed.

Second, there is also increasing empirical evidence that there is a positive relationship between perceived public spending and tax compliance. For instance, the experiments made by Thibaut, Friedland and Walker (1974) lead to the conclusion that there is the less tax cheating, the more the participants feel that their taxes are paid back in the form of public services. More recent experimental work and survey research seem to confirm this relationship.¹⁶ For instance, the experiments by Alm, McClelland and Schulz (1989) and Alm, Jackson and McKee (1990) clearly indicate that tax compliance significantly increased when the provision of a public good was added to a tax compliance game (with no government spending).

This relationship corresponds to the social psychological notion of a basic "norm of reciprocity" (Gouldner 1960). According to "equity theory" (Adams 1963, 1965; Walster, Walster and Berscheid 1977) as well as to "social exchange theory" (Homans 1950, 1961, Blau 1964), an interaction between actors will continue as long as all parties derive net benefits from it. Gross benefit may consist of factors such as approval, agreement of support, and cost of factors such as disapproval or the expense of time and effort. Approval and disapproval, even if only implicit, thus represent forms of reward and punishment (Simon 1957). A taxpayer compares what he or she perceives to be his or her particular "tax balance". If the exchange between the taxes paid and the government services performed is considered equitable, the taxpayer is more inclined to comply to the tax laws than if he or she finds the exchange unfair. If the basic norm of reciprocity is

¹⁴ See, e.g., Marwell and Ames (1981), Brubaker (1982, 1984), Rapaport (1985), Andreoni (1988), Bagnoli and McKee (1991); for a survey of much of this literature see Dawes and Thaler (1988).

¹⁵ See, e.g., Schneider and Pommerehne (1981).

¹⁶ See e.g. Wallschutzky (1984), Becker, Büchner and Slesking (1987).

violated, the equilibrium of recognition and tax morale included in the implicit contract is disrupted.

We wish to argue that it is not only the level of public spending, but also the extent to which those expenditures are in accordance with individuals' preferences which determines tax compliance: The more the citizens are satisfied with what the government supplies, the less they are inclined to cheat on taxes. A type of democracy in which taxpayers may themselves decide on the level and composition of publicly provided goods and their financing is characterized by lower tax evasion than a government structure where the voters have little to say. In an extreme case of direct democracy, a citizens' (town) meeting determines the type and level of public expenditure, the tax rate and the amount of public debt. A somewhat less direct type of democracy uses for that purpose initiatives and referenda. Each individual is also involved in determining the extent of fiscal control and the punishment for tax evasion. In contrast, in a representative democracy, it is the government that makes these decisions, and the citizens may at best and only very vaguely express their preferences on the day of the election.

For a cross-section of Swiss municipalities with a varying extent of direct political participation possibilities, it has been shown (Pommerehne 1978) that the median voter model, which corresponds to the institution of referendum democracy (including pure direct democracy), provides a good (statistical) explanation of (exhaustive) public expenditure, while it is significantly less satisfactory in the case of representative democracies. This outcome suggests that referendum democracy indeed has a greater potential to take care of citizens' preferences. Additional evidence was assembled in two studies co-authored by Schneider (1982, 1983), where public expenditures were forecasted over the period of one decade. Using the median voter model (implying that citizens' preferences are obeyed) on a sample of referendum democracies the ex post forecast explained the level and the structure of public outlays (in constant prices) in a very satisfactory way. When the same estimation structure generated by the median voter model was applied to a set of municipalities with the institution of representative democracies, the forecasts corresponded far less closely to actual outcomes: Representative democracies exhibited a significantly higher (30 percent) increase of total (exhaustive) expenditure and a much stronger deviation from the wishes of the citizens as expressed by the median voter model. Thus, it is possible to conclude that in referendum democracies the preferences of the citizens are much better met than in representative democracies.

Combining the various threads of thought, we are able to formulate

Proposition 1: The further reaching the political participation possibilities of the citizens are (i.e. the more direct the democracy is), the more satisfied they are with the public budget and, consequently, the higher tax morale and tax compliance, *ceteris paribus*, are.

3. Empirical Test

Switzerland provides an ideal case for empirically testing this proposition, as there are a great number of different forms of democracy in the cantons. At the one extreme, there are cantons with obligatory and optional referenda, as well as initiatives on budgetary affairs (size and structure of the budget, tax rates/public debt) at local and cantonal levels (e.g. in the cantons of Glarus, Basle-City and Basle-Country, Lucerne, Zug). At the other extreme, there are cantons with purely representative systems at the local and cantonal levels, i.e. where all decisions on budgetary affairs are made by the elected government or parliament (e.g. the cantons of Fribourg, Valais, Ticino). In order to test our proposition, the cantons are grouped, according to whether, at local and cantonal level, obligatory or optional referenda and initiatives with respect to both the spending side and the tax rates/public debt are fully, partly or not at all existent. About one third ($N = 23$) of the cantonal observations are associated with referendum democracies (REFD) (including all pure direct democracies) and another third ($N = 25$) with pure representative democracies (REPD). The remainder of the cantons satisfy only some of these characteristics, and are therefore classified as belonging neither to the set of (pure) referendum, nor of (pure) representative democracies. REFD and REPD thus do not comprise the whole set of institutional possibilities. With inclusion of the variable REFD into the standard tax evasion equation (1), the estimated coefficient is expected to be negative, with inclusion of the variable REPD to be positive.

The regression results of the extended analysis, again for the part of income not declared, reads¹⁷

¹⁷ Due to the multicollinearity between REFD and REPD ($r = 0.6$), each variable has been included separately; otherwise the estimates are:

$$\begin{aligned}
 Y_{nd} = & 7.40 - 3.42(*)p - 2.40 f + 0.70(*)r - 0.39**YA - 1.07 Y(\ln) + 0.56**NY - 0.98*A \\
 & (0.49) \quad (-1.87) \quad (-0.57) \quad (1.98) \quad (-2.73) \quad (-0.67) \quad (2.98) \quad (-2.31) \\
 & -5.22*REFD + 2.17 REPD \\
 & (-2.30) \quad (1.63) \\
 R^2 = & 0.76; \bar{R}^2 = 0.70; d.f. = 40; F\text{-value} = 8.79
 \end{aligned}$$

$$\begin{aligned}
 (3) \ Y_{nd} = & 7.17 - 3.52(*) p - 2.42 f + 0.79* r - 0.36* YA \\
 & (0.56) \quad (-1.98) \quad (-0.62) \quad (2.10) \quad (-2.51) \\
 & -2.72 Y(\ln) + 0.57**NY - 1.09*A - 7.70**REFD \\
 & (-0.30) \quad (2.89) \quad (-2.53) \quad (-3.80)
 \end{aligned}$$

$$R^2 = 0.75; \bar{R}^2 = 0.69; \text{d.f.} = 41; \text{F-value} = 11.08$$

when the dummy-variable for pure-referendum democracy (REFD) is considered in addition, whereas, in the case REPD is included, it reads

$$\begin{aligned}
 (4) \ Y_{nd} = & 8.98 - 3.22(*) p - 2.32 f + 0.59(*) r - 0.42** YA \\
 & (0.39) \quad (-1.72) \quad (-0.36) \quad (1.70) \quad (-3.47) \\
 & + 1.03 Y(\ln) + 0.60**NY - 0.82(*)A + 4.02* REPD \\
 & (0.29) \quad (3.07) \quad (-1.93) \quad (2.23)
 \end{aligned}$$

$$R^2 = 0.71; \bar{R}^2 = 0.65; \text{d.f.} = 41; \text{F-value} = 9.43$$

The inclusion of the institutional variables REFD and REPD respectively, markedly improves our results (the \bar{R}^2 s increase by about five percentage points). Furthermore, the estimates are robust, as the coefficients of the other significant variables change only slightly. The coefficients of REFD and REPD have the expected (opposite) signs. In cantons with a high degree of direct political control and thus a relatively high tax morale, the part of income concealed falls short of the mean of all cantons by 7.7 percentage points; in absolute terms, the average amount of income concealed is about 1600 SFr. (per taxpayer) less than the mean income concealed in all cantons. In contrast, in cantons with a low degree of political control and, thus, low tax morale, the part of concealed income is four percentage points higher than the average income gap, and the mean income undeclared exceeds the mean of all cantons by roughly 1500 SFr.

As a whole, the results of the empirical analysis are consistent with our theoretical proposition.

III. Interdependence between Tax Morale and Deterrence

So far, we have analyzed the impact of different "levels" of tax morale on tax evasion. In this section, we consider the influence of various policies in terms of auditing intensities and penalty tax rates in the context of different levels of tax morale.

An increase in deterrence may disrupt the basic norm of reciprocity for the taxpayers. This feeling is most intensive when a taxpayer who personally considers to have paid his or her fair due, i.e. who perceives himself or herself to be a honest taxpayer, is audited; or when he or she notes that other taxpayers clearly violating the tax law (or violating it much more strongly) are not audited and not fined.¹⁸ When such errors of type I (auditing an honest taxpayer) and of type II (not auditing a dishonest taxpayer) occur,¹⁹ the intrinsic motivation to comply to the tax law is undermined and a higher degree of tax evasion will be observed.

The same response to the behaviour of the tax authorities may also be attributed to another effect known in experimental cognitive social psychology. The "overjustification effect" (see Pittman and Heller 1987) states that when people are extrinsically rewarded for a task which they are ready to undertake for their own satisfaction, the intrinsic reason is negatively affected or crowded out.²⁰ As a result, when the extrinsic reward is discontinued, less of the task will be performed.²¹ The principle can also be applied when the external intervention is not a monetary payment, but a regulatory intervention: Taxpayers who consider themselves honest feel "overjustified" when their authorities force a particular behaviour upon them anyway. An economic explanation for the reactions to overjustification could be based on the general economizing idea that performance is produced at the lowest possible cost. Among the inputs determining behaviour, the tax authority's intervention is exogenously given while the extent of tax morale can be freely chosen by the citizens in question. When deterrence is raised, the taxpayers are rational to reduce their tax morale in order to regain the least cost equilibrium.

From what has been said, it does not follow that tighter monitoring always undermines taxpayers' motivation to comply. It could, for example, be argued that increased auditing does not result in a reduction of tax morale when auditing is carried out in a strictly random way (for an institutional account, see Roth, Scholz and Witte 1989, pp. 84ff.).

¹⁸ Part of this reaction may also be due to an information effect: more intensive monitoring makes honest taxpayers aware that other individuals are cheating more than themselves, i.e. that the general tax morale is low and that one can get away with cheating. See the experiment by Tittle and Rowe (1973).

¹⁹ Tax evasion models with few exceptions (in particular Beron, Tauchen and Witte 1988) assume that only non-compliant taxpayers are audited and that tax authorities detect all unreported income. However, empirical evidence clearly shows that errors do occur (Roth, Scholz and Witte 1989, p. 90).

²⁰ This corresponds to the "hidden cost of reward"; for a review of the literature see McGraw (1978).

²¹ For experimental evidence see Lepper, Greene and Nisbett (1973), Deci (1975), Staw, Calder and Hess (1980), and Deci and Ryan (1980, 1985).

Provided that the controls are indeed believed to be guided solely by mathematical chance, the taxpayers audited do not feel that the tax officials are expressing any specific mistrust towards them personally. Accordingly, they would not feel that their own tax morale is depreciated by the tax authorities. However, in most cases it is difficult or even impossible to convince a particular taxpayer being audited that this action has been undertaken purely on the basis of a random selection process. It is much more likely that the citizen believes that the applied behavioral control is, at least partly, directed at him or her because of the tax authority's mistrust. Even if auditing is believed to be random by the taxpayers, they may nevertheless perceive an increase in the general intensity of regulations to be an indication of mistrust by tax officials (see Elster 1989, p. 116). After all, honest taxpayers do not want to be put in the common pool of all (honest and dishonest) citizens, but desire to have their higher tax morale acknowledged by not being treated in the same way as the others. In that case, the taxpayers concerned respond by reducing what they perceive to be their excess tax morale.

When tax morale is high, i.e. in a referendum democracy, an auditing intervention by the tax authorities, which is perceived as adversary, diminishes tax morale more strongly than when tax morale is low. In the extreme, when tax morale is completely eroded, an increase in tax auditing does no longer affect tax evasion.

Proposition 2: In a referendum democracy, an increase in tax auditing is known to citizens to undermine tax morale more strongly than in a representative democracy. Based on the knowledge of this model, citizens rationally choose a lower level of auditing than politicians do in a representative democracy.

This proposition is consistent with empirical evidence. Our sample of Swiss cantons reveals that the auditing intensity (number of tax audits per 1000 taxpayers) is systematically lower in referendum democracies (0.69) than in representative democracies (1.07; the difference is statistically significant at the 99% confidence level, using a non-parametric Wilcoxon matched pairs signed-ranks test).²²

A second deterrent against non-compliance consists in the fines, once a citizen has been found guilty in the auditing process. Citizens in a referendum democracy have a shared interest in preventing tax cheating and will therefore politically decide to fight tax evasion by raising fines for those who proved to have concealed taxable income. This

²² The respective minimum/maximum values are 0.02/1.70 (s.d. = 0.54) in the case of referendum democracy, whereas they are 0.28/2.75 (s.d. = 0.70) in the case of representative democracies.

serves to maintain the implicit social contract stipulating a "fair" equilibrium between taxes paid and public services received. As has been argued and shown above, the auditing probability tends to be lower in referendum democracies than in representative ones. In order to create an effective degree of deterrence, the fines are set accordingly.

Proposition 3: In a referendum democracy, the fines for caught tax evaders are higher than in a representative democracy.

Again, the empirical findings tend to support the proposition. A comparison of the penalty tax rates applied in a referendum democracy reveals that they are on average higher (123 percent of the taxes due) compared to those in a representative democracy (107 percent).²³ The difference is statistically significant (at the 90% confidence level, again using a non-parametric Wilcoxon matched pairs signed-ranks test).

IV. Concluding Remarks

In this paper, we introduce tax morale into the standard neoclassical model of tax evasion. The main motivation is to improve the performance of this model, which is not able to explain tax compliance empirically in a very satisfactory way. In particular, an increase in auditing rates and fines does not have the expected, systematic and sizeable effect on income reporting. A close connection between tax morale and the extent of political control by individual citizens, that is, the degree of participation possibilities in political decisions in democracy, is established. This allows us to use tax morale in an empirical analysis without the need of measuring it directly.

The central hypothesis is based on a cognitive social-psychological effect: Measures taken by tax authorities perceived as "unjustified" by the citizens lead to an erosion of tax morale, especially where it is high, i.e. in a referendum democracy. Not all measures to deter tax evasion applied by tax authorities damage tax morale, but increased auditing does so because it leads to dissatisfaction in so far as honest taxpayers are audited, while dishonest ones are not.

Our analysis could be further developed in various directions. One possibility would be to measure tax morale directly. While this has been done in the past, it is no coincidence that no further efforts are being made today, since an independent measurement of tax

²³ The respective minimum/maximum values are 90/180 (s.d. = 24) in the case of referendum democracy, and 50/200 (s.d. = 40) in the case of representative democracy.

morale is possible only under great difficulties, especially in the international context. A more promising approach seems to be the "hidden variables" approach, but this works in a satisfactory way only when the variables involved are of good quality. And even then, the estimation results are subject to great instability.

Another direction in which our research could be extended is the experimental testing of the underlying social-psychological effects like overjustification and reciprocity. It is, however, not easy to design such a tax situation in a credible way in a laboratory setting, as the stakes and especially the social setting producing tax morale tend to be elusive. A more promising approach could be the analysis of micro-institutions with similar features as the state, for instance a club with contributions and more or less developed intrinsic motivations to contribute to its financing.

A competing theory to the one developed in this paper could be based on empirically established anomalies in decision-making such as the reference point effect integrated into prospect theory. This approach is faced with a number of serious problems, well known by now.²⁴

Our analysis has important consequences for economic policy. Simply suggesting changes in the auditing rates and fines is out of the question, because these instruments are determined endogenously by the actors in the system as a whole. However, they depend on identifiable institutional determinants, in particular on whether the state is organized in the form of a referendum or representative democracy. The standard approach to tax evasion takes into account that the taxpayers react to the policy instruments set by the tax authorities and therefrom deduce their optimal value. In this sense, the instruments are also endogenous to the system. Our analysis still looks at a higher level, as we consider how the citizens are able to react to the policies of the tax authorities, depending on their political participation rights. Economic policy in our setting looks at the rules under which the politico-economic process takes place. We suggest that under the conditions of referendum democracy, tax paying behaviour and tax evasion is systematically different from the outcomes in representative democracies.

²⁴ It is interesting to note that their consideration leads to an emphasis on institutional aspects as advocated above (see Frey and Eichenberger 1989).

LITERATURE

- Adams, J. Stacey (1963). Towards an Understanding of Inequity, *Journal of Abnormal and Social Psychology* 67: 422-36.
- Adams, J. Stacey (1965). Injustice in Social Exchange, In: Leonard Berkowitz (ed.). *Advances in Experimental Social Psychology* Vol. 2. New York: Academic Press: 267-99.
- Alexander, Craig and Jonathan Feinstein (1987). A Microeconomic Analysis of Income Tax Evasion. Manuscript. Massachusetts Institute of Technology, Cambridge, MA.
- Allingham, Michael G. and Agnar Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics* 1: 323-38.
- Alm, James; Betty R. Jackson and Michael McKee (1990). Alternative Government Approaches for Increasing Tax Compliance. Manuscript. University of Colorado at Boulder.
- Alm, James; Gary H. McClelland and William D. Schulz (1989). Why Do People Pay Taxes? Manuscript. University of Colorado at Boulder.
- Alm, James; Michael McKee and William Beck (1990). Amazing Grace: Tax Amnesties and Compliance. *National Tax Journal* 43: 23-38.
- Andreoni, James (1988). Why Free Ride? Strategies and Learning in Public Goods Experiments. *Journal of Public Economics* 37: 291-304.
- Bagnoli, Mark and Michael McKee (1991). Voluntary Contribution Games: Efficient Private Provision of Public Goods. *Economic Inquiry* 29: 351-66.
- Becker, Gary S. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy* 76 (2): 169-217.
- Becker, Winfried; Heinz J. Büchner and Simon Sleeking (1987). The Impact of Public Transfer Expenditures on Tax Evasion: An Experimental Approach. *Journal of Public Economics* 34: 243-51.
- Beron, Kurt; Helen V. Tauchen and Ann D. Witte (1988). A Structured Equation Model for Tax Compliance and Auditing. Manuscript, National Bureau of Economic Research, Cambridge, MA.
- Beron, Kurt J., Helen V. Tauchēn and Ann. D. Witte (1990). The Effects of Audits and Socio-Economic Variables on Compliance. Manuscript. University of Chapel-Hill, N.J.
- Blau, Peter M. (1964). *Exchange and Power in Social Life*. New York: Wiley.
- Brubaker, Earl R. (1982). Sixty-eight Percent Free Revelation and Thirty-two Percent Free Ride? Demand Disclosures under Varying Conditions on Exclusion. In: Vernon Smith (ed.). *Research in Experimental Economics* 2. Greenwich, CT: JAI Press: 151-66.
- Brubaker, Earl R. (1984). Demand Disclosures and Conditions on Exclusion: An Experiment. *Economic Journal* 94: 536-53.

- Clotfelter, Charles T. (1983). Tax Evasion and Tax Rates: An Analysis of Individual Returns. *Review of Economics and Statistics* 65: 363-73.
- Coleman, James S. (1990). *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.
- Cowell, Frank A. (1985). The Economic of Tax Evasion. *Bulletin of Economic Research* 37: 163-93.
- Cowell, Frank A. (1987). Honesty is Sometimes the Best Policy. Manuscript. London School of Economics, London.
- Cowell, Frank A. (1990). *Cheating the Government. The Economics of Evasion*. Cambridge, MA.: MIT Press.
- Crane, Steven S. and Farrokh Nourzad (1985). The Time Value of Money and Income Tax Evasion under Risk-averse Behavior: Theoretical Analysis and Empirical Evidence. *Public Finance* 40: 381-94.
- Crane, Steven S. and Farrokh Nourzad (1986). Inflation and Tax Evasion: An Empirical Analysis. *Review of Economics and Statistics* 68: 217-23.
- Crane, Steven S. and Farrokh Nourzad (1987). On the Treatment of Income Tax Rates in Empirical Analysis of Tax Evasion. *Kyklos* 40: 338-47.
- Dawes, Robyn M. and Richard H. Thaler (1988). Anomalies: Cooperation. *Journal of Economic Perspective* 2: 187-97.
- Dean, Peter N., Antony Keenan and Fiona Kelly (1980). Taxpayers' Attitude to Income Tax Evasion: An Empirical Study. *British Tax Review* 8: 28-44.
- Deci, Edward L. (1975). *Intrinsic Motivation*. New York: Plenus Press.
- Deci, Edward L. and Richard M. Ryan (1980). The Empirical Exploration of Intrinsic Motivational Processes. *Advances in Experimental Social Psychology* 10: 39-80.
- Deci, Edward L. and Richard M. Ryan (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum Press.
- Dubin, Jeffrey A.; Michael J. Graetz and Louis L. Wilde (1987). Are We a Nation of Tax Cheaters? New Econometric Evidence on Tax Compliance. *American Economic Review, Papers and Proceedings* 77: 240-5.
- Dubin, Jeffrey A.; Michael J. Graetz and Louis L. Wilde (1990). The Effect of Audit Rates on the Federal Individual Income Tax, 1977-1986. *National Tax Journal* 43: 395-409.
- Dubin, Jeffrey A. and Louis L. Wilde (1988). An Empirical Analysis of Federal Income Tax Auditing and Compliance. *National Tax Journal* 41: 61-74.
- Elffers, Henk (1991). *Income Tax Evasion: Theory and Measurement*. Deventer: Kluwer.
- Elster, Jon (1989). Social Norms and Economic Theory. *Journal of Economic Perspectives* 3: 99-119.
- Fischer, Georges; Kurt Altermatt and Renato Resegatti (1981). *Die Entwicklung der Kantonalen Volkswirtschaften seit 1965*. St. Gallen: HSG.

- Fishburn, Geoffrey (1981). Tax Evasion and Inflation. *Australian Economic Paper* 20: 325-32.
- Frey, Bruno S. (1992). *Economics as a Science of Human Behaviour*. Dordrecht: Kluwer.
- Frey, Bruno S. and Reiner Eichenberger (1989). Should Social Scientists Care about Choice Anomalies? *Rationality and Society* 1: 101-22.
- Friedland, Nehemiah (1982). A Note on Tax Evasion as a Function of the Quality of Information about the Magnitude and Credibility of Threatened Fines: Some Preliminary Research. *Journal of Applied Social Psychology* 12: 54-9.
- Friedland, Nehemiah; John Thibaut and Laurens Walker (1973). Some Determinants of the Violation of Rules. *Journal of Applied Social Psychology* 3: 103-18.
- Friend, Irwin and Marshall E. Blume (1975). The Demand for Risky Assets. *American Economic Review* 65: 900-22.
- Geeroms, Hans and Hendrik Wilmots (1985). An Empirical Model of Tax Evasion and Tax Avoidance. *Public Finance* 39: 25-69.
- Gouldner, Alvin W. (1960). The Norm of Reciprocity: A Preliminary Statement. *American Sociological Review* 25: 161-78.
- Graetz, Michael J.; Jennifer F. Reinganum and Louis L. Wilde (1986). The Tax Compliance Game: Toward an Interactive Theory of Law Enforcement. *Journal of Law, Economics and Organization* 2: 1-32.
- Graetz, Michael J. and Louis L. Wilde (1985). The Economics of Tax Compliance: Facts and Fantasy. *National Tax Journal* 38: 355-63.
- Grasmick, Harold G. and Robert J. Bursik (1990). Conscience, Significant Others, and Rational Choice: Extending the Deterrence Model. *Law and Society Review* 24: 837-61.
- Grasmick, Harold G. and Wilbur J. Scott (1982). Tax Evasion and Mechanisms of Social Control: A Comparison with Fraud and Petty Theft. *Journal of Economic Psychology* 2, 213-30.
- Hirshleifer, Jack (1985). The Expanding Domain of Economics. *American Economic Review, Papers and Proceedings* 75: 53-68.
- Homans, George C. (1950). *The Human Group*. New York: Harcourt, Brace.
- Homans, George C. (1961). *Social Behaviour: Its Elementary Forms*. London: International Library of Sociology and Social Reconstruction.
- Jackson, Betty R. and Valerie C. Milliron (1986). Tax Compliance Research: Findings, Problems, and Prospects. *Journal of Accounting Literature* 5: 125-65.
- Kaplan, Steven E. and Philip M. J. Reckers (1985). A Study of Tax Evasion Judgements. *National Tax Journal* 38: 97-102.
- Kinsey, Karyl A. (1984). Survey Studies of Tax Non-Compliance: A Compendium and Review. Manuscript, American Bar Foundation, Chicago.
- Kolm, Serge-Christophe (1973). A Note on Optimum Tax Evasion. *Journal of Public Economics* 2: 265-70.

- Laurin, Urban (1984). Tax Evasion in Sweden: A Tentative Test of Some Explanatory Variables. Manuscript. University of Lund, Lund.
- Lepper, Mark R.; David Greene and Richard E. Nisbett (1973). Undermining Children's Intrinsic Interest With Extrinsic Rewards: A Test of the Overjustification Hypothesis. *Journal of Personality and Social Psychology* 23: 129-37.
- Lewis, Alan (1982). *The Psychology of Taxation*. Oxford: Blackwell.
- Maital, Shlomo (1982). *Minds, Markets and Money*. New York: Basic Books.
- Marwell, Gerald and Ruth Ames (1981). Economists Free Ride; Does Anybody Else? *Journal of Public Economics* 15: 295-310.
- Mason, Robert and Lyle D. Calvin (1978). A Study of Admitted Income Tax Evasion. *Law and Society Review* 13: 73-89.
- Mason, Robert and Lyle D. Calvin (1984). Public Confidence and Admitted Tax Evasion in Oregon. *National Tax Journal* 37: 489-96.
- Mason, Robert and Helen Lowry (1984). An Estimate of Income Tax Evasion in Oregon. Manuscript. Oregon State University at Corvallis.
- McGraw, Kenneth O. (1978). The Detrimental Effects of Reward on Performance: A Literature Review and a Prediction Model. In: Mark R. Lepper and David Greene (eds.), *The Hidden Costs of Reward: New Perspectives of Human Behaviour*. New York: Erlbaum: 33-60.
- Morin, Roger A. and A. Fernandez Suarez (1983). Risk Aversion Revisited. *Journal of Finance* 38: 1201-16.
- Paternoster, Raymond (1989). Desist from Four Types of Common Delinquency: Deterrence and the Rational Choice Perspective. *Law and Society Review* 23: 7-40.
- Pittman, Thane S. and Jack F. Heller (1987). Social Motivation. *Annual Review of Psychology* 38: 461-89.
- Pommerehne, Werner W. (1978). Institutional Approaches to Public Expenditure: Empirical Evidence from Swiss Municipalities. *Journal of Political Economics* 9: 255-80.
- Pommerehne, Werner W. (1985). Was wissen wir eigentlich über Steuerhinterziehung? *Rivista Internazionale di Scienze Economiche e Commerciali* 32: 1155-86.
- Pommerehne, Werner W. and Friedrich Schneider (1982). Unbalanced Growth between Public and Private Sectors: An Empirical Examination. In: Robert H. Haveman (ed.). *Public Finance and Public Employment*. Detroit: Wayne State University Press: 309-26.
- Posner, Richard A. (1986). *The Economic Analysis of Law*. Boston: Little, Brown, 3rd ed.
- Poterba, James M. (1987). Tax Evasion and Capital Gains Taxation. *American Economic Review, Papers and Proceedings* 77: 234-9.
- Pyle, D. J. (1990). The Economics of Taxpayer Compliance. *Journal of Economic Surveys* 5: 163-98.

- Rapaport, Amnon (1985). Provision of Public Goods and the MCS Experimental Design. *American Political Science Review* 79: 148-55.
- Rice, Eric M. (1990). The Corporate Tax Gap: Evidence on Tax Compliance by Small Corporations. Manuscript. Harvard University, Cambridge, MA.
- Robben, Henry S.J.; Paul Webley, Russel H. Weigel et al. (1990). Decision Frame and Opportunity as Determinants of Tax Cheating. *Journal of Economic Psychology* 11, 341-64.
- Roth, Jeffrey A.; John T. Scholz and Ann D. Witte (eds.) (1989). *Taxpayer Compliance*. Philadelphia: University of Pennsylvania Press.
- Schmölders, Günter (1970). Survey Research in Public Finance: A Behavioural Approach to Fiscal Policy. *Public Finance* 25: 300-6.
- Schneider, Friedrich and Werner W. Pommerehne (1981). Free Riding and Collective Action: An Experiment in Public Sector Microeconomics. *Quarterly Journal of Economics* 96: 689-704.
- Schneider, Friedrich and Werner W. Pommerehne (1983). Macroeconomia della crescita in disequilibrio e settore pubblico in espansione: il peso delle differenze istituzionali. *Rivista Internazionale di Scienze Economiche e Commerciali* 33: 306-20.
- Schwartz, Richard D. and Sonya Orleans (1967). On Legal Sanctions. *University of Chicago Law Review* 34: 282-300.
- Scott, Wilbur J. and Harold G. Grasmick (1981). Deterrence and Income Tax Cheating: Testing Interaction Hypotheses in Utilitarian Theories. *Journal of Applied Behavioral Science* 17: 395-408.
- Simon, Herbert A. (1957). Authority. In: Arensberg, Conrad M. et al. (eds). *Research in Industrial Human Relations*. New York: Harper and Row: 103-18.
- Singh, Balbir (1973). Making Honesty the Best Policy. *Journal of Public Economics* 2: 257-63.
- Slemrod, Joel (1985). An Empirical Test for Tax Evasion. *Review of Economics and Statistics* 67: 232-8.
- Song, Young-Dahl and Tinsley E. Yarbrough (1978). Tax Ethics and Taxpayer Attitudes: A Survey. *Public Administration Review* 38: 442-52.
- Spicer, Michael W. and Lee A. Becker (1980). Fiscal Inequity and Tax Evasions: An Experimental Approach. *National Tax Journal* 33: 171-5.
- Staw, Barry M., Bobby J. Calder and Randall K. Hess (1980). Intrinsic Motivation and Norms About Payment. *Journal of Personality* 48: 1-14.
- Stigler, George J. (1984). Economics - The Imperial Science? *Scandinavian Journal of Economics* 86: 301-13.
- Strümpel, Burkhard (1969). The Contribution of Survey Research to Public Finance. In: Alan T. Peacock (ed.). *Quantitative Analysis in Public Finance*. Praeger: New York: 13-38.
- Szpiro, George G. (1986). Über das Risikoverhalten in der Schweiz. *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 122: 463-70.

- Tauchen, Helen V.; Ann. D. Witte and Kurt J. Bero (1990). Tax Compliance: An Investigation Using Individual TCMP Data. Manuscript. National Bureau of Economic Research, Cambridge, MA.
- Thibaut, John; Nehemiah Friedland and Laurens Walker (1974). Compliance with Rules: Some Social Determinants. *Journal of Personality and Social Psychology* 30: 792-801.
- Tittle, Charles R. (1980). Sanctions and Social Deviance: The Question of Deterrence. New York: Praeger.
- Tittle, Charles R., and Alan R. Rowe. (1973). Moral Appeal, Sanction Threats, and Deviance: An Experimental Test. *Social Problems* 20: 488-98.
- Wärneryd, Karl E. and Bengt Walerud (1982). Taxes and Economic Behavior: Some Interview Data on Tax Evasion in Sweden. *Journal of Economic Psychology* 2: 187-211.
- Wallschutzky, Ira G. (1984). Possible Causes of Tax Evasion. *Journal of Economic Psychology* 5: 371-84.
- Walster, Elaine; William G. Walster and Ellen Berscheid (1977). *Equity: Theory and Research*. Boston: Allyn and Bacon.
- Webley, Paul, I. Morris and Fred Amstutz (1985). Tax Evasion During a Small Business Simulation. In: Hermann Brandstätter and Erich Kirchner (eds.). *Economic Psychology, Proceedings of the Tenth IAREP Annual Colloquium*, Linz: Trauner: 233-42.
- Webley, Paul and Steve Halstead (1986). Tax Evasion on the Micro: Significant Simulations or Expedient Experiments? *Journal of Interdisciplinary Economics* 1: 87-100.
- Weck-Hannemann, Hannelore and Werner W. Pommerehne (1989). Einkommensteuerhinterziehung in der Schweiz: Eine empirische Analyse. *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 125: 515-56.
- Westat (1980). *Self-Reported Tax Compliance: A Pilot Survey Report*, prepared for the U.S. Internal Revenue Service.
- Witte, Ann D. and Diane F. Woodbury (1985). The Effects of Tax Laws and Tax Administration on Tax Compliance: The Case of the U.S. Individual Income Tax. *National Tax Journal* 38: 1-13.
- Yankelowich, Skelly and White Inc. (1984). *Tax Attitudes Study: Final Report*, prepared for the U.S. Internal Revenue Service.

University of Konstanz
Sonderforschungsbereich 178
"Internationalization of the Economy"

**Workshop on
International Political Economics of Taxation**

July 2-3, 1992
University of Konstanz
Großer Sitzungssaal, V 1001

Thursday, July 2, 1992

- 10.00 Opening Address
Hans-Jürgen Vosgerau (Speaker of the SFB 178)
Introduction
Bernd Genser (SFB 178)
- 10.30 *Chair: Bernd Genser (SFB 178)*
"Intergovernmental Tax Competition"
Bruno S. Frey (University of Zürich)
- 11.30 "International Tax Competition and Public Goods Supply:
Alternative Views of Government Behaviour"
Andreas Haufler (University of Konstanz)
- 12.30-14.00 Lunch (IBZ, University of Konstanz)
- 14.00 *Chair: Gebhard Kirchgässner (University of St.Gallen)*
"Explaining the Use of Related Tax Instruments"
Stanley L. Winer (Carleton University/Ottawa) and Walter
Hettich (California State University/Fullerton)
- 15.00 "Intertemporal Commitment Problems and Voting on
Redistributive Taxation"
Amihai Glazer (Carnegie Mellon University/Pittsburgh)
and Kai A. Konrad (University of München)
- 16.00-16.30 Coffee Break
- 16.30 *Chair: Friedrich Breyer (University of Konstanz)*
"The Effects of Tax Administration on Tax Morale"
Werner W. Pommerehne (University of Saarbrücken)
and Bruno S. Frey (University of Zürich)
- 17.30 "Fuel Taxation in EC Countries: A Political-Economy
Approach"
Bernd Genser and Hannelore Weck-Hannemann (SFB 178)
- 19.30 Dinner (Schwedenschenke, Insel Mainau)

Friday, July 3, 1992:

- 08.30 *Chair: Heinrich Ursprung (SFB 178)*
 "Fiscal Policy During the Transition in Eastern Europe"
 Roger H. Gordon (University of Michigan/Ann Arbor)
- 09.30 "Corporate Income Tax Competition, Double Taxation
 Treaties, and Foreign Direct Investment"
 Eckhard Janeba (University of Bonn)
- 10.30-11.00 Coffee Break
- 11.00 *Chair: Hannelore Weck-Hannemann (SFB 178)*
 "The Development of the Shadow Economy under Changing Tax
 Systems and Structures: Some Theoretical and Empirical
 Results for Austria"
 Friedrich Schneider (University of Linz) and Reinhard Neck
 (University of Bielefeld)
- 12.00 Closing Address
 Bernd Genser (SFB 178)
- 12.30 End of Workshop
- 13.00 Lunch (Hotel Mainaublick, Egg)

Organization: Bernd Genser/Hannelore Weck-Hannemann
 Faculty of Economics and Statistics
 University of Konstanz
 Box 5560
 D-7750 Konstanz
 Tel.: (07531)88-2345 / Fax: (07531)88-3560