

**Tax Evasion in Switzerland:
The Roles of Deterrence and Tax Morale**

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Abstract

The traditional economic approach to tax evasion does not appear to be particularly successful in explaining the extent of tax compliance. We argue instead that a psychological tax contract which establishes a fiscal exchange between the state and the citizens shapes tax compliance to a large extent. In that respect, a case study of Switzerland is useful because the small size of the cantons and their direct democratic political systems procedurally establish a close exchange relationship between taxpayers and tax authorities. In this paper, evidence is discussed on how tax evasion and tax morale in Switzerland evolved over time. In addition, the impact of economic, legal, socio-demographic, psychological and institutional factors on Swiss tax evasion is discussed.

Keywords: Tax Evasion, Tax Morale, Deterrence, Responsive Regulation.

JEL Classification: H26, H73, D73, D78.

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1 Introduction

In a recent retrospective overview of the economic theory of tax evasion, Sandmo (2006) discusses to what extent a traditional economic approach is able to explain tax compliance. He thereby acknowledges that the classic economic model developed by Allingham and Sandmo (1972), which in turn is based on Becker's (1968) economic theory of crime, has difficulties explaining empirically why people are so honest and pay taxes to such a large extent. In this approach deterrence, as the product of the probability of being detected and the size of the fine imposed, is crucial for the amount of income evaded. However, in view of the low deterrence applied in most countries, either because of a low intensity of control or small penalties, taxpayers should evade more than they actually do, i.e. compliance is too high.¹

Sandmo (2006) offers several ways to resolve the puzzle of tax compliance (see also the surveys by Andreoni, Erard and Feinstein 1998, Slemrod and Yitzhaki 2002 and Torgler 2003). A central argument he discusses is that the probability of being detected is subjective, such that individual perceptions of being caught when cheating on the tax code are higher than objective probabilities of detection. This difference might occur due to individual misperception of risk or because the individual ability to evade taxes varies among subgroups of the population. For example, withholding taxes reduce auditing costs of tax administrations because auditing of firms suffices to obtain information on employees' labor incomes. Moreover, it can be conjectured that income generated in the industrial sector can be less easily evaded than those in the services sector, that capital income is more easily evaded than labor income and so on. Adding socio-demographic structure and details of the auditing process could help to explain the poor performance of traditional economic tax compliance models.

However, Sandmo (2006) dismisses this argument as too simple and instead refers to notions of tax morale as explanation for high compliance rates in OECD countries. Allingham and Sandmo (1972) already discuss the social stigma emerging when individuals are caught as tax cheaters. In addition, a bad conscience might come up if taxpayers seriously consider to evade taxes. Grasmick and Bursick (1990) argue similarly in the emotive context of shame as a determinant of tax compliance. By including shame and extending his classic model with Allingham, Sandmo (2006) shows that an increase in the penalty rate can still deter people from reducing tax evasion. In addition, punishment reduces the effect of a bad conscience or shame on the amount of income evaded: *“In other words, the stronger extrinsic incentive to*

truthful reporting reduces the intrinsic incentive to behave honestly.” (Sandmo 2006, p. 650). In this model extension, the intrinsic motivation of taxpayers is depending only on the amount of income evaded. It is thus exogenous to government policy, but rather results from education or socialization of individuals. This argument is consistent with the view that fundamental social norms, like religion or personal attitudes, shape tax morale.²

A third argument put forward by Sandmo (2006) is based on considerations of social interaction when individual tax evasion is aggregated to the societal level. When individuals form their views about the probability of detection, they rely on their own observations. Perhaps they realize that neighbors, colleagues or friends evade taxes or work in the black economy without being caught or punished. If that is the case, the subjective probability of detection is a function of one’s own evaded income and the expected honesty of fellow taxpayers in a society. This argument is supported by experimental evidence (Feld and Tyran 2002). Individuals indeed pay their taxes if their fellow citizens contribute their fair share. In that respect, traditional deterrence policy is rather delicate, because the tax office can mistakenly forego to audit tax cheaters (who additionally tell their friends and relatives about it). Continued public discussion about the decline of tax morale serves the same purpose: Honest taxpayers arrive at the perception that they are the last to remain so stupid to comply with the tax code.

This extensive account of Sandmo’s (2006) most recent defense of the standard economic approach to explain tax evasion is particularly useful because he strongly dismisses the argument that the consideration of intrinsic motivation forces a leave from the framework of neo-classical economic theory (p. 650). We disagree and instead propose to study tax compliance by drawing on a contractual metaphor (Feld and Frey 2006): Tax compliance is the result of a psychological tax contract as a concept that goes beyond the traditional deterrence model and explains tax morale as a complicated interaction between taxpayers and the government establishing a fair, reciprocal exchange. A contractual relationship implies duties and rights for each contract partner. They first consist of public services the government provides to citizens in exchange for their tax payments. If the benefit principle of taxation, that implies a fiscal

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1. See e.g. Schwartz and Orleans (1967), Roth, Scholz and Witte (1989), Alm, McClelland and Schulze (1992), Cullis and Lewis (1997), Torgler (2003).
 2. Moreover, informal social control independent from auditing efforts by the tax office might increase compliance rates. For example, the leisure class might exaggerate the exposition of wealth such that envy of less affluent taxpayers leads to investigations by the tax administration. By commenting on a survey on Swiss taxpayers conducted by Strümpel (1965) according to which Swiss citizens demand a punishment of tax cheaters, Keller (1966/67, p. 245) argued that this demand might be interpreted as envy. Informal social control necessarily fits well into the traditional deterrence model of tax evasion.

equivalence between public goods and tax prices, is violated by setting those prices too high, citizens may feel a justification to evade taxes.³ Second, citizens may perceive their tax payments as contributions to the ‘*bonum commune*’. They may then honestly declare their income even if they do not receive a full public good equivalent to their tax payments. Income redistribution is the more accepted by affluent citizens the more the political process is perceived to be fair and the more policy outcomes are legitimate.⁴ Third, the contractual relationship has additional implications at the procedural level: the way the tax office treats taxpayers in auditing processes plays a role. As Frey and Feld (2002) and Feld and Frey (2002, 2002a) argue, the psychological tax contract presupposes that taxpayers and the tax authority treat each other like partners, i.e. with mutual respect and honesty. If tax administrations instead treat taxpayers as inferiors in a hierarchical relationship, the psychological tax contract is violated and citizens have good reason not to stick to their part of the contract and evade taxes.

In this paper, a case study of Switzerland is conducted in order to provide support for a psychological tax contract. Already Schanz (1890, I, p. 114) argued that Switzerland should provide fertile ground for tax compliance analysis because the small size of the cantons and their direct democratic political systems establish a close exchange relationship between taxpayers and tax authorities. In *Section 2* of this paper, the analysis by Schanz is hence briefly summarized in order to trace the traditional Swiss approach to tax compliance. Many of the arguments that are systematically analyzed in subsequent research already show up in this historical account. How tax evasion in Switzerland evolved over time according to different estimates in the literature is discussed in *Section 3*. The impact of traditional economic and legal, socio-demographic, psychological and institutional factors on Swiss tax evasion is analyzed in *Section 4* by summarizing the studies by Feld and Frey (2002) and Frey and Feld (2002). These results are put into perspective in *Section 5* by relating them to the existing literature.

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3. See Spicer and Lundstedt (1976), Spicer and Becker (1980) and Becker, Büchner and Sleeking (1987). Alm, McClelland and Schulze (1992) and Alm, Jackson and McKee (1993) find that the introduction of a public good in exchange for the taxes paid increases compliance rates in experiments. See also Lewis (1978), Falkinger (1988), Bordignon (1993) and Reckers, Sanders and Roark (1994).
 4. Tyler (1990) calls this procedural fairness. See also the survey by Frey, Benz and Stutzer (2004). For an analysis which political institutions shape the perception of procedural fairness, see Pommerehne, Hart and Frey (1994), Pommerehne and Weck-Hannemann (1996), Frey (1997), Pommerehne, Hart and Feld (1997), Feld and Frey (2002) and Feld and Tyran (2002).

2 Early Accounts of Tax Evasion in Switzerland

Georg von Schanz, who defined comprehensive individual income for taxation purposes, published his five volumes on taxation in Switzerland in 1890. Until today it is the most comprehensive collection of Swiss tax provisions and their analysis. It covers all tax laws of the then 25 cantons as well as their development in the 19th century. It goes without saying that this collection is providing precious insights into Swiss tax culture.⁵ To understand Swiss tax history of the 19th century, it is worth noting at the outset that the main power to tax income and wealth originated with the Swiss cantons at that time. The federation founded in 1848 only received contributions from the cantons, tariff and (negligible) indirect tax revenues. The historic situation in Switzerland was hence not much different from that of other federal states like Germany or the U.S. in the 19th century. What may be surprising however to many observers is the fact that today the cantons still have the basic power to tax (personal and corporate) income, property and wealth while the federal level has its own (highly progressive) income tax and the local jurisdictions levy a surcharge on cantonal taxes.⁶

Five features of Swiss tax culture as described by Schanz mainly shape individual tax compliance until today. First, with the exception of a withholding tax on capital income introduced together with the federal income tax during the Second World War, individual and corporate income is not taxed at source. Taxable income is derived on the basis of a system of individual self-assessment. Documents of the canton of Basel provide early evidence for such a system when (a kind of) income taxation in 1804 started with voluntary tax payments: “*The Great Council chose a method of tax collection which did not reveal how much each individual paid*” (Schanz 1890, II, p. 6, our translation). The cantonal government of Basel was however not satisfied with that method and increased the intensity of control since 1812 by demanding taxpayers to declare their income under oath (Schanz 1890, II, p. 9). A similar method was chosen by the canton of Geneva in 1815 (Schanz 1890, IV, p. 204) which additionally introduced a commission for the income assessment of taxpayers in 1864 and penalties in 1871 because of unsatisfactory results of the method of voluntary tax payment (Meier 1984, p. 498). Auditing efforts were subsequently intensified in all cantons in the second half of the 19th century. In the canton of Schaffhausen from 1862 to 1879, the assignment of responsibilities in tax auditing switched from the local to the cantonal level in order to reduce

5. See Meier (1984) who is the only more recent account of Schanz’ work.

6. Hence cantons can set tax rates and define tax bases autonomously. Both leads to a strong variation in (effective) tax rates among cantons and local jurisdictions. See Feld (2000) for a more detailed description of the Swiss fiscal system. Tax evasion laws form part of the legal power of the Swiss cantons as well.

the personal involvement of tax commissioners (Schanz 1890, II, pp. 178 and 183). Interestingly enough, self-assessment remained the rule of income reporting until recent times. Swiss cantons have still not switched to a system of withholding taxation. When individuals do not submit their tax forms, the tax authorities estimate income or assets (Kucher and Götte 1998).

Second, Swiss taxpayers are well aware of the fiscal exchange between public goods or services, and tax prices. It is interesting to note that a voluntary school tax in the canton of Glarus provided sufficient revenue to finance education services over a longer period (Schanz 1980, III, p. 98), while a voluntary welfare tax to redistribute income in the canton of Appenzell i. Rh. had to be quickly turned into coercive taxation (Schanz 1890, III, p. 10). Moreover, new taxes were more easily introduced in Swiss cantons when the additional revenue could be justified by financing needs from new public goods or services. This was the case in Appenzell i. Rh. in 1804 where it was argued that the additional revenue was needed to finance law enforcement measures – and a visit of the bishop of the Roman-Catholic church (Schanz 1890, III, p. 3). Similarly, Basel-County received the popular consent to levy direct taxes again in 1871 in order to finance cantonal investments. However, the tax increase in 1876 that was supposed to cover budget deficits politically failed. Another attempt in 1887 was finally adopted in order to finance the cantonal hospital (Schanz 1890, II, pp. 116).

Third, in the majority of cases tax laws must be decided by citizens in an obligatory referendum. The examples of tax changes just mentioned were also politically decided in referendums or cantonal assemblies. Schanz was reluctant to acknowledge the usefulness of these political procedures. On the one hand, he mourned that concessions to citizens in referendums violated principles of just taxation. On the other hand, he realized that peoples' consent to an introduction of new taxes or to tax increases did not lead to any major problems in the cantons (Schanz 1890, I, pp. 49 and 52). Meier (1984, p. 496) shows some understanding for Schanz' perspective perceiving him as a tax expert who viewed direct democracy as an unnecessary restriction to rational taxation. Meier also criticizes that referendums entailed a stressful bargaining process with uncertain and often stochastic outcomes. Meanwhile, instruments of direct democracy are however positively assessed with respect to their impact on tax morale. Pommerehne and Weck-Hannemann (1996) argue that governments in direct democratic cantons provide public goods and services that are more strongly in line with citizens' preferences which in turn reduces taxpayers' incentives to evade taxes. The evidence described by Schanz indicates that direct democracy in Switzerland established a process of mutual learning between the government (and its bureau) and citizens in which cantonal governments had

to find out citizens' preferences for public services and citizens realized their willingness to pay for them. In that process an exchange relationship between the state and the citizens could develop without major disturbances. Institutions of direct democracy indeed served to procedurally establish the Wicksellian (1896) connection between public services and tax prices.

Fourth, increases in deterrence measures are often coupled with positive incentives. When Schaffhausen increased deterrence in 1879 by shifting auditing responsibilities from the local to the cantonal level, increasing penalties and publishing tax registers, it also reduced the administrative pressure on taxpayers. Taxpayers obtained the benefit of a doubt by conceding that they may erroneously declare up to 4 percent less than true income without any penalty. Moreover, no penalties were imposed if taxpayers voluntarily declared a higher income or wealth in their periodic tax declaration. Hence a standing tax amnesty was introduced in the case of self-declaration of taxpayers (Schanz 1890, II, p. 180). The government of Glarus did not consider a penalty because it was supposed to induce taxpayers to evade wealth in the case of bequests. After several experiments to enhance tax compliance by increased deterrence, Neuchâtel started to differentiate between tax evasion and tax fraud in 1867 and subsequently decreased penalties by nearly half for tax evasion (Schanz 1890, IV, pp. 63–82). The distinction between tax evasion as an administratively investigated offense that does not entail previous conviction, and tax fraud as a criminal offense, when forgery of a document can be proved, still prevails in Switzerland. It is a distinction unique in OECD countries today.

Fifth, in some cases Swiss tax authorities rely on social control in addition to official audits in order to increase tax compliance rates. In the 19th century, several cantons started to publish the tax registers in which the taxes paid by Swiss residents in each community of the canton were denoted. It was an attempt to increase the probability of detection with social control in the community as a complement to auditing by government authorities. A mixture of moral suasion by and envy of their fellow citizens was supposed to increase tax morale of tax cheaters. For example, Schaffhausen hoped to increase tax compliance by publication of tax registers in 1879. In addition, taxpayers that were found guilty of tax evasion were prohibited to enter bars and restaurants for up to 5 years. The names of those people were also published in all bars and restaurants in that area (Schanz 1890, II, p. 182). Similar measures were imposed by the canton of Bern in 1889 (Schanz 1890, III, p. 310). Schanz was very pessimistic about the success of published tax registers because he conjectured that honest taxpayers would reduce their tax compliance once they realized that their neighbors successfully evaded taxes

(Schanz 1890, I, p. 120). Today, a few cantons still publish tax registers, like e.g. Bern, Luzern, Fribourg or Vaud, while the success has never been systematically assessed.

All in all, these early discussions of Swiss tax culture by Georg von Schanz pretty well reveal basic principles of tax compliance in Switzerland. Taxpayers are fundamentally taken seriously as partners in a (psychological) tax contract. The first institution that ensures this contractual relationship is the procedural establishment of fiscal exchange by direct democratic decision-making that subsequently shapes the material existence of fiscal exchange in the Swiss cantons. Second, taxpayers are not treated as inferiors in a hierarchical relationship. Increases in deterrence in the 19th century were often accompanied by a relaxation of government intrusion in individual privacy. Taxpayers were and still are given the benefit of a doubt. Third, Swiss cantons (more or less consciously) establish a relationship of trust by sticking to self-assessment procedures. While a major source of under-declaration of income became less important by the introduction of the withholding tax on capital income during the Second World War, sufficient possibilities to evade different forms of income still exist. However, taxation of labor income at source is not seriously discussed in Switzerland. Finally, the reliance on social control as a complement to auditing by tax authorities is typical for a society in which state institutions evolved from self-organized communities over time. The Swiss federation is a bottom up polity such that it appears natural to use the strong social ties existing at the local level. However, the usefulness of the publication of tax registers is ambiguous.

3 The Level of Tax Evasion in Switzerland

The measurement of income tax evasion is necessarily difficult because individual incentives to truthfully reveal the share of income evaded is minimal. In 1864, the tax office of Geneva estimated that only half of the taxable individual wealth was effectively declared (Meier 1984, p. 497) without saying anything about the measurement method. During the period 1860 to 1869, the canton of Zurich estimated about the same amount of evaded wealth on the basis of public assessments of bequeathed assets (Schneider 1929). About a century later in 1962, the federal government estimated the extent of tax evasion again in a widely recognized report on ‘tax defraudation’ in Switzerland. Based on that capital income for which a tax credit from the withholding tax on capital income was not claimed, tax evasion was estimated to amount to 645 million SFR which is about 2 percent of official GDP in 1962 (Higy 1962/63, p. 510, Pommerehne 1983, p. 267).⁷ According to Higy (1962/63), the federal government in this

7. Strümpel (1965) and Keller (1966/67) erroneously contend that about 300 million SFr were evaded which would imply a compliance rate of about 96 to 97 percent. Still a compliance rate of 91 percent is high.

report expected that labor income of between 1.3 and 1.5 billion SFr was evaded. The Commission Justitia and Pax (1981) of the Swiss bishops' conference estimated tax evasion from capital income in 1978 to be again 600 million SFr by using the same method as the federal government in 1962. In the last general tax amnesty in Switzerland of 1969 however, 1.15 billion SFr could be additionally taxed. The additional revenue was about 6 percent of income and wealth tax revenue in that year (Pommerehne and Zweifel 1991, Feld 2003, Torgler, Schaltegger and Schaffner 2003).

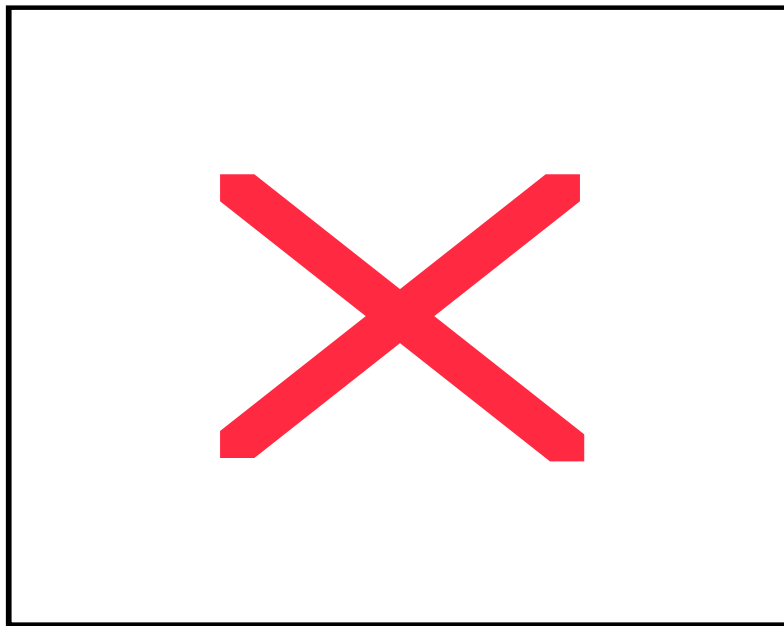


Figure 1: The Average Level of Income Tax Evasion in the Swiss Cantons from 1965 to 1995 (in Percent of Gross Household Income), Source: Feld and Frey (2002)

These early estimates are more or less unsystematic and incomplete, they often focus too strongly on capital income, they are not very transparent and appear to be rather ad hoc. A very popular indirect method to estimate the level of tax evasion is the GAP method according to which the difference is calculated between national accounts measures of primary income and income reported to the tax authorities in percent of the national accounts measure of primary income (Schneider and Enste 2000).⁸ While the national accounts data compute the purchasing side, the tax data indicate income accrual. Differences between both reveal that

8. Many arguments can be brought forward against this method. See Schneider and Enste (2000). Slemrod and Yithzaki (2002) for example criticize that, first, some of the national accounts data are based on tax return data, and second, there are many inconsistencies in the definition of both income measures. Engel and Hines (1999) find however that the GAP measure of tax evasion performs extraordinarily well to capture the dynamics of tax compliance in the U.S. from 1947 to 1993. Since the indirect method of calculating income evaded poses an error in the variables problem, it is necessary to include socio-demographic variables that capture the opportunity of evading taxes of different taxpayers in econometric model.

more is spent than is officially earned and thus raise the suspicion of tax evasion. This method can only be employed if both measures are calculated independently from each other. Pommerhne and Weck-Hannemann (1996) have used this approach to analyze the factors influencing the level of income tax evasion in Switzerland for the years 1965, 1970 and 1978. Feld and Frey (2002) and Frey and Feld (2002) have extended their data set to the years 1985, 1990 and 1995. In all of these years, the independent accounting of primary national income by the federal tax administration and the federal statistical office could be ensured.

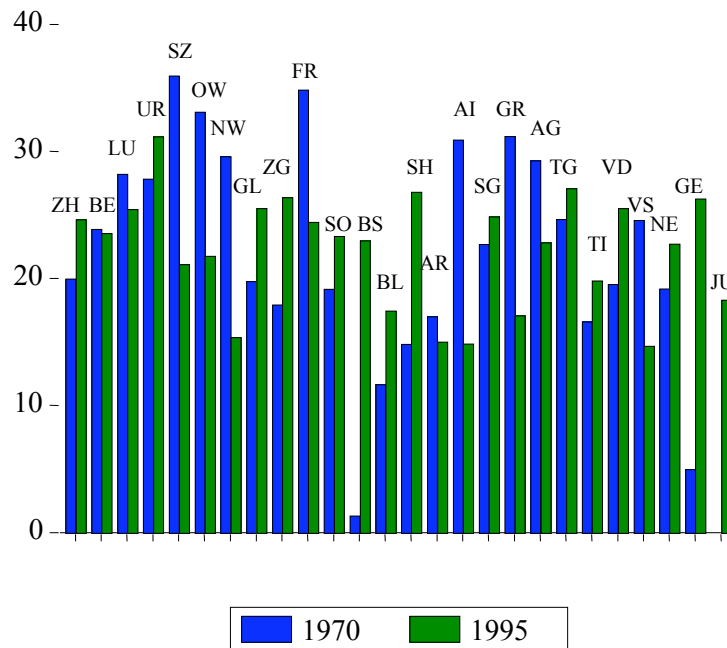


Figure 2: The Extent of Income Tax Evasion in the Swiss Cantons in 1970 and 1995 (in Percent of Gross Household Income) , Source: Feld and Frey (2002)

Figure 1 shows the level of income tax evasion according to these estimates between 1965 and 1995. It is evident that tax evasion is much larger according to these estimates than is suggested by the informed guesstimates discussed before. Tax evasion varies between 12.6 percent in 1978 and 35.1 percent in 1990. Figure 2 indicates the variation of these estimates across the cantons for 1970 and 1995. As can be seen, there are substantial differences between the 26 cantons. In 1995, tax evasion was highest in the cantons Uri, Thurgau, Schaffhausen, Zug and Geneva, and lowest (with less than 15 percent) in the cantons Appenzell a. Rh., Appenzell i. Rh. and the Valais. The average for all the cantons in 1995 is 22.3 percent. It is important to note that tax evasion has changed considerably over time in many cantons. While tax evasion decreased in some cantons, like in Schwyz, Obwalden, Nidwalden and Graubünden, it has risen sharply in others, most notably in the two city cantons of Basle-City

and Geneva. In both cantons, tax compliance declined steadily over time leading to a large difference between the first and last year of the observation period.

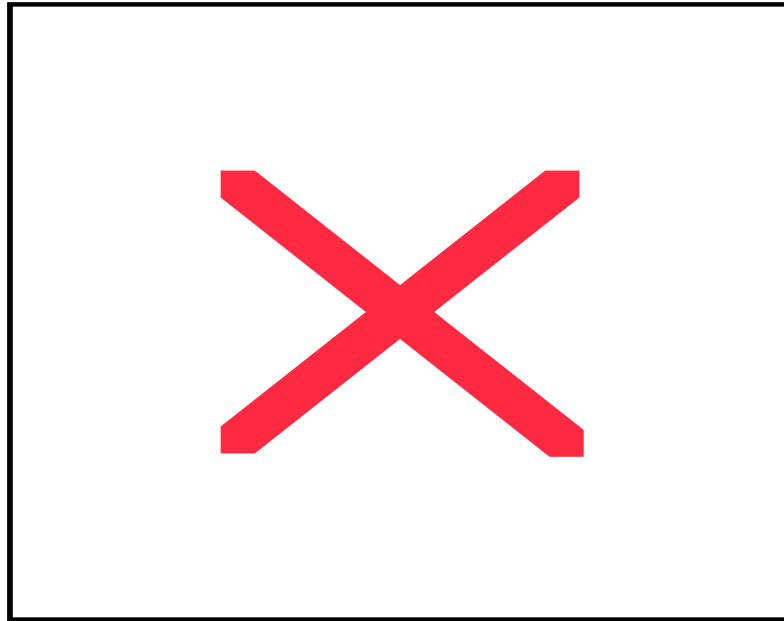


Figure 3: The Size of the Shadow Economy in Switzerland from 1975 to 2002 (in Percent of National Income), Source: Schneider (2000).

To put these estimates into perspective, it is useful to confront them with the development of the shadow economy in Switzerland. Since the preferred estimates of Schneider (2000) are based on the currency demand approach it can be argued that it captures labor income to a larger extent than capital income. If this were correct, the size of the shadow economy should be lower than that of tax evasion because capital income supposedly makes up for a larger share of tax evasion. *Figure 3* shows the estimates for the Swiss shadow economy from 1975 to 2002. In contrast to the estimates of tax evasion in *Figure 1*, the variation of the shadow economy over time much less follows a cyclical pattern, but is characterized by a steady increase since 1985. In addition, the size of the shadow economy is less than half the extent of tax evasion. *Figure 4* contains the size of the shadow economy in the Swiss cantons in 1995 according to Schneider's (2000) estimates on the basis of currency demand. What is interesting in reflecting the cantonal variation is the fact that the cantons with the largest shadow economies in 1995 are also those that have high levels of tax evasion in 1970. According to *Figure 2*, the cantonal structure of income tax evasion in 1995 however markedly differs reflecting the fact that tax evasion is not as common in rural or mountainous areas as in earlier times. This development supports the conjecture that tax evasion is nowadays more heavily driven by capital income tax evasion than it was in the sixties or seventies. Additional sug-

gestive evidence has recently been discussed by Kirchgässner (2006) in his discussion of Swiss tax morale in an international comparison of data from the World Value Survey and the International Social Survey Programme. He attributes the relatively low Swiss tax morale in international comparisons to increasing capital income tax evasion and to the Swiss bank secrecy.

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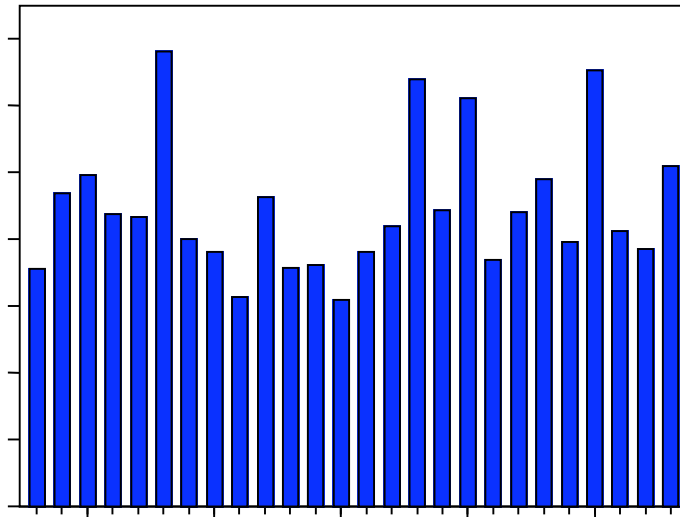


Figure 4: The Size of the Shadow Economy in the Swiss Cantons in 1995 (in Percent of National Income), Source: Schneider (2000).

4 Determinants of Swiss Tax Evasion

The impact of different factors on the level of income tax evasion has been studied only in a few studies. As the historical account above points out, several factors might particularly influence tax evasion in Switzerland. In addition to the standard variables that can be obtained from the Allingham and Sandmo (1972) model, i.e. fines, the probability of detection, marginal income tax rates and income, factors that shape tax morale, in particular those establishing the psychological tax contract between the state and the citizens, need to be taken into account. This has been done most recently by Frey and Feld (2002) using pooled cross section time series data for the 26 cantons of Switzerland over the period 1970-1995. *Column (1)* in *Table 1* presents their econometric estimates for the effect of the probability of detection and of the fine on income evaded. In addition to these two variables, the marginal tax rate, income per capita, the existence of tax indexation to inflation, population size, the proportion of people older than 65 years, the share of self-employment from total employment, the share of employment in the agricultural sector and time dummies are also included as explanatory

variables. The OLS regression in *column (1)* of *Table 1* indicates that the basic tax evasion model is not performing in a satisfactory way. While more than 70 percent of tax evasion in the cantons can be explained, only the size of the fine for tax evasion is statistically significant at the 5 percent level in the OLS estimate, and only at the 10 percent level in the TSLS estimate in *column (2)*. The probability of detection is far from being statistically significant and moreover has a theoretically unexpected *positive* sign. In addition, the marginal tax rate has a significant positive impact on tax evasion on the 1 percent significance level.

Table 1: Unbalanced Panel Regressions of Cantonal Share of Income Evaded in Percent of True Income upon Treatment by the Tax Authority and Control Variables, 1970 to 1995

Variables	OLS (1)	TSLS (2)
Probability of Detection Measured as the Number of Tax Auditors per Taxpayer (in ‰)	0.021 (1.56)	0.024 (1.15)
Standard Fine as a Multiple of the Evaded Tax Amount (in ‰)	-0.030* (2.19)	-0.041(*) (1.86)
Maximum Marginal Tax Rate (in ‰)	0.470** (3.19)	0.442** (2.84)
Gross Effective Primary Income per Capita (in 1'000 SFr)	0.199 (1.31)	0.186 (1.11)
Tax Indexation, Dummy = 1 if there is an indexation to inflation, and 0 otherwise	-0.791 (0.85)	-0.709 (0.76)
Population (in 1'000)	-0.001 (0.28)	-0.001 (0.56)
Proportion of People older than 65 (in ‰)	-0.579** (2.72)	-0.610* (2.45)
Share of Self-Employment from Total Employment (in ‰)	-0.605* (2.34)	-0.661* (2.26)
Share of Employment in the Agricultural Sector (in ‰)	0.482** (3.74)	0.416* (2.52)
F-Test: Time Dummies	45.179**	48.841**
\bar{R}^2	0.719	0.750
SER	4.915	4.718
J.-B.	2.705	0.053

Source: Frey and Feld (2002), Table 1. Notes: Instruments are the amount of evaded income from true income, the probability of detection and the standard fine all three of the former period. OLS has 128, TSLS 102 observations. The numbers in parentheses are the t-statistics of the estimated parameters based on White heteroscedasticity consistent standard errors. The F-statistics test the joint significance of the mentioned variables. SER is the standard error of regression, J.-B. is the value of the Jarque-Bera-Statistic for normality of the residuals. ‘(*)’, ‘*’, or ‘**’ denotes significance at the 10, 5, or 1 percent level, respectively.

These results are disappointing for the standard model of tax evasion because the main deterrence variables are only weakly significant if at all and partly have theoretically unexpected

signs. The results are not due to outliers as the Jarque-Bera-test statistics indicate. In all equations, the hypothesis of normal distribution of the residuals cannot be rejected according to those test statistics. Only demographic variables like the proportion of people older than 65 years, the share of self-employment from total employment and the share of employment in the agricultural sector have an additional statistically significant influence on tax evasion. All in all, it has to be concluded that the crucial explanatory variables of the standard model of tax evasion do not fare well in empirical tests. This is not a specific feature of an application of the model to the case of Switzerland but has also been observed in a great number of empirical studies for the U.S. (Clotfelder 1983 for a positive impact of the marginal tax rate; Beron, Tauchen and Witte 1992 and Slemrod, Blumenthal and Christian 2001 for a sometimes even significant positive impact of the probability of detection on tax evasion in some income groups). Hence, an investigation on the factors shaping the psychological tax contract is necessary to understand Swiss tax evasion.

4.1 The Treatment of Taxpayers

As contended above, the way tax administrations treat taxpayers has an impact on taxpayers' behavior. Based on Crowding Theory (Frey 1997a), Frey and Feld (2002) argue that a systematic relationship between external intervention (in this case, how the tax officials deal with taxpayers) and intrinsic motivation (in this case, individuals' tax morale) exists. Deterrence is only one of the motivational forces in getting people to pay their taxes. Quite another is the set of policies available to the tax authority to bolster taxpayers' tax morale. A '*respectful*' relationship of the tax authorities to the taxpayers *crowds in* tax morale while an '*authoritarian*' relationship using instruments of deterrence has two countervailing effects: on the one hand the change in relative prices (the higher probability of being punished) reduces the incentives to evade taxes, but on the other hand tax morale is *crowded out*. Which effect dominates depends on specific circumstances. The tax officials can choose between these extremes in many different ways. For instance, when they detect an error in the tax declaration, they can immediately suspect an intention to cheat, and impose legal sanctions. Alternatively, the tax officials may give the taxpayers the benefit of a doubt and inquire about the reason for the error. If the taxpayer in question indeed did not intend to cheat but simply made a mistake, he or she will most likely be offended by the disrespectful treatment of the tax authority. The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honorable taxpayer and, as a consequence, tax morale will fall. In contrast, if the tax official makes an effort to locate the reason for the error

by contacting the taxpayer in an informal way (e.g. by phoning him or her), the taxpayer will appreciate this respectful treatment and tax morale will be upheld.

Table 2: Unbalanced Panel Regressions of Cantonal Share of Income Evaded in Percent of True Income, Exogenous Government Behavior, 1970 to 1995

Variables	TOLS (3)	TOLS (4)	TOLS (5)
Typical Procedure if No Tax Declaration	2.908** (2.97)	3.712** (3.49)	2.153* (2.21)
Respectful Procedure	-4.574* (2.61)	-5.726** (3.84)	5.783 (0.86)
‘Authoritarian’ Procedure	-3.888* (2.06)	-6.673* (3.31)	-7.129 (0.88)
Respectful Procedure * Direct Democracy	–	–	-2.529* (2.01)
‘Authoritarian’ Procedure * Direct Democracy	–	–	0.844 (0.49)
Index of Direct Democracy	–	-2.291** (3.14)	-0.462 (0.33)
Probability of Detection (in ‰)	0.057* (2.43)	0.066** (2.74)	0.035 (1.50)
Standard Fine (in ‰)	-0.059** (3.00)	-0.055* (2.48)	-0.064** (2.72)
Marginal Tax Rate (in ‰)	0.475** (3.37)	0.709** (4.92)	0.718** (5.26)
Income per Capita (in 1'000 SFr)	0.428* (2.40)	0.353* (2.20)	0.423** (2.65)
Tax Indexation	-0.321 (0.30)	-1.038 (0.91)	-0.365 (0.32)
Population (in 1'000)	-0.002 (0.96)	-0.005(*) (1.94)	-0.006* (2.26)
Proportion of People older than 65 (in ‰)	-0.420(*) (1.71)	-0.463(*) (1.95)	-0.778** (3.09)
Share of Self-Employment from Total Employment (in ‰)	-0.605* (2.12)	-0.687* (2.61)	-0.581* (2.34)
Share of Employment in the Agricultural Sector (in ‰)	0.329(*) (1.95)	0.403** (2.69)	0.329* (2.14)
Dummy for French and Italian Speaking Cantons	–	-7.432** (3.10)	-6.786** (3.08)
F-Test: Respectful Equals Authoritarian	0.284	0.315	7.829*
F-Test: Direct Democracy	–	–	9.485**
F-Test: Respectful Procedure	–	–	18.284**
F-Test: ‘Authoritarian’ Procedure	–	–	1.222
\bar{R}^2	0.767	0.798	0.814
SER	4.559	4.242	4.072
J.-B.	0.535	1.846	0.877

Source: Frey and Feld (2002), Table 2. For notes see Table 1.

In order to investigate the relationship between taxpayers and tax authorities, Feld and Frey (2002) sent a survey to the tax authorities of the 26 Swiss cantons which asked detailed questions about the legal background of tax evasion, like the use and size of fines, whether an ex-

PLICIT link is established between tax payments and the provision of public services, the perceived feedback effect of tax evasion on the level of public services, the intensity of control by tax authorities, the existence of tax amnesties, and whether the tax register is published in a jurisdiction. The survey also included questions on the treatment of taxpayers by tax authorities in day-to-day audits, in particular when a taxpayer is suspected of not declaring his or her true taxable income.

In particular the extent of *respectful treatment* of the taxpayers is captured by (1) Fully observing procedures based on formal and informal rules, i.e. what happens typically if a taxpayer does not declare taxable income at all (procedures, fines), if a tax declaration is mistakenly filled out or, in a second stage, if taxpayers do not react?; (2) Acknowledgment of individual citizens' rights and personality, i.e. what does the tax administration do if taxpayers declared taxable income by mistake too high? Are there any differences in the treatment whether these mistakes are formally wrong, e.g. mistakes in adding up columns of figures, or possibilities for legal tax avoidance, e.g. tax deductions, are not used? Are there attempts to find out whether taxpayers intentionally or mistakenly declare too low a taxable income? Are mistakes in the tax declaration to the advantage or to the disadvantage of *taxpayers*?; (3) Avoidance of high penalties for minor offenses and giving taxpayers the benefit of a doubt: What are the minimum, maximum and standard fines for tax evasion, the fines in the case of inheritances and of self-declaration, as a multiple of the tax payment (or in percent of the tax payment)? Deterrence is considered by clearly establishing taxpayers' legal duties and penalties for not complying: Is the criminal code applied in the case of tax fraud, i.e. is it possible to impose a prison sentence or a monetary fine? Which is the maximum monetary fine in the case of tax fraud (maximum fine in thousands of Swiss Francs)? What is the average monetary fine for tax fraud? Are the monetary fines for tax fraud added to the fine for tax evasion if tax fraud is part of the criminal code? What is the maximum prison sentence for tax fraud? What is the average prison sentence for tax fraud?

The way taxpayers are treated by tax authorities reveals interesting differences between the Swiss cantons. Only 58 percent of Swiss cantonal tax authorities believe that mistakes in reported incomes are, on average, in favor of taxpayers. 31 percent believe that mistakes are neither to the advantage nor to the disadvantage of taxpayers, and 12 percent believe that mistakes are to the disadvantage of taxpayers. These answers indicate that distrust towards taxpayers is not universal. If a taxpayer does not report his or her true taxable income, tax authorities can contact her in several ways. 54 percent of the cantons phone the person con-

cerned and ask how the mistake(s) occurred in the tax reporting form and what explanation the taxpayer has. All of the cantons send a letter to the taxpayer, half of them with a standard formulation. Nearly 85 percent ask the taxpayer to visit the tax office, but half of the cantons mention the possibility of punishment. Thus, one half of tax authorities adopt the strategy of explicit deterrence, while the other half seeks to gain additional information. 96 percent of the cantonal tax authorities correct reported incomes that are too high, i.e. reduce taxable incomes when taxpayers commit mistakes that are to their disadvantage. 27 percent of the tax authorities correct reported taxable income even if taxpayers fail to profit from legal tax savings.

The impact of the treatment of taxpayers on tax evasion is considered in the estimated equations presented on *Table 2*. Two variables in *column (3)* capture the respectful treatment of taxpayers by the tax authority. The typical procedure if no tax declaration is coded 0 if a reminder is sent and direct income assessment follows, 1 if a reminder is followed by a penalty and an assessment by the tax authority, 2 if a direct income assessment by the authority without any other contact to taxpayers follows, 3 if there is a penalty and an official assessment without a reminder and without an attempt to check out the situation. The respectful procedure obtains if taxpayers are first called on the phone, then a written reminder is sent, and finally the taxpayer is invited to visit the tax administration. The variable ‘Typical procedure if no tax declaration’ in *column (3)* of *Table 2* indicates that there is a statistically significant (1 percent level) positive influence on tax evasion when the tax authority becomes less respectful. The variable ‘respectful procedure’ captures the other aspects of how the tax authority deals with the taxpayers collected by our survey. The effect is again statistically significant (5 percent level) and indicates that tax evasion is reduced when taxpayers are treated more respectfully. The authoritarian treatment is captured by a dummy variable that is one if taxpayers are directly invited to pay a visit to the tax administration and additionally threatened by potential fines. According to the estimates in *column (3)* of *Table 2*, the ‘authoritarian’ procedure reduces tax evasion. This effect is statistically significant at the 5 percent level.

Column (3) also contains the two standard variables for deterrence already included in *Table 1* as well as the control variables used there. The probability of detection is statistically significant (at the 5 percent level) and has a theoretically unexpected *positive* sign. It suggests that a higher probability of being caught raises (rather than decreases) tax evasion. An increase in the standard fine reduces tax evasion in a statistically significant way (1 percent level) which corresponds to theoretical expectations.

4.2 Establishing Fiscal Exchange by Political Decision-Making Procedures

The fiscal exchange relationship between taxpayers and the state also depends on the politico-economic framework within which the government acts. It has, in particular, been argued that the extent of citizens' political participation rights systematically affects the kind of tax policy pursued by the government and its tax authority. Empirical studies by Weck-Hannemann and Pommerehne (1989), Pommerehne and Weck-Hannemann (1996), Pommerehne and Frey (1992) and Frey (1997) focus on the impact of constitutional differences of the cantons on tax evasion. The more direct democratic the political decision-making procedures of a canton are, the lower is tax evasion according to those studies. Feld and Frey (2002a) have found that the treatment of taxpayers by the tax authority can partly be explained by these constitutional differences between the Swiss cantons as well. The more strongly developed citizens' participation rights are the more respectfully they are treated by the tax authority.

The extent of direct democratic participation rights of the citizens is measured by an index proposed by Stutzer (1999). The index is constructed on the basis of the different constitutional provisions concerning the extent of direct democracy at the Swiss cantonal level. All Swiss cantons have mandatory constitutional referendums, but already in the case of an optional constitutional referendum the number of signatures and the time span in which they have to be collected vary across cantons. The variation between the cantons is even higher in the cases of constitutional and statutory initiatives, mandatory and optional statutory referendums, and fiscal referendums. All this information is used to construct the index.

In addition to the index of direct democracy, a regional dummy variable is included that measures whether a canton has a majority of German or of French and Italian speaking citizens.⁹ It is often argued that the cultural differences between Swiss cantons, most visible in the language differences among the Swiss population, are strongly reflected in Swiss politics as well. The French and Italian speaking cantons in the West and South of Switzerland appear to be internationally more open, e.g. reflected by their position towards the European Union, and appear to favor government solutions to a larger extent than the German speaking cantons. It is thus also argued that this translates into fiscal policies. In addition, the French and

9. It should be noted that aside the respective and 'authoritarian' treatment variables, the typical procedure if no tax declaration and the dummy for French and Italian speaking cantons, all variables vary over time. The direct democracy index does so only moderately, but the fine, the probability of detection, tax indexation and so on vary considerably. Thus, sufficient degrees of freedom remain in the cross section domain despite of the reduced number of Swiss cantons.

Italian speaking cantons usually have lower rankings in the index of direct democracy such that this variable could indicate the impact of cultural differences when they are not controlled for. Therefore, this regional dummy variable is included in the econometric model.

The estimation results in *column (4)* of *Table 2* suggest again that the respectful treatment and the authoritarian treatment have about the same effect on tax evasion. Moreover, direct democracy and thus higher participation rights have a significant negative impact on tax evasion. Including political participation rights in the analysis does however not affect the results. Higher audit rates are still associated with higher tax evasion, while a higher fine and the authoritarian procedure successfully deter taxpayers from evading taxes. In addition, the respectful procedure reduces tax evasion as well.

The most interesting point shows up when the interaction between higher participation rights and treatment by the tax authority are considered in *column (5)* of *Table 2*. The respectful procedure has indeed a negative impact on tax evasion in more directly democratic cantons while it increases tax evasion in more representative democratic cantons. And vice versa for the ‘authoritarian’ procedure: It has a dampening effect on tax evasion in more representative democratic cantons and increases tax evasion in more direct democratic cantons. While the single effects of the interaction terms with the respectful procedure do not reach any conventional significance level, they are individually significant in the case of the interaction terms with the ‘authoritarian’ procedure. Nevertheless, the tests on the joint significance of the respectful procedure variables and the direct democracy variables, reported on the bottom of *Table 2*, indicate that each of these variables has a significant impact on tax evasion while that of the ‘authoritarian’ procedure is not significant at any conventional significance level according to that Wald test. In addition, the hypothesis that the effects of respectful and authoritarian treatment are equal can now be rejected at the 5 percent significance level. The dampening effect of the ‘authoritarian’ procedure on tax evasion mainly arises in representative democracies while the dampening effect of the respectful procedure mainly occurs in direct democracies. Distinguishing both constitutional systems underlines the dominance of a respectful as compared to an authoritarian treatment.

5 Putting the Results into Perspective.

These results are fully in line with the existing literature on tax evasion in Switzerland and also with the historical study of Schanz (1890). The studies by Frey and Feld (2002) and Feld and Frey (2002) corroborate the earlier findings of Weck-Hannemann and Pommerehne (1989), Pommerehne and Weck-Hannemann (1996), Pommerehne and Frey (1992) and Frey

(1997) with respect to the impact of direct democracy on tax evasion. Torgler (2005) uses an alternative approach to study tax morale in the Swiss cantons by investigating two micro data sets, the World Value Survey and the International Social Survey Programme, that contain questions about tax morale of respondents. His results provide evidence that direct democracy shapes tax morale. According to his estimates, tax morale is significantly higher in direct democratic cantons. Distinguishing between different instruments of direct democracy, he finds that the fiscal referendum has the highest positive influence on tax morale. In addition, tax morale of respondents is higher if they have a higher trust in government, or in the courts and the legal system. Finally, local autonomy as an indicator of fiscal federalism has a marginally significant positive impact on tax morale. Since studies for the U.S. (Gerber 1999) and Switzerland (Pommerehne 1978) show that policies in direct democratic jurisdiction are more strongly in line with citizens' preferences, institutions of direct democracy can be seen as a means to establish a relationship of fiscal exchange between taxpayers and the government. While Schanz (1890) was pessimistic about the usefulness of direct democracy in tax compliance, it becomes evident that the possibility to decide on tax rates and the level of public services shows taxpayers what they get in exchange for their tax payment. This method helps to reveal citizens' preferences for public goods.

The impact of the treatment of taxpayers by the tax office on tax evasion has not yet been investigated for Switzerland. The studies by Frey and Feld (2002) and Feld and Frey (2002) are the first to investigate it. There is however similar evidence for Australia reported by Braithwaite (2003) according to which responsive regulation by the tax office pays off in the form of lower tax evasion. Again quite interestingly Swiss citizens are the more respectfully treated by the tax authority the more strongly developed citizens' participation rights (Feld and Frey 2002a). Respectful treatment is subsequently more successfully reducing tax evasion in direct democratic cantons. In addition, tax authorities in more direct democratic cantons appear to give taxpayers more frequently the benefit of a doubt. Feld and Frey (2002a) report evidence that tax authorities in more direct democratic cantons believe to a significantly lesser extent that mistakes in the tax declaration are in favor of taxpayers. Moreover, a publication of tax registers occurs less often in direct democratic cantons. In light of the doubts by Schanz (1896) on the effectiveness of these measures in the 19th century this is an interesting result.

That a friendly and respectful treatment of taxpayers by the tax authorities is an important means to reduce tax evasion has been recognized for a long time in Switzerland. Again the historical account by Schanz (1890) as summarized in *Section 2* indicates that citizens are

frequently given the benefit of a doubt. If deterrence measures were increased, additional measures to reduce the administrative interference in the private sphere of individuals were taken. Schneider (1929) strongly argues in favor of a respectful treatment of taxpayers. In form of the tax administrator the state is personalized to the citizens. A too strong emphasis on deterrence would accordingly lead to a distrust of citizens and finally crowd out tax morale. Moral suasion does however not lead to increases in tax morale as Torgler (2004) finds in a controlled experiment in a Swiss community. The simple normative appeal by the tax commissioner in a letter did not have any significant impact on tax morale. These results corroborate those for the U.S. provided by Blumenthal, Christian and Slemrod (2001).

The evidence for Switzerland is also pretty consistent with respect to the impact of traditional deterrence measures, like the fine or the intensity of control, on tax evasion: There is no robust effect of deterrence on tax evasion or tax morale in Switzerland. In most cases, both variables are insignificant. Sometimes, like in the studies by Feld and Frey (2002) and Frey and Feld (2002) as well as Torgler (2005), the intensity of control even has an unexpected positive sign. Weck-Hannemann and Pommerehne (1989) provide evidence that the intensity of control has the expected negative sign and is statistically significant for highly educated taxpayers only. They interpret it as evidence for the complexity of risk assessment in the evasion gamble. Feld and Frey (2002) exploit the Swiss distinction between tax evasion and tax fraud and find evidence that penalties for tax fraud have a quantitatively stronger negative impact on tax evasion than fines for tax evasion. Feld and Frey (2002a) report evidence that penalties for not submitting the tax declaration are significantly higher, while fines for tax evasion are significantly lower in direct democratic cantons. Kucher and Götte (1998) employ a ratio of concurrence between the government's recommendation to vote in referendums and the actual referendum outcome as a measure of trust in the government. According to their time series analysis for the city of Zurich from 1964 to 1996, the share of submitted tax declarations from all tax declarations is significantly higher the higher is trust. All these results reflect that tax compliance in Switzerland is affected by deterrence in a non-linear way. Smaller offenses are punished relatively lightly. If citizens do not stick to the rules of the game, they are more strongly punished. This policy pays attention to the fact that nobody's perfect and to cheat a little bit does not undermine the underlying psychological tax contract. Meier (1977) discusses evidence from a survey among the Swiss population that indicates a general tolerance to minor forms of tax evasion. The evidence is fully in line with the allowance of individual errors in the tax declaration in some cantons up to a certain amount during the 19th century.

Overall, the evidence for Switzerland supports the contentions made in the introduction. They strongly point to the existence of a psychological tax contract in Switzerland according to which both sides of the contract are fully aware of their material duties and rights. Obviously, taxes in Switzerland act as prices for the goods and services provided by the government. Tax evasion is also lower in more direct democratic cantons indicating that taxpayers are more willing to support income redistribution by the state, the more legitimate such redistributive decisions are. Thus the fiscal exchange relationship is to be interpreted in a broader sense. Finally, there is also evidence on the procedures accompanying fiscal exchange. Partners in a contract treat each other with mutual respect and honesty. The more respectfully Swiss citizens are treated, the more they acknowledge it by higher tax compliance. The psychological tax contract has thus elements of gain (or distributive justice) and participation (or procedural justice), but also of respect (or interactional justice). Adopting a broad understanding of tax compliance appears to be promising than the traditional economic approach to tax evasion.

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