Is Forgiveness Divine?

A Cross-Culture Comparison of Tax Amnesties

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1. INTRODUCTION

In many countries tax amnesties are under consideration. This holds for Italy, which declared a new tax amnesty "scudo fiscale" in November 2001. The same applies to Poland, which enacted a tax amnesty from September 2002 till April 2003. In Summer 2002, the German chancellor, Gerhard Schröder, brought up a tax amnesty for discussion, with the words: "It's better to have people working in Leipzig than money sitting in Liechtenstein. That's the principle" (tax-news, 14. 8. 2002). The intention is to bring back money that is assumed to be stashed in Switzerland and Liechtenstein. In Switzerland, the minister of finance presented a model for a general tax amnesty in 2000. However, the proposal was not accepted in the cabinet. Some exponents in the Swiss federal parliament are currently discussing a model for a tax amnesty that only applies to inherited money, which had not been declared before.

Why are tax amnesties a major issue of the political agenda these days? In a time when many governments are confronted with budget deficits tax reforms gain importance. One strategy is to turn to a tax amnesty as part of a fiscal reform. The aim is to raise tax revenues, permitting people who have failed to file tax returns or who have un-

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derpaid taxes to pay taxes during some specific period of time and thus to clear up the tax delinquent status mostly without penalties. However, the amount of additional money produced by tax amnesties is in general not very important (HASSELDINE, 1998). Furthermore, the efficiency of a tax amnesty depends on the long-run revenue effects. Here, it is debated whether in the long run tax amnesties undermine tax morale especially when tax amnesties are frequently replicated. Table 1 presents pros and cons of tax amnesties.

Table 1: Pros and cons of a tax amnesty

Pros	Cons
- Generates additional government revenues in the short run.	Undermines tax morale, as honest taxpayers may feel upset.
- Enlarges the tax base.	 Signalises a weak government, which is unable to enforce taxation.
 Gets some tax evaders back to the route of honesty. 	 Taxpayers could anticipate further tax amnesties, which may have a negative effect on tax compliance in the long run.
 Offers a "soft option" for those who became tax delinquents by mistake. 	- Signalises that tax evasion is a "peccadillo".
 Provides short-term revenues to aid the transition to a new tax structure. 	 Experiences indicate that amnesties produce small and overstated revenues.
 Signalises that the problem of tax evasion will be tackled by the government. 	 Individuals get aware of the presence of non-compliance.
- Reduces administrative costs.	 Moral costs to behave dishonestly decrease. Personal guilt is removed.
 Improves compliance keeping and monitoring individuals who previously were not on the tax roles. 	 An amnesty generates revenues that would have been collected in the absence of an amnesty. The increased revenues will be followed by a decline in additional collections from penalties, com-pounding or settlement fees.

Source: Alm (1998), Das-Gupta and Mookherjee (1995), Stella (1991), Fisher, Goddeeris and Young (1989).

The evidence available concerning the success of an amnesty gives an unclear picture. Unfortunately, there is generally a lack of empirical evidence. Progress has been made primarily with aggregated data from the United States (see, e.g., Alm and Beck, 1991). Experimental methods have been used to test the long-run impact of an amnesty on voluntary compliance (see, e.g., Alm and Beck, 1993). Table 2 presents an overview of some major empirical results. However, the effects of a tax amnesty in developing countries have hardly been analysed empirically in the tax compliance literature.

Authors	Ammostri	Data	Main Results
Authors	Amnesty	Data	Wani Resuits
ALм and Веск (1993)	Colorado	1980–1989	 No long-run effects on the level of tax revenues despite increased enforcement efforts.
ALM and BECK (1991)	28 US-States	1982–1988	 Combination of tax amnesty with increased enforcement efforts increases amnesty revenues.
Dubin, Graetz and Wilde (1992)	US-States	1980-1988	 An increase of audit rates leads states to wait longer before initiating a tax amnesty.
CHRISTIAN and GUPTA (2003)	Michigan	1983	 Two-thirds of new filers and nine-tenths of previous filers who filed amended returns under amnesty filed a state income tax return subsequently.
			 Amnesty impact (5'500 new taxpayers) on revenues, inducing 0.1 percent of Michigan's personal income tax, is negligible.
Das-Gupta and Mookherjee (1995)	India	1965–1992	 Out of 12 amnesties between these periods only the 1975 amnesty induced a significantly positive effect on tax revenues
Alm, McKee and Веск (1990)	Experiment United States	1990	 Average level of tax compliance falls after a tax amnesty
			 Expectations of an amnesty reduces compliance
			 Revenues from an amnesty are greater if post-amnesty enforcement increases

Table 2: Previous empirical evidence

When deciding whether or not to conduct an amnesty it is crucial to take taxpayers' attitude towards an amnesty into account. However, in hardly any country this was done by voters' approval. The aim of this paper is to evaluate the impact of voter participation on tax amnesties conducting a laboratory experiment. The results of our experiment show that the mere possibility for taxpayers to decide on a tax amnesty increases future tax compliance. It seems that the voting procedure, especially public discussions prior to votes, is bringing about a sense of civic duty, as taxpayers become aware of the importance to contribute to public goods.

In this paper we present evidence from a tax amnesty experiment done in Switzerland at the University of Basel and at the International University of INCAE in Costa Rica, including participants from 8 Latin American countries, and the University of Fidélitas in San José. This allows us to check to which extent tax amnesties are accepted among individuals with a different cultural background and how individuals react to different tax amnesty strategies, which can be designed with the help of different treatment groups. As the experiment done in both countries has exactly the same structure, we have the possibility to pool the data in order to analyse cultural differences regarding the degree of tax compliance. Moreover, experimental methods allow controlling for

many extraneous influences as, e.g., holding tax reporting factors constant (penalty, fine rate, tax rate, income level etc.). ALM and MARTINEZ-VAZQUEZ (2001) point out that the

"experimental approach is therefore ideally suited to investigate the question of whether different social norms, as they arise from different societal institutions across countries, have a significant impact on tax compliance behavior" (p. 22).

The aim of this paper is to conduct a cross-culture tax amnesty experiment with data from a European and a Latin American country. The focus of the analysis lies on evaluating the impact of popular votes on tax compliance in the long run. Until now, cross-culture tax compliance experiments have been analysed by Alm, Sanchez, and De Juan (1995) comparing Spain and the United States, Cummings, Martinez-Vazquez and McKee (2001) using the same experiments in the United States, South Africa, and Botswana, and Torgler (2003a) with data from Switzerland and Costa Rica. In general, the results indicate that compliance varies among different countries solely focussing on general tax compliance but not on the aspect of a tax amnesty.

The paper is organised as follows. In Section 2 we present a short survey on tax amnesties in Switzerland and Latin America. Section 3 introduces the design of the experiment and develops the hypotheses, which are tested in Section 4. The paper finishes in Section 5 with some concluding remarks.

2. TAX AMNESTIES IN SWITZERLAND AND LATIN AMERICA

2.1. Switzerland

Since World War II Switzerland has had three broad tax amnesties at the national level (see Table 3). During the preceding years, in several cantons tax amnesties took place on the state level. The first one was enacted in 1917 in the canton of Zurich, followed until 1938 by the cantons Grisons, Fribourg, Valais (three times), Lucerne, Geneva (twice), Basle-Country, Thurgau, Glarus, Neuchâtel, Berne, Vaud, and finally Zurich a second time (Linder, 1968). The success of the cantonal tax amnesties mainly depended on a succeeding amnesty on the national level. This is due to the special federalist design of the tax system in Switzerland. The federal level shares the tax sources with the state level. Therefore, a taxpayer had few incentives to participate in a cantonal tax amnesty without a succeeding federal tax amnesty, since she must fear that the cantonal tax administration would give its tax information to the federal tax administration.

Law	Amnesty Period	major covered taxes	Collection (CHF Mio.)	% of tax rev.
Wehropferamnestie	19. 07. 1940	Property (Wealth)	150	15% of the so far declared property
Verrechnungssteueramnestie	31. 10. 1944	All	650	n.a.
Allgemeine Steueramnestie	15. 03. 1968	All	1150	6

Table 3: Federal tax amnesties in Switzerland

Source: Gusberti (1982), Weidmann (1968).

When in 1940 the Swiss central government was looking for additional revenues in order to finance the defence costs incurring during World War II, the government officials levied an extraordinary property tax as a one-time charge (einmaliges Wehropfer). In principle, new federal taxes need to pass a popular referendum in Switzerland. But the cabinet used ist extended legal power during the war times and enacted this new tax not by the normal legal process but by decree. With Article 3 of the decree, the levy of the new tax was connected with a general tax amnesty on the federal level (Wehropferamnestie) in order to motivate taxpayers to comply. Furthermore, the amnesty did not only guarantee exemption from punishment but also from taxation of the evaded taxes. However, the first national tax amnesty in Switzerland was not a success. All in all, only 1.5 Billion CHF newly declared property appeared thanks to the program, which was about 15 % of the so far declared property (Swiss Federal Tax Administration, 2000). One reason was that the amnesty did not evolve from the public will and taxpayers feared that a possible new administration might use the official documents to confiscate their wealth. Additionally, the program was not connected with serious post-amnesty enforcement efforts (Gusberti, 1982).

In 1944, a new federal tax amnesty was declared in Switzerland. The so-called *Verrechnungssteueramnestie* is seen as quite successful. An additional amount of 6.5 Billion CHF of declared property appeared. The *Verrechnungssteuer* enacted in 1943 is a source-based tax created as an incentive to fight tax evasion. This kind of withholding tax is charged on the returns of securities. The borrower has to pay the tax so that the creditor of the securities only gets the returns ex tax. But the creditor can recall the tax, if she declares the securities. Originally, the tax rate of the *Verrechnungssteuer* was of 15%. But in order to fulfil the idea behind the tax, the government officials increased the tax to 25%. Together with the augmentation of the tax rate, a tax amnesty was granted in order to give those an incentive to declare their securities who had not done it so far. Additionally, the tax amnesty was connected with stricter tax controls and an exchange of information between the cantonal tax authorities.

From 1944 until 1966 in 14 states further 16 cantonal amnesties were implemented (see Table 4).

Canton	enacted	Canton	enacted
St. Gallen	1. 1. 1945	Schaffhausen	1. 1. 1958
Schwyz	1.1.1947	Schwyz	1. 1. 1959
Zoug	1. 1. 1947	Vaud	1. 1. 1959
Appenzell A.R.	1. 1. 1947	Valais	1. 6. 1960
Fribourg	1. 1. 1951	Obwalden	1.1.1961
Ticino	1.1.1951	Nidwalden	1. 1. 1963
Valais	1. 1. 1953	Uri	1. 1. 1965
Uri	1. 1. 1955	Lucerne	1. 1. 1965

Table 4: Cantonal tax amnesties in Switzerland

Source: LINDER (1968, p. 22)

In the early 60s, the question of a new tax amnesty at the federal level emerged again. In 1962 the federal parliament worked out a bill for a tax amnesty despite the fact that the federal government did not support this idea. The government argued that without enhanced enforcement efforts there is no need for an amnesty in normal times. Actually, the proposal did not pass the popular referendum in 1964. A huge majority of voters refused the program as well as 23 cantons whereas only 3½ approved the idea of a new tax amnesty. In 1968, however, the parliament took the initiative for a new try. Contrary to the first proposal, this bill did not change the procedures of tax auditing. Furthermore, tax foregone was to be waived (Pommerehne and Zweifel, 1991). The modified proposal was then accepted in a popular referendum on 18th February 1968 with a majority of 62% yes.

Table 5 presents information regarding the collected amount in each canton. We can observe a strong variation between the cantons, with the highest amount in Geneva (4026 CHF per capita) and lowest in Lucerne (915 CHF per capita). Compared to other cantons, Geneva has made an intensive effort using educational advertising, press conferences, and arrangements for professional organisations and private bodies (see Bericht des Bundesrats, 1972). On the other hand, the small collection rate in Lucerne can be explained by the cantonal tax amnesty in this canton, which took place only some years before (Linder, 1968).

In general, there are only few insights concerning the distribution of participants and their contribution in the tax amnesty literature. In Table 6 we present a distribution of individuals classified according to the capital and the employment status. It should be noticed that the data based on the capital level (employment status) is not fully representative for Switzerland as only 16 out of 25 cantons have been included.

Column 4 indicates a stable picture for almost all capital groups (except for group 1, under 50'000 CHF). About every fifth taxpayer participated in the amnesty program. Similarly column 5 shows that the collected sum in reference to the total capital varies marginally between 6.8 and 9.1 %. We furthermore observe an almost equal distribution among the different employment groups.

Table 5: Collected amounts in the Swiss federal tax amnesty 1969

Cantons	Collected Amount CHF Mio.	Amount per capita
Aargau	676.2	1561
Appenzell I. Rh.	39.7	3025
Appenzell A. Rh.	100.3	2046
Berne	2200.0	2237
Basel-Country	256.7	1253
Basel-City	405.7	1727
Fribourg	333.9	1852
Geneva	1335.0	4026
Glarus	75.0	1966
Graubünden	250.0	1542
Lucerne	265.0	915
Neuchâtel	347.6	2055
Nidwalden	32.0	1248
Obwalden	46.8	1910
Sankt Gallen	850.0	2211
Schaffhausen	85.0	1167
Solothurn	312.0	1392
Schwyz	155.7	1691
Thurgau	378.8	2072
Ticino	430.2	1753
Uri	34.3	1006
Vaud	470.6	919
Valais	335.1	1622
Zug	135.8	1997
Zurich	1965.1	1774
Total/Average	11516.5	1799

Source: Bericht des Bundesrates (1972, p. 13).

	amnesty participants (%)	collected amount (%)	amnesty participants in % of the taxpayers	collected amount in % of the total capital
capital (CHF)				
-49'000	55.9	14.7	8.3	9.1
50'000-99'000	18.4	9.4	19.1	7.7
100'000-199'000	12.9	10.8	22.2	7.4
200'000-499'000	8.3	14.4	22.1	6.8
500'000-999'000	2.6	10.9	20.7	6.9
1'000'000 +	1.9	39.9	19.4	7.0
employment status				
self-employed	20.4			9.7
employed	18.5			11.1
retired	17.0			9.6

Table 6: Capital and employment groups of amnesty participants, Swiss federal tax amnesty 1969

Source: Bericht des Bundesrates (1972, p. 10).

2.2. Latin America

In the 1980s Latin America has been confronted with many tax system reforms (for a survey see Torgler, 2003b). Tax amnesties often go in line with tax reforms. It is thus not surprising that quite a lot of tax amnesties have been carried through in this period. In Argentina, e.g., a tax amnesty has been conducted in 1987. In terms of additionally collected revenues, the amnesty was not successful. The amnesty program exempted taxes from income that was used for investment purposes as a part of their "1987 debtto-equity program" (UCHITELLE, 1989, p. 51). But even though the Argentinean government promised not to prosecute the delinquents, the amnesty program failed to reach the intended goal. ALM (1998) sees possible reasons for this failure in numerous tax amnesties offered previously that were very similar, and in the enforcement strategies that have not been changed after the program. Additionally, UCHITELLE (1989) points out that there has never been a serious effort to eliminate the source of the problem of tax evasion in Argentina, namely the huge size of the shadow economy, the highly regulated economy, and the uncertainty of government's economic policy. In 2001/2002 the Argentine tax authority implemented a tax amnesty program where taxpayers could use government bonds to pay for tax liabilities that were overdue. Penalties were reduced and national taxes, customs duties, and payroll taxes were included in the amnesty program (see PWC, 2002).

Colombia conducted a tax reform in 1987 reducing, for example, income tax rates, and offering a tax amnesty, which allowed individuals to correct their reports without penalty and prosecution. The government increased the post-amnesty efforts and penalties.

Compared to other tax amnesties in other countries this program was relatively successful collecting some 100 million \$ or 0.3 percent of gross domestic product (Alm, 1998).

The 2001 tax reform in Mexico, which included only small changes regarding the income tax and other tax laws, introduced a tax amnesty (PWC, 2002). Similarly, Costa Rica is now conducting a tax reform incorporating a tax amnesty. The reform consists, among others, of an increase in the income and corporate tax rates. Furthermore, the property tax on luxury vehicles for the year 2003 is increased by 50% of the ordinary rate. The tax amnesty program grants taxpayers a tax amnesty during two months, cancelling the fine rate for taxes managed by the tax authorities (income tax, sales tax, selective consumption tax, property tax on vehicles, transfer tax of real property and vehicles, education and culture stamp tax, tax on offshore companies, taxes on gambling houses, specific tax on alcoholic beverage etc.) (Arroyo, 2002). This tax contingency law was approved by the congress of Costa Rica in December 2000 (Amén, Arroyo and García, 2002), and the bill has been sanctioned by the president on December 18 and became effective on January 1st, 2003. Taxes created by this law had a term of twelve months (Arroyo, 2002b). Previously, a tax amnesty has been done in 1995 (Justice Law, Ley de Justicia Tributaria No. 7535).

3. DESIGN OF THE EXPERIMENT AND HYPOTHESES

We have already pointed out that experiments help to analyse the long-term effect of tax amnesties, which is debated in the tax compliance literature. In general, experiments offer the possibility to get own data and to check specific circumstances, which are difficult to control in field studies (for a survey see Torgler, 2002a). It is a possibility to study alternative policy strategies regarding the implementation of a tax amnesty.

3.1. General structure of the experiment

We have conducted experiments in Switzerland and Costa Rica. 120 subjects have participated in the experiment, 68 in Switzerland and 52 in Costa Rica. The experiment in Switzerland took place at the University of Basel, in Costa Rica at the University IN-CAE in Alajuela and the University Fidélitas in San José. As the city of Basel shares frontiers with Germany and France, its University has many foreign students. This allows evaluating the differences between foreign and Swiss native participants. Around 20% came from Germany and 5% from France. On total, some 34% of the individuals were foreigners with a European background (e.g., Italian, Austrian, Danish). Similarly, in Costa Rica we had the unique possibility to differentiate between native "ticos" (48.1% of the participants) and foreigners (51.7%). 13.4% of the foreigners came from Guatemala and Peru, followed by El Salvador (5.8%), Honduras (5.8%), Ecuador (5.7%), and Venezuela and Bolivia (1.9%).

The experiment lasted about an hour and participants earned between 7 and 20 \$\\$ in Switzerland and between 5 and 15 \$1 in Costa Rica depending on the individually accumulated amount of money at the end of the experiment. Communication among the participants was not allowed. We did not use tokens as currency but fictive lab Dollars. Subjects were told that all the accumulated earnings during the experiment would be redeemed for cash at the end of the experiment at a fixed conversion rate. The complete experiment, with the exception of a short instruction sheet at the beginning, was conducted on computers and was programmed with z-Tree (Zurich Toolbox for Readymade Economic Experiments, FISCHBACHER, 1998). The experimental software is interactive. In each round, subjects were informed about the audit probability, the penalty, the accumulated income (fortune) and the individual tax redistribution. Using a computer allows minimal experimenter-subject interaction during experimental sessions, which reduces possible framing effects. Furthermore, a computer system facilitates the accounting process (income distribution, tax redistribution, and the accumulation of the income). Before playing 25 rounds in every session, 3 rounds were played to make sure everybody understood the program. Subjects were informed that the performance in the practice periods did not affect their payments. As the participants were well informed about the different tax parameters, we confronted them with a tax context language. We used neutral tax terms such as income to declare, tax rate, audit probability, fine rate, to integrate contextual factors which are important in determining tax reporting behaviour. This helps perceiving the experiment not as a mere gamble. In addition to the experiment, subjects also completed a post-experimental questionnaire. The questionnaire was designed in order to collect information for further control variables.

Contrary to many tax compliance experiments, we assume that the tax agencies use information from the returns to determine audits. Such an experimental design is closer to reality as in many countries we can observe a selection of returns (Discriminant Index Function in the United States, DIF, see, e.g., Alm, Cronshaw and McKee, 1993; Roth, Scholz and Witte, 1989). Two endogenous audit selection rules have been introduced in the experiment. If a subject is audited and found to evade taxes, then the previous four periods are controlled. All the unpaid taxes plus a penalty on unpaid taxes of the same amount (fine rate = 2) must be paid. If the audited subject has reported all income, the previous periods are not examined. Thus, the tax agency goes back in time to previous period's declarations. Furthermore, the audit probability increases from 5 % to 10 % depending on the amount of non-declared income from this year's and last year's declaration. In such an experimental design the probability of audit is endogenous, depending on the behaviour of taxpayers throughout the experiment. On the other hand, the income distribution is treated as exogenous in our experiment since all subjects received the same income in all the periods (200 lab dollars).

The difference in the payment amounts between Switzerland and Costa Rica are deduced from
price comparisons of homogenous goods among different cultures (Coca Cola, Big Mac and a cinema ticket price).

The experiment implemented a public good structure. The taxes on the declared income were multiplied by 2 and then redistributed in equal shares to the members of the group. After a round subjects' net income can thus be calculated as income after taxes plus share of the multiplied group tax fund. The tax rate has been held constant (20 percent). Each session consisted of 25 rounds. Figure A1 in the Appendix presents the declaration monitor screen.

We paid attention to reduce problems, which arise in conducting a cross-culture experiment (see Roth, 1995, pp. 282–284). The main experimenters were the same in Costa Rica and Switzerland, to eliminate possible variations arising from uncontrolled procedural differences or uncontrolled personal differences between the experimenters. All instructions were presented in the same language (English) in both countries. Otherwise systematic differences between countries might arise due to the way the instructions are translated. Furthermore, as already mentioned, payments given to the subjects are adapted to the situation in the country. Thus, differences in the degree of compliance are not caused by differences related to the experimental payments.

3.2. Experimental sessions

The experiment contained seven sessions with different sets of individuals (see Table 7). The design of the sessions goes in line with government policy strategies. In session 1, no amnesty took place. In session 2 an amnesty was introduced after round 13. Subjects did not have any information about the possibility of a tax amnesty. Thus, with session 2 we can observe the impact of a tax amnesty on tax compliance. In session 3, the probability of audit and penalty was doubled. Such an experimental structure is in line with many real tax amnesties.

As a novelty in a tax amnesty experiment we integrated sessions in which people could vote whether they would like to have an amnesty or not (session 4 and 5). Furthermore, in session 5, participants had the possibility to discuss the issue for five minutes before casting their votes. In line with the analysis of ALM, McKee and Beck (1990), session 6 analyses the effects of taxpayers' expectations of future amnesties. The first amnesty has been declared without previous warning after round 10. Subjects have been informed that no further amnesties will take place. However, contrary to this announcement, subjects were again confronted with an amnesty after round 18.

Sessions	Amnesty	Voting	Discussion	Audit Probability	Fine Rate	Tax Rate
S1	no	no	no	5%	2	0.2
S2	yes	no	no	5 %	2	0.2
S3	yes	no	no	10%	4	0.2
S4	no	yes	no	5 %	2	0.2
S5	no	yes	yes	5%	2	0.2
S6	yes	no	no	5 %	2	0.2

Table 7: Parameters of the experimental design

3.3. Investigated hypotheses

LET THE PEOPLE VOTE

Hypothesis 1: The opportunity to decide on a tax amnesty increases tax compliance, independently from whether a tax amnesty is rejected or not.

Previous research evaluated the pros and cons of tax amnesties and little attention has been given to the question of the relationship between taxpayers and tax authorities. One exemption concerns the empirical study by Feld and Frey (2002). They conclude that there are significant differences in the treatment of taxpayers by the tax authority. From an institutional perspective, the relationship can be understood as a "psychological contract". The easier taxpayers can participate in political decision making by popular rights, the more this contract is based on trust and the higher is tax morale. This is similar in the case of a tax amnesty. We predict that voting possibilities have a positive effect on tax compliance. Voting possibilities provide utility in themselves. Citizens value the right to participate positively, because participation produces itself a kind of procedural utility as their opportunity set increases. It leads to an outcome (acceptance of the amnesty or not) more favourable to the taxpayer than when no such voting possibility exists. We predict that this effect should be robust throughout different cultures and should work independently from whether a group agrees to or rejects a tax amnesty.

LET THE PEOPLE DISCUSS BEFORE VOTING

Hypothesis 2: Discussion prior to the vote has a stronger positive impact on tax compliance compared to a voting procedure without discussion.

Discussion allows the exchange of arguments between group members and enhances group identification. Others' preferences become visible and moral costs of not behaving in line with the group increase, which has a positive effect on tax compliance. If discussion is possible prior to votes, people have the opportunity to exchange arguments, which raises the level of information of the participants. Individuals become involved

and feel responsible for the result. The voting procedure, especially public discussions prior to votes, creates a sense of civic duty, as taxpayers become aware of the importance to contribute to public goods. Their interaction in a face-to-face situation gives them the opportunity to identify others' preferences and enhances people's willingness to accept the voting decision (see Bohnet and Frey, 1994). Alm, McClelland and Schulze (1999) argue that there is a social norm of tax compliance affecting individual reporting decisions. Their findings indicate that communication combined with the vote influences tax compliance, so that paying taxes becomes the accepted mode of behaviour. Discussion gives the opportunity to clarify benefits and costs of a topic and thus increases cooperation among group members. In general, Alm (1996, p. 123) points out surveying his experimental findings: "I believe that the cheap talk in combination with vote allows individuals to change the social norms, in this case to demonstrate that evasion will not be accepted". Thus, we decompose the voting parameter into voting without discussion and voting with discussion.

SHORT-TERM POLITICS TRUMPS LONG-TERM GOALS

Hypothesis 3: The anticipation of future tax amnesties reduces tax compliance.

It is reasonable to assume that governments invest for short-term political advantages in order to be re-elected. Thus, political motivation lays in the short-term advantages of a tax amnesty (see, e.g., the recent tendencies in Italy). It is not surprising that many countries have more than one amnesty per generation. Posner (2000), for example, finds a positive correlation between tax amnesties and unstable governments with data from the United States. But short-term politics tends to trump long-term goals of enhancing tax compliance. Previously honest taxpayers feel treated unjustly when others have the opportunity of a tax amnesty more than once. In other words, intrinsic motivation to voluntarily comply with tax laws crowds out. Delinquents have little incentive to get back into the tax system, they just hope for future acts of grace by the government.

In order to analyse the effect of multiple tax amnesties on tax compliance, our experimental design includes a second amnesty although subjects had been informed that no further amnesties will take place. The second amnesty signalises that the government cannot be trusted which increases expectations of additional tax amnesties. In their experiment conducted in the United States Alm, McKee and Beck (1990) find that expectations of an amnesty reduce compliance. The design of our experiment is close to theirs to evaluate the robustness in other cultural settings.

4. EXPERIMENTAL RESULTS

The dependent variable of our experiment is the individuals' compliance rate in a given round, specified as the ratio of the reported income on the true income in a specific round. Hence, the compliance rate varies between 0 and 1. Figure 1 shows tax compliance

ance over time for both countries. It can be observed that for all years the tax compliance rate is higher in Costa Rica than in Switzerland. The minimum value for Costa Rica (Switzerland) is 0.73 (0.64), the maximum 0.84 (0.75), the mean 0.80 (0.70) and the standard deviation 0.022 (0.029). Thus, the results indicate a great difference between Costa Rica and Switzerland, with higher values for Costa Rica. It is often argued that the shortcomings of experiments lies in the artificiality of the laboratory setting, which makes it difficult to generalise results into real world. However, it is interesting to notice that our experimental results are in line with field data from Switzerland. With a sample of Swiss cantons over the 1970–1995 period, FREY and FELD (2002) estimate an average tax evasion rate of 23.48 percent.²

In order to evaluate whether this cultural effect is stable or just a statistical artifact, we perform a multivariate analysis. In a first step, random Tobit maximum likelihood estimations have been done as our dependent variable varies only between 0 and 1 and many observations take the values 0 and 1. Results are presented in Table 8 and the variables are explained in detail in Table A1 (see Appendix).

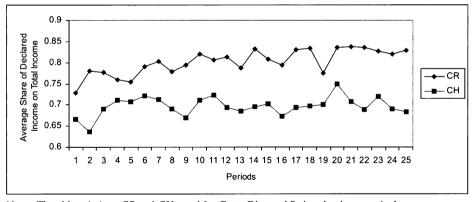


Figure 1: Tax compliance rate over time

Note: The abbreviations CR and CH stand for Costa Rica and Switzerland, respectively.

The basic estimation equation reads as follows:

$$TCR_{it} = \beta_0 + \beta_1 \cdot CTRL_{it} + \beta_2 \cdot AM1_{it} + \beta_3 \cdot AM2_{it} + \beta_4 \cdot VOTE_{it} + \beta_5 \cdot NATIVE_i + \beta_6 \cdot CR_i + \varepsilon_{it}$$
(1)

where TCR_{it} denotes the tax compliance rate. $CTRL_{it}$ is a panel of control variables including the number of audits per person, the nominal fine for tax evasion, the transfer

It should be mentioned that we tried to operationalise the important variables with real-world values to reduce artificiality. During the experiment we could observe that participants took time to make their decisions, for example doing calculations, which might indicate that they were involved in it and took it seriously, evoking processes as in reality.

payment obtained in each period. $AM1_{it}$ is a dummy variable that compares the pre-amnesty period with the post-amnesty period (value = 1) whereas $AM2_{it}$ considers the case for a second amnesty. $VOTE_{it}$ is the dummy variable of interest that differentiates between the pre-voting and the post-voting period. Furthermore, with the dummy variable $NATIVE_i$ we differentiate between native individuals and foreigners. Furthermore, we integrate the dummy variable CR_i for Costa Rica (reference group: Switzerland) to control whether the differences between Switzerland and Costa Rica remain robust.

Table 8 presents the results. Additionally, and in order to consider the problems that arise from heteroscedasticity, Table 8 displays also White corrected standard error values. Furthermore, to take into account individual differences we use least square estimations, clustering over individuals. In all estimation versions, two equations are performed. The first equation contains one voting variable whereas the second equation differentiates between voting with discussion and voting without discussion using an interaction term.

The results indicate that hypothesis 1 cannot be rejected. The coefficient of the variable VOTING is significant with a positive sign. Giving individuals the possibility to vote increases post-voting tax compliance behaviour. Interestingly, all groups who had the chance to vote always opted for an amnesty in Costa Rica whereas in Switzerland the option was refused each time. Thus, the positive effect of the voting possibility is independent of whether the amnesty has been accepted or not. Furthermore, our results indicate that political participation has a positive impact on tax compliance irrespective of the cultural setting. This is interesting as direct-democratic participation rights are much less developed in Costa Rica (Latin America) than in Switzerland. Thus, the results indicate that increasing individuals' participation rights might have a positive effect on tax compliance independently of the cultural background and the historical experience.

In a next step we will analyse whether there is a difference in tax compliance when the voting procedure is accompanied by public discussions prior to the ballots in contrast to when this option is not allowed. In order to test hypothesis 2, we decompose the dummy variable voting into the dummy variables voting with discussion and voting without discussion. The results in *Table 8* indicate that hypothesis 2 cannot be rejected. The coefficient of the variable voting with discussion is significant, whereas this does not hold for the variable voting without discussion even though showing a positive correlation, too. Thus, the key message favouring tax compliance is to foster public communication before casting votes for a tax amnesty. Voters' interaction in a face-to-face situation gives them the opportunity to identify others' preferences.

Hypothesis 3, postulating the negative effect of multiple amnesties on tax compliance, cannot be rejected either. In the pooled version, the first amnesty had a significant positive effect on tax compliance. On the other hand, the second amnesty did not significantly increase compliance in the post-amnesty period. These findings support the view that amnesties should not be conducted in short intervals, since individuals anticipate future tax amnesties eventually crowding out tax compliance.

In line with the findings by TORGLER (2003a) in another experiment and in accordance with the descriptive survey results on tax morale, individuals participating in the experiment in Costa Rica show a significantly higher tax compliance than the Swiss experiment participants. Thus, it seems that societal differences between countries have an impact on tax compliance.

There is a slight tendency for foreigners to report their revenues more honestly than their native counterparts. However, the coefficients are not significant in the clustered version. Not surprisingly, higher group transfers lead to a higher compliance, as it indicates that other taxpayers also contribute to the public good. Contrary to neo-classical assumptions for example in the field of economics of crime, there is a significant negative correlation of both deterrence factors (audit probability and penalty) with tax compliance. Monitoring and penalties for non-compliance might have the effect that individuals crowd out intrinsic motivation to voluntarily comply with tax laws (see Frey, 1997). Empirical findings in Switzerland also indicate that the expected utility maximisation approach does not work well. The pooled cross section time series estimations for Swiss cantons over the years 1970, 1978, 1985, 1990, and 1995 done by Frey and Feld (2002) using tax evasion as dependent variable indicate that probability of detection has a positive sign being not statistically significant, while the size of the fine is statistically significant at the 5 percent level. Furthermore, TORGLER (2002b) found in an empirical study working with two different data sets from Switzerland (World Values Survey and International Social Survey Programme) that the effects of deterrence parameters on tax morale are mostly insignificant with the tendency of a higher audit probability being correlated with a higher tax morale. However, higher fine rates are associated with lower tax morale. A similar effect can be found in Torgler (2003b), too. Furthermore, a few experiments cannot find any significant impact (see, e.g., FRIEDLAND, MAITAL and RUTENBERG, 1978; SPICER and THOMAS, 1982; JACKSON and JONES, 1985; BENJAMINI and MAITAL, 1985).

Table 8: Determinants of tax compliance in Switzerland and Costa Rica

	Rando	om-Effects	Tobit Regre	ssions	White	Pooled Corrected	l Tobit, l Standard F	Errors			ast Squares, ver Individu	als
	Eq	. 1	Eq	ı. 2	Eq	ı. 1	Ec	լ. 2	Eq	. 1	Eq	_l . 2
Variables	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
a) Deterrence												
audit	-0.200***	(-11.84)	-0.200***	(-11.59)	-0.199***	(-12.16)	-0.195***	(-11.90)	-0.070^{**}	(-2.68)	-0.068**	(-2.48)
penalty	-0.003***	(-6.27)	-0.003***	(-6.22)	-0.003***	(-8.18)	-0.003***	(-7.92)	-0.001***	(-6.44)	-0.001***	(-6.44)
b) Group Transfer												
transfers	0.003***	(4.77)	0.003***	(4.26)	0.003***	(4.70)	0.003***	(4.22)	0.001***	(4.97)	0.001***	(5.30)
c) Tax Amnesty												
amnesty	0.281***	(8.05)	0.287***	(8.24)	0.281***	(8.15)	0.287***	(8.35)	0.108***	(3.70)	0.108***	(3.74)
second amnesty	0.106	(1.42)	0.1	(1.34)	0.106	(1.43)	0.1	(1.35)	0.08	(1.28)	0.048	(0.82)
d) Political Participati	ion											
voting	0.299***	(7.82)			0.299***	(7.85)			0.111**	(2.46)		
voting with discussion			0.483***	(8.94)			0.483***	(9.09)			0.160**	(2.54)
voting without discussion			0.148***	(3.09)			0.148***	(3.10)			0.060	(0.99)
e) Culture												
native	-0.046	(-1.52)	-0.064^{**}	(-2.08)	-0.046	(-1.57)	-0.064**	(-2.14)	0.023	(0.44)	0.019	(0.37)
Costa Rica	0.557***	(17.44)	0.577***	(17.60)	0.572***	(16.69)	0.577***	(16.85)	0.207***	(4.04)	0.207***	(4.04)
Log-likelihood	-2633.85		-2621.18		-2633.85		-2621.18					
Prob > F									0.000		0.000	
Number of Observations	3000		3000		3000		3000		3000		3000	
R-squared									0.17		0.17	

Notes: Dependent variable: tax compliance rate as the ratio of reported income to true income. In the reference group are foreigner, Switzerland. Significance levels: ${}^{\bullet}0.05 , <math>{}^{\bullet}0.01 , <math>{}^{\bullet}$ p < 0.01.

5. CONCLUSIONS

These days, tax amnesty programs gain huge political attention not only in OECD countries like Italy or Germany, but also in Latin America. In Costa Rica a new tax amnesty is a key issue in the tax reforms approved by the congress and the president in December 2002 for the year 2003.

However, there is a surprising lack of empirical evidence on the effects of tax amnesties on compliance. To the authors' knowledge hardly any empirical evidence is available for Latin America. Thus, this paper has a novel framework conducting the same tax amnesty experiment in Switzerland and Costa Rica, two different countries with different cultural and historical backgrounds. The purpose of this paper is to analyse whether the effects of voter participation on the decision of arranging a tax amnesty affects tax compliance in the long run. Our results suggest that tax compliance increases significantly when people have the opportunity to vote on a tax amnesty. The strongest effect can be achieved when the voting procedure is coupled with pre-voting discussion. Interestingly, these results are robust across the two different cultures. Thus, giving subjects a higher opportunity set has a positive impact on the intrinsic motivation to pay taxes.

Furthermore, in line with Alm, McKee and Beck (1990) we found that multiple tax amnesties in a short interval reduce the efficiency of such a program. Government's credibility is reduced and individuals' tax compliance is crowded out since honesty is not honoured. Thus the results indicate that tax amnesty programs should be used as a "once-per-generation" opportunity to increase tax compliance and to avoid negative compliance effects.

Interestingly, our findings indicate that tax compliance is significantly higher in Costa Rica than in Switzerland. As these experiments generate data from different countries under the same settings, controlling extraneous influences as the tax agency (enforcement effort, tax rate, income level), differences arise from different social norms or social institutions. The payments given to the subjects having been adapted to the economic situation in the country (individuals in Costa Rica have received lower payments), the differences in the degree of compliance should not be caused by differences related to the experimental payments. Hence, the effects of a tax amnesty tend to depend on the degree of internal and external social norms in a country. It is therefore no surprise that in general great variances regarding the success of an amnesty are observed in different countries in the world.

Generally, our results indicate that there are limitations to the economics-of-crime approach. This can be concluded from the parameters audit probability and penalty but also from the high average degree of compliance over time. The standard analytical work, which implies a rational choice framework, would predict a lower tax compliance rate than observed in these experiments. Thus, it might be important to incorporate the role of societal institutions and social norms into tax compliance models to better understand why so many individuals comply.

APPENDIX

Figure A1: Income declaration

	- Year	
	1	
INCOME TAX DECLARATI	ON	
Tax Policy Information:		
Personal Information:		
taxable income: 200 lab\$ Accumulated income (fortun therefrom: 0 lab\$ state's tra Taxes: 0 lab\$ from last yeal	nsfer from last year	
Declaration:		
Herewith I declare an assigned incor	ne of:	
	lab\$: 0	
the participants. Revenue from penal	e whole tax revenue from your group is multiplied with the fact y tax and after taxes is not redistributed. If the whole amount o s) is 100 \$, every participant receives transfer payments of 20	of taxes (i.e., the sum of all single payments of

Table A1: Description of variables

Variables	Description
compliance rate	ratio of the reported income to the true income.
audit	number of times a subject has been controlled adjusted after every audit (results: mean = 0.65 , min = 0 , max = 5).
penalty	total penalty amount after detection (results: mean = 5.65, min = 0, max = 800).
transfers	amount an individual obtains from the group fund at the end of the previous round (results: $mean = 72$, $min = 30.24$, $max = 194.67$).
voting	dummy variable (0 = pre-voting period, 1 = post-voting period).
amnesty	dummy variable (0 = pre-amnesty period, 1 = post-amnesty period).
second amnesty	dummy variable (0 = pre-second amnesty period, 1 = post second amnesty period).

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SUMMARY

Tax compliance literature lacks empirical evidence regarding the effects of a tax amnesty on tax compliance. To measure the long run effects of an amnesty on compliance, experiments in Switzerland and Costa Rica were conducted. The results suggest that tax compliance raises significantly when people get the opportunity to vote for or against a tax amnesty, independently from whether a tax amnesty is rejected or not. The strongest effect can be achieved when voting is coupled with pre-voting discussion. Furthermore, the anticipation of further tax amnesties reduces positive effects on tax compliance. All these findings are robust across the different cultures. Interestingly, our results indicate that tax compliance is significantly higher in Costa Rica than to Switzerland.

ZUSAMMENFASSUNG

In der Literatur fehlt die empirische Evidenz über die Effekte einer Steueramnestie auf die Steuerehrlichkeit. Um die langfristigen Effekte einer Amnestie zu messen, wurden in der Schweiz und in Costa Rica Experimente durchgeführt. Die Ergebnisse zeigen, dass die Steuerehrlichkeit signifikant steigt, wenn die Teilnehmer über die Amnestie abstimmen können, und zwar unabhängig davon, ob die Amnestie angenommen oder abgelehnt wird. Der stärkste Effekt entsteht, wenn vor der Abstimmung Gelegenheit zur Diskussion geboten wird. Ausserdem zeigt sich, dass die Erwartung weiterer Amnestien die positiven Effekte verringert. Diese Ergebnisse waren für beide Kulturen robust. Interessanterweise ergaben die Experimente eine signifikant höhere Steuerehrlichkeit in Costa Rica als in der Schweiz.

RÉSUMÉ

Dans la littérature, il n'y a guère d'évidence concernant les effets d'une amnistie fiscale sur l'observation des obligations fiscales des citoyens. Afin de mesurer les effets d'une amnistie à long terme, des expériences ont été conduites en Suisse et au Costa Rica. Les résultats montrent que l'observation des obligations fiscales augmente de manière significative si les participants ont la possibilité de voter sur l'amnistie, indépendamment du résultat du vote. L'effet le plus important est produit par une combinaison du vote avec une discussion préalable. En outre, si les personnes s'attendent à d'ultérieures amnisties fiscales, les effets positifs diminuent. Ces résultats sont constants à travers les deux cultures. Nos résultats indiquent en plus que l'observation des obligations fiscales est plus forte au Costa Rica qu'en Suisse.