



# The occurrence of tax amnesties: Theory and evidence<sup>☆</sup>

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## ARTICLE INFO

### Article history:

Received 20 February 2014

Received in revised form 6 February 2015

Accepted 19 February 2015

Available online 10 March 2015

### Keywords:

Tax amnesties

Tax evasion

## ABSTRACT

This paper presents a theoretical model and empirical evidence to explain the occurrence of tax amnesties. We treat amnesties as endogenous, resulting from a strategic game between many taxpayers discounting future payments from punishment and a government that balances costs and benefits of amnesty programs. From the model we derive hypotheses about the factors that should influence the occurrence of tax amnesties. To test these predictions empirically, we rely on amnesty information from US States between 1981 and 2011. In line with the theoretical model, our empirical findings suggest that the likelihood of amnesties is mainly driven by a government's fiscal requirements and the taxpayers' expectations on future amnesties.

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## 1. Introduction

Many governments around the world, faced with mounting public deficits after the recent financial crisis, frequently initiated tax amnesties to meet their fiscal needs. Such programs give delinquent taxpayers the opportunity to repay all or parts of unpaid taxes without being subject to prosecution and penalties. However, not all of these amnesties raised considerable tax revenues. Short-term revenues depended crucially on whether a significant amount of taxpayers decided to take part in amnesties or not.

Standard tax-evasion theory considers amnesty participation as the result of expected utility gains from participation under uncertainty (e.g., Alm and Beck, 1991). There are a handful of models and extensions that seek to enrich this understanding of an amnesty as it relates to the psychology of the taxpayer and as a tool for policy makers.<sup>1</sup> Andreoni

(1991), for instance, points to a consumption shock that hits the taxpayers between the initial declaration and the amnesty, making them unwilling to bear the risk of an audit. Malik and Schwab (1991) assume that taxpayers are initially unsure about their risk preferences and only learn them once an amnesty is offered, and Graetz and Wilde (1993) propose a model where taxpayers are motivated to accept amnesties because detection incurs fines also for non-filing in earlier periods. Introducing tax amnesties in a model where taxpayers are credit constrained and evade taxes for purposes of consumption-smoothing might also explain why amnesties are taken up (Andreoni, 1992).

This paper provides a model motivated by the criminology literature to explain why tax cheats participate in amnesties. Delinquents become increasingly scared of detection and fines when the time of potential punishment approaches. Loosely speaking, taxpayers have different objectives at the time they decide on tax evasion and the time they try to avoid punishment. We assume that the benefits of tax evasion accrue immediately after tax declaration, while (discounted) fines and amnesty payments arise in a later period. In this setting, a taxpayer finds it worthwhile to delay tax payments by reporting less income initially and some more if an amnesty is announced. In this regard, our model is also able to capture more traditional channels that explain amnesty participation, such as strategic tax planning or the avoidance of punishment if detection is imminent. A major innovation of the model is that the occurrence of amnesties is viewed as an endogenous outcome of a strategic interaction between many taxpayers and a government that balances benefits (i.e., additional revenues) and costs of amnesties (e.g., loss of reputation or decreasing re-election probability).

Analyzing the equilibrium properties of our model, we are able to identify factors that determine how likely the occurrence of an amnesty

<sup>☆</sup> We would like to thank the editor in charge of our submission (Kai Konrad), three anonymous referees, James Andreoni, Frank Cowell, Dieter Pennerstorfer as well as the seminar participants at the University of Innsbruck, the University of Salzburg, the University of Adelaide, the 2014 Annual Meeting of the Austrian Economic Association and the 2014 German Economists Abroad workshop for their valuable comments and helpful discussions. Ralph-C. Bayer acknowledges the financial support from the Australian Research Council through Discovery Project DP120101831.

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<sup>1</sup> While research on amnesty participation is generally scarce, there exists a broad literature on the fiscal implications of tax amnesties. Evidence from US states on the (short and long run) revenue impact of amnesties is provided by Mikesell (1986), Fisher et al. (1989), Alm and Beck (1991, 1993), Christian et al. (2002), Luitel and Sobel (2007) or Mikesell and Ross (2012), among others; Uchitelle (1989), Cassone and Marchese (1995), Alm et al. (2000) or Lopez-Laborda and Rodrigo (2003) investigated amnesties outside the US. Baer and Le Borgne (2008) provide an overview over recent amnesties in- and outside the US.

is. It turns out that the likelihood of leniency programs is positively affected by a government's fiscal requirements and the taxpayers' initial expectations about the likelihood of future amnesties. The impact of a country's tax rate is ambiguous. To test these predictions empirically, we use a panel of US state amnesties between 1981 and 2011. In line with our theoretical hypotheses, we find that public expenditure (tax revenues) enter significantly positive (negative) into our regressions. In order to account for potential short run budgetary shocks we also include the annual change in public debt, which has a significantly positive impact. Taken together, these findings indicate that governments tend to initiate amnesties in times of greater fiscal need.<sup>2</sup> Further, and also in accordance with our model predictions, we observe an insignificant parameter estimate for a state's overall tax burden and a significantly positive impact of taxpayers' expectations on future amnesties (as measured by the number of amnesties that have been enacted in all other states one year ago). Expectations are self-fulfilling. Anticipated amnesties lower revenues as evasion increases, which in turn reinforces the necessity of future amnesties. Taxpayers' expectations undermine the potential (long run) revenue success of amnesties. From a tax policy perspective, we conclude that governments should be cautious when relying on this instrument only for budgetary reasons.

Our paper contributes to previous research in two major regards. First, we provide a theoretical framework motivated by the criminology literature which models the occurrence of amnesties as an endogenous outcome of a strategic game played between many taxpayers and a government faced with amnesty-related benefits (increased revenues) and costs (e.g., a loss of reputation). On the taxpayers' side, this approach encompasses a broad class of alternative explanations why rational taxpayers participate in tax amnesties, including strategic delinquency (Ross and Buckwalter, 2013), shocks that alert tax cheats to imminent detection (Andreoni, 1991; Malik and Schwab, 1991) and excessive discounting of negative future consequences of evasion. Second, while previous studies merely relied on ad hoc specifications to predict the likelihood of tax amnesties, our model provides a structural basis to estimate such probabilities. Perhaps most importantly, our theoretical findings and the corresponding empirical evidence points to the self-fulfilling character of amnesties, indicating that initial tax compliance is considerably influenced by the taxpayers' expectations about future amnesties. This, in turn, is a plausible explanation for the moderate additional revenue collected by such programs (Baer and Le Borgne, 2008).

The remainder of the paper is organized as follows. Section 2 presents a game-theoretical model with many taxpayers and a government considering costs and benefits of tax amnesties. In Section 4 we conduct the comparative statics to derive model predictions on how the likelihood of amnesties varies with important model parameters. Section 4 provides empirical evidence on key model predictions. Finally, Section 5 concludes and offers some policy implications.

## 2. The model

We develop a simple model of taxpayer behavior if amnesties are possible. For the time being, we assume that tax amnesties are

exogenous, random events. Later on, we introduce the government, leading to endogenous amnesty decisions.

### 2.1. Why amnesties are taken up

If we want to explain why a taxpayer participates in an amnesty even if enforcement parameters or tax rates remain unchanged, we require a model that results in a taxpayer delaying tax payments by reporting less income initially in order to declare some in addition if an amnesty takes place. Otherwise, "[I]t follows from revealed preferences that the amnesty will be completely benign: no rational person would plan to accept the amnesty" (Andreoni, 1991: 146).

A short-term motive for amnesty uptake, recently documented by Ross and Buckwalter (2013), is strategic delinquency, which they estimate to account for between 4.3 and 16.5% of the US State tax amnesty revenues. Taxpayers, who know or suspect a tax amnesty to be enacted, decide to declare less income initially in order to realize some interest gains by delaying the tax payment until the amnesty takes place. For a taxpayer to engage in strategic tax planning of this kind, a discrepancy between the individually faced interest rate and the interest rate on the later tax payment is required.<sup>3</sup>

An alternative situation that induces tax evaders to come clean when offered an amnesty arises when individual shocks occur between the initial evasion and the amnesty take-up decision. Examples in the theoretical literature include consumption shocks (Andreoni, 1991) and taxpayers learning about their willingness to take risks (Malik and Schwab, 1991). Another kind of shock, which to our knowledge has not yet been modeled explicitly, is the emergence of information that signals imminent detection, such as, for instance, the publicized purchase of Swiss banking data by German authorities.<sup>4</sup> If a tax dodger learns that the authorities are on his heels, then a tax amnesty is the perfect opportunity to avoid prosecution and punishment.

A further reason for amnesty take-up is a tendency of taxpayers to neglect future bad consequences when initially declaring their income. The criminology literature has identified this as a major cause of crime (see Gottfredson and Hirschi (1990), for an influential study in this regard). There is also some evidence in criminology that a higher celerity of punishment reduces re-offending for white-collar crime (Simpson and Koper, 1992), which supports this view. Neglecting future bad consequences can be due to a conscious present bias, which can be modeled by introducing discounting or can be the consequence of poor impulse control. Nagin and Pogarsky (2004), relying on the National Longitudinal Survey of Adolescent Health, find that the former is the dominant driver for premeditated non-violent crime, while the unconscious lack of impulse control is driving violent crimes and crimes that offer instant gratification. Since tax evasion typically requires some planning, conscious excessive discounting of future fines seems the appropriate modeling choice here.<sup>5</sup>

A discount factor on future consequences (i.e., for fines and potential amnesty payments) can capture both the findings from criminology but also the strategic delinquency described above. In the former case, the discount factor measures the severeness of the underestimation of negative future consequences, while it measures the difference between personal interest rate and the rate applied to late tax payments in the latter. However, the introduction of excessive discounting does not yet

<sup>2</sup> In this regard, we also contribute to a recent debate on the relationship between tax amnesties and a government's fiscal necessities. In particular, Dubin et al. (1992), using amnesty data from US states between 1980 and 1988, found that states initiated amnesties mainly for revenue yield rather than fiscal stress motives. Luitel and Tosun (2014) shed doubt on this result showing that fiscal stress is a major driver of tax amnesties in US states, especially in the period 1989 to 2010 (see also Le Borgne (2006)). In contrast to these studies, our primary goal is to explain the occurrence of amnesties theoretically, leading to an empirical specification where fiscal requirements are not only captured by the revenue (as in the aforementioned papers) but also the expenditure side of a government's budget. We come back to this issue in the empirical part of the paper.

<sup>3</sup> A similar reasoning applies for taxpayers who are credit constraint as in Andreoni (1992).

<sup>4</sup> To a similar effect, traditional tax havens such as Switzerland and Singapore have recently agreed to declare their American clients as a reaction to America's Foreign Account Tax Compliance Act (FATCA), which imposes stiff penalties on foreign financial firms that fail to declare their clients.

<sup>5</sup> Findings from neuroscience provide further evidence. Sharot et al. (2007) find that their subjects report significantly longer expected times passing before negative events happen than before positive events occur. This difference is the larger the more optimistic subjects are. Subjects also experience future negative events with a weaker intensity of pre-experience than positive events.

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