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978-0-521-13061-5 - Tax Evasion: An Experimental Approach

Paul Webley, Henry Robben, Henk Elffers and Dick Hessing

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1.1 Introduction

Taxation and evasion have always gone together and income-tax evasion – the subject of this monograph – is as old as income tax itself. In fact, in William Pitt's speech introducing income tax in Britain in 1799, the problem of evasion occupied centre stage. It was 'to prevent all evasion and fraud' that 'a general tax shall be imposed on all the leading branches of income' (Wright 1819). Ironically, even though tax rates in Victorian England were set at levels that now seem unbelievably low (when reintroduced in the 1942 budget, income tax was set at 2.9%), there were complaints about evasion from the outset. In 1866 it was estimated that the average taxable income declared was less than half what it should have been. In Exeter, where there was a special report in 1871, only 20% of those liable to income tax made returns that were satisfactory to the Revenue Service (Sabine 1966).

So income-tax evasion *per se* is not a modern problem. But the sheer scale of the public sector in most economies today makes it a much more pressing one. It is important economically: the most recent direct estimates in the United States by the Internal Revenue Service, for example, put the cost of federal income-tax evasion at 85 billion dollars (IRS 1988a). It is important to individuals: before the second world war less than 20% of the British workforce and only 4% of the American paid income tax, figures that rose in a few years to 66% and 51% respectively (Goode 1976). There is some evidence that the amount of evasion is increasing in America (Etzioni 1986) and it seems as if anti-tax sentiment has been growing in the past decade. Opinion polls in the States and the UK show a marked increase in tax resistance; a 1973 Harris poll revealed that 31% of respondents felt that federal income taxes were reasonable, a figure that had dropped to 20% by 1978. An IRS survey immediately after the passage of the Tax Reform Act 1986 (TRA 86) showed that 28% thought the new law would be more fair. However, in a 1988 follow-up this percentage had dropped to 17 after people had actually had to deal with the law (Broehm & Sharp 1989). After TRA 86 three-quarters of the subjects in three different surveys expressed the sentiment that the tax burdens imposed on middle-income individuals were too high (McKee & Gerbing 1989; Swingen 1989).

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Tax resistance and evasion are not necessarily bad of course. Tax resistance has a long and honourable history. Two examples dear to our hearts are the Peasant's Revolt in England in 1381, which was provoked by the imposition of a new poll tax, and the Dutch war of independence from Spain, which was partly sparked off by the introduction of a new centralised tax system by the Habsburgs. Even today evasion need not be economically detrimental. As Bracewell-Milnes (1979) put it, 'an economy breathes through its tax loopholes'. He pointed out that it is possible for the suppression of evasion to lead to losses to the government as well as to the individuals concerned. This would be the case if the alternative to evasion is a shift to an activity which results in less government revenue rather than proper payment of taxes on the initial earnings.

But here we are not concerned with the moral or economic rights and wrongs of the issue. Our aim in this book is to introduce a new way of exploring an old but growing problem. For a social psychologist, evasion is an interesting real-life form of cheating which may be treated as a social dilemma. It may be explained through people's attitudes, by reference to social comparison and aspects of decision making. For an economic psychologist it is a paradigm case of the interaction of the individual and the wider economy. Finally, for the economist it is an intriguing part of the national economy which is outside the national accounts. We hope to say something to all these people. But in this chapter we aim simply to set the scene with some descriptive background and a consideration of why people evade taxes.

First, some definitions. In legal terms there is a distinction between tax avoidance and tax evasion. Avoidance involves 'every attempt by legal means to prevent or reduce tax liability which would otherwise be incurred, by taking advantage of some provision or lack of provision in the law . . . it presupposes the existence of alternatives, one of which would result in less tax than the other' (Report of the Royal Commission on Taxation 1966, 538). Evasion is illegal. It can involve acts of commission or omission. So one of us may claim to have earned less in royalties from this book than is actually the case (optimistically assuming this to be worthwhile!) or simply fail to tell the revenue authorities about certain assets.

Cutting across this legal definition is the distinction between compliance and noncompliance. Researchers have often used the term 'noncompliance' to characterise the intentional or unintentional failure of taxpayers to pay their taxes correctly. Noncompliance is a more neutral term than evasion since it does not assume that an inaccurate tax return is necessarily the result of an intention to defraud the authorities and it recognises that inaccuracy may actually result in overpayment of taxes. A taxpayer may genuinely forget some extra earnings or that some expenses are tax deductible,

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miscalculate or simply not understand aspects of the tax form. By contrast, a term like 'tax cheating' describes deliberate acts of noncompliance and does not entail the difficulty of legal proof of tax evasion.

Do these distinctions matter? The answer has to be a cautious 'yes'. Although the reasons for intentional evasion and intentional avoidance may be very similar (i.e. to pay less tax), psychologically (and economically) we believe them to be very different. In evading tax one is knowingly breaking the law. This has social and psychological consequences such as stigma and guilt and involves confronting different costs since there is a risk of being caught and fined or sent to prison. We are obviously interested primarily in evasion. Now in practice it is difficult, if not impossible, to be certain about intent and so often we have to talk about noncompliance. The psychology of tax forms (James, Lewis & Allison 1987) and the problems caused by legal complexity (Long & Swingen 1988), although interesting, are not our main concerns here.

1.1.1 The size and scope of the problem: Estimates and guesstimates from around the world

The distinction between evasion and noncompliance is also relevant when we consider the size and scope of the problem. Noncompliance is obviously easier to estimate than evasion, though neither can be said to be easy to measure. Estimating the size of any illegal activity, be it delinquency in general or tax evasion in particular, is never easy and the differences in tax systems, the nature of economic activity and the quality of accounting make comparisons between countries difficult.

None the less we will describe some of the better-known results here and reserve a discussion of problems of measurement until the next chapter. Two direct methods and a variety of indirect methods have been used to estimate the extent of evasion. Of the direct methods, one relies on official records, the other on self-report. The first involves an intensive audit of a sample of taxpayers which is then grossed-up to reach an estimate of overall evasion. The Victorian reports mentioned above are an early example of this method. In the 1866 report, 200 cases were examined and in 40% of these fraud was judged to have taken place. A more modern example is the American Taxpayer Compliance Measurement Program (TCMP), which has involved samples of approximately 50,000 individual tax returns at intervals of two to four years since 1963. Here the scale of evasion has been more modest, although it must be remembered that some evasion occurs through no return being made (Kinsey 1984). The second involves asking people, for example using a questionnaire or telephone interview, whether they have evaded taxes and, if so, how much and how often. This can be a direct question or involve using a sealed envelope, randomised response, or a 'locked' box

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technique (all methods of guaranteeing the anonymity of the respondents). American self-report studies, which are summarised by Kinsey (1984), reveal noncompliance rates of between 9% and 33%.

The indirect methods can all be characterised as 'guesstimates'. Here, the size of the 'underground' economy is estimated by the traces it leaves in the official economy. Cowell (1990) likens this to trying to work out the number of moles in a field by counting the number of molehills! A variety of methods have been tried. These have included such indicators as the percentage of bank notes issued that are of large denomination and the divergence between income and expenditure estimates of the gross domestic product (GDP, which is basically the sum of income from property and income from employment). The first rests on the assumption that people try to conceal their underground economy activities by making payments in cash. For example, the increase in the ratio of cash to money held in bank accounts observed in the US since 1937–41 is attributed to the growth in the hidden economy. If it is assumed that there was no evasion in 1937–41 this leads to an estimate that the hidden economy comprised around 10% of gross national product (GNP) in 1976 (Guttman 1977) (GNP is GDP plus property income received from abroad and minus property income to foreigners). The logic of the discrepancy method is rather different; this is based on the fact that GNP can be estimated from the income side (essentially from tax records) and completely independently from the expenditure side (from household and industrial surveys). These different methods have led to divergent estimates; in the United States from 3.4% to 5% of GNP (Tanzi, cited in Maital 1982) to 25 to 33% of GNP (Feige 1979). Clearly these guesstimates have to be treated with caution.

Cowell (1990) provides a summary listing of all the main studies, whether using direct or indirect methods. He concludes that there is a consensus that the underground economy is about 2 to 10% of GNP in Western economies, with perhaps 7 to 10% being a reasonable estimate for the US (though he cautions that this conclusion should be heavily qualified). This gives us an idea of the general economic importance of the underground economy.

For a more detailed picture of the position in the Netherlands and in Britain we can rely on two recent comprehensive reviews (Smith 1986; Van Eck & Kazemier 1988). Van Eck and Kazemier summarise past research carried out in the Netherlands in the late 1970s and 1980s. This research has used both indirect methods (e.g. Broesterhuizen 1985) and surveys (Van Eck & Kazemier 1985). This gives estimates ranging from 1% to 22% of GDP, with the average being about 5% to 7%. The lowest estimates come from survey work, probably because this is only concerned with hidden income from labour (i.e. does not include the self-employed). None the less this 1% is shared by more than 1 million individuals (nearly 12% of the population).

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Smith (1986) explores British evidence from the demand for cash, from national accounts discrepancies and from survey discrepancies. He concludes that, on balance, the level of underground economy activity is unlikely to be less than 3% or more than 5% of GDP, with the lower estimate being probably more accurate.

Aggregate information of this kind is, however, not enough. Ideally we would like to know the number of people who evade, how often they evade (including the number of evasions in a lifetime), how they evade (false deductions and/or underdeclaring income, etc.), the distribution of the amount evaded (e.g. do most people evade rather trivial amounts?). On the other side of the coin some comparable information (how many people are, and how much money is, involved in the deterrence process) would also be helpful. Many studies simply do not have such detailed data but we can sketch an outline picture.

In general, survey studies ask if a respondent has ever overstated deductions or underreported income. On this basis, and using only those studies that have asked a direct question or used a sealed envelope, about 25% of the American population admit that they have evaded tax at least once. This suggests that in any given year a somewhat lower percentage will be evading. The TCMP results show far more noncompliance although net undercompliance (percent undercompliance minus percent overcompliance) ranges from 26% to 35%. This suggests that, for the US at least, a working estimate of a quarter of the population annually evading tax is plausible. The evidence we have for other countries suggests that this is a reasonable 'ball-park' figure. In the Netherlands, Groenland and Van Veldhoven (1983) found that one third of their wage-earners and two-thirds of their self-employed sample reported experience of the underground economy and Van Bijsterveld (1980) tells us that two out of three entrepreneurs evaded taxes in a given year. Using a more representative sample, Hessing, Robben, and Elffers (1989) found that 11% of their Dutch respondents admitted tax evasion. Wärneryd and Walerud (1982), in a telephone survey of Swedish males, report that 19% of their sample said that they had evaded at least once. Laurin (1986), reporting on a very large-scale interview study of a representative sample of the Swedish population, singled out opportunity as a prime cause of evasion. From his results it appears that more than 30% of the Swedish population have cheated in connection with reporting their income, while 12% have claimed higher deductions than they were entitled to.

To answer the question of 'how' people evade, we can use Kinsey's (1984) detailed overview of the survey literature. When direct questions were used, 5 to 7% of respondents said that they had overstated deductions. By way of contrast, 12 to 15% admitted underreporting income. The figures in the studies that used locked box and randomised response methods are rather

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different, but in most cases underreporting income was the more popular form of evasion. In addition, some people evade tax by not filing returns. In the few (all American) studies that have examined this, 4% to 7% admit failure to file returns (Kinsey 1984).

The TCMP results also give some indication of the number of people evading significant amounts. The figures are obviously different from survey to survey, but from the 1979 figures 10% of the 35% net undercompliant returns were trivially noncompliant (less than \$50 tax change). Some detailed Dutch data also suggest that most noncompliance detected by careful auditing is for relatively small amounts (Elffers, Robben & Hessing 1991 report that the mean tax correction was approximately £300). Looked at from the other side, Van Eck and Kazemier's (1988) large survey of hidden labour in the Netherlands suggests that the average participant earns approximately 2,300 guilders a year: 55% earn less than 1,500 guilders a year (roughly £10 a week) and only 4% earn more than 7,000 guilders a year. Brown, Levin, Rosa, and Ulph (1984), in a survey study of British taxpayers, also report that most tax evasion by the employed is for relatively small amounts. Under the Pay As You Earn (PAYE) system the chance of evading tax is limited and Brown *et al.* conclude that there is little evidence of evasion on people's main jobs. About 5% of their respondents had second jobs and 17% of these were reckoned to be evading tax on these earnings. These second-job earnings averaged approximately £18 per week (average main earnings in the survey were £92 per week).

Information on how many people are involved in the deterrence process is also hard to come by. For 1988, 8,859 officials were working at the income-tax department of the Dutch Tax Service. Of these, 2,070 were actively involved with the assessment of income on the basis of returns including desk auditing. Another 1,372 were engaged in in-depth auditing of business income. In comparison we observe that about 5 million tax returns were processed in 1988. A different perspective is obtained by looking at the cost of deterrence. The total costs of the Internal Revenue Service in the US in 1974 were \$1.3 billion, which is about 0.55% of the amount of tax collected. The UK system is much more expensive; for the same year the collection costs were 1.75% of the amount collected (Barr, James & Prest 1977). Much of this money is spent on collection and data processing, though Erikson and Sullivan (1988) say that auditing accounted for 36% of the IRS budget in 1976. Of more significance is the fact that in the US only a sample of returns is audited; approximately 1,250,000 out of 96 million in 1986 (US Bureau of the Census 1987). This overall figure masks considerable variation; people with low incomes are much less likely to be audited but those with very high incomes are likely to be audited twice every three years. Erikson and Sullivan (1988) conclude that the IRS is trying to ensure compliance but is also

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involved in budget-constrained revenue maximisation. In the Netherlands all returns are audited, but with varying depth of audit. There are no separate phases of arithmetical checking or preprocessing; all these things are merged into one task. In the US all individual returns, although not audited, are subject to maths and clerical error checking, and computer screening for audit potential when they are received at IRS Service Centers.

1.1.2 Policy issues

Social scientific research into taxation inevitably touches on issues of policy. Tax reform has been a notable feature of government policy in a number of countries recently (Denmark, Britain, the Netherlands, and the US, to name but four). Although this has been mainly based on the desire to reduce distortions caused by taxation, for example, the effects of high marginal rates of tax on incentives to work, there have been other motives. These include a desire to simplify tax systems and, through simplification and the reduction in marginal tax rates, to bring about a reduction in tax evasion. For instance, several recent income-tax reforms have put explicit limitations on what deductions are allowable (Hagemann, Jones & Montador 1988).

Tax reform has often been based on the prevalent ideology. When it is based on research, this is usually from economics rather than other social sciences. Our own work has limited, but definite, policy implications which we will discuss in later chapters. Here we would like just to give a single example of a piece of noneconomic research with policy implications. Schwartz and Orleans (1967) examined the comparative effectiveness of the threat of legal sanctions and appeals to conscience. They obtained tax-compliance figures for three groups of taxpayers, a threat group, an appeals to conscience group and a control group. All members of these groups were interviewed about political and tax issues a month before they made their tax return. The questions that they were asked were themselves the experimental manipulation. They stressed either sanctions or personal responsibility. The tax records showed a mean change in income declaration of \$181 in the sanctions group, \$804 in the conscience group and \$87 in the control group. The sanctions group also increased their claims for tax-deductible allowances, which suggests that threats may actually increase tax avoidance or evasion. This difference approached statistical significance ($p < 0.10$) in the direction opposite of that predicted. In view of these outcomes, Schwartz and Orleans' endorsement of the capacity of threats of punishment to reduce tax evasion seems unjustified and the overall assessment of the deterrence value of civil and criminal penalties remains uncertain.

This study does not, of course, show that appeals to conscience are necessarily a better way of reducing evasion than threats. But it does suggest

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that a simple application of elementary economic models may be counterproductive. It is to these models that we now turn.

1.2 Why do people evade taxes? Man as a rational amoral taxpayer

If we were to stop a person in the street and ask him or her why people evade tax, the answer would almost certainly be 'greed'. Stripped of its moral connotations, that is also the basis of the answer that economists have given. The assumption is that people will commit an offence, any offence, if by so doing they maximise their utility. Becker (1968) argues that people become criminals not because their motivations are different from others' but because their costs and benefits differ. Applied to the tax situation, this treats people as rational amoral decision makers whose aim, in this as in all other areas, is simply to maximise utility. The classic model (Allingham & Sandmo 1972; see also Cowell 1985) is extremely simple. It assumes that behaviour is influenced by factors such as the tax rate (which determines the benefits of evasion) and the penalties for fraud and the probability of detection (which determine the costs). Individuals have a choice of how much income to declare and may report none, some, or all of it.

This model produces generally unsurprising predictions. For instance, an increase in penalty rate and an increase in the probability of detection both result in more income being declared. But simultaneously, with penalties on tax evaded rather than income concealed and decreasing absolute risk aversion – both reasonable possibilities – the model predicts that evasion *decreases* when the tax rate rises. It is not quite as simple as has sometimes been claimed; in addition to allowing predictions like the latter one, Allingham and Sandmo incorporate the nonmonetary variable 'reputation' and the notion of risk aversion into their model as well as briefly exploring the dynamic case. Though here the predictions are also fairly commonplace, e.g. in a dynamic model where discovery of evasion leads to auditing of past tax returns, income declarations increase as the years go by.

The classic model predicts that both probability of detection and the severity of penalties will affect evasion; if detection is likely and penalties severe people will be more compliant. Kinsey's (1984) review suggests that for criminal behaviour in general, penalties are less of a deterrent than the probability of being caught, and this pattern is also found in the literature on tax compliance. The evidence that fear of detection is a deterrent is mixed. Mason and Calvin (1978) report that in their survey study the highest correlation with admitted evasion was the perceived probability of not being caught and many studies have found that evaders and participants in the underground economy perceive a lower probability of detection than others (e.g. Vogel 1974; Scott & Grasmick 1981; Grasmick & Scott 1982; Van Eck &

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Kazemier 1988), although people generally overestimate the chance of being audited. Using IRS records from 1969, Dubin and Wilde (1988) also found that audits had a deterrent effect. Experimental studies have confirmed the importance of audit probability (e.g. Spicer & Thomas 1982; Webley & Halstead 1986). Two additional studies using TCMP data do not support this notion. Long (1980) used a classic deterrence econometric feedback model and TCMP data aggregated at the IRS district level. The estimated deterrent effect of audits found was demonstrated to be explainable by bias introduced through random sampling error. A second later study using individual level TCMP panel data showed little specific deterrent effect of an audit (Long & Schwartz 1987).

This raises the question of what influences people's perceptions of the probability of detection. To explore this issue, Klepper and Nagin (1989) presented individuals with a series of detailed scenarios about a hypothetical taxpayer. They found that age and itemisation of deductions were associated with perceiving lower probabilities of detection overall, but, more interestingly, perceived probabilities of detection varied according to the nature of the specific declaration made. So, for example, detection was seen as less likely for income not subject to third-party reporting and more likely if tax was evaded on a large proportion of an item (e.g. a charitable deduction).

Although the evidence that heavier penalties produce more compliance than lighter penalties is limited, it is undoubtedly the case that fines and other punishments are, to a certain extent, deterrents. Some researchers have argued that above a certain threshold of probability of detection a mild penalty is as effective a deterrent as a heavy one (see Friedland 1982), though Jackson and Jones (1985) found that when the probability of detection was low (less than 4%) people were sensitive to the size of the penalty. Witte and Woodbury (1985) found that there was a relationship between severity of sanctions and compliance but only for a specific group of taxpayers (those who had high incomes and were self-employed). This suggests that we need to know much more about individual differences in the personal consequences of penalties and how those penalties are perceived. Klepper and Nagin (1989) argue that the reason researchers (including themselves) have found no evidence that the severity of a penalty matters is that the personal costs of even mild penalties are heavy.

Given the somewhat mixed nature of the evidence it is perhaps surprising that the classic model has been so widely used. Our guess is that it is its very simplicity that is appealing. As models use more realistic assumptions their predictions often become more ambiguous and, as Allingham and Sandmo (1972, 329) themselves point out, 'even a model as simple as the present one does not generate any simple result concerning the relationship between income and tax evasion' (it depends upon the relationship between relative

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risk aversion and income). But there is widespread recognition that tax evasion cannot just be treated as a simple gamble. Apart from anything else, given the current mild sanctions and low probability of detection, this kind of approach would predict that virtually everybody should be evading tax (Smith & Kinsey 1987); in other words we should not be asking 'why do people evade taxes?' but rather 'why do people pay them?' (Alm, McClelland & Schulze 1989).

So there have been a variety of extensions to the simple model. We will describe just two of them here; interactive (game-playing) models (Corchon 1984; Benjamini & Maital 1985) and those that use the idea of limited rationality (Kahneman & Tversky 1979, 1984; Jackson & Milliron 1986; Schadewald 1989).

The interactive models stem from a recognition that a taxpayer is not taking decisions in isolation and that there are other 'players' in the 'game'. The revenue authorities can clearly alter the probability of detection and the penalty rate. They can change these over time and make them different for different taxpayers. The behaviour of other taxpayers may also be relevant. Your reputation may suffer if you are caught evading in a population largely comprised of nonevaders but will be unaffected or may even rise if most people evade taxes.

In the Corchon model (described by Cowell 1990), the tax situation is treated as a two-person game involving the taxpayer and the authorities. The taxpayer has two choices; he can either comply or not comply. The authorities also have two choices; they can either investigate the taxpayer or not. Clearly there is no simple equilibrium in this model. If the taxpayer is complying it is best for the authorities not to waste money investigating but, if the authorities are known not to be investigating, it is best for the taxpayer not to comply. But there is an equilibrium if both parties use mixed strategies. In this situation the probability of evasion increases with the marginal cost of investigation and decreases with the size of the penalty for evasion (as the penalty gets less the probability of playing the 'investigate' move approaches 1). Surprisingly, if the game is repeated the expected tax evaded is zero.

This kind of approach may look very simplistic but there have been some interesting developments. The game between the taxpayer and the authorities is not a symmetrical one; the participants are emphatically not of equal status. And there are many taxpayers. So the authorities can maximise their returns by treating different groups of taxpayers differently. A particularly neat model of this type, by Greenberg (1984), is described by Cowell (1985). Here the assumption, as always, is that everyone would cheat if it was worth their while. Naturally the government cannot afford to investigate everyone but it can reduce evasion dramatically if it divides the population into three groups rather than auditing the whole population at the same overall level.