

Chapter 2

Tax Compliance Theory and the Literature

2.1 Introduction

During the 1980s structured research into tax evasion and non-compliance became widespread following the political concerns in the United States of an increasing “tax gap.”¹ Initially, the literature which emerged from the United States had a strong focus on economic theory. Utility theory, developed by Allingham and Sandmo,² assumed taxpayers to be ‘utility maximisers’ in decisions of tax reporting and compliance, where tax evasion was viewed as worthwhile if the financial gains purely outweighed the financial costs.

More recently, however, tax compliance studies³ have been based on social and psychological theories. Research studies in this field have argued that the human element plays a vital role in individual taxpayer compliance decisions. However, while the tax compliance literature has emerged from a wide variety of disciplines, there has been a lack of consensus and agreement as to why people do or do not pay their taxes. Indeed the tax compliance literature indicates that there are still many research gaps that need to be filled with respect to issues concerning tax morals, tax fairness and deterrence measures, for the likely improvement in overall taxpayer compliance.

This chapter which undertakes a synthesis, generally chronological in order and by category, critically reviews and evaluates the state of knowledge of taxpayer compliance to 2012. In particular, studies based on the theory of economics that explain the change in taxpayer compliance behaviour,⁴ and others based on the theories of psychology and sociology that explain the varying levels of taxpayer compliance, reveal that some combination thereof is optimal in improving overall compliance.

The focus in this chapter is upon three compliance variables which have been predominant throughout the review of the literature. They include the economic

¹ Tanzi and Shome (1994, p. 17).

² Allingham and Sandmo (1972, pp. 323–338).

³ See for example Murphy (2004), Tan (1998), Hite (1997) and Torgler and Murphy (2004).

⁴ Cuccia (1994, pp. 81–116).

variable of deterrence, which comprises the likelihood of being caught and the range of penalties applied to those who are caught, and the psychological variables, including moral values and the perceptions of equity and fairness held by taxpayers. The first of these variables has been identified by scholars of the economic school of compliance,⁵ whereas the latter two variables come from the social and fiscal psychology school of compliance.⁶

Logic suggests that the most efficient way to design an effective taxpayer compliance program would be to concentrate on the factors that appear to have the most impact on compliance levels and behaviour. Of all the variables examined by scholars, deterrence, tax equity/fairness and tax morals have been predominant and, accordingly, the focus herein is upon those three factors. Of these three factors, the greatest emphasis is placed upon the deterrence factor which is derived from the economic deterrence theory model.

2.2 Tax Compliance Theories

The main theoretical approaches to tax compliance have commonly been divided into the 'economic deterrence' approach, and the wider behavioural approach which incorporates both social and fiscal psychological approaches. The economic deterrence model has been commonly used to examine tax evasion and compliance from a theoretical perspective.⁷ Factors that have been examined in the economic deterrence model include:

- Complexity of the tax system
- Level of revenue information services
- Withholding and information reporting
- Preparer responsibilities and penalties
- Probability of receiving audit coverage
- Progressive and actual level of tax rates, and
- Penalties for non-compliance.

Despite the number of factors which have been examined under this model, the early pioneering work of Jackson and Milliron⁸ shows that there is no unanimous agreement on any one of these factors, thus indicating a positive relationship with taxpayer compliance.

The social/fiscal psychological model on the other hand, focuses on psychological variables which include moral values and the perception of fairness of the tax system and the tax authorities. This approach has often been used in empirical

⁵ Ibid 90–91.

⁶ See, for example, Kaplan et al. (1986, pp. 461–476).

⁷ See Jackson and Milliron (1986) and Chap. 3 generally.

⁸ Ibid 142.

research.⁹ The remainder of this section proceeds to outline the elements and characteristics of the two models and the various studies which have employed them.

2.2.1 *Economic Deterrence Model*

2.2.1.1 Introduction

The models which have been based on the economic theory of compliance generally focus on deterrence. Deterrence can be achieved through a number of approaches, punitive and persuasive.¹⁰ That is, deterrence may take on the form of increasing the probability of detection, increasing the tax rate or by the imposition of tougher penalties.¹¹ Alternatively, it may take on the form of better education, increased advertising/publicity and incentives.¹² The focus of this section of the chapter will be upon the punitive impact of penalties, sanctions and other enforcement factors which shape taxpayer compliance attitudes and behaviour.

The economic definition of taxpayer compliance views taxpayers as ‘perfectly moral, risk-neutral or risk-averse individuals who seek to maximise their utility, and chose to evade tax whenever the expected gain exceeded the cost.’¹³ Thus, a pure ‘cost-benefit’ approach is given for why or why not taxpayers may comply with the tax laws. Some researchers propose that individuals are expected to weigh ‘the uncertain benefits of successful evasion against the risk of detection and punishment.’¹⁴ Consequently, a penalty structure forms part of the punishment, and is a critical factor in an individuals’ choice to evade tax.

Given this background, the following analysis illustrates how the economic deterrence model has evolved over the last five decades. Over this period studies have demonstrated a gradual ‘watering down’ of the pure economic deterrence model, which concentrated predominantly on maximising utility, to a model which now incorporates other non-economic and persuasive factors, albeit in a somewhat primitive form.

2.2.1.2 Studies in the 1960s

Principles of economic deterrence models were first discovered in the late 1960s from the work of Becker,¹⁵ who analysed illegal behaviour using an economic

⁹ See for example, Ajzen and Fishbein (1980).

¹⁰ See Chap. 3 for more discussion on an extended economic deterrence model.

¹¹ See, for example, Fischer et al. (1992, pp. 1–46).

¹² See for example Hite (1989, p. 254).

¹³ Milliron and Toy (1988, pp. 84–104).

¹⁴ Fischer et al. (1992, p. 2).

¹⁵ Becker (1968, pp. 169–217).

framework. Becker proposed a narrow argument which implied that deterrents such as the probability of detection and penalties and sanctions, were within the control of society. Becker did admit, however, that there was a point where enforcement became uneconomic and resulted in a social loss.¹⁶ So, even at this very early stage of compliance research, there was recognition that the pure economic deterrence model had limitations.

2.2.1.3 Studies in the 1970s

Following Becker's model, Allingham and Sandmo¹⁷ derived a model based on a number of assumptions including taxpayers as utility maximisers who possessed actual knowledge of penalty and detection rates. The formulae they produced, despite also recognising taxpayers' reputation as a variable, were limited and simplistic. While they advocated that increasing the penalty rate and/or the probability of detection was a deterrent and led to greater income declaration, it was still an unproven theoretical model.¹⁸

A potentially salient issue which stems from Allingham and Sandmo's model is the existence of thresholds.¹⁹ The issue here is the certainty of the offender being detected versus the severity of punishment. That is, the deterrents could be used interchangeably. When detection rates are low penalties should be high and vice versa. Consequently, Allingham and Sandmo's study also indicated that where the probability of detection is certain, mild punishment may be as effective a deterrent as a more severe one.²⁰ Hence, increasing the penalty level will not necessarily achieve a greater deterrent effect if the offender knows that the chance of being caught is very high.

Other early studies on the economic deterrence model during the 1970s include the work of Srinivasan,²¹ who also based his views on the notion that taxpayers were utility maximisers. Srinivasan argued that if the probability of detection was independent of income, then, as taxpayers' incomes increased the level of evasion would also increase.²² However, Srinivasan acknowledged that the purpose of the

¹⁶ Ibid 181.

¹⁷ Allingham and Sandmo (1972).

¹⁸ Friedland et al., quoted in Lewis (1982), St Martins Press New York, conducted a simulation test of Allingham and Sandmo's model. The results suggest that the overall income declared decreased and the probability of evasion increased as a function of higher taxes, and that the fraction of earned income was very elastic with respect to the tax rate. However, the relationships were not found to be statistically significant. Lewis also questioned the comparability of the simulation to real-life behaviour. As cited in McKerchar (2003, p. 39).

¹⁹ That is the threshold or maximum chance of being detected for a tax offence.

²⁰ Allingham and Sandmo (1972, pp 323–338).

²¹ Srinivasan (1973, pp. 339–346).

²² Ibid 342.

tax structure was not just to collect tax revenue, so this assumption was largely unrealistic.²³

A study by Kolm²⁴ viewed the economic deterrence model from the taxpayers' perspective. That is, a taxpayer's utility in this case was the unknown variable rather than the total tax revenue. The issue was how to maximise a taxpayer's utility given changes in tax rates and income levels. The total utility of the model was calculated as the product of the utility of the individual (derived from a limited number of variables) and the total number of citizens.²⁵

The first sign of a real departure from Allingham and Sandmo's model was provided by Yitzhaki.²⁶ Yitzhaki examined taxpayers' attitude to risk and indicated that where a taxpayer had an absolute risk aversion that decreased with income, then an increase in the tax rate would result in a decrease in evasion.²⁷ Hence, it was argued that attitude to risk was determined by the taxpayer's level of income.²⁸ Although this theory was not tested it did appear more realistic.

Other early studies of criminal behaviour found that the probability of apprehension is more important than the sanctions actually imposed,²⁹ also questioning the pure economic deterrence model from an enforcement perspective. Following this argument is the issue of the precision of information regarding the probability that punishment will be imposed. Consequently, where there is only vague information about the relatively low probability of detection and punishment, there will be a low deterrent value.³⁰

2.2.1.4 Studies in the 1980s

During the 1980s following the earlier theories of the economic deterrence model, came more extended models which modified some basic assumptions and examined different compliance variables. While the models were more complex than previous versions, they were still based on the premise that economic sanctions were the key to improving overall taxpayer compliance.

In response to the growing rate of non-compliance and evasion in the US during the early 1980s the range of penalties was extended by government.³¹ Supporting this policy were studies that found that taxpayers are more sensitive to the magnitude of the penalty than to the probability of detection when the probability is very

²³ Ibid 344.

²⁴ Kolm (1973, pp. 265–270).

²⁵ Kolm as cited in McKerchar (2003, p. 40).

²⁶ Yitzhaki (1974, pp. 201–202).

²⁷ Yitzhaki as cited in McKerchar (2003, p. 40).

²⁸ Ibid.

²⁹ Tittle and Logan (1973, pp. 371–389).

³⁰ Friedland (1982, pp. 54–59).

³¹ Ibid 55.

low (i.e., 4% or less).³² This obviously has implications for many Anglo-Saxon countries that have moved to a self-assessment environment where audit coverage is low.³³

Yet, the failure of these penalties alone to improve compliance behaviour resulted in researchers continuing to question the merits of the pure economic deterrence model. Graetz and Wilde,³⁴ in particular, felt that the model was too simplistic and suggested that government auditing and collecting as well as lowering tax rates should be addressed in order to reduce non-compliance.

Clearly, there was support for Jackson and Milliron's argument that the severity of sanctions does not necessarily have a linear effect on tax compliance. Jackson and Milliron's mid-1980s pioneering study also indicated that the social cost of sanctions could outweigh the benefits. For example, taxpayers as a group may become alienated if sanctions are perceived as too severe resulting in general antagonism and disrespect for the law.³⁵

Further to the study by Graetz and Wilde was a study by Reinganum and Wilde³⁶ which examined the relationship between auditing, tax and fines. A number of algebraic equations based on principal-agent relationships were suggested.³⁷ Specifically, taxpayers were assumed to be risk-neutral, while non-random audits with the use of cut-off figures were used to induce honest reporting of income.

A further study by Graetz, Reinganum and Wilde³⁸ indicated that the economic deterrence model, as it existed, provided an inadequate theory of revenue collection. Graetz, Reinganum and Wilde proposed a more comprehensive theoretical basis for analysing tax compliance involving a "game." Specifically, levels of non-compliance, auditing and penalty assessment were determined through the interaction between taxpayers and the IRS.³⁹ The aim was to clarify the relationships between the elements which influenced compliance. While the testing of the relationships was a new characteristic in the deterrence model, it was restricted to only two income positions (i.e., IRS and the taxpayer) and still involved no empirical testing.

Cowell⁴⁰ investigated the definition of tax evasion and proposed that other non-economic objectives needed to be considered. Cowell indicated that social objectives may be better achieved in ways other than penalties and audit and with no loss of private expected utility.⁴¹ The key was that the tax authority had to use the

³² Jackson and Jones (1985, pp. 7–17). This research also added credence to congressional efforts to raise the magnitude of legal penalties a taxpayer faces for non-compliance (Code Section 6661).

³³ Self-assessment was implemented in Australia in 1986 and approximately 2% of the taxpaying population are audited based on this system.

³⁴ Graetz and Wilde (1985, pp. 355–363).

³⁵ Jackson and Milliron (1986).

³⁶ Reinganum and Wilde (1986, pp. 739–760).

³⁷ Ibid 748.

³⁸ Graetz et al. (1986, pp. 1–32).

³⁹ Graetz et al. cited in McKerchar (2003, p. 43).

⁴⁰ Cowell (1985, pp. 164–193).

⁴¹ Cowell as cited in McKerchar (2003, pp. 41–42).

information available wisely in determining its tax policy. Cowell's theory was, nevertheless, principally a theoretical and economic one.

By the late 1980s two other important studies had advanced the basic economic deterrence model. The first was a study by Scotchmer and Slemrod,⁴² which introduced the variables of randomness and taxpayer welfare into econometric modelling. Randomness was basically the uncertainty of assessment by an auditor and aimed at achieving the best combination between randomness and enforcement. Unfortunately, the model suffered from simplistic assumptions and problems in measuring social welfare.

A second study by Slemrod⁴³ introduced the variable of complexity into the economic model. It was argued that because complexity increased the cost of complying with the law it increased non-compliance.⁴⁴ While the theory was still based on the (unproven) assumption that the taxpayer sought to maximise utility, calculus was employed to prove it.⁴⁵ Overall, Slemrod was able to identify a number of weaknesses in economic deterrence models, particularly their inability to deal with the non-identical characteristics and situations of taxpayers.⁴⁶

2.2.1.5 Studies in the 1990s and 2000s

During the 1990s and early 2000s further studies have attempted to address the deficiencies of the pure economic deterrence model and have made modifications. In particular, Cuccia⁴⁷ noted that, apart from its simplified assumptions, the economic deterrence model tends to consider some endogenous variables (such as probability of detection) as exogenous, resulting in the models being misspecified.⁴⁸ Also, the concept of taxpayers having perfect knowledge ignores the differences in actual and perceived audit and penalty parameters in the taxpayers' decisions. What has been discovered is that taxpayers' perceptions of the true penalty levels are higher than the actual penalties. This has tended to skew research findings, and indicates that actual rates may not matter as much as the perceived rates of penalties.⁴⁹

A study by Falkinger and Walther⁵⁰ looked beyond punitive factors and considered persuasive factors. Their evidence suggested that a tax system that combines both penalties and rewards is more effective in maximising compliance than a system that focuses solely on sanctions.⁵¹ As such, positive inducements for compliance may also have a key role to play in deterrence. Whether these inducements

⁴² Scotchmer and Slemrod (1989, pp. 17–32) as cited in McKerchar (2003, pp. 44–45).

⁴³ Slemrod (1989) in Roth and Scholz (1989).

⁴⁴ Slemrod as cited in McKerchar (2003, pp. 45–46).

⁴⁵ Ibid 46.

⁴⁶ Ibid 46.

⁴⁷ Cuccia (1994, pp. 81–116).

⁴⁸ Cuccia cited in Smart (1999, p. 11).

⁴⁹ Jackson and Milliron (1986, p. 6).

⁵⁰ Falkinger and Walther (1991, pp. 67–79).

⁵¹ Ibid 72.

come in the form of quicker tax refunds, or a percentage reduction in tax payable, however, was and is still open to question.

Alm, Sanchez and De Juan,⁵² also examined other non-economic factors in their study and concluded that most empirical work carried out to date tends to refute the economic model of compliance in its basic form. For example, it has been demonstrated by means of laboratory experiments that even where the deterrence factor is so low that evasion makes obvious economic sense, some individuals will nevertheless comply.⁵³ Such findings may be particularly relevant in the context of a self-assessment environment. Where random audits exist, or where it is planned that only a small percentage of returns are selected for audit, a purely rational taxpayer would still be able to virtually discount audit as a serious deterrent factor.⁵⁴

2.2.1.6 Conclusion

Therefore, despite the positive effect of increased sanction levels on taxpayer compliance having been found to hold where relatively low (and realistic) penalty levels are used,⁵⁵ their overall impact has been questionable. Consequently, traditional economic deterrence models which draw upon expected utility theory and deterrence, mainly in the form of sanctions, have been found wanting. Little empirical evidence to support the predictions of economic deterrence models as a whole has surfaced. Researchers⁵⁶ have, therefore, summarised the effect of factors that determine the monetary cost of compliance as including the tax rate, detection probability, the level of income and the penalty structure and suggest that, for all of them, existing empirical evidence provides no firm conclusions.⁵⁷

Consequently, having considered the economic deterrence model and its deficiencies, it became apparent that further refinements and improvements needed to be developed to address tax evasion and non-compliance. The following section examines alternative approaches that have been pursued under the heading of fiscal and social psychology models.

2.2.2 *Fiscal and Social Psychology Models*

2.2.2.1 Introduction

Fiscal psychology models blend together aspects of economic deterrence models and social psychology models. The essential thrust of this approach is that

⁵² Alm et al. (1995, pp. 3–18).

⁵³ Ibid 16.

⁵⁴ Pilkington (1998).

⁵⁵ See Carnes and Eglebrecht (1995, pp. 26–41).

⁵⁶ Roth and Scholz (1989).

⁵⁷ Hasseldine (2000, pp. 299–303).

individuals are not simply independent utility maximisers rather individuals are recognised to contain an array of attitudes and beliefs which interact and respond to social norms. Social psychology models inductively examine the attitudes and beliefs of taxpayers in order to understand and predict human behaviour. The studies based on these models are many and varied in terms of the methodologies employed and the potential compliance factors examined. In this regard, the focus of this section of the chapter is to analyse the studies which examine the human factors that affect taxpayers' compliance attitudes and behaviour.

Consequently, the following analysis illustrates how the fiscal and social psychology model has evolved over the last five decades. Over that period, studies have demonstrated a sophisticated development of both the methods and variables employed within the model. While methodologies explored both quantitative and qualitative approaches, the variables have ranged from social norms and personal characteristics to fairness perceptions and taxpayer education and awareness.

2.2.2.2 Studies in the 1960s

One of the earliest studies on tax evasion which explored a "tax mentality" concept was presented by Schmolders.⁵⁸ This concept is based on the assumption that taxpayers have separate views with respect to looking after their self-interest as opposed to contributing to community interests. In this regard, the more positive a taxpayer's attitude towards paying tax and working with the tax authorities, the greater their willingness to pay tax. Schmolders concluded that attitudes were a reflection of cultural differences and the tax systems in which they were formed.⁵⁹ This was considered a narrow view of the formation of attitude.⁶⁰

In the late 1960s one of the earliest fiscal psychology models of tax compliance was developed by Strumpel.⁶¹ Strumpel's model asserts that rigid enforcement (rigidity of assessment) by the tax authorities is likely to reduce taxpayers' level of compliance with the tax laws.⁶² The two main variables in the model include, the "rigidity of assessment" which measures the amount of tax fines, the assessment process and the level of "red tape" involved in dealing with the tax authorities and, secondly, the "willingness to co-operate" which relates to individuals' attitudes and perception of the tax system.⁶³

An analysis of Strumpel's model was provided by Kinsey.⁶⁴ Kinsey interprets the concept of "willingness to co-operate" as being positively related to compliance, in that taxpayers who are very co-operative towards the tax authority are likely to

⁵⁸ Schmolders (1959, pp. 184–193).

⁵⁹ Ibid 187.

⁶⁰ McKerchar (2003, p. 55).

⁶¹ Strumpel (1969).

⁶² Ibid.

⁶³ Strumpel cited in Smart (1999, p. 13).

⁶⁴ Kinsey (1986, pp. 403–425).

be more compliant than those who are not.⁶⁵ In contrast, “rigidity of assessment” Kinsey sees has having two opposite effects. One is a direct positive impact on tax compliance, influenced by the tax rate, the amount of penalty and other economic variables which act as deterrents to tax evasion.⁶⁶ The second is a negative effect on the “willingness to co-operate” variable where tax compliance behaviour may be influenced by the level of red tape involved in the tax paying process or other non-economic variables⁶⁷ (See Fig. 2.1 below).

2.2.2.3 Studies in the 1970s

During the 1970s a number of fiscal psychology models were proposed which examined attitude variables. In particular, a study by Spicer⁶⁸ focused on the concept of exchange equity, that is, the perceived inequity between taxes paid in return for public goods and services supplied by government. Two further studies, by Vogel⁶⁹ and Song and Yarbrough,⁷⁰ examined the impact of ethical values upon taxpayer compliance or, in other words, the beliefs and values taxpayers placed on certain elements of the tax system. Both of these non-economic variables, equity and morals, were found to be significantly related to compliance behaviour.⁷¹

2.2.2.4 Studies in the 1980s

Following the build-up of fiscal psychology models over the previous decade, an important alternative version was offered in the early 1980s by Ajzen and Fishbein,⁷² and is referred to as the Theory of Reasoned Action (TRA).⁷³ This model indicated that taxpayers’ behaviour is directly determined by their intentions that are a function of their attitude towards behaviour and perception of subjective norms⁷⁴ (See Fig. 2.2 below).

Subjective norms are concerned with individuals’ beliefs of referents’ approval of their specific behaviour.⁷⁵ Referent groups are those individuals taxpayers

⁶⁵ Kinsey as cited in Smart (1999, p. 13).

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Spicer (1974).

⁶⁹ Vogel (1974, pp. 499–513).

⁷⁰ Song and Yarbrough (1978, pp. 442–452).

⁷¹ See studies herein Chap. 2 generally, which found both tax morals and tax fairness variables to be significantly related to compliance behaviour.

⁷² Ajzen and Fishbein (1980).

⁷³ An extended version of the Theory of Reasoned Action (TRA) is provided in the Theory of Planned Behaviour (TPB). See Ajzen (1991, p. 179).

⁷⁴ Ajzen and Fishbein (1980).

⁷⁵ Bobeck et al. (2007, pp. 49–64).

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