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Behavioural insights of tax compliance: An overview of recent conceptual and empirical approaches

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Ms Lilia Arcos Holzinger

ANU Centre for Social Research and Methods
Department of Prime Minister and Cabinet

Dr Nicholas Biddle

ANU Centre for Social Research and Methods

Abstract

Many tax policies in Australia and comparable countries are based on a completely rational individual decision maker. However, recent evidence in the fields often referred to as behavioural insights (combining behavioural economics and psychology) have shown that people are neither completely rational not completely irrational. Rather, they exhibit predictable biases that reduce the probability of achieving their own stated aims. In this paper, we summarise the evidence on behavioural insights related to tax compliance, with a particular focus on the more limited set of research on the decision making of small-medium enterprises.

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*The author can be contacted at nicholas.biddle@anu.edu.au

Tax and Transfer Policy Institute
Crawford School of Public Policy
College of **Asia and the Pacific**
+61 2 6125 9318
tax.policy@anu.edu.au

The Australian National University
Canberra ACT 0200 Australia
www.anu.edu.au

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1. Introduction

'Behavioural insights of tax compliance' encompass developments from a wide range of disciplines that explain how human behaviour is shaped by our nature and social environment, influence our willingness and capacity to comply with tax obligations.¹ The valuable contribution of behavioural insights is reflected in the explosive presence of this field in academia and in government policies. As Kirchler (2007) notes, although published interest in the intersection of 'tax compliance' and 'psychology' can be traced back to the mid 20th century, since the 1980's the number of scholarly papers with a title or abstract falling in this intersection have increased from about 1% to 10% of all tax compliance research.

Although still an emerging field, these insights are shaping how researchers and governments think about and attempt to influence tax compliance. Since the 1990s, this research has influenced tax policy and administrative approaches significantly. Government agencies within the Organisation for Economic Co-operation and Development (OECD) are increasingly researching and training staff on behavioural drivers of compliance, and even establishing entire research units to investigate behavioural insights (e.g. the UK's Behavioural Insights Team within the Cabinet office) (OECD, 2015). Recent joint efforts across the OECD have also sought to unify cross-country evidence in order to boost tax compliance, and the resulting reports and recommendations have a strong focus on behavioural insights (see OECD, 2013 and OECD, 2014).

The Australian Taxation Office (ATO) has a strong record of implementing innovative reforms and of conducting experiments to understand determinants of tax compliance, as will be discussed in later sections. Furthermore, Australian researchers have been involved in innovative work at

¹ Willingness to comply is affected by various cognitive biases and social interactions as will be later explained. Recent research also points to how these biases and interactions affect our capacity or ability to pay taxes under different circumstances and timeframes.

the frontier of behavioural insights. The Centre for Tax System Integrity (CTSI), for example, has a particularly outstanding record of liaising with government, as well as in driving cutting-edge research with a domestic focus but an international influence. Led by Professor Valerie Braithwaite, the CTSI—an enterprise between the ATO and the Australian National University (ANU)—was active during 1999-2006. During this time the CTSI produced over 180 publications, and while its groundbreaking work has been widely cited internationally, the centre's work had a central focus on testing and improving the ATO's voluntary tax compliance system.

The aim of this current paper is to provide a concise yet comprehensive reference of behavioural insights for tax compliance with a particular focus on recent works that are likely to drive future research, point to gaps in the literature, or are highly relevant to Australia.

This paper presents an overview of key elements of the behavioural insights literature. It is not an exhaustive review of all research under the broad umbrella of behavioural insights as this would both be very lengthy and would cover overlapping methods and lessons. Furthermore, there are detailed overviews and surveys on behavioural dynamics that were referenced extensively in writing this overview; particularly helpful and thorough are the perspectives of Alm et al. (2012), Alm (2012), Kirchler (2007), Kirchler (2009), Kircher et al. (2014), Kornhauser (2007), Pickhardt & Prinz (2014), Reeson & Dunstall (2009), Ritsatos (2014), and Walsh (2012). Next, we define important concepts within the literature, explain the traditional approach to analyse the tax compliance decision, and provide a visual map of some key topics that fall within tax compliance.

2. Defining non-compliance, the tax type, and the taxpayer

Before delving into the conceptual approaches and empirical findings of behavioural research on tax compliance, it is important to define and highlight the differences between tax avoidance and tax evasion, as this distinction has implications for the insights discussed. As Kirchler (2007) points out:

“Tax compliance is probably the most neutral term to describe taxpayers’ willingness to pay their taxes. Non-compliance represents the most inclusive conceptualisation referring to failures to meet tax obligations whether or not those failures are intentional...non-compliance does not necessarily imply violation of law.”

Within non-compliance then, lie the concepts of tax avoidance and evasion. Tax avoidance is characterised by a *legal* minimisation of tax payments achieved by taking advantage of tax loopholes and tax schemes with the purpose of avoiding tax. On the other hand, tax evasion is generally characterised as *illegal* non-compliance; examples include reporting false deductions, the use of fake invoices, or failing to report full earnings. While the legal distinction of these two concepts is clear, the moral one is less so, as shown by the case of large corporations or wealthy individuals who engage in *legal* activities to avoid paying local taxes by seeking tax havens (Kirchler 2007).

Another important clarification concerns the type of taxes and taxpayers that are studied. Most research up to now has focused on the individual taxpayer facing the decision to pay personal taxes, and ignores the general behavioural dynamics of the self-employed, or businesses, which must also remit a range of business taxes including Goods and Services Tax (GST) and Pay-as-you-go obligations of employees. Given this focus, personal income tax has received the most attention in the behavioural literature (Pickhardt and Prinz, 2014). It is important to keep this in mind when extrapolating findings, as the type of taxpayer and taxes faced can make a significant difference to the relevant behavioural determinants of compliance. Small business owners for example, often view themselves as earning GST (or Value Added Tax, VAT) money as opposed to simply collecting it for the government. As a result, they are often unwilling to transfer collected GST to the government (Kamleitner et al., 2012).

3. The Deterrence model of tax evasion

'Rational agent' models of human behaviour have traditionally dominated explanations on the way taxpayers choose to comply, which have come to be known as deterrence models of tax evasion (Hashimzade et al., 2013; Ritsatos 2014). Koh (2012) described individuals within the rational choice model as being "...self-interested, rational agents: they analyse the costs and benefits of various options and choose the option that maximises their utility. They have stable, consistent preferences and the options they face are comparable to one another."

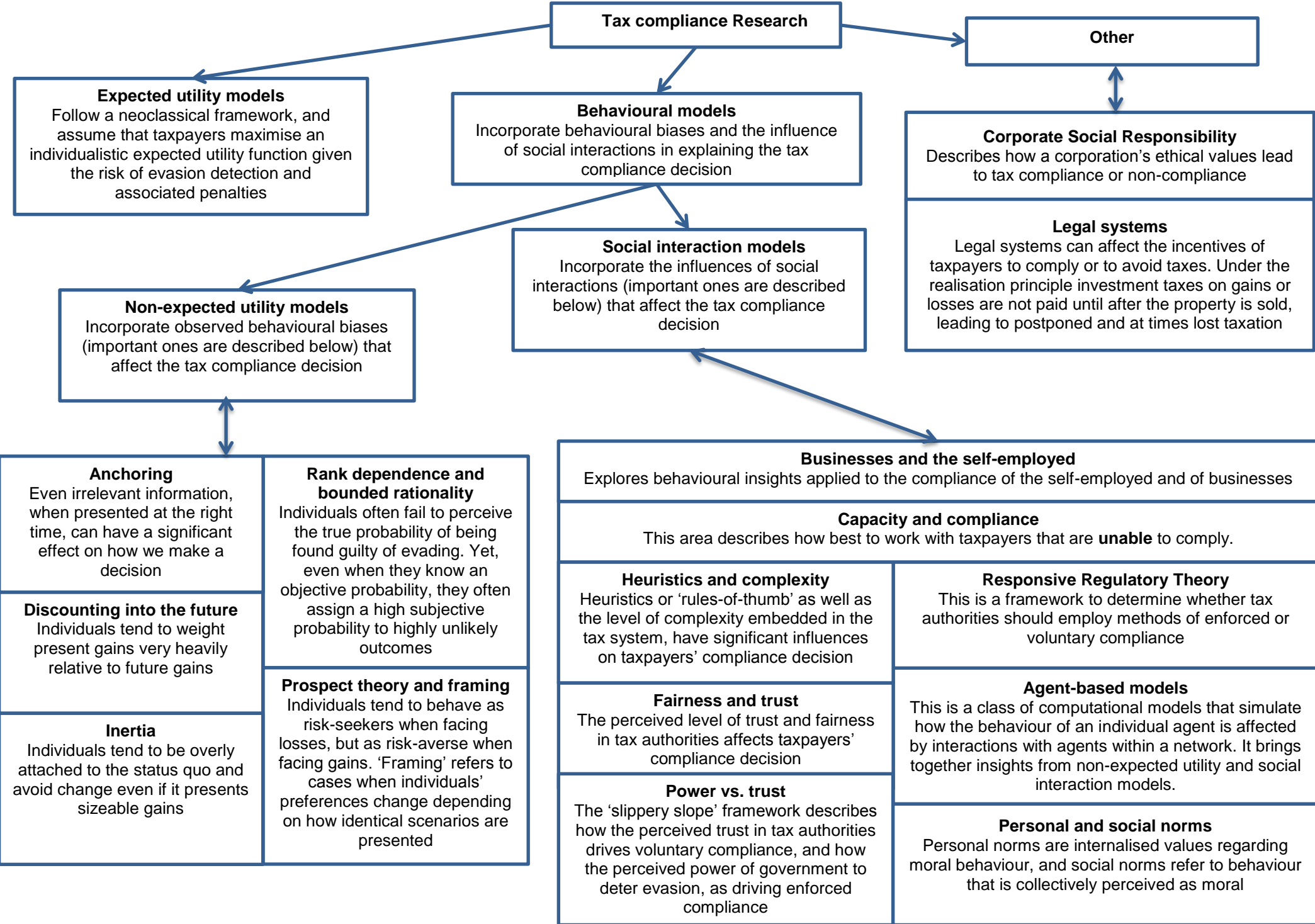
It is important to understand these models as they put into perspective how and why behavioural explanations of tax compliance are different and innovative. Allingham and Sandmo (1972) and Yitzhaki (1974) pioneered deterrence models, which assume that taxpayers decide whether to pay or not to pay taxes by maximising their individual lifetime expected utility. Specifically, individuals decide how much to understate their tax obligations based on the probability of being audited and on the associated penalties from being found guilty of evading. They also value the future and the present in a consistent way. Key predictions of deterrence models include an increase in compliance resulting from an increase in: tax rates; the efficacy of detecting evasion; the penalty rates for evasion; and the risk-aversion profile of taxpayers (i.e. more risk-averse taxpayers evade less often) (Slemrod & Gillitzer, 2013).

The rise of interest in behavioural approaches to tax compliance followed in particular the inability of deterrence models of tax evasion to explain the high levels of compliance seen empirically, and the capacity of behavioural models to overcome an the unrealistic view of the taxpayer as a cost-benefit analyst that disregards personal and social norms as well as other agents in the decision to pay taxes (e.g. tax accountants, government, other tax payers). Instead, behavioural insights are interdisciplinary, incorporating ideas from economics, social psychology, sociology, and agent-based simulations

thereby better modelling human behaviour and decision-making (see Table 1 in Pickhardt and Prinz, 2014 for an illustration of approaches by discipline).

It is helpful to understand where behavioural insights fall within the broader research area of tax compliance, as well as how non-behavioural insights have contributed to our understanding of tax compliance. For this reason, the map below describes key conceptual approaches to tax compliance research, and also serves to illustrate the structure of the behavioural insights that are later overviewed. Furthermore, while we have explained the deterrence model, any other categories that cannot be classified as behavioural insights are outside the scope of this overview. Two important areas of this research are included in the map below to illustrate the diversity of tax compliance research. The first is corporate social responsibility theory, and the second is the importance of a country's legal system in influencing compliance, as reflected through the realisation principle (see respectively Spence, 2014, and chapter 1 of Sheffrin, 2014).

In the sections that follow, we first explain the non-expected utility models of taxation, as they are direct responses to the limitations of the standard expected utility models. We then proceed to outline social interaction models, which incorporate how a taxpayers' environment influences the compliance decision; some studies use elements from both non-expected utility theory and social interaction models (e.g. agent-based models), and these are considered in the latter section.



4. Incorporating behavioural biases into economic models: Non-expected utility models

The standard models of expected utility applied to tax compliance rely on a set of restrictive and often unrealistic assumptions, as was discussed in section 3 (see Andreoni et. al., 1998 and Sandmo, 2005 for detailed overviews of this class of models). Social scientists, especially psychologists and behavioural economists, have documented the existence of systematic behavioural biases that preclude individuals from acting as the fully rational, utility maximising agents of neoclassical economic models.

Non-expected utility models are characterised by the construction of alternative preferences under risk (when the probabilities of outcomes occurring are known) and uncertainty (when the probabilities of some or all outcomes occurring are not known). They utilise a similar approach to the standard neoclassical economic models, but incorporate behavioural biases by either changing the subjective probability of obtaining an evasion penalty (i.e. this is the probability that individuals perceive) or the objective that individuals seek to maximise. Still, these models continue to perceive the decision to pay taxes as an individualistic one, and ignore social interactions that influence the decision to comply (Alm, 2012). Next we review key non-expected utility concepts that drive a better understanding of the behavioural determinants of tax compliance.

4.1 Rank dependence and bounded rationality

It is unrealistic to assume taxpayers have full information on audit rates as is assumed under standard models, and bounded rationality models incorporate this uncertainty by assuming that individuals do not know audit probabilities when deciding to evade. Results from controlled laboratory experiments show that a higher uncertainty in audit rates has been linked to lower evasion (Tan & Yim, 2014). Yet even when individuals are fully aware of the objective probability of being audited (in reality these probabilities are very low), they

may exaggerate the chances of an audit in their decision to comply. This behaviour is captured in rank dependent models that overweight extremely unlikely outcomes, and this bias could explain the high compliance levels observed across developed nations.

4.2 Hyperbolic discounting

Another notable empirical observation is the tendency of individuals to discount the future against the present at a much faster rate than specified under standard models (Reeson & Dunstall, 2009). This has implications for particular groups of society, for example the young or those with addiction problems, who may not realise the negative effects of non-compliance or who are unable to practice self-control in their budgets (Nordblom & Žamac, 2012).

4.3 Prospect theory and framing

Prospect theory models individuals as risk-seekers when losses are involved, and as risk-averse when gains could be made. This theory suggests that taxpayers give tax losses a higher weight than tax gains, and that the way a tax payment is perceived or framed can lead to compliance or evasion (Reeson & Dunstall, 2009). For example, systems like 'Pay as You Earn' (PAYE) that automatically deduct tax payments and later refund taxpayers create less defiance among taxpayers than do systems where tax deductions are later claimed from untaxed earned income (Walsh, 2012). Avoiding systems where liabilities are unexpected and incurred in large quantities at a particular point in time is also supported by evidence that personal finances are subjected to mental accounting, where individuals divide their money into various 'mental accounts' and try to minimise losses in each account. Hence, under the PAYE system for example, a positive tax return at the end of the financial year is seen as a gain despite it representing lost interest (Reeson & Dunstall, 2009). In a study of hairdressers/beauticians in the UK, Webley & Ashby (2008) found that mental accounts for various types of income streams were present and dictated whether a particular stream would be declared to the tax office. However, mental accounts were also influenced by the

occupational culture in which the interviewees were operating, pointing to the importance of social norms in shaping individual tax compliance decision.

4.4 Inertia and the importance of defaults

Status quo bias or inertia describes the inclination of individuals to avoid change, as possible losses arising from the change are weighted more heavily than possible gains (Kahneman et. al., 1991). This observation could explain the importance of setting default options to maximise compliance. In 2007-8 for example, 72% of Australian taxpayers used the prefill-service, and only 11% submitted the tax in the first month, which is likely due to more difficulties in completing the tax return early, when pre-filled information is missing (Kerr, 2012). Similarly, Jones (2012) shows that as default settings or tax liabilities change for recipients of an Earned Income Tax Credit (EITC) in the United States, participants only partly changed their prepayments, which is attributed in part to strong inertia effects among taxpayers. This bias places emphasis on the importance of designing smart default options and simplified tax systems that will appeal to taxpayers who struggle with the time-demands or complexity of compliance.

4.5 Anchoring

Anchoring refers to people's tendency to utilise known information to form their expectations, even if the information is irrelevant to the problem at hand (Walsh, 2012). Anchoring has key implications on the information that should be disclosed or highlighted by the tax office to taxpayers. In controlled experiments for example, participants increase evasion after an audit, despite audit probabilities remaining unchanged (Maciejvosky et. al., 2007). Similarly, Gemmell & Ratto (2012) found that among audited UK taxpayers, those who were found compliant after an audit lowered their compliance levels, while the opposite held true for those found non-compliant.

The non-expected utility class of behavioural models are able to predict the high compliance levels observed, as well as other empirical anomalies discussed above, which the standard models were unable to explain.

Nonetheless, in the process of making the theory of taxpayers' decisions more realistic by incorporating psychological insights into the formulation of preferences, the evasion decision also becomes much more complex (see Hashimzade et al., 2013 for a stylised survey of behavioural economic models). Moreover, these types of models often predict that a higher tax will lead to higher tax compliance as do the standard models, yet this is not observed empirically (Alm, 2012).

5. Social interaction models and tax morale

Social interaction models address important limitations and drawbacks of non-expected utility models, while also moving away from a purely quantitative approach to analysing tax compliance. Collectively, these models cover many disciplinary approaches. Social interaction models view the tax decision more realistically by including the influences of other agents in the tax compliance decision. Important considerations include the propensity of others to pay tax, the normative influences of colleagues, friends and family, the advice of tax accountants, and perceptions on the role and legitimacy of government (Alm, 2013). With social interaction models developed the idea of tax morale—an intrinsic motivation to pay taxes—as the main explanation to why an overwhelming majority of taxpayers choose to comply (see Luttmer & Singhal, 2014 for an overview of tax morale research to date). Indeed, the empirical support for traditional deterrence policies is weak, while tax morale along with tax policies and state regulation have been documented as stronger drivers of compliance levels across the OECD (Feld & Schneider, 2010). In what follows, we overview important social interaction theories of tax compliance, as well as empirical findings where social interactions are emphasised as influencing tax compliance.

5.1 *Personal and social norms*

Research concerning personal and social norms forms a key component of the social interaction models of tax compliance, yet the diverse specifications and empirical undertakings that fall within these concepts makes it hard to define them precisely, which is further complicated by the interaction and

feedback mechanisms that exist between personal and social norms. Broadly, a personal norm is defined as an internalised value regarding moral behaviour, and a social norm refers to behaviour that a group of individuals collectively perceive as moral (Wenzel, 2005). Empirical studies have pointed to the prevalence of cooperative values that characterise compliant taxpayers over non-compliant ones, as well as to feelings of guilt or shame when compliant taxpayers violate these norms (Kirchler, 2007). Christian & Alm (2014) show that being empathetic to other taxpayers as well as conducting 'priming activities' to induce empathy among participants, leads to higher tax compliance (see also Maciejovsky et al., 2012 for various effects of emotional priming in lab experiments).

In a survey of Australian citizens, Wenzel (2004) examined the impact of social and personal norms on deterrence, concluding that internalised social norms (which he argues become personal norms) moderate the effect of deterrence measures. On the other hand when social norms have not been internalised, they have a negligible impact on compliance; if additionally personal norms are weak, Wenzel claims that standard deterrence policies would be more effective in inducing compliance. The importance of personal norms in the compliance decision has extensive experimental support. For example, Bobek et al. (2013) conduct a controlled experiment on compliance and found that while both personal and social norms play a critical role, personal norms have a much stronger effect on compliance than do social norms.

While personal norms can be hard to change, a personalised service as well as educational campaigns can help to promote tax morale. Specifically, inexperienced individuals and businesses are more likely to fall into both intentional and unintentional non-compliance. Braithwaite (2006) explains how for young Australian taxpayers, it is not necessarily age-defiance that leads them to be non-compliant, but rather a weakening tax-paying culture across the generations; she finds similar results of a weakening tax morale when examining the compliance of student loans and child support recipients in Australia (Ahmed & Braithwaite, 2004).

Social norms are also important determinants of tax compliance. They can be classified into injunctive norms (what a group approves or disapproves) and descriptive norms (what a group actually does). Social norms can contradict each other at times, including through ways individuals construct their own relative identity, and there is still little work explaining which norms overpower other ones in the tax compliance decision. Arguably, injunctive norms are particularly influential when information is public, for example if the identity of evaders were to be made public after an audit. On the other hand, descriptive norms become most relevant in decisions under uncertainty—if a taxpayer is unsure whether to declare a particular income stream or claim a deductible, he or she will normally refer to the actions taken by those in his or her social circle (Onu & Oats, 2014b).

Empirical research has also shed light on instances when social norms might be salient in the tax compliance decision. First, taxpayers who have a strong sense of group identity tend to comply more—those with high sentiments of patriotism or religiosity are more likely to comply, and national identity often overpowers occupational norms of tax compliance (see Wenzel, 2004 for the case of patriotism; see Torgler, 2006 for the case of religiosity; see Ashby et al., 2009a on the importance of societal over occupational norms). Compliance has been also shown to increase when taxpayers have an opportunity to update their beliefs about social norms by communicating with others and receiving direct feedback on their behaviour (for qualitative evidence on social interaction effects based on online communication forums see Oats & Onu, 2014a and Oats & Onu, 2015). In a field study, the UK behavioural insights team sent letters to non-compliant taxpayers reminding them of the high levels of tax compliance nationally, thereby raising compliance by about 16 percentage points among debtors (Onu & Oats, 2014b). However, in case of taxpayers who before receiving the information had overestimated others' compliance levels, the opposite effect could occur, as the new information could decrease an individual's sense of moral responsibility to comply.

Demographic and socio-political characteristics help to explain how social norms vary across heterogeneous societies (For extensive international results on the links between demographic variables and tax compliance see the reviews by Richardson & Sawyer, 2001 and Kirchler, 2007; for insights from Portugal and Italy see respectively Gomes et al., 2013 and Russo, 2013). In the Australian case, Devos (2008) conducted a survey to map how various demographic characteristics relate to attitudes towards tax evasion. Participants were also asked how they felt deterrent policies impacted tax evasion and how they should be applied, as well as their perspectives on tax morale and the system's fairness.

The Devos study found that while the level of education had little effect on tax knowledge, men tended to evade more than women, lower income earners were more tolerant of underreporting cash payments, and senior respondents advocated stricter penalties for tax evasion and complied at higher levels. Most respondents were concerned that the Australian tax system is horizontally and vertically unfair, and there seemed to be a strong societal norm for shaming evaders—respondents overwhelmingly thought that media exposure and jail time would have strong deterrent effects on evasion, while monetary penalties were perceived as less effective. Nonetheless, except for seniors and non-Australian respondents, most respondents also advocated a positive, education-based method to deal with tax evaders as opposed to only using deterrence measures. Based on the survey responses, some demographic groups seem more responsive to traditional sanctions, including those under the age of fifty, and those in white-collar occupations. As the author notes however, this study requires more robust statistical methods before drawing policy implications. Building on this work, Devos (2012) confirmed—through robust quantitative and qualitative analysis—that low tax morale due to inequities in the tax system (and not to fear of deterrent measures) were closely related to non-compliance. Moreover, non-compliers were highly aware of tax avoidance mechanisms and engagement in these practices was prevalent.

As discussed before, countries like the UK and the USA have embarked on campaigns to inform taxpayers of high national and local compliance levels, yet there is little understanding of prior beliefs held by taxpayers on compliance rates. As Onu & Oats (2014b) point out, injunctive and descriptive norms should be taken into account in designing these interventions, so that an individual would be informed of both the high compliance levels across localities and nationally (the descriptive norm), and also that most individuals view taxes as a civil duty (the injunctive norm). Other empirical results further show that harsh deterrence rules can undermine a social norm of paying taxes as a citizen's moral duty, thereby decreasing tax morale and increasing non-compliance. For example, if shaming rituals are not followed by reintegration of offenders, then this often results in more evasion (Coricelli et al., 2013). There can also be possible negative consequences of providing tax amnesties, as these policies could signal that non-compliance is a socially accepted norm (Nar, 2015). Likewise, awarding compliance with monetary benefits can have the ironic effect of undermining again a tax-paying social norm as it frames the tax process as a purely economical transaction, and taxpayers are more likely to view taxes as a personal monetary loss.

5.2 *Fairness and trust*

Tax systems that are perceived as fair are also characterised by high compliance levels. In experimental studies, individuals tend to choose alternatives that yield less monetary payoffs, but which they perceive as being fairer. Social psychology distinguishes among three types of justice concepts that affect how fair a tax system will seem to a taxpayer. Distributive justice relates to how balanced a taxpayer believes his tax payments are relative to the benefits he receives from them, and to the taxes that others pay; procedural justice conveys how fair the process of reallocation of resources is perceived to be, including the level of transparency, efficiency, and respect with which taxpayers are treated; retributive justice examines whether sanctions for those that evade taxes are fair (Kirchler, 2007).

Wenzel (2003) creates a framework to explain how these three justice components interact with personal, group or societal perceptions of the tax system. At the individual level, taxpayers are principally concerned with the personal costs and benefits from the tax system and about their interactions with tax authorities; the principles of horizontal equity, vertical equity, and consistency in the process of taxation are particularly important since individuals constantly use reference groups to evaluate fairness at a personal level (see Bazart & Bonein, 2014 for experimental evidence on the importance of equity and reciprocity in compliance). At the group level, taxpayers view justice from the perspective of a particular group they identify with, such as those with the same occupation or economic strata (see Ashby et al., 2009b for the importance of occupational taxpaying culture in Australia). At the societal level, people want the tax system to treat members of a society under the same principles, and to provide common goods and services in accordance to what social norms consider as fair.

Besley et al. (2015) examine the impact on UK taxpayers of the introduction and subsequent removal of the hugely unpopular poll tax of the 1990s. The authors use quasi-experimental methods and a panel set spanning thirty years, finding that movements towards less equalising tax measures decreased tax morale, and that these effects were persistent even a decade after the tax's abolition. Braithwaite (2003) finds that vertical inequity in Australia is linked to poor relationships between taxpayers and the ATO, including feelings of procedural injustice and disillusionment with democracy. She shows that wealthy individuals and corporations are perceived as not paying their fair share of taxes, and that there is a strong desire for increased transparency on the contributions of these groups.

While fairness is an important determinant of compliance, trust in tax authorities is a key precondition for procedural justice to have a significant impact on voluntary compliance (Van Dijke & Verboon, 2010; Murphy et al., 2009). In the 1990's for example, certain tax avoidance schemes became common among middle-income Australian taxpayers. These schemes operated over some years until in 1998 the Australian Taxation Office (ATO)

ruled that they did not comply with the tax law and hence large deductions that had been claimed were found not to be lawful. The taxpayers that had engaged in these schemes (many of whom had only moderate incomes) were responsible for significant tax payments, penalties and interest dating back over a period of years (Wenzel, 2003). The scale and widespread engagement in these tax schemes, and the length of time that passed before the ATO cracked down upon them likely decreased the trust in authorities and the likelihood of voluntary compliance.

Trust and the perceived fairness of taxes have also been linked to political systems and institutions. Some suggest that direct democracy enhances tax morale (see Kirchgassner for a general discussion on the role of direct democracy and federalism; see Torgler, 2011 for an overview of tax morale findings across Europe). On the other hand, countries with poor institutions or transitioning to democratic regimes suffer from poor tax morale and a vicious cycle of high evasion (see Hug & Sporri, 2011 for the case of countries transitioning from communism; see Kaplanoglou & Rapanos, 2013 for recent evidence from Greece).

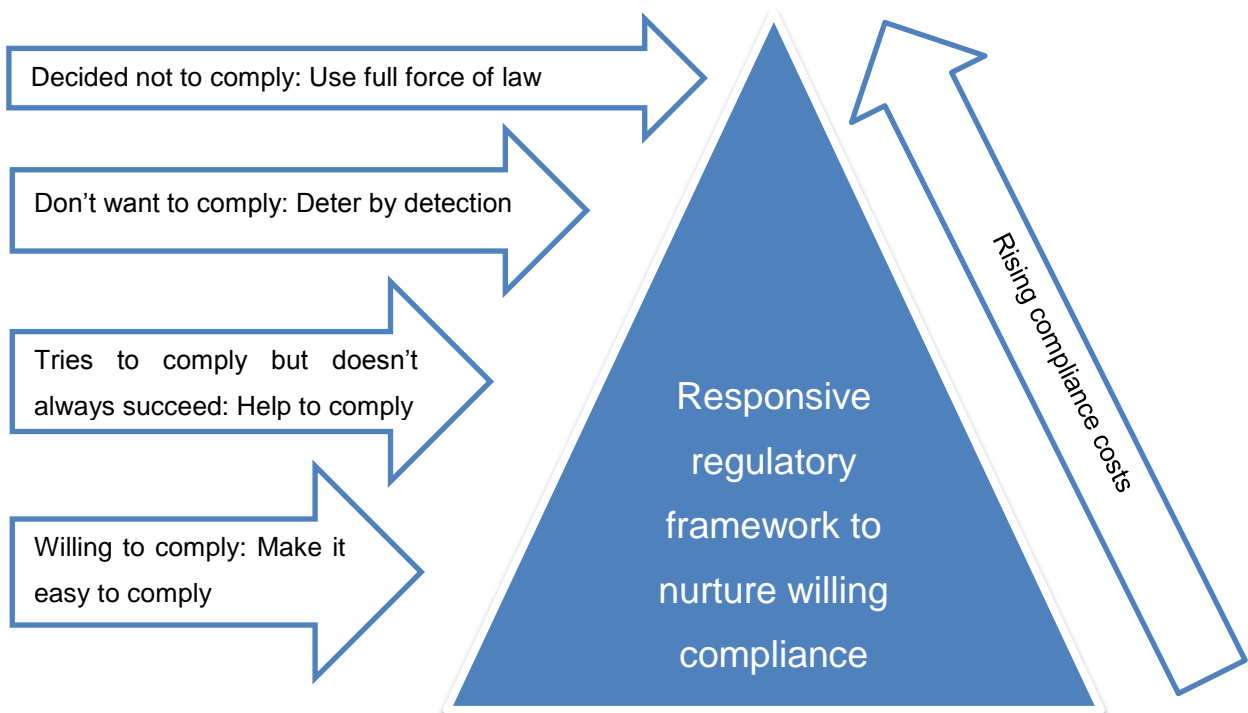
5.3 *Responsive regulation theory (RRT)*

In enhancing voluntary compliance, the nature of the social exchange between taxpayers and the tax authority is essential, and has been the focus of much theoretical as well as empirical work of social interaction theories. While a just and trusted tax collector enhances voluntary compliance, traditional forms of deterrence can be more effective at achieving compliance in certain circumstances. In countries with high compliance such as Sweden, deterrence has been effectively combined with behavioural insights (for the strategies of the Swedish tax office, see STA, 2005). Aiming to reconcile traditional deterrent policies with those that emphasise cooperation, RRT guides tax administrators on when to choose harsh deterrence versus a cooperative strategy; the aim is for the rule of law to be promoted in a personalised but systematic way, preventing enforcement of the law from crowding-out tax morale (Braithwaite, 2010).

RRT takes the shape of a pyramid with cooperative strategies placed at the base of the pyramid (the base represents the first encounter with the non-compliant taxpayer). As figure 2 shows, these strategies become progressively harsher going up the pyramid (i.e. when the taxpayer remains non-compliant). The framework takes the shape of a pyramid as its objective is to guide voluntary tax payments among the majority of taxpayers, and to reduce the number of people who require enforced compliance as much as possible.

Complementing the RRT framework is the concept of motivational postures of taxpayers. This refers to the social distance that individuals place between themselves and authority as a result of approval or discontent with the demands of the law. Braithwaite (2009) notes that once negative postures are observed, they should be addressed or will otherwise lead to defiance with authority, as manifested through dismissiveness or resistance. Hence, tax administrators should engage evaders through a procedurally just system (Murphy, 2014).

Figure 1: Responsive Regulatory Framework of the ATO



Source: ATO's compliance model

RRT was officially introduced in the ATO in 1998, and has since been subjected to empirical tests on its efficacy in dealing with compliance (Wenzel, 2003). Short-term studies after its implementation revealed that the agency faced significant challenges in adapting to the new system, and that at times resistance among staff slowed down the adaptation process (Shover et al., 2003). This is at least partly a response to changed power dynamics under an RRT system, as unlike the traditional deterrence approach, voluntary compliance includes a collaboration between tax administrators and taxpayers. There is also evidence that as taxpayers give supportive and critical feedback to tax administrators, this results in greater pressure, but also in better performance and job involvement by tax collectors (Lee et al., 2014).

It can be difficult for regulatory bodies to transition to a system that employs the principles of RRT, and often the system is only partially implemented (see Nielsen & Parker, 2009 for a study on the of regulatory compliance of large Australian businesses and their interactions with the Australian Competition and Consumer Commission). Still, when properly implemented, RRT has driven exceptional compliance levels. Frey and Feld (2007) cite evidence of high voluntary compliance across the Swiss cantons where the principles of RRT are well implemented, and they point to the central role that respect—especially in the face of initial non-compliance—and the norm of reciprocity has had on the high levels of compliance observed.

5.4 *Trust and power: The ‘slippery slope’ framework*

As has been previously noted, the ability of governments to enforce penalties for tax evaders, as well as to be perceived as trustworthy by taxpayers, are important drivers of tax compliance. The ‘slippery slope’ framework presented in Kirchler et al. (2008) synthesises key components of tax compliance theories and empirical findings in a simple yet comprehensive model. The framework distinguishes between cooperative compliance driven by trust, and enforced compliance driven by the power of authorities. Trust is determined by personal and social norms and fairness perceptions of the tax system. In

the case where trust is low, compliance can also be achieved by utilising an authority's power to conduct audits and impose legal and financial penalties on evaders. Hence, compliance is a function of trust and power, and when either of these two parameters improves, so does compliance (Alm et al., 2012). The framework also takes into account the possible interactions of trust and power in determining compliance. A 'slippery slope' occurs when a decrease in trust leads to a decrease in power and vice versa, thus precipitating a sharp fall in compliance (Kirchler et al., 2014). The framework encourages a focus on cooperation driven by trust, recognising that enforced compliance requires that the government signal its power through high-cost measures including regular audits for non-compliers, and the enforcement of related penalties.

This framework has been tested and validated in controlled experiments as well as in surveys and cross-country studies (see Muehlbacher et al., 2011 and Kogler et al., 2013 for cross-country validations). Empirical work has also helped to point to how trust and power interact in regards to two distinctive kinds of power. Coercive power occurs when trust is low and leads to enforced tax compliance, while legitimate power occurs when trust is high and is positively perceived by compliant-taxpayers, leading to voluntary compliance (Gangl et al., 2015; Kogler et al., 2013; Kogler et al., 2015).

Nonetheless, this framework leaves out some important considerations. In particular, it doesn't specify how to transition from enforced cooperation to voluntary cooperation. This contrasts with the responsive regulatory framework, which recommends a service-driven relationship with taxpayers to encourage voluntary compliance. Extensions of the model however, have been taking into consideration these dynamics and they will need to be empirically tested in the future (Gangl et al., 2015). Other recent extensions include exploring the effects of political preferences and views on the role of the State. In an Italian study, those who advocate a greater role of the State in the economy (traditionally referred to as the 'left-wing') were more likely to comply voluntarily but also responded more negatively to coercive power. Those who advocate a more minimal role of the State (the 'right-wing') were

more responsive to enforced compliance and more likely to comply under high levels of trust in government (Lozza et al., 2013). Finally, Kogler et al. (2015) use survey data to conclude that the slippery slope model applies well to a group of self-employed taxpayers, while also highlighting the importance of justice and of personal and social norms in driving compliance.

5.5 *Heuristics and complexity*

Individuals do not normally behave as utility maximisers, but rather apply heuristics also known as rules of thumb, when making decisions. These rules of thumb for problem solving involve a systematic way of trialling alternatives, receiving feedback from the environment, and selecting an acceptable solution even if it is not the optimal one (Torgler, 2014). Heuristics can also be explained as a mechanism to deal with one's bounded rationality. For example, people tend to apply heuristics more extensively and to ignore new information when complexity increases (Reeson and Dunstall, 2009)

An emerging finding from experimental and other research is the profound negative effects on cognitive ability from the ongoing stresses of poverty and complexity. In a review of this literature, Vohs (2013) attributed these findings to the 'limited-resource model of self-control.' Under this model, individuals have a finite amount of self-control. This self-control is a resource that can be used to undertake costly behaviour that leads to long-term benefits (like compliance) or to avoid pleasurable behaviour that leads to long-term costs. Those with few financial resources are required to exercise this self-control on a much more frequent basis than those who are relatively well off. In essence: "Because the poor must overcome more urges and make difficult decisions more often than others, they are more likely to over-eat, overspend and enact more problematic behaviors" (Vohs 2013).

This research was further expanded on in Mullainathan and Shafir (2013), particularly in the context of long term financial decision making, showing that situations of stress and complexity increase the probability of making decisions that are not in that individual's own stated long-term best interest.

The detrimental effects of complexity on compliance have been widely studied through controlled experiments and qualitative studies. Alm et al. (2010) show that providing information services to taxpayers reduces the uncertainty of filing and reporting compliance, and increases the levels of reported income. Alm (2014) argues that under more complex tax systems, individuals find it harder to correctly predict their true levels of tax liability, and that this added uncertainty leads to higher occurrences of aggressive tax planning, which the author defines as the practice of incorporating elements of tax evasion and avoidance. It has been suggested that in Australia, the focus should be on procedural and administrative simplifications that decrease complexity (Tran-Nam et al., 2014). Moreover, increasingly complex tax system can have a disproportionately negative impact on low-income, less-educated households. A qualitative study of EITC welfare recipients in the US found that in response to the incentives presented by the program, recipients engage in non-compliant practices as a result of a complex tax system and uncertain liabilities (Edin et al., 2014).

Given the importance of heuristics in the compliance decision, simplifying the tax compliance process, applying a personalised service-driven interaction between the tax office and taxpayers, and providing feedback to those who comply can yield significant improvements in compliance that deterrence alone cannot achieve (see Slemrod, 2010 for an Australian-specific treatment of tax system complexity). Nonetheless, James and Edwards (2008) provide a cautionary note that simplifying the tax law or reducing tax costs *alone* does not lead to higher compliance. Rather, the authors advocate for a multifaceted approach including analysing taxpayer behaviour across several measures, understanding the relationship and interaction of different policies, and monitoring and evaluating the performance of planned strategies as complementary to simplifying the taxpaying process.

5.6 *Agent-based models (ABMs)*

The social interaction models discussed up until now are often silent on *how* various parameters in the tax compliance decision interact and result in an

observed outcome, and the emerging field of ABMs provide a solution to this limitation. ABMs allow an agent in a network to interact with other agents, and for the agent's behaviour to depend on the behaviour of others. Beside these interactive effects, ABMs also model changes resulting from stochastic processes; that is, they incorporate systematic as well as random factors that affect tax compliance. These features of ABMs complement the less precise and descriptive nature of some of the social interaction models previously discussed (Prinz and Pickhardt, 2014). Although still in the early stages, ABMs applied to tax compliance have provided important behavioural insights including how to best select taxpayers to audit (see Bloomquist & Koehler, 2015; Garrido & Mittone, 2013); the role of occupational choice on tax compliance (Hashimzade et al., 2014); the effect of varying communication rules and social influences (Muñoz et al., 2015; Llacer et al., 2013); and the effects of heuristics on observed tax morale (Méder et al., 2012). For an overview of ABMs applied to tax compliance, see Prinz and Pickhardt (2014) and Bloomquist (2006).

6. Extending insights to businesses and the self-employed

Most work on the behavioural determinants of tax compliance comes from models and empirical studies of individual taxpayers, and it is often implicitly assumed that the tax faced is based on personal income from wages or investments. Given the high non-compliance of businesses and the self-employed relative to PAYG taxpayers, as well as the heavy burden that many have had to endure following the global financial crisis, behavioural insights on this group of taxpayers is of high relevance (Alm, 2014a).

Alm & McClellan (2012) provide one of the first attempts to extend the concept of tax morale from individuals to firms. The authors use an international data set spanning eight years and covering 8,000 firms to derive a measure of tax morale. Based on perceived obstacles to doing business, they then test the impact of a firm's tax morale on compliance. The authors conclude that the derived measure of firm tax morale has a significant impact on compliance, and as with individuals, firms with higher tax morale tend to comply more. Other interesting findings include: firm ownership type (i.e.

foreign, domestic, or state-owned) has a significant effect on compliance, with domestic firms evading more; tax morale and compliance increases with firm size; tax morale and compliance decreases with government corruption (as proxied by bribes paid), and with more complex tax systems

As with individuals, monetising compliance for businesses can decrease tax morale and decrease compliance. This is an example of extrinsic criteria potentially crowding out intrinsic ones. In an Austrian field study of newly established firms, close supervision by tax authorities led to a crowd-out of timely payments, even though the intervention was focused on friendly service-provision (Gangl et al., 2014). Furthermore, the difficulties of a complex tax system extend to the realm of businesses. A study of the tax returns of Swedish closely held corporations (CHC) provides evidence that higher levels of complexity led CHC owners to commit more mistakes in reporting, and decreased the chances of detection of non-compliance.

6.1 Insights on small and medium enterprises (SMEs) and the self-employed

Given evidence that small businesses tend to evade more than larger ones, there has been a growing focus on the factors that affect their compliance, and important behavioural insights have been found for this group of taxpayers. Kirchler (2007) notes that the opportunity to evade taxes is one of the most notable predictors of non-compliance, and self-employed individuals as well as SMEs have more evasion opportunities than PAYG taxpayers. In a study of small businesses with sole proprietors, factor analysis was initially conducted to identify “themes” affecting compliance; the results identified a traditional deterrence factor, a trust in government factor, a norms factor, and a fairness factors among others. Regression analysis using these factors then revealed that norms and trust in government have the most important impact on compliance. Treatment of taxpayers in the tax process, perceived fairness, and tax morale were particularly important components within these factors (Beers et al., 2013).

Tan et al. (2014) show that small businesses, like other individual taxpayers, are highly susceptible to the recommendations of tax accountants; both high trust and the provision of aggressive planning led taxpayers to commit to their advisors. Additionally, the compliance of SMEs is made more difficult by the extensive use of direct payments that many small businesses are exposed to—given what we know about the effects of mental accounts, emotional priming, and loss aversion (filing taxes for this group of taxpayers usually results in a net liabilities not net returns), it is not surprising that SMEs and the self-employed have high levels of non-compliance. Additionally, SMEs and the self-employed bear high compliance costs and often find it difficult to navigate the compliance process. Their tax liabilities are made up of various tax types, and they often act as collectors of taxes as well. Hence, a service approach is of outmost importance to them. A survey of Belgian businesses identified that unfriendly service provision by tax collectors increases the compliance burden significantly and reduces the tax morale of firms; the smallest firms were also affected the most (Eichfelder and Kegels, 2014). With an increasingly complex tax system, intention to comply must also be complemented by awareness of the tax system or compliance may not be achieved (Langham et al., 2012).

6.2 *Are firm behavioural insights analogous to those of individuals?*

It would be misleading however, to assume that firms are equally susceptible to policy interventions as are individuals. In a randomised control trial from Israel, 4,395 corporations were treated with either a letter intending to deter evasion, or with a letter containing a tax-morale appeal for compliance. Unlike similar interventions for individuals described above that successfully increased compliance, the deterrence letter had no effect on firms' compliance, and the moral appeal letter actually led to a statistically significant *decrease* in compliance (Ariel, 2012). Clearly, there are different mechanisms affecting the compliance of firms that have not been identified yet in the literature. These behaviours are not explained by traditional theories either, as a purely profit-maximising firm should not have changed its behaviour after receiving either of the letters.

One possible analogy that should be explored further in the future, is that a firm's public image and its corporate values help dictate its compliance decision the way norms affect an individual taxpayer's compliance. Hoopes et al. (2014) examine the effects of public pressure on noncompliant large UK firms to disclose the location of its subsidiaries, which would point to the extent that tax avoidance was being practiced. As a result of the disclosures, noncompliant firms significantly increased their tax compliance, especially firms with subsidiaries in tax havens; Rawlings (2011) notes that for Australian SMEs:

“Favourable views and actions towards employees appear to have positive effects on high rates of voluntary compliance. Compliance in one area appears to parallel compliance in other [areas]...revenue authorities may be able to work more constructively [to achieve tax compliance] with SMEs that demonstrate a commitment to overall business and tax ethics.”

While a qualitative initial investigation, this study provides support for the validity of the importance of corporate values and public image as drivers of compliance.

7. Compliance and capacity: “Payment thinking”

Recent behavioural insights point to a difference between being unwilling to comply and being unable to do so. In the second case, individuals and businesses want to but are unable to meet obligation deadlines, consequently becoming discouraged to become compliant. The Swedish tax office introduced the concept of “payment thinking”, which calls for an integrated strategy to improve compliance from the earliest stages of the taxation process (OECD, 2014). As part of this unified approach to tax compliance, tax collectors identify which taxpayers are likely or have already become non-compliant, and follow a set of procedures to encourage compliance in a flexible and cost-effective manner.

Acknowledging the factors that affect a taxpayers' capacity to comply has led to significant improvements in tax revenue collected and to decreased collection costs. A mixed-approach study in New Zealand—including interviews, a survey, and a controlled experiment—provides insights on dealing with rising SMEs debts. The authors find that by using analytics to identify SMEs with a risk of falling behind payments, educating them, and providing flexibility on repayments, voluntary compliance was substantially improved (Poppelwell et al., 2012). The neoclassical assumptions regarding business full-information is especially misleading for SMEs (as opposed to medium or large enterprises): two-thirds of SMEs in the study were uninformed on lenient policies, including waiving initial penalties for businesses that fall behind payments but seek help from the tax office. Participants also expressed that non-financial sanctions such as credit reporting or travel restrictions, were as effective at deterring non-compliance as financial penalties. Support is particularly needed for young enterprises as they possess little tax knowledge and commonly incur losses in the early years of operation, which can trigger aggressive planning. Most importantly, Kamleitner et al. (2012) claim that young businesses and entrepreneurs have more malleable norms, and can thereby be inculcated with a tax-paying culture through cooperation.

New research on the use of income-contingent payment methods (for example, the Higher Education Contribution Scheme, HECS, applied to university fees in Australia) is also applicable in considering the best combination of behavioural and capacity-based approaches to tax payment (Chapman et al 2014).

8. Some issues with behavioural insights approaches

8.1 *Internal verses external validity: Can we trust the data on tax compliance?*

Three main empirical approaches have been used in tax compliance research: controlled lab experiments or surveys, econometric modelling using administrative data, and field experiments. Field experiments and surveys can

be costly and difficult to implement, so researchers have commonly used administrative data or created controlled experiments to investigate the drivers of tax compliance. Econometric modelling using administrative data doesn't always allow to properly control for covariates (particularly those that are unobservable), or to identify specific treatments (e.g. sanctions, audits), so many specific behavioural insights come from controlled lab experiments and surveys (Alm, 2012). Recent evidence sheds light on the inconclusive and at times contradictory results from these three empirical approaches. While the reasons for these inconclusive results are extensive and the topic of various papers and book chapters (for a comprehensive summary see chapter 7 in Kirchler, 2007), some key caveats will be discussed.

First, experimental studies often use undergraduate students who are inexperienced taxpayers as their subjects and may have different preferences and capabilities. They also tend to focus on very specific aspects of tax compliance, as opposed to accounting for the complex interactions that occur in reality. Secondly, given the propensity of individuals to display anchoring bias, the results from narrow experiments suffer from external validity issues as participants will focus on the information given and ignore other factors that they might account for in reality. For example, in a study of undergraduate students and real taxpayers (either self-employed or company employees), Choo et al. (2014) conducted laboratory experiments as well as surveys on the three types of participants. They concluded that students possess different norms relative to the other two groups. Particularly, students are less compliant yet more responsive to deterrent policies, behaving more closely to profit-maximising agents. On the other hand, self-assessed taxpayers and taxpayers that submit taxes through their employers base their decisions more closely on social norms of compliance. Finally, Alm, Kirchler & Muehlbacher (2012) explain that it is hard to find reliable information on individual reporting—there may be biases for example from self-reporting that comes from surveys—and when reliable information is available, it is not always specific enough to isolate the effects of a given policy.

Despite their limitations, these empirical approaches are important steps to explore complex behavioural questions that often lack reliable data sources. The limitations discussed highlight the importance of conducting field experiments more extensively and of taking into account the interactions of interrelated issues such as heuristics, complexity, and network effects.

8.2 *Challenges in implementing behavioural insights for tax administrators*

Even where ‘behavioural insights’ approaches appear to be supported by the empirical research, properly implementing these approaches may be challenging for the regulator, such as the Australian Taxation Office.

For example, properly implementing Responsive Regulatory Theory (RRT) can be difficult, since the difference between the appropriate uses of enforced versus cooperative tax compliance can be hard to determine in practice. Regulators must operate within the legal constraints including limits on discretionary power and strict regimes of penalties and interest. Traditional deterrence policies can harm tax morale, while policies to incentivise voluntary compliance can do the same if they make compliant taxpayers view paying taxes as a monetary transaction and not a civil duty (see for example Nar, 2015 on the potentially negative effects of tax amnesties).

More generally, Australia’s system of taxation like that of other countries faces the ongoing challenge of balancing efficiency and equity considerations. Many taxpayers have a perception that the system is inequitable in various ways (Whait, 2012). Nonetheless, the Australian tax policy and administration system has a strong record of improvement over time (Xynas, 2011). As Torgler & Murphy (2005) point out, in the decades since the major tax reforms and administrative improvements of the 1980’s, there has been a strong improvement in tax morale in Australia. This may have been because of reforms that made the basic tax system fairer, as well as procedural reforms including the implementation of self-assessed tax returns, and the introduction of responsive approaches to enforcement and compliance.

Applying behavioural insights has the potential to increase tax revenues significantly, at lower cost than traditional deterrence measures. An example of this is a set of two field experiments in the UK, which reminded taxpayers of socially valued norms on tax compliance; the messages increased tax compliance by millions of dollars, and their implementation had no cost (Hallsworth et al., 2014). These behavioural insights point to ways in which the system can be made more responsive to taxpayers and ensure their voluntary compliance, which traditional deterrence methods alone are unable to achieve.

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