Tulane Economics Working Paper Series

Does an Uncertain Tax System Encourage "Aggressive Tax Planning"?

James Alm
Department of Economics
Tulane University
jalm@tulane.edu

Working Paper 1403
February 2014

Abstract

"Aggressive tax planning" (ATP) is typically characterized as a tax scheme that reduces the effective tax rate of a particular type of income to a level below the one sought by fiscal policy for this income. One motivation often suggested for its use is the uncertainty in tax liabilities introduced by a complicated and ever changing tax system. In this paper, I examine the impact of an uncertainty on the use of such tax schemes; by implication, I also examine how a simpler and more stable tax system that reduced this uncertainty might affect ATP. In this analysis, I draw upon some of my own work on tax avoidance and tax evasion, and then I extend this work to the related but separate area of ATP. Importantly, I introduce and model both individual and group motivations, incorporating insights from behavioral economics in these new analyses. Taxpayers are clearly motivated in part by narrowly defined financial considerations as shaped by the tax, audit, and penalty rates that they face, all of which I classify as individual motivations. However, individuals are also often influenced by many other factors that go beyond self-interest and that have as their main foundation some aspects of social norms, morality, altruism, fairness, or the like. In their entirety, I lump these factors together as group motivations, and I argue that they are shaped by the dynamic social context in which, and the process by which, decisions emerge. My main conclusion is that there is much in theory to suggest that uncertainty leads to more use of ATP, especially when both individual and group motivations are considered.

Keywords: tax avoidance, tax evasion, uncertainty, risk, behavioral economics, experimental economics.
JEL codes: H2, H26, D03, C9

Does an Uncertain Tax System Encourage "Aggressive Tax Planning"?

James Alm*

ABSTRACT

"Aggressive tax planning" (ATP) is typically characterized as a tax scheme that reduces the effective tax rate of a particular type of income to a level below the one sought by fiscal policy for this income. One motivation often suggested for its use is the uncertainty in tax liabilities introduced by a complicated and ever changing tax system. In this paper, I examine the impact of an uncertainty on the use of such tax schemes; by implication, I also examine how a simpler and more stable tax system that reduced this uncertainty might affect ATP. In this analysis, I draw upon some of my own work on tax avoidance and tax evasion, and then I extend this work to the related but separate area of ATP. Importantly, I introduce and model both *individual* and *group* motivations, incorporating insights from behavioral economics in these new analyses. Taxpayers are clearly motivated in part by narrowly defined financial considerations as shaped by the tax, audit, and penalty rates that they face, all of which I classify as *individual motivations*. However, individuals are also often influenced by many other factors that go beyond self-interest and that have as their main foundation some aspects of social norms, morality, altruism, fairness, or the like. In their entirety, I lump these factors together as *group motivations*, and I argue that they are shaped by the dynamic social context in which, and the process by which, decisions emerge. My main conclusion is that there is much in theory to suggest that uncertainty leads to more use of ATP, especially when both individual and group motivations are considered.

---

* Department of Economics, Tulane University, 6823 St. Charles Avenue, 208 Tilton Hall, New Orleans, LA 70118-5698 (telephone +1 504 862 8344; fax +1 504 865 5869; email jalm@tulane.edu). An earlier version of this paper was presented at the September 2012 conference in Vienna, "Tax Governance – The Future Role of Tax Administrations in a Networking Society", organized by the Institute for Austrian and International Tax Law and the Austrian Ministry of Finance in cooperation with the Faculty of Psychology of the University of Vienna. I am grateful to Christian Kaeser, Erich Kirchler, Stephan Muelhbacher, Jeffrey Owens, Alex Raskolnikov, Benno Torgler, and other conference participants for many helpful comments and suggestions.

1. INTRODUCTION

Individuals take a variety of actions to reduce their tax liabilities. Some are legal "tax avoidance" activities, such as income splitting, postponement of taxes, and tax arbitrage across income that faces different tax treatment. Others are illegal "tax evasion" actions (e.g., underreporting incomes, sales, or wealth; overstating deductions, exemptions, or credits; failing to file appropriate tax returns; by engaging in barter). There is widespread, if often imprecise, evidence that both tax avoidance and tax evasion activities are extensive and commonplace in nearly all countries.

The distinction between legal tax avoidance and illegal tax evasion may be clear in theory, but in practice the difference is more nuanced. "Aggressive tax planning" (ATP) is an example of such nuance. Although a precise and widely accepted definition of ATP is probably not available, ATP is often seen as a tax avoidance transaction that complies with the letter but not the spirit of the law; that is, ATP consists of a scheme that reduces the effective tax rate of a particular type of income to a level below the one intended by fiscal policy for such income (OECD, 2011). Such an ATP scheme is usually a sophisticated transaction that includes a number of steps and uses complex mechanisms. The economic justification of an ATP scheme is generally limited, even non-existent, and its true rationale consists entirely of reducing the effective tax rate by exploiting shortcomings, weaknesses, or ambiguities in tax laws, via the movements of funds, the construction of fictitious or shell companies, and/or the use of financial instruments or entities that are treated differently in different jurisdictions. As such, ATP may be considered a transaction that blends elements both of legal tax avoidance and illegal tax evasion.

A natural concern for policymakers is to search for strategies to reduce ATP. Devising such strategies depends critically upon understanding why individuals (and firms) utilize these

schemes and on pursuing policies that are consistent with these motivating factors and the associated evidence. The clear underlying motivation for the use of ATP is to reduce the burden of taxation. However, there are other factors as well. One often suggested reason for ATP is said to be the uncertainty in tax liabilities introduced by a complex and ever-changing tax system, so that a simpler and more stable tax code would reduce the use of ATP (OECD, 2010; National Taxpayer Advocate, 2012). However, there is virtually no real support for this claim.

It is this issue that I examine here; that is, how does uncertain tax system affect ATP? By implication, I also examine a related issue: how would a simpler and more stable tax system that reduced such uncertainty affect ATP?

Uncertainty about tax policies can arise from many sources. One obvious source is the frequent, seemingly random changes in tax policies that make one's exact tax liabilities uncertain and subject to manipulation via complicated transactions. In fact, merely the discussion in government legislative bodies of potential tax changes introduces some element of risk into individual planning. Another reason sometimes suggested is the complicated tax laws that individuals and firms face. Difficulties in interpreting these tax laws introduce uncertainty.

Such uncertain tax policies make individual choices in a variety of dimensions more difficult. Individuals who are planning their financial affairs need to know whether tax changes will alter the return on their tax shelters by changing such things as depreciation rules, investment tax credits, interest deductions, at-risk rules, or capital gains tax rates and holding periods. They also would like to know whether their itemized deductions will be allowed. Individuals do not know whether they will be audited by the authorities or how much unreported income will be discovered by government auditors. Actual and proposed changes in tax policies toward saving (e.g., the tax-exempt status of interest, the deductibility of contributions to

retirement programs, the treatment of estate and gift taxes, the preferential treatment of capital gains) have increased the riskiness to saving. The tax rate schedule itself has been altered numerous times in the past. Uncertain tax policies affect virtually the entire range of individual choices.

There is an enormous theoretical and empirical literature that analyzes how individuals and firms respond to known, certain tax policies. There has also been much work on how agents behave in the presence of uncertainty. However, with some exceptions (Weiss, 1976; Stiglitz, 1982), there has been little analysis of how individuals act when it is tax policy that is uncertain.

In this paper, I examine the impact of an uncertain tax system on the use of ATP. In this analysis, I start with some of my own work on tax avoidance and tax evasion, and then I extend this work to the related but separate area of ATP. Importantly, I introduce and model both *individual* and *group* motivations, incorporating insights from behavioral economics in these new analyses (Alm, 2013). My main conclusions are that the impact of uncertainty on ATP is far from clear-cut in theory but that there is much in theory to suggest that uncertainty does in fact lead to more use of ATP, especially when the many and varied factors that affect taxpayer compliance are considered. In particular, taxpayers are clearly motivated in part by narrowly defined financial considerations as shaped by the tax, audit, and penalty rates that they face, all of which I classify as *individual motivations*. However, there is growing evidence that these individual motivations, while important, are not always decisive. Individuals are also often influenced by many other factors that go beyond narrowly defined self-interest and that have as their main foundation some aspects of social norms, morality, altruism, fairness, or the like. These factors are shaped by the dynamic social context in which, and the process by which, their decisions emerge. In their entirety, I lump together these factors broadly and no doubt

imprecisely as *group motivations*. My main conclusion is that there is much in theory to suggest that uncertainty leads to more use of ATP, especially when both individual and group motivations are considered.

2. UNCERTAINTY AND ATP: INDIVIDUAL MOTIVATIONS

In this section, I examine the ways in which the individual choice of aggressive tax planning is affected by uncertain tax policies. I focus here on *individual motivations*, or the ways in which uncertain tax policies alter the narrowly defined financial incentives facing a purely self-interested individual. These financial incentives are based upon the usual array of fiscal variables, all of which affect the "prices" of various individual activities: tax rates, audit rates, penalty rates, tax base definitions, compliance costs, and the like. Following but extending Alm (1988), I consider three basic types of risky tax policies. The first is called "tax base risk". Here the individual does not know with certainty whether the government will change the basic nature of the tax base. A second type of risk is called "tax rate risk", in which the tax rate applied to the (certain) base becomes riskier. A third type of risk is "enforcement risk", in which an individual facing an administrative audit does not know with certainty how much income will be discovered in the audit. For simplicity, I also focus on a single, if representative, type of ATP individual behavior: the decision to invest in tax shelters.[1] For all three types of risk, an increase in risk is measured as a mean-preserving spread in the distribution of the random variable.

My principal conclusion is that increased risk has generally ambiguous behavioral effects on individual decisions. However, a secondary conclusion is that, under some plausible

[1] Throughout the discussion, I use uncertainty and risk interchangeably, thereby ignoring the Knightian distinction between "risk" (where the probabilities of events are known) and "uncertainty" (where the probabilities are inherently unknown, even unknowable).

restrictions on individual preferences, increased tax base risk and increased enforcement risk typically changes individual behavior so as to increase the size of the income tax base (e.g., ATP declines), while increased tax rate risk has the opposite effect on the base. I also consider a number of relevant additional factors, still based on individual motivations, all of which contribute further to the mixed nature of the theoretical predictions.

Now these conclusions run somewhat counter to the common claim that uncertain tax laws necessarily encourage more use of aggressive, even abusive, tax preferences like those characterized by ATP. However, these conclusions are fairly robust in their ambiguity. One issue then becomes whether other theoretical considerations might alter these conclusions, in particular whether introducing *group motivations* in the individual decisions might lead to different results. A second issue is whether there is empirical support for any of these types of behavioral responses. These issues are discussed later.

2.1. Tax Shelters and Tax Base Risk

Assume that a risk-averse individual has a fixed endowment of income I_0 to allocate between sheltered income S and non-sheltered income N. The individual incurs some cost c for each dollar of sheltered income. The individual must also pay income taxes at rate t on taxable income, which consists of all non-sheltered income plus some random fraction α of sheltered income. Net-of-tax income I therefore equals $[I_0-t(N+\alpha S)-cS]$. The individual chooses N and S to maximize an expected utility function $V=E\,U(I)$, where E is the expectation operator, subject to the constraint that N and S sum to I_0.

The first-order condition from this maximization is

$$E\{U_I(I)\,[t(1-\alpha)-c]\} = 0. \qquad (1)$$

Now let there be an increase in "risk" in the random variable α. Rothschild and Stiglitz (1970)

show, when comparing two random variables α and α' with the same expected value, that α' is riskier than α if its distribution can be obtained from that of α by a mean-preserving spread. This definition can be used to determine the impact of increased risk upon the optimal choice of S^*.

Suppose that the expression in parentheses in equation (1) is a concave function of α. Then an increase in risk will decrease the optimal choice of S^*, since greater risk will lower the expectation of this expression and, by the second-order condition, the first-order condition can then be restored by a reduction in S^*. Conversely, if the expression is a convex function of α, then an increase in risk will increase S^*.

Consequently, there are two offsetting effects on the choice of S^*. A risk-averse individual will find sheltered income less attractive because of its greater risk, and respond by substituting away from sheltered income toward more non-sheltered income. However, in order to be assured of a given level of income, the individual must increase sheltered income. The net effect on S^* is therefore uncertain due to conflicting substitution and income effects.

The effect of greater risk on the optimal choice S^* depends upon the concavity or convexity of $\{U_I(I)[c-(1-\alpha)t]\}$. Now this function is convex if

$$-2\,U_{II}(I) - [(1-\alpha)t-c]SU_{III}(I) > 0, \qquad (2)$$

and it is concave if it is less than zero. In general, the sign of this function is ambiguous.

Suppose, however, that the convexity or concavity is examined for extreme values of α. When α=1, or all when S is included in the base, the sign is positive as long as $U_{III}(I) > 0$, which is a necessary condition for non-increasing absolute risk aversion. When α=0, a sufficient condition for the sign to be positive is that relative risk aversion $R(I) \equiv -IU_{II}(I)/U_I(I)$ be non-decreasing and less than one. These restrictions are often made because they imply that the demand for the risky good has an income elasticity that is positive and less than one. They are

also satisfied by the Bernoulli and logarithmic utility functions. These restrictions are assumed to apply here, so that the function can be shown to be convex. Convexity implies that increased uncertainty about the income tax treatment of tax shelters will decrease the amount that an individual invests in sheltered income; that is, increased tax base uncertainty will reduce ATP.

2.2. Tax Shelters and Tax Rate Risk

Suppose now that the tax base is assumed to be known with certainty and that it is instead the tax rate t that is risky. Like tax base risk, tax rate risk alters the individual decision. Unlike tax base risk, however, the individual will now alter behavior so as to decrease the size of the tax base by increasing sheltered income, so that the individual will increase the use of ATP.

Greater t risk decreases or increases sheltered income depending upon the sign of $\{2U_{II}(I)+(c-t)NU_{III}(I)\}$. The sign of this expression is ambiguous because the signs of both $U_{III}(I)$ and $(c-t)$ cannot be determined in general. However, when $c>t$, then the expression is less than zero if relative risk aversion is non-decreasing and less than one; the sign is also negative when $c<t$ if there is non-increasing absolute risk aversion. Sheltered income is therefore likely to increase when there is greater tax rate risk because it is non-sheltered income that is fully taxed and so fully subject to the random tax rate. Unlike tax base uncertainty, tax rate uncertainty is likely to decrease the size of the expected tax base – and so increase ATP – because tax rate uncertainty makes non-sheltered and taxed income the riskier good. As a result, the individual will tend to substitute away from the riskier good (non-sheltered and taxed income) and toward the less risky good (sheltered and untaxed income).

2.3. Tax Shelters and Enforcement Risk

The individual's tax shelter investment is now assumed to be subject to enforcement activity that may disallow some random fraction α of the activity as illegal evasion activity, at

which point a penalty *f* is imposed on each dollar of detected and sheltered income. The uncertain income of the individual therefore equals $[I_0(1-t)+S(t-\alpha f-c)]$. Expected utility $V=E\,U(I)$ is maximized when sheltered income S^* is chosen so that

$$E\{U_I(I)\,[t-\alpha f-c]\} = 0. \qquad (3)$$

Now suppose that the proportion of sheltered income that is discovered and disallowed becomes more uncertain. Sheltered income will increase if:

$$-2U_{II}(I) - [t-\alpha f-c]\,E\,U_{III}(I) > 0, \qquad (4)$$

while S^* will decrease if the inequality is reversed. In general, the sign of this function in inequality (4) is ambiguous because the signs of $U_{III}(I)$ and $[t-\alpha f-c]$ are both uncertain. The ambiguity reflects the conflicting substitution and income effects that affect S^* when α becomes riskier. Sheltered income will decrease because its return is less certain, but sheltered income will increase because more must be put into it to attain an assured level of income. However, following an analysis similar to that for tax base risk, it can be shown that sufficient conditions for inequality (4) to be positive are that absolute risk aversion be decreasing and that relative risk aversion be non-decreasing and less than one. If these restrictions apply, then the substitution effect will dominate, and greater risk will decrease S^* and so decrease ATP.

2.4. Some Additional Considerations Based on Individual Motivations

These analyses clearly omit a range of complicating factors that may be affected by increased uncertainty about the tax base, the tax rate, or the enforcement regime. Introducing these additional individual motivations further clouds the theoretical results.

Lowering the Risk of Detection. Greater uncertainty about any of the random variables seems likely to decrease the probability that the tax authority will detect ATP. Such a reduction in the probability of detection can be easily shown to increase the use of sheltered income.

Increasing the Cost of Sheltered Income. Greater uncertainty about any of the random variables may also affect the cost of sheltered income. It is straightforward to demonstrate that an increase in the cost *c* of sheltering income will decrease the use of sheltered income and so of ATP. It is also possible (although more involved) to demonstrate that an increase in uncertainty about the cost of sheltered income will decrease *S**.

Allowing Taxpayer Use of Paid Preparers. An obvious response to uncertainty is that taxpayers may resort to the use of professional, paid tax preparers, with potentially conflicting effects on *S**. Tax practitioners may provide services that reduce taxpayer uncertainty about the taxpayer's tax liability (Scotchmer, 1989). They may also reduce time and anxiety costs for a taxpayer (Reinganum and Wilde, 1991). They may identify ways (legal or illegal) to reduce a taxpayer's tax liability, especially if their compensation is tied to the tax savings that they generate (Slemrod, 1989). They may reduce the audit and/or the penalty rates on any noncompliance that is found (Erard, 1993). Overall, it is unclear how taxpayer use of practitioners will affect ATP.

Introducing Behavioral Economics Notions. Some additional extensions keep the focus on individual motivations but incorporate notions of behavioral economics, broadly defined as an approach that uses methods and evidence from other social sciences (especially psychology) to inform the analysis of individual decision making (and, as I discuss later, group decision making). The underlying motivation for the introduction of behavioral economics insights is dissatisfaction with the typical economic approach to analyzing individual behavior. The standard neoclassical economic model of human behavior is based on several main assumptions: that individuals are rational, that they have unlimited willpower, and that they are purely self-interested. While these assumptions may be a useful starting point for the analysis of individual behavior, there is now much evidence that they are inaccurate depictions of many, perhaps most,

individuals. Contrary to the standard neoclassical approach to consumer choice, individuals face limits on their ability to compute (e.g., bounded rationality, mental accounting); they systematically misperceive, or do not perceive at all, the true costs of actions (e.g., fiscal illusion, saliency, overweighting of probabilities); they face limits on their self-control (e.g., hyperbolic discounting); they are affected by the ways in which choices are framed (e.g., reference points, gains versus losses, loss aversion, risk-seeking behavior); they are motivated by individual notions of guilt, shame, morality, or altruism; they are influenced by the social context in which, and the process by which, decisions are made; and they are motivated by group notions like social norms, social capital, social customs, fairness, trust, reciprocity, and tax morale.

In short, individuals are not always the rational, outcome-oriented, self-controlled, selfish, and egoistic consumers envisioned by much of our standard theory. Behavioral economics uses these so-called "departures" from the standard assumptions as the starting point for developing more realistic theories of individual behavior.[2]

One strand of behavioral economics deals mainly with *individual motivations*, and applies various formalizations of non-expected utility theory to these individual choices. There are numerous examples of these non-expected utility theories, including (but not limited to): prospect theory, rank dependent expected utility theory, first order and second order risk aversion, regret theory, disappointment theory, non-additive probabilities, and ambiguity theory. Relative to expected utility theory, these models can generate more accurate predictions of individual behavior under uncertainty.

Several behavioral considerations stemming from such individual motivations are

[2] For general discussions of behavioral economics, see Camerer, Loewenstein, and Rabin (2004) and McCaffery and Slemrod (2006). For a survey of theoretical developments as applied to tax evasion, see Hashimzade, Myles, and Tran-Nam (2013).

especially relevant to uncertainty and its effects on ATP. It is straightforward to demonstrate that an individual who overweights the low probability of (say) detection will reduce the use of sheltered income in the tax base risk or the enforcement risk scenarios. In contrast, there is some evidence that at low probabilities some individuals will engage in risk dismissal, essentially treating a low probability of (say) detection as a zero probability. Risk dismissal will lead to greater use of sheltered income and so greater use of ATP. An individual may instead exhibit loss aversion, especially at low probabilities, in which case the individual will be less inclined to invest in sheltered activities whose return is risky. Further, an individual may have a value function that depends upon changes in income from some reference point, rather than a utility function that depends upon income alone. For such an individual, the effect of greater uncertainty on ATP depends upon the specific reference point that is used, and general predictions are difficult to obtain.

Behavioral notions also suggest that the process by which income is determined is important, rather than simply the level of income alone. In this context, if a taxpayer believes that, say, an administrative tax ruling on an uncertain tax liability is arbitrary and unjustified, then the taxpayer may respond by reducing initial levels of reporting and waiting for an administrative ruling to provide the true interpretation. In this case, greater uncertainty in the tax regime may lead to greater use of ATP as the individual becomes frustrated, even resentful, and responds to the uncertainty by intentionally evading (Picciotto, 2007). However, it is certainly possible that in other cases individuals who face uncertainty about tax code interpretations may instead respond by overpaying their taxes, a response that is especially likely if the individual exhibits loss aversion; that is, under some plausible circumstances, greater uncertainty can make taxpayer reporting a “safer” choice than not reporting, and individuals may respond by choosing more of

this now safer choice (e.g., non-sheltered income).

Behavioral notions also allow for the possibility of bounded rationality on the part of a taxpayer. A taxpayer may not be fully aware of the various probabilities when undertaking the sheltered income gamble, in part because the tax authority may not reliably be able, or even be willing, to announce audit probabilities. The ways in which an individual taxpayer chooses a reporting strategy in the face of such fuzzy probabilities is in general ambiguous.

2.5. Summary

Theoretical analyses of uncertain tax policies based on individual motivations come to conflicting results on how uncertainty affects taxpayer use of ATP. Many results are possible in theory, reflective of the many types of individual behavior that theory must attempt to explain.

A common result is that increased uncertainty over how much income is taxable tends to make taxpayers more conservative in their reporting decisions than they would be if this uncertainty was resolved because uncertainty makes the risky activity (e.g., ATP) less attractive. In this case, policies that reduce uncertainty via tax simplification or taxpayer service provision would not improve taxpayer reporting but would in fact have the opposite effect on reporting. However, if one accounts for other individual motivations, then uncertainty may undermine rather than improve reporting behavior. In short, although theoretical analyses clearly demonstrate that individuals change their behavior in the face of uncertain taxes, these impacts remain unresolved in theory.

However, all of these analyses assume that the individual is motivated by monetary and nonmonetary considerations that only affect him or her individually. The role of group motivations is discussed next.

3. UNCERTAINTY AND ATP: GROUP MOTIVATIONS

There are many ways of introducing *group motivations* into the analysis of aggressive tax planning. One way is to recognize that there is much evidence of what may be termed a social norm of behavior (Elster, 1989). Although difficult to define precisely, a social norm can be distinguished by the feature that it is process-oriented, unlike the outcome-orientation of individual rationality. A social norm therefore represents a pattern of behavior that is judged in a similar way by others and that is sustained in part by social approval or disapproval. If others behave according to some socially accepted mode of behavior, then the individual will behave appropriately; if others do not so behave, then the individual will respond in kind.

The presence of a social norm is also consistent with a range of other approaches, including those that rely upon group notions like social capital, social customs, fairness, trust, reciprocity, and tax morale, whose roots often lie in the psychology of taxation (Lewis, 1982; Kirchler, 2007). For example, Kirchler, Hoelzl, and Wahl (2008) explore the interaction between enforcement effort (power) and facilitation (trust) on the part of the tax authority via a "slippery slope" framework. McBarnet (2004) suggests that people may choose to comply willingly (what she terms committed compliance), they may choose to comply unwillingly (capitulative compliance), they may take full advantage of the law in minimizing their taxes (creative compliance), or they may choose non-compliance. Similarly, Braithwaite (2009) argues that individuals are motivated either by deference motives or by defiance motives. Also, Frey (1997) discusses how one's intrinsic motivation to obey the law may be crowded out by enforcement actions; similarly, Torgler (2007) argues that one's tax morale may be affected by the behavior of other taxpayers (whether honest or dishonest) and by the actions of government. In all cases, there are significant distinctions among taxpayers, these distinctions are important in explaining

behavior, and government policies need to be tailored to reflect these different motivations.

Overall, these various considerations suggest that the nature of one's social interactions with others – other taxpayers, tax practitioners, government officials – affects one's own behavior, especially through the social norm of compliance (Alm, Kirchler, and Muelhbacher, 2012). How can a social norm be formally introduced in the analysis? I suggest present two possible approaches, all of which have the same basic conclusion: group motivations imply that greater uncertainty increases the use of ATP.

3.1. Modeling Social Norms

Introducing a Reference Point. Perhaps the simplest way is suggested by the work of Kahneman and Tversky (1979), who incorporate what they term a reference point as a form of social norm in their prospect theory by assuming that an individual suffers a loss in utility if he or she does not achieve some given level of utility defined by the reference point. The social norm may be achieved by reporting all income and paying all taxes; an individual who declares less than full income and pays less than full taxes suffers a loss in utility.

More formally, assume that each individual *i* is suffers a psychological loss in expected income proportional to undisclosed taxes, equal to $[\gamma_i t(I_i - R_i)]$, where the coefficient γ_i measures as a fraction how much individual *i* would pay to avoid the loss associated with each dollar of unreported taxes. It is straightforward to demonstrate that an individual is more likely to report more income in the presence of this psychological loss, and that reported income increases with an increase in γ_i. Clearly, γ_i is likely to be sensitive to the social norm of tax compliance. The stronger is the social norm, the more deviant the behavior of a non-compliant individual becomes, the greater is the loss that a non-compliance individual feels, and the greater is the resulting level of compliance. In contrast, the weaker is the social norm due, say, to perceptions of unfair treatment

from differential use of ATP or to a loss of trust in government, the lower is the loss from evasion, and the lower is the level of compliance.

Introducing Ethics and Morality.[3] The notions of ethics and morality are related notions that refer to conceptions of right and wrong, as normative guides to conduct that are (or should be) important in shaping behavior. These terms are often used interchangeably. Even so, it is generally accepted that there are distinctions between them (McCloskey, 2006). Morality is now sometimes restricted to mean individual behavior that conforms to principles of individual conduct that are based on one's duty or obligation, while ethics is reserved for a more general approach to practical reasoning (thereby avoiding the separation of moral considerations from other practical considerations). Accordingly, there are two ways of introducing these notions, one that relies upon morality and one that focuses more on ethics (Calvet and Alm, 2013).

A first approach utilizes the Akerlof and Kranton (2010) notion of one's ideal, or *moral*, behavior, defined in terms of "exemplary characteristics and behavior associated with a social category". Here a *moral* individual is one who considers paying taxes as the ethical norm; if the individual behaves differently, then he or she may incur a psychic cost, and may also feel pleased if there is full compliance for doing "the right thing". An amoral individual has an ideal behavior that may not be to comply fully with taxes, and indeed he or she may feel happy with noncompliant behavior. This approach implies that every individual has two different components in his or her utility function. The first part is the standard expected utility, as in the Allingham and Sandmo (1972) formulation. The second part is called the moral identity utility (Akerlof and Kranton, 2010), which is the gain or loss in utility from conforming or not to an individual's ideal behavior. This part of utility is denoted $\theta_i (R_i^* - R_i)$, where θ_i is the moral utility

[3] Some of this discussion is based on Alm and Torgler (2011), who examine the role of ethics in tax compliance.

or preference coefficient, R^*_i is the ideal moral behavior that individual *i* wants to follow (dependent on the category to which the individual belongs), and R_i is again declared income. The moral identity utility is a function of the difference between what the individual considers ideal behavior R^*_i and the actual behavior R_i. This ideal behavior R^*_i is assumed to equal to I_i (i.e., full income) for moral individuals, while it is less than I_i for amoral individuals. Thus, if an individual does less than the morally ideal behavior, then the moral identity and the resulting utility are affected negatively, a negative effect that can be considered a feeling of guilt or frustration that is independent of tax evasion being detected. If actual behavior approaches the morally ideal behavior, then the individual may feel happy for doing what he or she thinks it is right. The resulting total expected utility EU^T_i of individual *i* is a convex combination of the expected utility of Allingham and Sandmo (1972) and the moral identity utility of Akerlof and Kranton (2010), or $EU^T_i = EU_i(I_i) - \theta_i(R^*_i - R_i)$. A moral individual who maximizes EU^T_i will report more income than in the standard Allingham and Sandmo (1972) approach.

A second approach is perhaps more straightforward. Here an additional element is introduced in the individual's utility function, an element that incorporates the individual's self-perception of ethically motivated behavior. The utility of any individual *i* now becomes $U_i=U_i(I_i, M_i)$, where the term M_i is a measure of this ethical self-perception when translated into individual morality . One potentially productive way of defining M_i is in terms of the deviation of actual declared taxes from the level with full compliance. Here the individual views paying taxes as the normal, accepted, and ethical form of moral behavior, so that *M* becomes a function of this difference. For example, in the specific function $M_i=M_i(tR_i-tI_i)=-\alpha_i(tR_i-tI_i)^2$, the term M_i reaches a maximum (at zero) when $R_i=I_i$, or when the individual pays all legally due taxes, and M_i is a minimum when $R_i=0$. This ethical self-perception also increases at a decreasing rate with

declared income.[4]

Once again, the presence of an ethical basis for behavior that can be weakened by perceptions of unfair treatment or a loss of trust in government leads to less compliance.

3.2. Summary

Regardless of the specific approach, how does the recognition of group motivations affect an individual's choice of ATP? I argue that the presence of these group motivations seems likely in all cases to imply that greater uncertainty – about the tax base, the tax rate, or the enforcement regime – will lead to an increase in an individual's use of ATP.

Specifically, greater uncertainty seems likely to generate individual feelings of unfair treatment relative to others, which will lead to greater use of ATP (Feld and Frey, 2002). Similarly, greater uncertainty will tend to reduce the trust that an individual has in government (Kirchler, Hoelzl, and Wahl, 2008), again leading to greater use of ATP (Muelhbacher, Kirchler, and Schwarzenberger, 2011). In either of these cases, greater uncertainty will lower the social norm of compliance (Alm, McClelland, and Schulze, 1999), it will reduce social capital (Alm, Clark, and Leibel, 2013), it will destroy an individual's intrinsic motivation to obey the tax laws (Frey, 1997), it will lower an individual's tax morale (Torgler, 2007), it will reduce an individual's committed compliance (McBarnet, 2004), and it will reduce the deference motive and increase the defiance motive of Braithwaite (2009). Regardless of the specific group motivation, an individual will respond by engaging in greater use of ATP.

4. SUMMARY: WHAT CAN BE DONE TO CONTROL ATP?

[4] In related approaches, Gordon (1989) adds an individual's "honesty characteristic", which acts as a private psychic cost and which affects evasion negatively, and Erard and Feinstein (1994) offer a model with moral sentiments of "guilt" and "shame" when evasion is chosen.

The two main conclusions from this analysis can, I believe, be summarized as follows. First, although uncertain tax systems may lead in theory either to higher or to level levels of ATP, a strong case can be made that greater uncertainty leads to greater use of ATP, at least when both individual and group motivations are considered. Second, regardless of the specific type of behavioral response to uncertainty, individuals are quite varied in their behavior. Behavior is driven by many individual and group motivations, only some of which are observable and only some of which are influenced by tax administration policies. Consequently, appropriate policies to control ATP are likely to vary by individual type.

Is there evidence to support these two conclusions?

For the first conclusion, there is some suggestive evidence, mainly from experimental studies, that indicates that uncertainty does in fact often lead to greater use of ATP-type activities. For example, Alm et al. (2010) utilize laboratory experiments to test of the effectiveness of taxpayer service programs in increasing the individual's level of reported income, focusing on individual motivations for reporting income in an environment in which individuals do not know with certainty their "true" tax liability. The basic experimental setting mimics the naturally occurring environment. In each tax period, subjects earn income, they must choose whether to file a tax return, and (conditional upon filing) they must choose how much of their net income to report to a tax authority that may audit the return. To investigate the effect of providing taxpayer information services, Alm et al. (2010) "complicate" the filing/reporting decisions of subjects though multiple entries on the tax form and also through uncertainty regarding the subject's true tax liability. As a treatment variable, they then provide information services from the tax administration that allow subjects to compute more easily and accurately their tax liabilities. Their results indicate that uncertainty reduces both the filing and the

reporting compliance of an individual. However, they also find that agency-provided information has a positive and significant impact on reporting.

Similarly, Alm, Jackson, and McKee (1992) also use laboratory experiments to examine the effects of uncertainty on taxpayer compliance, focusing more on group motivations. They compare the compliance behavior of individuals when the key fiscal parameters (i.e., the tax rate, the probability of detection, and the penalty rate) are known with certainty against compliance when each of these parameters is made uncertain by randomly drawing the value of the parameter from a known distribution. They also examine the potential impact of government expenditures by introducing a public good in some sessions. Their results indicate that the impact of greater fiscal uncertainty depends upon the institutional setting in which the individual makes the compliance decision. When the decision is made independently of the use of the tax revenues (e.g., no public good), greater uncertainty always increases tax compliance. However, if the fiscal institution specifies that individuals receive a benefit from government for their tax payments (e.g., a public good), then the introduction of uncertainty always leads to a fall in compliance. The effect of uncertainty therefore depends critically upon the way in which an individual's tax payments are linked with those of other group members in the governmental provision of goods and services. The stronger the link between the payment of taxes and the receipt of expenditures the more compliance will suffer with greater uncertainty.

Overall, then, there is at least some evidence to support the conclusion that greater uncertainty leads to greater use of ATP. There is even more compelling evidence for the second conclusion, on the great diversity of taxpayers. As summarized by Alm (2012), empirical evidence on taxpayer behavior indicates that there are individuals who always cheat and those who always comply, some who behave as if they maximize the expected utility of the tax evasion gamble, others who seem to overweight low

probabilities, individuals who respond in different ways to changes in their tax burden, some who are at times cooperative and at other times free-riders, and many who seem to be guided by more broadly defined group motivations as captured in the broad term "social norms". In short, there is clear evidence of what might be termed a "full house" of individual behaviors (Gould, 1996). Indeed, building in part on this empirical evidence, the IRS (2010) has concluded that it is useful to divide individuals into different "segments", which reflect both their diversity and the potential for government policies to have differential impacts on behavior depending on these segments. These segments distinguish taxpayers along several dimensions: by their "awareness" (or knowledge) of tax requirements and of services offered by the tax agency and third-parties to assist them with their taxes; by their "ability" to comply; by their "opportunity" to deliberately or unintentionally fail to meet their tax obligation; and by their "motivation" to comply.[5]

The existence of these various taxpayer segments, together with the likelihood that individuals respond systematically to uncertainty, has important implications for policies to control ATP.

An obvious first policy step is to reduce the uncertainty that a complex and variable tax code creates for individuals (OECD, 2010, 2011; National Taxpayer Advocate, 2012). Some standard simplification measures include reducing the use of special tax provisions, moving toward scheduler taxes (e.g., a dual income tax), eliminating the requirement to file an individual tax return for individuals with a "simple" return, and limiting taxation of capital income. An equally obvious second policy step is to provide greater taxpayer assistance.

However, it seems likely that there are additional policies that can reduce ATP, policies

[5] The IRS (2010) further distinguishes the motivation to comply by identifying seven compliance "postures": "pathologically honest" (or those committed to report honestly regardless of incentives to cheat), "conflicted" (or those motivated by moral considerations), "fearful" (or those who consider the potential for detection and punishment), "surprised" (or those with unexpected liabilities or windfalls), "careless procrastinator", "strategic" (e.g., the rational calculator of *homo economicus*), and the "pathologically defiant" (or those committed to cheat even in the face of significant deterrence).

that build upon the remarkable diversity that people exhibit in their behavior. In particular, government policies need to be targeted to the many different "segments" into which individuals fall, segments that reflect both their diversity and the potential for government policies to have differential impacts on behavior depending on these segments.

As argued by Alm and Torgler (2011), these policies suggest several "paradigms" for tax administrations. Under a first paradigm – the traditional "enforcement paradigm" – the emphasis is exclusively on repression of questionable behavior through frequent audits and stiff penalties. A second paradigm recognizes the role of enforcement, but also recognizes the role of tax administration as a facilitator and a provider of services to taxpayer-citizens. This new "service paradigm" for tax administration fits squarely with the perspective that emphasizes the role of government-provided services as considerations in tax reporting behavior. Indeed, the most recent literature on tax administration reform has emphasized this service paradigm, as a facilitator and a provider of services to taxpayer-citizens, and many recent administrative reforms around the world have embraced this paradigm with great success. A third paradigm is also suggested by this work. Alm and Torgler (2011) term this a "trust paradigm", and it is consistent with the role of group motivations in the individual decision. Additional strategies to control ATP therefore fall into three main categories, each consistent with one of the three paradigms: increase the likelihood and the threat of punishment, improve the provision of tax services, and change the tax culture.

Any government policies toward ATP must address this "full house" of behaviors. What is needed is a multi-faceted approach that emphasizes the broad range of factors – based on individual and group motivations – that drive behavior.

REFERENCES

Akerlof, G.A. and R. E. Kranton, R.E. (2010). *Identity Economics: How Our Identities Shape Our Work, Wages, and Well-being.* Princeton, NJ: Princeton University Press.

Allingham, M.G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics*, 1 (3–4), 323–338.

Alm, J. (1988). Uncertain Tax Policies, Individual Behavior, and Welfare. *The American Economic Review*, 78 (1), 237-245.

Alm, J. (2012). Measuring, Explaining, and Controlling Tax Evasion: Lessons from Theory, Field Studies, and Experiments. *International Tax and Public Finance*, 19 (1), 54-77.

Alm, J. (2013). Individual Versus Group Motivations in Tax Compliance Decisions. In F. Forte, R. Mudambi, and P. Navarra (eds.), *A Handbook of Alternative Theories of Public Economics*. Cheltenham, UK: Edward Elgar Publishing, forthcoming.

Alm, J., T. Cherry, M. Jones, and M. McKee (2010). Taxpayer Information Assistance Services and Tax Reporting Behavior. *Journal of Economic Psychology*, 31 (4), 577-586.

Alm, J., J. Clark, and K. Leibel (2013). Socio-economic Diversity, Social Capital, and Tax Filing Compliance in the United States. Tulane University Working Paper. New Orleans, LA.

Alm, J., B. R. Jackson, and M. McKee (1992). Institutional Uncertainty and Taxpayer Compliance. *The American Economic Review*, 82 (4), 1018-1026.

Alm, J., E. Kirchler, and S. Muehlbacher (2012). Combining Psychology and Economics in the Analysis of Compliance: From Enforcement to Cooperation. *Economic Analysis and Policy*, 42 (2), 133-151.

Alm, J., G. H. McClelland, and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting. *Kyklos* 52 (2), 141-171.

Alm, J. and B. Torgler (2011). Do Ethics Matter? Tax Compliance and Morality. *Journal of Business Ethics*, 101 (4), 635-651.

Braithwaite, V. (2009). *Defiance in Taxation and Governance – Resisting and Dismissing Authority in a Democracy*. Cheltenham, UK and Northhampton, MA: Edward Elgar Publishing.

Calvet, R. and J. Alm (2013). Empathy, Sympathy, and Tax Compliance. *Journal of Economic Psychology*, forthcoming.

Camerer, C. F., G. F. Loewenstein, and M. Rabin (eds.) (2004). *Advances in Behavioral Economics*. Princeton, NJ: Russell Sage Foundation and Princeton University Press.

Elster, J. (1989). *The Cement of Society – A Study of Social Order*. Cambridge, UK: Cambridge University Press.

Erard, B. (1993). Taxation with Representation: An Analysis of the Role of Tax Practitioners in Tax Compliance. *Journal of Public Economics*, 52 (2), 163-197.

Erard, B. and J. S. Feinstein (1994). The Role of Moral Sentiments and Audit Perceptions in Tax Compliance. *Public Finance*, 49 (1), 70-89.

Feld, L. P. and B. S. Frey (2002). Trust Breeds Trust: How Taxpayers Are Treated. *Economics of Governance*, 3 (1), 87–99.

Frey, B. S. (1997). *Not Just For the Money – An Economic Theory of Personal Motivation*. Cheltenham, United Kingdom: Edward Elgar Publishing.

Gordon, J. P. F. (1989). Individual Morality and Reputation Costs as Deterrents to Tax Evasion. *European Economic Review*, 33 (4), 797-805.

Gould, S. J. (1996). *Full House*. New York, NY: Harmony Books.
Hashimzade, N., G. D. Myles, and B. Tran-Nam (2013). Applications of Behavioural Economics to Tax Evasion. *Journal of Economic Surveys*, 27 (5), 941-977.
Internal Revenue Service (2010). *Final Report for Planning Theoretical Research*. Washington, D.C.: Department of the Treasury.
Kahneman, D. and A. Tversky (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47 (2), 263–292.
Kirchler, E. (2007). *The Economic Psychology of Tax Behavior*. Cambridge, UK: Cambridge University Press.
Kirchler, E., E. Hoelzl, E. and I. Wahl (2008). Enforced Versus Voluntary Tax Compliance: The "Slippery Slope" Framework. *Journal of Economic Psychology*, 29 (2), 210-225.
Lewis, A. (1982). *The Psychology of Taxation*. Oxford, UK: Martin Robertson.
McBarnet, D. (2004). *Crime, Compliance, and Control*. Burlington, VT: Ashgate/Dartmouth Publishers Ltd.
McCaffery, E. J. and J. Slemrod (eds.) (2006). *Behavioral Public Finance*. New York, NY: Russell Sage Foundation.
McCloskey, D. N. (2006). *The Bourgeois Virtues: Ethics for an Age of Commerce*. Chicago, IL and London, UK: University of Chicago Press.
Muehlbacher, S., E. Kirchler, and H. Schwarzenberger (2011). Voluntary Versus Enforced Tax Compliance: Empirical Evidence for the "Slippery Slope" Framework. *European Journal of Law and Economics*, 32 (1), 89-97.
National Taxpayer Advocate (2012). *2012 Annual Report to Congress*. Washington, D.C.: Department of the Treasury.
Organization of Economic Co-operation and Development (2010). *Promoting Transparency and Exchange of Information for Tax Purposes*. Paris, France: OECD.
Organization of Economic Co-operation and Development (2011). *Tackling Aggressive Tax Planning Through Improved Transparency and Disclosure*. Paris, France: OECD.
Picciotto, S. (2007). Constructing Compliance, Game Playing, Tax Law, and the Regulatory State. *Law and Policy*, 29 (1), 11-30.
Reinganum, J. F. and L. L. Wilde (1991). Equilibrium Enforcement and Compliance in the Presence of Tax Practitioners. *The Journal of Law, Economics, and Organization*, 7 (1), 163-181.
Rothschild, M. and J. E. Stiglitz (1970). Increasing Risk I: A Definition. *Journal of Economic Theory*, 2 (2), 225-243.
Scotchmer, S. (1989). Who Benefits from Taxpayer Confusion? *Economics Letters*, 29 (1), 49-55.
Slemrod, J. (1989). The Return to Tax Simplification: An Econometric Analysis. *Public Finance Quarterly*, 17 (1), 3-27.
Stiglitz, J. E. (1982). Utilitarianism and Horizontal Equity. *Journal of Public Economics*, 18 (1), 1-33.
Torgler, B. (2007). *Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis*. Cheltenham, UK: Edward Elgar Publishing.
Weiss, L. (1976). The Desirability of Cheating Incentives and Randomness in the Optimal Income Tax. *The Journal of Political Economy*, 84 (6), 1343-1352.