Concentrated Enforcement in a Best-Case Tax Enforcement Regime

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Introduction

In this paper, I set forth a theory ("concentrated enforcement") for allocating scarce enforcement resources within a low compliance tax sector. The intuition behind concentrated enforcement is that, under a number of different circumstances, there may be increasing marginal returns to enforcement resources and psychological factors that support concentration. This paper begins by setting forth the notion of a best-case tax enforcement regime, which would allocate scarce tax enforcement resources to maximize the combination of direct revenue and voluntary compliance. The paper then examines some empirical evidence from the criminology context, which suggests that, under certain circumstances, concentration of enforcement may be critical to voluntary compliance. The bulk of the paper draws on a number of different disciplines to set forth the conditions under which concentrated enforcement may increase voluntary compliance and explore how it might work in the particularly problematic cash business tax sector. The question of when concentrated enforcement can increase compliance is not merely theoretical. As I explain in this paper, concentrated tax enforcement, in the form of project-based enforcement, already exists in practice. By exploring the conditions under which concentrated enforcement can increase compliance, this paper can help explain and improve existing practice, as well as guide future research. While ultimately determining when concentrated enforcement does increase voluntary compliance requires experimental application and evaluation, examining the conditions under which concentrated enforcement is likely to increase voluntary compliance and the evidence of such conditions is the first step toward such experimentation. This paper takes that first, necessary step toward thinking about concentrated enforcement as part of a best-case tax enforcement regime.

Toward Best-Case Tax Enforcement

As a result of the suboptimal enforcement resources that often exist in practice, scholars in a variety of fields have examined how best to allocate scarce enforcement resources. Tax enforcement is an area in which enforcement resources are often constrained, making the question of their allocation quite important for tax enforcement agencies. It is relatively straightforward to measure the direct revenue yield from various tax enforcement strategies. However, an optimal, or "best-case" allocation of scarce tax enforcement resources would focus on maximizing not only direct revenue, or the actual revenue collected from the enforcement cases themselves. The indirect effect of enforcement, comprised of revenue voluntarily paid by taxpayers in the general population in response to enforcement, is likely to be many times the direct revenue collected directly from that enforcement (Plumley 1996). More generally, the revenue reported by taxpayers on their own, whether in indirect response to enforcement or not, far surpasses the direct revenue raised from enforcement (Internal Revenue Service 2013). As a result, a best-case allocation of tax enforcement resources should take into account not only direct revenue raised from enforcement, but also the voluntary compliance engendered by enforcement (McCubbin 2004, Plumley 2009).

The Discriminant Function ("DIF") score is often cited and discussed as one of the key means of allocating scarce tax enforcement resources within a given taxpayer sector.[2] The DIF score chooses taxpayers for audit based on their "potential for [tax] change, based on past IRS experience with similar returns" (Internal Revenue Service 2006(a)).

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[2] An important question not addressed by this paper is how to allocate scarce tax enforcement resources between tax sectors. This paper assumes that the enforcement resources available to audit a particular tax sector are exogenously given and fixed. The focus of this paper is how to allocate such enforcement resources within a given sector.

As such, the DIF score can be described as a method for finding the offenders likely to be the worst, or a "worst-first" approach to tax enforcement. Evidence suggests that the DIF score is likely a reasonable means of allocating scarce tax enforcement resources so as to maximize direct revenue yield (General Accounting Office 1999, Comptroller General 1976). However, as discussed above, this conclusion does not suggest that using the DIF score alone is a comprehensive, best-case approach to allocating scarce tax enforcement resources. An important, unanswered set of questions is: (1) what is the impact on voluntary compliance of allocating enforcement resources to the returns with the highest DIF scores, and (2) whether the DIF score could be combined with other methods of allocation to maximize total revenue collected, as comprised of both the direct revenue and voluntary compliance resulting from enforcement.

The impact of DIF-based resource allocation on voluntary compliance is currently unclear. Theoretically, arguments exist that relying solely on the DIF score, or worst-first approaches generally, could maximize voluntary compliance. Worst-first approaches can maximize voluntary compliance if they encourage regulated parties to increase compliance, so as not to be considered the "worst" (Lemos and Stein 2010). However, when noncompliance is pervasive, the regulated parties may coordinate on low or no compliance and thereby undermine the power of a worst-first approach to maximize voluntary compliance. While more sophisticated empirical evaluation is needed to determine the impact of the DIF score on voluntary compliance, at least at present the DIF score seems like an effective, and crucial, tool for maximizing direct revenue, but perhaps only part of a best-case allocation of scarce tax enforcement resources.

Indeed, the IRS uses more than the DIF score to allocate scarce enforcement resources.[3] The IRS also uses compliance projects (and other methods, such as related examinations and a focus on large corporations and abusive tax avoidance transactions) to allocate scarce tax enforcement resources (Internal Revenue Service 2006(a)). Other countries such as the United Kingdom have even more prominently used so-called "tax campaigns" directed at certain taxpayer subsectors within particular geographic locations (HM Revenue and Customs 2013). The tax enforcement literature has yet to provide a comprehensive, theoretical explanation for the use of such enforcement projects in practice.

Some tax enforcement scholarship has suggested potential benefits of using allocation methods other than the DIF score. Most notably, James Alm and Michael McKee have suggested that exclusive use of the DIF score may allow taxpayers to coordinate on noncompliance (Alm and McKee 2004). Similarly, Norman Gemmell and Marisa Ratto have suggested that random auditing (in addition to a risk-based approach) can help prevent taxpayers from feeling safe in engaging in relatively low levels of noncompliance (Gemmell and Ratto 2012). However, existing scholarship has not suggested what allocation methods, other than random enforcement, might complement the DIF score. This paper sets forth concentrated enforcement, which, under certain circumstances, may complement the DIF score in order to create a best-case tax enforcement regime. The case for concentrated enforcement set forth in this paper also may help to explain and inform the project-based enforcement seen in actual tax practice.

Criminology Evidence

Criminologists have offered some evidence that focusing enforcement efforts on particular groups or particular projects at a given time (rather than, or in addition to, a purely individualized, worst-first approach) can increase voluntary compliance. Most notably, criminologists have offered empirical evidence in support of a policing methodology known as "hot spots policing." Hot spots policing arose out of empirical determinations that: (1) spreading preventative police presence across an entire population may render such resources relatively ineffective as crime deterrents; and that (2) crime often concentrates in particular geographic locations. In response to these findings, criminologists developed hot spots policing, which concentrates police resources in particular crime "hot spots." Criminologists have shown that concentrating policing resources in hot spots can substantially reduce crime both in the hot spots and, to some extent, in surrounding areas (Braga and Weisburd 2010). This finding has been particularly encouraging, in contrast to an early policing study in Kansas City. That study found that when policing resources were applied across large patrol beats, increasing police patrol did not have a substantial, preventative effect on crime (Kelling *et al.* 1974). The bottom line from the hot spots policing research is that the concentration of policing resources can be a key factor in preventing crime.

Criminologists have also offered more anecdotal evidence of compliance benefits from project-based enforcement. Mark Kleiman has described numerous examples of project-based enforcement in which enforcement resources were

[3] Technically, the IRS distinguishes between resource allocation and workload selection. Resource allocation is a planning exercise in which portions of the budget are assigned to specific activities (e.g., to competing types of enforcement, and to different categories of returns within a given type of enforcement), and is typically completed well before the fiscal year begins. Workload selection refers to deciding (within the fiscal year for which the budget is appropriated) which specific taxpayers to contact within a given category and type of enforcement given the budget already allocated to that category and type of enforcement. The DIF score assigned to a return as it is processed is one of several factors used when selecting workload. However, the historical relationship between DIF score and audit yield observed in operational and random audit data has also been used as a basis for allocating the budget to audit programs and categories.

concentrated on a particular set of violators for a particular amount of time. Kleiman has described such efforts as effective means of substantially decreasing a number of otherwise rampant crime problems, such as "squeegeeing" in New York City and parole violations in Hawaii (Kleiman 2009). David Kennedy and others have similarly described how they used project-based approaches, in which specified violations were subject to enhanced enforcement efforts at specified times. Kennedy and others have described such efforts as a successful means of controlling otherwise uncontrollable crime problems such as gang violence (Kennedy 2011). While the work of Kleiman, Kennedy, and others has not been amenable to a high degree of empirical proof, it nonetheless provides real-world examples of the potential role of project-based enforcement in increasing compliance.

Concentrated Enforcement

Building on the actual examples of (and some empirical support for) a project-based approach, I set forth concentrated enforcement as a new theory for allocating scarce tax enforcement resources. Concentrated enforcement breaks a large, low compliance sector of taxpayers into smaller subsectors and applies substantially enhanced enforcement resources in particular subsectors on a rotating basis. Subsectors subject to enhanced enforcement resources are said to be subject to "enforcement projects." The application of enforcement projects to certain subsectors means that fewer enforcement resources are available for subsectors of the population that are not subject to enforcement projects. DIF scoring can be used as a means of identifying particularly noncompliant subsectors of taxpayers, which should be more likely to be selected for enforcement projects. Within a particular enforcement project, not necessarily every taxpayer needs to be subject to enforcement. Rather, DIF scoring may be used to select taxpayers who should be subject to particular enforcement attention within an enforcement project.

The initiation of enforcement projects would be announced directly to taxpayers subject to an enforcement project (perhaps via direct mailing or some other form of direct notification, including notification to advisors who have historically served the taxpayers in the enforcement project) prior to the initiation of enforcement projects. The initiation of enforcement projects would also be posted publicly on the IRS website, identifying which subsectors will be subject to enforcement projects and when the enforcement projects will begin. Announcement occurs because concentrated enforcement is premised on the benefits of concentrated enforcement and coordination of taxpayers' expectations regarding concentrated enforcement and resulting compliance effects (fleshed out below). However, termination of the enforcement projects is not announced. The termination of enforcement projects is not announced so as to garner a possible (albeit likely short-lived) free-ride on the deterrence benefits of enforcement projects, even after they have terminated. Specifically, taxpayers may continue to believe they are subject to the enforcement project for some short time, even after it has terminated.

Take, for instance, the following hypothetical regarding cash business taxpayers. Imagine (for the sake of simplicity and illustration only) that there are 100,000 cash business taxpayers and 30 revenue agents available to audit cash business taxpayers. Imagine that each revenue agent can audit 100 cash business taxpayers in a given year. If the enforcement resources were applied uniformly across the population, each taxpayer would face a 3% chance of being audited per year. If the DIF score were applied to select which taxpayers to audit, particular cash business taxpayers would actually face a higher or lower than 3% chance of being audited, depending on their relative DIF score. However, whether or not they perceived themselves as having a higher or lower than 3% chance of being audited would depend on whether they perceived themselves as being more or less likely to be selected under a DIF score method (which may, but would not necessarily, correspond with their actual chance of being audited under a DIF score method). Without any reason to believe that particular taxpayers perceived they had a higher or lower individual chance of being selected for audit under a DIF score method, and that these perceptions mattered in some systematic way, it seems reasonable to assume that taxpayers believe they have an approximately 3% chance of being audited in this example, even after application of a DIF method.

Concentrated enforcement would split the population of 100,000 taxpayers into smaller subsectors and apply enforcement projects to such subsectors. Subsectors could be defined in a number of ways, but they would likely be defined by industry and location. Ideally, taxpayers within given subsectors would all be in the same group for purposes of DIF scoring. For instance, dry cleaners in Manhattan may be one subsector of the cash business tax population. Dry cleaners in Brooklyn may be another. Construction workers in San Francisco may be another subsector, and the list would go on and on. Under concentrated enforcement, a certain number of subsectors of the cash business tax population would be subject to enforcement projects at any given time. For instance, imagine that, of the 100,000 cash business taxpayers, 200 are dry cleaners in Manhattan, and that DIF scoring reveals that Manhattan dry cleaners are likely a particularly noncompliant node. An enforcement project on Manhattan dry cleaners may allocate 24% of the time of

one tax agent to audit dry cleaners in Manhattan. As a result, the dry cleaners would face a 12% chance, rather than a 3% chance, of being audited. The announcement of an enforcement project on Manhattan dry cleaners should be made directly and in advance to the Manhattan dry cleaners and their tax advisors (via direct mailing or otherwise), as well as on the IRS website. The announcement should indicate an enhanced enforcement project for the subsector, designed to ensure compliance and root out and punish noncompliance. By assumption, the limited enforcement resources available for the entire sector would mean that cash business taxpayers outside of the Manhattan dry cleaning enforcement project would face a concomitantly lower chance of being audited during the application of this enforcement project. However, cash business taxpayers outside of enforcement projects would remain subject to some chance of audit, albeit a slightly reduced chance. Other enforcement projects would be chosen based on a similar methodology, with similar effects on chance of audit of the taxpayers within and outside of the enforcement project. Enforcement projects should rotate through the population of cash business taxpayers, using DIF scoring to help choose particularly noncompliant subsectors (to the extent they can be identified).

Under certain circumstances, the application of concentrated enforcement, as described above, may increase net voluntary compliance, as measured across the entire sector of taxpayers. The underlying intuition is that, for a number of reasons, there may be increasing marginal returns to enforcement as well as psychological factors that make concentrated enforcement more effective. As an initial matter, for purely economic reasons, spreading resources uniformly (or even the perception of relatively uniform chances of being audited) may give taxpayers insufficient incentives to comply (Eeckhout *et al.* 2010, Lando and Shavell 2004, Lazear 2006). In such cases, the compliance gains in subsectors subject to enforcement projects may outweigh the losses from subsectors not subject to such projects. The point can be illustrated in a straightforward fashion by imagining a binary compliance decision, in which individuals either choose to comply or not to comply. For instance, as above, imagine that there are 100,000 cash business taxpayers and 30 tax agents available to audit cash business taxpayers, and that each tax agent can audit 100 cash business taxpayers in a given year. As illustrated previously, if the enforcement resources were spread across the population, each cash business taxpayer would face a 3% chance of getting caught for not complying with the taxpayer's tax obligations. Imagine also that each cash business taxpayer owes an unreported tax liability of $2,000 and, if caught not complying, will have to pay the tax liability of $2,000 plus a fine of $1,500. Given such parameters, each taxpayer has an expected benefit of noncompliance of $1,940 and an expected cost of noncompliance of $45, and no taxpayer will comply. In order to comply, taxpayers would have to face a greater than 57% chance of being caught for noncompliance.[4] Under such circumstances, concentrated enforcement could be used to bring the chance of getting caught to 58% in the subsectors subject to enforcement projects. As a result, all taxpayers in the enforcement projects should comply. Given the limitation on enforcement resources (and assuming only for the sake of this illustration that no enforcement resources were applied outside of an enforcement project), the maximum number of cash business taxpayers in the enforcement project (or multiple enforcement projects) would be 5,172.[5] Under these parameters, no taxpayer outside an enforcement project will comply. However, since no taxpayers would comply at all under a uniform application of enforcement resources, total, net compliance, as measured across the entire population, would still increase under concentrated enforcement. In this situation, 5,172 more cash business taxpayers would be complying under concentrated enforcement. Indeed, as long as penalties are not treated as a source of revenue, microdeterrrence in this situation not only maximizes voluntary compliance but also revenue.[6] While the above illustration obviously oversimplifies the compliance landscape, it nonetheless illustrates a base economic case for how concentrating enforcement resources may raise voluntary compliance.

[4] To determine this (rounded) percentage, solve for x in the following equation: $1{,}500x > 2{,}000(1- x)$.

[5] To determine this number solve for x in the equation $3{,}000 / x \geq 58/ 100$.

[6] This statement merits a bit of elaboration. Generally, this paper focuses on how, under certain conditions, concentrated enforcement can increase voluntary compliance. However, at least under the terms of this example, as long as penalties are not considered a source of revenue, maximizing voluntary compliance also maximizes revenue. The reason is as follows. Absent concentrated enforcement, no taxpayer voluntarily complies. As a result, all revenue is obtained as direct revenue from audit. Direct revenue from audit would be 3,000 x $2,000 = $6 million. Under concentrated enforcement, 5,172 taxpayers pay a tax liability of $2,000, which yields revenue of $10.344 million. If penalties are considered a source of revenue, then uniform application of enforcement resources would actually maximize revenue because 3,000 audits each would produce revenue of $3,500, which would yield total revenue of $10.5 million. The assumption not to consider penalties a source of revenue is being made because the IRS and Treasury Department have made it clear on numerous occasions that the tax penalties should be used as a means of ensuring compliance, and that penalties should not be viewed as a direct means of raising revenue (Internal Revenue Service 1989, Department of the Treasury 1999). More generally, whether direct revenue or voluntary compliance dominates in terms of revenue depends on how high audit rates actually have to be to produce voluntary compliance. To the extent that audit rates could be lower than 58% to generate voluntary compliance, the size of the enforcement project could be larger, in which case the impact of voluntary compliance on revenue would be larger. The general importance of voluntary compliance to revenue in response to increases in low audit rates, discussed previously, suggests that, for a variety of reasons, the audit rates likely could be substantially lower than 58% and still engender voluntary compliance. For these reasons it seems reasonable to equate maximizing voluntary compliance with maximizing revenue. On the other hand, the IRS is often judged based on its direct enforcement yield per spending ratios (GAO 2012). If the IRS really were to reduce direct revenue to zero (as a result of 100% voluntary compliance) it may suffer significant criticism as a result of not being able to show direct revenue yield. In light of this practical concern, it seems fair to assume that the IRS cares about both voluntary compliance and direct revenue, but that the former may be more heavily weighted. It is worth pointing out that, in contrast to tax enforcement, criminal enforcement (discussed previously in the text) likely places a lower weight on direct return from enforcement. In other words, in the criminal context it is likely even safer to view voluntary compliance (i.e., no murders) as the goal, rather than direct return from enforcement

Moreover, the economic point can be modeled in a more complex fashion to reflect a more realistic compliance environment (in which, for instance, not every taxpayer faces the same compliance parameters, or in which compliance is not a binary decision). Lando and Shavell have set forth a more generalized economic model, which suggests that scarce enforcement resources should always be allocated such that any portion of the population subject to enforcement receives just the optimal level of enforcement resources. The intuition behind their model is that any alternative would fail to maximize the social return per policeperson (or auditor, in this case), and therefore would fail to maximize the total, social return from policing (or auditing).[7] Moving beyond the Lando and Shavell model to focus on the tax context in particular, it is worthwhile to emphasize that tax compliance choices tend not to be binary (i.e., comply, don't comply), but rather a range of compliance is often possible (i.e., how much income to report). Under certain circumstances, a range of potential compliance, combined with multiple equilibria, can also create an economic case for concentration of enforcement resources. In particular, if existing levels of voluntary compliance are low, but multiple equilibria exist, concentrated enforcement may yield substantial gains from enforcement projects (by moving compliance to a higher equilibrium) and few losses from taxpayers not subject to enforcement projects (because only the low, existing voluntary compliance can be lost). While of course the opposite is possible (high losses of compliance by taxpayers not subject to enforcement projects, matched by low gains in groups subject to enforcement projects) (Alm and McKee 2006), the point here is to suggest conditions under which concentrated enforcement may increase total compliance, not prove that concentrated enforcement will always increase compliance. For the reasons suggested in the economic models sketched above, when enforcement resources are so limited as to yield inadequate incentives if spread across the whole population, there may be much to gain and little to lose by concentrating enforcement resources in the form of concentrated enforcement.

Indeed, Eeckhout *et al.* have not only made a normative, economic case for a concentration of enforcement resources (in which the threshold level of enforcement necessary to engender substantially higher compliance is applied to a subset of the population). They also have showed that their model has positive, explanatory power. Specifically, they determined that the Belgian police have monitored speeding in a manner remarkably consistent with their model. The Belgian police have engaged in a practice of rotating, announced monitoring, with a relatively fixed rate of detection (corresponding to the threshold level of enforcement) for drivers subject to announced monitoring. As enforcement resources have increased, the incidence of announced monitoring has increased, but not the rate of detection for those subject to announced monitoring. Eeckhout *et al.* estimate that this policy has resulted in an optimal use of enforcement, such that marginal benefits have almost equaled marginal costs (Eeckhout *et al.* 2010).

Moreover, when rates of enforcement are already quite low, probability neglect (or the lack of responsiveness to variations of small probabilities) may dampen the impact of the loss of enforcement in subsectors not subject to enforcement projects. For individual taxpayers, the actual rate of audit hovers around approximately 1% (Internal Revenue Service 2012). Given these parameters, it seems reasonable to imagine that taxpayers subject to an enforcement project may be more responsive to a change in their audit likelihood (for instance, an increase in audit likelihood from 1% to 12%), than taxpayers not subject to an enforcement project would be to their change in audit likelihood (for instance from a 1% chance to a slightly lower, but still very low chance of audit). As a result of probability neglect, individuals may not be particularly responsive to variations of less than 1% (Sunstein 2002, Stack and Vandenbergh 2011), decreasing the potential losses of compliance from taxpayers who are not part of an enforcement project.

Other circumstances may enhance the base case for concentrated enforcement, set forth above. First, the case for concentrated enforcement may be stronger if there are feedback loops between noncompliance and enforcement. As an initial matter, feedback loops may exist when enforcement is costly and limited, and it is not possible to punish all the existing noncompliance. The underlying mechanism at work is the congestion of noncompliance, little examined in the

Footnote 6 continued—

(i.e., catching murderers). In any event, this paper focuses on the impact of concentrated enforcement on voluntary compliance. Additionally, as will be discussed in the text later, to the extent that taxpayers are not uniform and that such nonuniformity can be detected, concentrated enforcement should focus on particular nodes of noncompliance and should allocate enforcement resources within an enforcement project toward particularly noncompliant taxpayers. This methodology should help maximize the combination of voluntary compliance and direct revenue.

[7] In contrast to a purely rational, economic model, this paper assumes (and discusses in text to follow) that noneconomic incentives also affect compliance. For instance, individuals may comply in response to an audit rate that is too low to economically incentivize them to comply for a variety of reasons, such as in response to norms or misperceptions of the actual audit rate. In any event, in contrast to the Lando and Shavell model, this paper suggests maintaining some chance of audit in the portion of the population that is not subject to an enforcement project at a given time. As discussed below, probability neglect may cause this portion of the population to be less responsive to the slight reduction in audit rate than purely rational economic theory would predict. As a result, maintaining some audit presence in the portion of the population not subject to an enforcement project may be able to maintain a substantial amount of compliance. This paper does adopt the suggestion from Lando and Shavell that subsectors subject to an enforcement project should be just subject to the optimal level of enforcement (however the "optimal level of enforcement" is ultimately determined, which is an important topic for future research).

tax literature (Schrag and Scotchmer 1997, Graetz *et al.* 1986). Essentially, if enforcement resources are perceived to be (relatively) fixed, increasingly high rates of noncompliance lower the perceived chance of getting caught for the same amount of noncompliance. Noncompliance therefore breeds further noncompliance. By using enforcement projects to raise rates of noncompliance within given taxpayer subsectors, concentrated enforcement may be able to reset rates of compliance to reasonably high levels, high enough to help sustain compliance as enforcement projects move to the next subsector (Kleiman 2009). Feedback loops between noncompliance and enforcement also can exist when there are commonalities in noncompliance in certain taxpayer subsectors. For instance, the difficulty in detecting tax shelters and yet the commonality of tax shelters across taxpayers makes information developed in a particular case much more valuable than simply the returns from that case. When such noncompliance commonalities exist, enforcement projects can engender enforcement expertise that produces increasing returns to scale.

Somewhat relatedly, concentrated enforcement may help create local norms of compliance to help sustain compliance. Norms and other noneconomic incentives are often thought to play a role in encouraging compliance. However, a combination of theory and some evidence suggests that norms may themselves depend on rates of compliance, such that a norm of compliance exists only once a threshold level of compliance has been reached (Cooter 1996, Lederman 2003). When enforcement resources are limited, a uniform allocation of enforcement resources may not yield sufficiently high compliance in order to create norms of compliance. However, norms can be local (Schelling 1978, Gladwell 2000), and behavior is often influenced by members of one's small group, even in cases in which such groupings are relatively arbitrary (Goette *et al.* 2006, Revesz 1997). As a result, by separating a large, highly noncompliant population into small, local subsectors and engaging in enforcement projects within subsectors, concentrated enforcement may activate local norms of compliance. These norms of compliance may help generate compliance and sustain it after the enforcement project ends.

Concentrated enforcement may also help increase voluntary compliance if taxpayers exhibit uncertainty aversion and concentrated enforcement increases the perceived uncertainty of tax enforcement. Research suggests that individuals often exhibit uncertainty aversion, or a tendency to avoid gambles when uncertainty exists regarding the likelihood of the potential outcomes (Ellsberg 1961, Lawsky 2009). Concentrated enforcement may leverage uncertainty aversion in order to increase compliance. A uniform application of enforcement resources would create a fixed probability of being audited, minimizing uncertainty. Application of a DIF score method would introduce greater uncertainty regarding the likelihood of audit. However, under a DIF score method alone, taxpayers may imagine that their own behavior affects their likelihood of audit, thereby reducing the uncertainty. Layering concentrated enforcement on top of the DIF score may preserve the uncertainty flowing from the DIF score, while also introducing the possibility of a significantly higher or lower chance of audit, which chance would depend on factors falling outside of the taxpayer's control. The increased uncertainty may decrease the likelihood of taxpayers engaging in the compliance gamble of noncompliance.[8]

Along similar lines, concentrated enforcement may increase voluntary compliance if taxpayers exhibit the availability bias and concentrated enforcement enhances the salience of enforcement. Research suggests that individuals tend to rely on information that is more readily available to assess the probability of events occurring (Taylor 1982, Tversky and Kahneman 1974). To the extent that concentrated enforcement makes information regarding IRS enforcement more readily available, or salient, taxpayers may perceive a greater likelihood of being audited, without requiring additional enforcement resources. The perceived higher likelihood of audit may raise voluntary compliance.

Finally, as alluded to previously, concentrated enforcement would likely work best if there are particular nodes of noncompliant taxpayers, and concentrated enforcement focuses on those nodes in particular. Concentrating enforcement efforts on nodes of noncompliance has been integral to hot spots policing, discussed previously. Such concentration can ensure that sufficient enforcement is available in the particular subsectors in which compliance is quite low. In such subsectors, there is likely to be the most to gain in terms of potential, increased compliance, and new rates and norms of compliance. The potential benefits of concentrating enforcement projects on particular nodes of noncompliant taxpayers reveals most notably how the DIF score and concentrated enforcement may work together to create a best-case enforcement regime. By using DIF scoring to identify particularly noncompliant nodes and the taxpayers who are likely to be most noncompliant within such nodes, concentrated enforcement may help ensure both a high direct yield from audit (as a result of the taxpayers being audited owing high amounts of taxes) and a high indirect yield from audit (as a result of the potential voluntary compliance benefits of concentrated enforcement, discussed above).

[8] While, under concentrated enforcement, taxpayers would have warning of the initiation of an enforcement project, thereby reducing uncertainty to some extent, they would not have information regarding the termination of enforcement projects, which would perpetuate uncertainty. Moreover, especially in cases of cash business underreporting, in which fraud can result in the taxpayer being subject to no statute of limitations, the possibility of being subject to an enforcement project at any point in time may be more relevant to taxpayers for the purposes of uncertainty aversion than whether or not they are subject to an enforcement project at a particular time.

Concentrated enforcement is not premised on being able to identify nodes of noncompliance or particularly noncompliant taxpayers. However, to the extent that they can be identified, the segmentation and rotation at the heart of concentrated enforcement (and the accompanying, potential voluntary compliance benefits of such segmentation and rotation) can be combined with DIF scoring as the means of choosing which segments will receive particular attention.

Application to the Cash Business Tax Sector

While the above case for concentrated enforcement is general, this Part examines how it might apply to the cash business tax sector, a particularly problematic tax sector. This Part does so not because the cash business tax sector is the only (or best) application of concentrated enforcement, but rather because the cash business tax sector is much in need of enforcement innovation. As is widely known, significant cash business tax evasion results from the difficulty in detecting cash income and the limited enforcement resources available to detect it (Bankman 2007). The resulting net misreporting rate for nonfarm proprietor income is approximately 56% (Internal Revenue Service 2006(b)).

As an initial matter, it is worth emphasizing that these very conditions suggest reasons why exclusive use of the DIF score may not produce a best-case tax enforcement regime. The pervasive noncompliance means that cash business taxpayers, to some extent, have coordinated on widespread noncompliance, making high levels of noncompliance relatively safe. Additionally, worst-first methods work particularly well as a means of incentivizing voluntary compliance when differences from an average reflect likely noncompliance. In such cases, high levels of noncompliance can be detected relatively easily based on observable behavior, thereby providing the regulated parties a strong incentive to engage in high levels of voluntary compliance, so as not to be deemed the "worst." However, in the case of cash business taxpayers, lower than average tax liability reporting does not necessarily reflect a high level of noncompliance. Instead, it may suggest the business is simply unsuccessful. Nor does reporting a high amount of tax liability necessarily convey that the taxpayer is highly compliant. Reporting a high amount of tax liability therefore does not necessarily inoculate the taxpayer from audit. As a result, while the DIF score may serve as a useful tool (in light of limited information) for selecting taxpayers likely to owe the most, the DIF score likely provides a relatively weak incentive for taxpayers to increase their voluntarily reported tax liability so as not to be deemed the "worst."

A variety of conditions in the cash business tax sector suggest that concentrated enforcement, combined with the use of the DIF score (as described previously), may help maximize the combination of direct revenue and voluntary compliance. First, the widespread noncompliance in the cash business tax sector and the difficulty and expense in detecting noncompliance suggest that spreading enforcement resources across the population of cash business taxpayers on a uniform basis may yield insufficient compliance incentives. While the reporting rate for nonfarm proprietor income is approximately 44% (which is far better than nothing), this rate likely significantly overstates the truly voluntary compliance of cash business taxpayers. In particular, structural enforcement mechanisms help compel cash business taxpayers to report their credit card receipts. While so-called "cash business taxpayers" by definition receive much of their income in cash, they also receive some amount of their income in the form of credit card receipts, which are both traceable and, more recently, reported to the IRS (IRC § 6050W, Lederman 2010). Taking the reporting of such receipts into account, the reporting of actual, cash receipts likely occurs at a rate significantly lower than 44%. In other words, cash business taxpayers likely report significantly less than 44% of their cash income, or the income for which their reporting can be seen as truly voluntary. The low rate of reporting with respect to such income, the very limited enforcement resources available to audit the widespread cash business tax evasion, and the difficulty (and expense) in actually detecting cash income on audit suggest that concentration of enforcement resources may be necessary in order to give cash business taxpayers adequate incentives to report their cash income.[9] Moreover, because structural enforcement mechanisms (namely the traceability and reporting of credit card receipts) likely explain a significant amount of the compliance that exists in the cash business tax sector, such enforcement mechanisms may help dampen any loss of compliance by taxpayers who will not be subject to enforcement projects. Essentially, if traceability and information reporting of credit card receipts provide a substantial incentive to report credit card receipts even given a low, 1% chance of audit, they may continue to provide a substantial incentive to report such receipts for taxpayers outside of enforcement projects, for whom the audit rate will drop slightly lower as a result of concentrated enforcement. In some ways, then, the cash business tax sector may be the prototypical type of situation in which there is much compliance to gain and little compliance to lose by concentrating enforcement.

[9] One potential danger from auditing cash business taxpayers is that wholly ineffective audits may actually convince taxpayers of the ineffectiveness of audits, and the lack of need to comply. However, this potential danger exists whenever taxpayers are audited and is not unique to concentrated enforcement. A general assumption of this paper is that audit is effective enough (even if it is difficult and expensive to conduct well) such that increasing audit rates, all else equal, would increase compliance. If this was not the case, the IRS's best tactic might be to find a way to increase the perception of audit ability without actually increasing audits.

Additional characteristics also suggest potential benefits from concentrated enforcement. The role of the DIF score in selecting taxpayers for audit and suggestions of cash business taxpayers' resulting benchmarking behavior suggest that feedback loops exist between noncompliance and enforcement. To understand the significance of the DIF score in creating feedback loops between noncompliance and enforcement, imagine that, prior to an enforcement project, a cash business taxpayer is underreporting $2,000 of its cash receipts. The expected benefit of underreporting would be the $2,000 x probability of not getting caught. The expected cost of underreporting is the penalty if caught x probability of getting caught. As a result of the DIF score, if other taxpayers within the taxpayer's DIF group begin complying at a higher rate, the taxpayer would face a higher probability of getting caught for the same $2,000 of underreporting. Increased compliance by other taxpayers would thereby decrease the expected benefit and increase the expected costs for the *same* $2,000 of potential underreporting. This effect does not depend on the audit rate being higher. The rate of compliance of other taxpayers within the DIF group can operate as an independent factor, which affects the expected benefits and costs of underreporting the same amount. Indeed, this dynamic is consistent with early findings that audits of taxpayers tend to have the greatest impact on other taxpayers in the same class (Witte and Woodbury 1985). By substantially increasing the rate of audit, concentrated enforcement may reset the rate of compliance. As a result, to the extent that the enforcement project is comprised of taxpayers within the same DIF group, taxpayers within the enforcement project should (at least on a short term basis) still face higher costs of noncompliance, even after the enforcement project has ended. Anecdotal evidence of cash business taxpayers benchmarking their noncompliance to industry averages (Morse *et al*. 2009) suggests that increased expertise from enforcement projects may also help create increasing returns from enforcement.

The perceived importance of norms in the cash business tax sector also may help sustain compliance gains from concentrated enforcement. There appears to be a correlation between cross-country attitudes toward tax evasion and actual evasion (Slemrod 2007). Michael Wenzel has developed survey evidence suggesting interrelationships between norms of compliance and actual tax compliance (Wenzel 2005). In the cash business tax sector, taxpayers have reported, at least anecdotally, the importance of norms of compliance, or "shared wisdom" of noncompliance from family and friends who are also in the cash business tax sector (Morse *et al.* 2009, Kagan 1989). And yet, appealing to norms of compliance has not been particularly successful in affecting actual tax compliance (Blumenthal *et al.* 2001, Torgler 2004). Given the perceived importance of norms for tax compliance, an important, unanswered question is how to move the "shared wisdom" of cash business taxpayers from one of predominantly noncompliance to one of greater compliance. This task seems particularly difficult when contemplating the cash business tax sector as a whole, because existing enforcement resources have as of yet been insufficient to yield widespread compliance across the sector. However, as alluded to previously, norms and beliefs of local (even relatively arbitrary) groupings seem particularly influential. As a result, to the extent that the enforcement projects yield enhanced compliance within a particular subsector, this local compliance may help create norms of compliance and thereby sustain some amount of compliance, even after the enhanced enforcement has moved on to the next subsector.

Evidence on the reactions to uncertainty also suggests potential voluntary compliance benefits from increasing uncertainty through concentrated enforcement. Most notably, Jeff Casey and John Scholz found evidence that experimental taxpayers experienced uncertainty aversion when the probability of detection was otherwise low (Casey and Scholz 1991). These results were consistent with an earlier simulation by Nehemia Friedland regarding the impact of uncertainty of audit for low probabilities of detection (Friedland 1982). The likelihood of audit of cash business taxpayers, approximately 1%, is quite low, suggesting that uncertainty regarding this likelihood may make cash business taxpayers feel less safe in engaging in the compliance gamble of underreporting their tax liability. By layering the uncertainty of potentially being in an enforcement project onto the uncertainty of the DIF score, concentrated enforcement may inject greater uncertainty into the system and thereby increase compliance.

Additionally, media attention to tax enforcement projects suggests potential salience benefits from concentrated enforcement. The media has often publicized various tax enforcement projects, including perhaps most notably the highly covered story of a crackdown on offshore tax evasion (CNBC 2009). The media coverage of UK tax campaigns and even of a small, targeted mailing of cash business taxpayers suggest that concentrated enforcement may garner media attention as well (Caldwell 2013, McKinnon and Hughes 2013). As suggested previously, by creating more salient news stories regarding enforcement, concentrated enforcement may increase the perception of enforcement and its effectiveness.

Finally, because evidence suggests that nodes of particularly noncompliant cash business taxpayers may exist, concentrated enforcement may be able to target such nodes in particular. The Government Accountability Office cites statistics that indicate that a small portion of cash business taxpayers are responsible for the bulk of the cash business

tax noncompliance (GAO 2007). That fact, combined with information that taxpayers try to hew to industry reporting averages, implies that particular industries of cash business taxpayers may be particularly noncompliant. Recent research has used DIF scoring to identify noncompliant groups of taxpayers, based on industries and geographic location (Taxpayer Advocate Service 2012). As discussed previously, concentrated enforcement would likely be most effective if it focuses on nodes of noncompliance (as has occurred with hot spots policing).

Potential Problems and Future Research

Of course, a number of potential problems exist with the application of concentrated enforcement to the cash business tax sector. First, the persistent noncompliance by cash business taxpayers and the extreme difficulty in detecting cash business tax evasion may suggest to some that attempts to use audit to engender substantially higher voluntary compliance by cash business taxpayers are futile. This paper does not mean to suggest that auditing is an ideal method of ensuring compliance. As suggested previously, structural enforcement mechanisms, such as credit card information reporting, can often be effective. However, in the absence of congressional adoption of some sort of structural enforcement mechanisms with respect to cash receipts (such as, perhaps, a VAT) or (the very unlikely) complete abandonment of income tax liability for cash business taxpayers, audit remains an essential means of policing the cash business tax sector. Since it appears that audits are here to stay for the foreseeable future, determining the best-case allocation of audit resources remains essential. To the extent that concentrated enforcement can improve the allocation of audits, concentrated enforcement may be an important methodology. Additionally, while this paper repeatedly mentions audits when discussing allocating enforcement resources, concentrated enforcement is a more general model that can apply to any form of enforcement resources. To the extent that other methods of enforcement (for instance, perhaps evaluations of return preparers, etc.) prove promising, concentrated enforcement could be applied to such forms of enforcement. Moreover, as suggested previously, the inadequacy of the existing enforcement resources for auditing also tends to support the concentration at the heart of concentrated enforcement.

Similarly, while some might wonder whether the cash business tax sector is the best sector for application of concentrated enforcement, this paper is not attempting to claim that concentrated enforcement would work only, or even best, in the cash business tax sector. Rather, the paper is using the cash business tax sector (a sector much in need of enforcement innovation) as just one case study of a potential application of concentrated enforcement. This paper would be consistent with additional thinking regarding other, or better, applications of concentrated enforcement. Moreover, even if other tax sectors would be better suited to concentrated enforcement, to the extent that concentrated enforcement would increase compliance of cash business taxpayers, it should be applied.

The next major issue worth addressing is the possibility of compliance decay. The concern regarding compliance decay is that compliance gains from application of an enforcement project may be temporary. After the enhanced enforcement resources move on from an enforcement project (and after the taxpayers realize that they move on), taxpayers will lose the enhanced incentives to comply. As taxpayers collectively lose such incentives, the rate of compliance may again decrease, renewing the possibility of coordinated noncompliance, and eroding any norms of compliance. However, two responses to this potential problem of compliance decay are in order. The first response is that compliance decay may not be a problem at all, in that it may not defeat the case for concentrated enforcement. The base, economic case for concentrated enforcement is that when compliance incentives are too diffuse, concentrating enforcement on one subsector of the population may raise total compliance. This can be true even if the entirety of the population not subject to an enforcement project displays significantly lower (or, in an extreme case, no) compliance as a result. As long as the compliance in the subsector(s) actually subject to an enforcement project at any given time outweighs the losses elsewhere, compliance decay would not defeat the case for concentrated enforcement. Moreover, for reasons suggested previously, various phenomena suggest reasons why compliance decay may not occur immediately, thereby increasing the benefits of concentrated enforcement above the base case scenario. Increased rates of compliance and norms of compliance may help maintain some of the benefits of an enforcement project, even after the enforcement project has terminated. Uncertainty aversion and increased salience of enforcement may help raise the compliance across the population, even in subsectors not currently subject to an enforcement project. And targeting enforcement projects to particularly noncompliant groups may help ensure that those subsectors most likely to experience compliance decay also would be most likely subject to enforcement.

The next potential concern is taxpayer entrenchment to tax evasion positions. A fundamental assumption of the concentrated enforcement model is that taxpayers would respond to enhanced enforcement by increasing their compliance. However, taxpayers could respond to enhanced enforcement by maintaining or increasing their levels of evasion. Taxpayers may maintain their levels of evasion if they fear that, by increasing their compliance, they would red flag

themselves as likely noncompliant in prior years. Taxpayers could even increase their levels of evasion if they believed that doing so would create more negotiating room with the IRS when they are actually audited. The experiment that speaks to the latter concern directly is the Minnesota experiment, in which taxpayers were told that their tax returns would be "closely examined." The widely-cited result was that low and medium income taxpayers raised their reported tax liability, but high income taxpayers lowered their reported tax liability. The researchers suggested that the high income taxpayers may have done so as a bargaining tactic (Slemrod *et al.* 2001). However, a number of factors suggest that reduced reporting is less likely in the case of concentrated enforcement projects. First, reducing the tax reported as a bargaining position makes some sense in cases in which the tax law is unclear (as may have been the case with the high income taxpayers). In such cases, as a result of how tax penalties and statutes of limitations rules work, taking an aggressive, low reporting position is somewhat unlikely to result in a penalty or extended statute of limitations. However, in the case of cash business tax liability, underreporting involves knowingly understating tax that is clearly owed, creating the possibility of civil fraud or even criminal penalties, and an unlimited statute of limitations. Because the downside of increasing evasion in response to enhanced enforcement is great in the case of cash business tax liability, increasing underreporting as a negotiating tactic is less likely. Additionally, as the Minnesota researchers suggested, there are likely two countervailing incentives for taxpayers in deciding what to report. The first incentive is to report high tax liability, to help avoid audit. The second incentive is to report low tax liability, so as to create room to bargain in case the taxpayer is selected for audit. The Minnesota researchers hypothesized that since the taxpayers in the experiment were told that their returns would be closely examined, the taxpayers were freed of the incentive to report high tax liability to help avoid audit. As a result, at least in the case of high income taxpayers, the incentive to report low to create bargaining position on audit may have dominated. However, in the case of concentrated enforcement, not every taxpayer in an enforcement project would be promised an audit. Indeed, taxpayers would be warned that enforcement projects would be designed to root out noncompliance in particular. DIF scoring methodology could be used within an enforcement project to focus the enhanced enforcement resources. As a result, taxpayers would still have an incentive (perhaps a stronger incentive) to report high to avoid audit within an enforcement project. Perhaps even more fundamentally, the notion that enforcement can increase compliance, which has received some empirical support (Dubin 2012, Plumley 1996), motivates the IRS's use of audit and enforcement as a general matter. As long as audit and enforcement remain an important part of the IRS's arsenal, concentrated enforcement may help guide their allocation.

Somewhat relatedly, concentrated enforcement could potentially create compliance backlash. Unlike entrenchment, in which increased evasion could occur as a strategic taxpayer move in response to enhanced enforcement, compliance backlash may arise as a result of enforcement crowding out norms of compliance. In some ways, this concern about compliance backlash does not fit well with concentrated enforcement. Compliance backlash typically occurs when enforcement increases, and thereby crowds out norms (Gneezy and Rustichini 2000). However, concentrated enforcement is premised on the notion that enforcement resources cannot be increased substantially. As a result, concentrated enforcement seeks to change the allocation of enforcement resources, not increase the amount. Nonetheless, part of the case for concentrated enforcement is that concentrated enforcement may make enforcement seem more salient, which, for all intents and purposes, may be perceived as an increase in enforcement resources. However, at least in the cash business tax sector, it is not clear how much to make of this concern regarding compliance backlash. As discussed above, some amount of empirical evidence links increased deterrence generally with increased compliance. Leandra Lederman has persuasively explored why deterrence can be compatible with—and necessary for—compliance and norms of compliance (Lederman 2003). The likely low, existing levels of voluntary compliance among cash business taxpayers described previously suggest that, at present, norms of compliance are unlikely to be pervasive in the cash business tax sector. As a result, rather than interfering with norms of compliance, additional deterrence may foster such norms. Moreover, to the extent that concentrated enforcement focuses on particularly noncompliant nodes, it can direct enforcement toward those taxpayers for whom the lowest norms of compliance are likely to exist.

Even if compliance backlash does not occur, the concentration of resources at the heart of concentrated enforcement also presents the risk of another form of backlash, political backlash. As recent examples have poignantly indicated, taxpayers and the media alike can react swiftly and negatively to perceived instances of unfair IRS targeting. While cash business taxpayers are not associated with the type of political activity that tends to merit particularly strong concerns regarding targeting, small businesses generally tend to evoke demands for protection in the political sphere (Eyal-Cohen 2011). While mere rhetoric should not stand in the way of effective tax enforcement reform, the concerns might be more sincere. To the extent that sincere concern exists about a regime that concentrates enforcement resources, the IRS can echo some of the statements that the UK has issued in its own tax campaigns, in order to assure the public that enforcement resources are being concentrated not as a means of unfairly targeting taxpayers, but rather as a means of focusing on and eliminating noncompliance. In particular, the IRS should emphasize that enforcement

projects are necessary to root out widespread noncompliance, as well as protect the fairness of the taxpaying system for compliant taxpayers. Using DIF scoring to focus enforcement projects on particularly noncompliant nodes, and on taxpayers likely to be most noncompliant, may help assure taxpayers that enforcement is being applied in an efficient and fair fashion. To be sure, the interaction between "fair" enforcement procedures (however such procedures are defined) and ensuring compliance is a more complex subject than this paper can address in its entirety. For now it is enough to say that, to the extent that concentrated enforcement improves compliance, these concerns should be addressed so as to improve, rather than defeat, concentrated enforcement.

Perhaps most importantly, it is worth stressing that this paper has not proven, nor attempted to prove that concentrated enforcement will definitively increase voluntary compliance in the cash business tax sector, or any other taxpayer sector. Rather, the paper attempts to flesh out the conditions under which concentrated enforcement may increase voluntary compliance of taxpayers, and has engaged in a preliminary examination of how concentrated enforcement may apply to the cash business tax sector. Whether concentrated enforcement indeed increases voluntary compliance depends on whether the increases in compliance as a result of concentrated enforcement outweigh any decreases (including any decreases by taxpayers who reduce compliance as a result of not being subject to an enforcement project). This paper has fleshed out the conditions under which concentrated enforcement may increase voluntary compliance. However, ultimately determining when such conditions exist and whether, as theorized, they do, indeed, increase total voluntary compliance ultimately requires empirical data.

The fundamentally empirical questions fleshed out above underscore the benefits, rather than detriments, of applying concentrated enforcement in an experimental fashion. As Alan Plumley has explained in earlier work, tax administrators' central goal should be to allocate resources in a manner that equalizes the marginal benefit / cost ratio across tax enforcement activities. Failure to do so would mean that greater benefit could be obtained by shifting resources to an enforcement activity that would produce higher marginal benefit (Plumley 2009). Just as important as stating this objective, however, is developing and testing innovative theories of enforcement to determine what enforcement activities produce what benefits and at what costs. To date, tax enforcement scholars have not focused sufficiently on the potential benefits of concentrated enforcement, and the possibility that such an approach may increase voluntary compliance. This paper seeks to remedy this oversight by exploring why, under certain circumstances, concentrating enforcement may increase such compliance. Putting concentrated enforcement in practice in an experimental fashion will allow tax administrators to develop data regarding the impact of concentration, which can be fine-tuned over time, as different iterations of concentration are tested. For instance, various questions include: how big can an enforcement project be, how high does the likelihood of enforcement have to be in an enforcement project in order to trigger the potential benefits fleshed out in this paper, how should publicity be tailored, how often should rotation of enforcement projects occur, how transparent should the criteria for selection of enforcement projects be, and in what taxpayer sectors might concentrated enforcement be applied? The theory of concentrated enforcement set forth in this paper provides a jumping off point for examining these questions. Enforcement projects can be put in place along the lines suggested in this paper, with data collected on the impacts of the enforcement projects on compliance both in and outside of the enforcement projects. Factors like the size of the enforcement projects, as well as the level of enforcement in the enforcement projects, can be varied over time, thereby producing more data and better estimations of the impacts of concentration. Determining what makes a best-case tax enforcement regime will require decades of data, borne out of experimentation based on theories of taxpayer responsiveness to various enforcement activities. This paper hopefully helps move tax administration toward a best-case tax enforcement regime by asking when concentrated enforcement might increase voluntary compliance and arguing that the case for concentrated enforcement in the cash business tax sector merits experimental application.

References

Alm, James, and Michael McKee. 2004. "Tax Compliance as a Coordination Game." Journal of Economic Behavior and Organization 54(3): 297–312.

Alm, James, and Michael McKee. 2006. "Audit Certainty, Audit Productivity, and Taxpayer Compliance." National Tax Journal 59(4): 801–816.

Bankman, Joseph. 2007. "Eight Truths About Collecting Taxes from the Cash Economy." Tax Notes October 29, 2007, p. 506.

Blumenthal, Marsha, Charles Christian, and Joel Slemrod. 2001. "Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota." National Tax Journal 54(1): 125–138.

Braga, Anthony A., and David L. Weisburd. 2010. Policing Problem Places. New York, NY: Oxford University Press.

Caldwell, Kyle. 2013. "Pay Your Tax or Face the Consequences, Minister Tells Buy-to-Let Investors." Telegraph September 19, 2013, 7:38 PM. http://www.telegraph.co.uk/finance/personalfinance/investing/10320504/Buy-to-let-Landlords-warned-over-unpaid-tax-on-rental-income.html.

Casey, Jeff T., and John T. Scholz. 1991. "Boundary Effects of Vague Risk Information on Taxpayer Decisions." Organizational Behavior and Human Decision Processes 50(2): 360–394.

CNBC. 2009. "UBS Tax Enforcement Project Widens." August 17, 2009. http://video.cnbc.com/gallery/?video=1217031897.

Comptroller General. 1976. "How the Internal Revenue Service Selects Individual Income Tax Returns for Audit." GGD-76–55.

Cooter, Robert D. 1996. "Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant." University of Pennsylvania Law Review 144(5) 1643–1696.

Department of the Treasury, Office of Tax Policy. 1999. "Report to Congress on Penalty and Interest Provisions of the Internal Revenue Code," available at http://www.treasury.gov/resource-center/tax-policy/Documents/intpenal.pdf.

Dubin, Jeffrey A. 2012. "Criminal Investigation Enforcement Activities and Taxpayer Noncompliance." http://www.irs.gov/pub/irs-soi/04dubin.pdf.

Eeckhout, Jan, Nicola Persico, and Petra E. Todd. 2010. "A Theory of Optimal Random Enforcement Projects." American Economic Review 100(3): 1104–1135.

Ellsberg, Daniel. 1961. "Risk, Ambiguity, and the Savage Axioms." Quarterly Journal of Economics 75(4): 643–669.

Eyal-Cohen, Mirit. 2011. "Why Is Small Business the Chief Business of Congress?" Rutgers Law Journal 43(1): 1–58.

Friedland, Nehemia. 1982. "A Note on Tax Evasion as a Function of the Quality of Information About the Magnitude and Credibility of Threatened Fines: Some Preliminary Research." Journal of Applied Social Psychology 12(1): 54–59.

Gemmell, Norman, and Marisa Ratto. 2012. "Behavioral Responses to Taxpayer Audits: Evidence from Random Taxpayer Inquiries." National Tax Journal 65(1): 33–57.

General Accounting Office. 1999. "IRS' Return Selection Process." GAO/GGD-99–30.

Gladwell, Malcolm. 2000. The Tipping Point: How Little Things Can Make a Big Difference. Little, Brown and Company.

Gneezy, Uri, and Aldo Rustichini. 2000. "A Fine Is a Price." Journal of Legal Studies 29(1): 1–18.

Goette, Lorenz, David Huffman, and Stephan Meier. 2006. "The Impact of Group Membership on Cooperation and Norm Enforcement: Evidence Using Random Assignment to Real Social Groups." American Economic Review 96(2): 212–216.

Government Accountability Office. 2012. "IRS Could Significantly Increase Revenues by Better Targeting Enforcement Resources." GAO-13–151.

Government Accountability Office. 2007. "Tax Gap: A Strategy for Reducing the Gap Should Include Options for Reducing Sole Proprietor Noncompliance." GAO-07–1014.

Graetz, Michael J., Jennifer F. Reinganum, and Louis L. Wilde. 1986. "The Tax Compliance Game: Toward An Interactive Theory of Law Enforcement." Journal of Law, Economics, and Organization 2(1): 1–32.

HM Revenue and Customs. 2013. "Reducing Tax Evasion and Avoidance." https://www.gov.uk/government/policies/reducing-tax-evasion-and-avoidance/supporting-pages/hmrc-campaigns (accessed Oct. 7, 2013).

Internal Revenue Service, Commissioner's Executive Task Force on Civil Penalties. 1989. "Report on Civil Penalties," available at 89 TNT 45-36, Doc 89–1586.

Internal Revenue Service. 2006(a). "The Examination (Audit) Process." FS-2006–10.

Internal Revenue Service. 2006(b). "Tax Gap for Tax Year 2006." http://www.irs.gov/pub/newsroom/overview_tax_gap_2006.pdf.

Internal Revenue Service. 2013. Data Book, 2012. IRS Publication 55B: Tables 1 and 9a.

Kagan, Robert A. 1989. "On the Visibility of Income Tax Law Violations." In Roth, Jeffrey A. and John T. Scholz (eds.), Taxpayer Compliance, Volume 2: Social Science Perspectives, 76–125. University of Pennsylvania Press.

Kelling, George L., Tony Pate, Duane Dieckman, and Charles E. Brown. 1974. "The Kansas City Preventive Patrol Experiment: A Summary Report." Police Foundation.

Kennedy, David M. 2011. Don't Shoot: One Man, A Street Fellowship, and the End of Violence in Inner-City America. New York, NY: Bloomsbury USA.

Kleiman, Mark A.R. 2009. When Brute Force Fails: How To Have Less Crime and Less Punishment. Princeton, NJ: Princeton University Press.

Lando, Henrik, and Steven Shavell. 2004. "The Advantage of Focusing Law Enforcement Effort." International Review of Law and Economics 24(2): 209–218.

Lawsky, Sarah B. 2009. "Probably? Understanding Tax Law's Uncertainty." University of Pennsylvania Law Review 157(4): 1017–74.

Lazear, Edward P. 2006. "Speeding, Terrorism, and Teaching to the Test." Quarterly Journal of Economics 121(3): 1029–1061.

Lederman, Leandra. 2003. "The Interplay Between Norms and Enforcement in Tax Compliance." Ohio State Law Journal 64(6) 1453–1514.

Lederman, Leandra. 2010. "Reducing Information Gaps To Reduce the Tax Gap: When Is Information Reporting Warranted?" Fordham Law Review 78(4) 1733–1760.

Lemos, Margaret H., and Alex Stein. 2010. "Strategic Enforcement." Minnesota Law Review 95(1): 9–58.

McCubbin, Janet G. 2004. "Optimal Tax Enforcement: A Review of the Literature and Practical Implications." OTA Working Paper No. 90.

McKinnon, John D., and Siobhan Hughes. 2013. "Small Business in IRS Sights." Wall Street Journal August 9, 2013, p. A1.

Morse, Susan Cleary, Stewart Karlinsky, and Joseph Bankman. 2009. "Cash Businesses and Tax Evasion." Stanford Law and Policy Review 20(1): 37–68.

Plumley, Alan H. 2009. "A Framework for Optimal Resource Allocation for the IRS." Paper presented at the 2009 HMRC-ESRC International Tax Analysis Conference, http://www.esrc.ac.uk/hmrc/images/Day1-Session7-Plumley-FULL-PAPER_tcm19-18214.pdf.

Plumley, Alan H. 1996. "The Determinants of Individual Income Tax Compliance: Estimating the Impacts of Tax Policy, Enforcement, and IRS Responsiveness." IRS Publication 1916 (Rev. 11-96).

Revesz, Richard L. 1997. "Environmental Regulation, Ideology, and the D.C. Circuit." Virginia Law Review 83(8): 1717–1772.

Schelling, Thomas C. 1978. Micromotives and Macrobehavior. New York, NY: W.W. Norton & Company.

Schrag, Joel, and Suzanne Scotchmer. 1997. "The Self-Reinforcing Nature of Crime." International Review of Law and Economics 17(3): 325–335.

Slemrod, Joel, Marsha Blumenthal, and Charles Christian. 2001. "Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Experiment in Minnesota." Journal of Public Economics 79(3) 455–483.

Slemrod, Joel. 2007. "Cheating Ourselves: The Economics of Tax Evasion." Journal of Economic Perspectives 21(1): 25–48.

Stack, Kevin M., and Michael P. Vandenbergh. 2011. "The One Percent Problem." Columbia Law Review 111(7): 1385–1443.

Sunstein, Cass R. 2002. "Probability Neglect: Emotions, Worst Cases, and Law." Yale Law Journal 112(1): 61–108.

Taxpayer Advocate Service. 2012. "Factors Influencing Voluntary Compliance by Small Businesses: Preliminary Results." http://www.taxpayeradvocate.irs.gov/userfiles/file/Full-Report/Research-Studies-Factors-Influencing-Voluntary-Compliance-by-Small-Businesses-Preliminary-Survey-Results.pdf.

Taylor, Shelley E. 1982. "The Availability Bias in Social Perception and Interaction. In Kahneman, Daniel, Paul Slovic, and Amos Tversky (eds.), Judgment Under Uncertainty: Heuristics and Biases, 190-200. New York, NY: Cambridge University Press.

Torgler, Benno. 2004. "Moral Suasion: An Alternative Tax Policy Strategy? Evidence from a Controlled Field Experiment." Economics of Governance 5(3): 235–253.

Tversky, Amos, and Daniel Kahneman. 1974. "Judgment Under Uncertainty: Heuristics and Biases." Science 185(4157): 1124–1131.

Wenzel, Michael. 2005. "Motivation or Rationalisation? Causal Relations Between Ethics, Norms and Tax Compliance." Journal of Economic Psychology 26(4): 491–508.

Witte, Ann D., and Diane F. Woodbury. 1985. "The Effect of Tax Laws and Tax Administration on Tax Compliance: The Case of the U.S. Individual Income Tax." National Tax Journal 38(1): 1–13.