The Laffer Curve for Amnesty

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Tax amnesty programs, which have the potential to impact many, are periodically proposed. Estimates of the number of taxpayers who owe back taxes range up to 20 million (Jackson 1986). From 1919 to 1952, the federal government had a program that granted tax evaders amnesty from criminal prosecution if they voluntarily acknowledged their non-compliance. Between 1982 and 1996, thirty-five states enacted some form of a tax amnesty (Table 1); some states, for example, Florida, Illinois and Louisiana, approved additional amnesties thereby exceeding the one-time only amnesty that officials frequently stress as essential (Mikesell 1986, Leonard and Zeckhauser 1987). Alm and Beck (1990) and Pommerehne and Zweifel (1991) stress that the effect of amnesty on taxpayer compliance becomes indeterminate unless taxpayers believe the officials.

This paper develops an aggregate political-economy model of tax amnesty, the future provision of enforcement, and by implication evasion of taxes and collection of unpaid taxes. In particular, we are concerned with public policy allocating resources to enforcement and the resulting aggregate behavior of the public.

Table 1

Tax amnesty proponents emphasize that enforcement resources must be increased following the amnesty. The intent seems obvious: accept amnesty by signing-up or afterwards be caught and receive harsher penalties. However, the claim of increased enforcement, even if intended and enacted, does not guarantee that the increase becomes permanent or ever occurs. Some (Alm, McKee, and Beck 1990, Alm and Beck 1990, Andreoni 1991, and Becker 1968) believe that amnesty reduces the need for future enforcement. These amnesty proponents emphasize the collection of revenues plus a longer-term positive impact on collections through placement on tax rolls of previous non-filers. Others believe that the Internal Revenue Service=s (IRS) inadequate collection procedures fail to detect most tax cheats. To such believers (Pilla 1998 and Lerman 1986), tax amnesty erases the past so that improved collection methods can be focused only on the present and future. Still others (Delong and Posey 1987 and Lerman 1986) consider the penalties for non-compliance with tax laws as being so excessive that amnesty provides a way of clearing the Areputation and conscience without facing high penalties@ (Delong and Posey, p. 43).

Opponents of tax amnesty stress the potential for reduced compliance. Some (Alm and Beck 1990 and Andreoni 1991) believe amnesty encourages increased non-compliance with the tax code by implying that enforcement has been ineffective or that enforcement acts as a lottery in which the individuals face a low-probability of detection.[1] To others (Jackson 1986) amnesty improperly rewards illegal behavior and, hence, creates undesirable incentives within society. A related argument stresses the relative impact on individuals who previously had voluntarily confessed and incurred penalties that the amnesty eliminated. Others focus on the inability to convince people that the amnesty is a one-time event; hence, some tax evaders still do not comply but await a future amnesty.

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[1] Report from the 1997 Congressional Joint Committee on Taxation. The Committee concludes that in the long-run amnesty reduces taxpayer compliance and that revenues would rise by $4.2 billion in the first year of an amnesty; and, that over a nine-year period collections would decline by $8 billion.

Model

Economists have modeled tax amnesty in two ways: expected utility and prospect theory. Good examples of the utility approach are found in Allingham and Sandmo (1972) and Cowell (1985), while Alm and Beck (1990) develop the prospect theory approach. Unlike these approaches that aggregate from the individual, we begin with the aggregate in order to focus analysis not on the individual=s response but on government=s policy response. After all, outcomes of the utility and prospect approaches depend on the political policies that follow.

In the tradition of Gary Becker (1968), and, also recently and more directly, that of J. R. Clark and Dwight Lee (1996 and 1997), we begin with long-run and short-run demand curves (Figure 1A), and from them, develop long-run and short-run Laffer curves respectively (Figure 1B). We then add community-indifference curves in order to identify the equilibrium (Figure 2).[2]

In Figure 1A, we posit a long-run demand curve, D_{LR}, with tax delinquency or dollars of taxes evaded on the horizontal axis, and the risk of being caught and convicted of tax evasion on the vertical axis. Tax evasion is only risky provided government allocates resources to enforcing its tax code. This is opposite to the mountain climbing example focused upon by Clark and Lee (1997) that because it is inherently risky requires resources to reduce risk (from climbing).

[2] The work of Clark and Lee expands upon earlier work by Buchanan and Lee (1982a and 1982b) that developed the short-run and long run implications for different time horizons through Laffer type curves.

At the origin of Figure 1A, where no resources are allocated to enforcement, tax evasion is without risk, and therefore, the dollars of expected taxes evaded become substantial. Zero enforcement implies

expected cost from evasion.[3] As the public realizes or perceives that a change in enforcement has occurred, expected compliance with the tax code changes accordingly. Thus, tax evasion declines with increased risk, giving the negatively sloped demand curve.

Of course, enforcement efforts change for a variety of reasons. Re-allocations occur within the IRS due to changed public attention, to a newly elected President, Congress, or other relevant leadership change. Importantly, taxpayers initially are not likely to take seriously such change. Following a change in risk, individuals may not believe that enforcement has changed, may incorrectly estimate the implications of the change, or may find adjusting their behavior awkward, if not impossible. For example, consider the quandary of the person who, having never filed a tax return, learns of an enhanced effort to detect tax cheats. What does this individual do? In response to the increased probability of detection, does the individual continue not filing a tax return or begin filing with the possibility of alerting the IRS to past discrepancies? Similar behavior quandaries C such as >should the individual cease filing taxes= C arise following an apparent reduction in the risk of detection. Evasive behavior may not be immediately adjusted to the alteration in risk. However, eventually individuals will fully adjust their tax evasive behavior relative to the risk of detection. The short-run demand curve, D_{SR}, in Figure 1A, depicts adjustment over a period too short to facilitate full adjustment to changes in risk.

[3] Government is assumed to use enforcement resources efficiently or at some constant level of efficiency so that the risk of detection changes with changes in enforcement resources.

The long-run Laffer curve (LRLC) of Figure 1B is derived from the long-run demand curve in Figure 1A. At zero risk, no enforcement of the tax code, substantial tax evasion is expected because it is costless. The percentage of delinquent taxes is substantial and the collection of current taxes is minimal. The long-run Laffer curve approximates passing through the origin because the collection of delinquent plus current taxes is a minimum. With resources allocated to enforcement, the risk of detection increases, providing incentive for increased taxpayer compliance. At low levels of risk, the change represents a relatively large percentage increase in risk and results in a relatively small percentage decrease in tax evasion. Therefore, tax evasion is inelastic with respect to risk at low risk levels so that the Laffer curve, plotting current and delinquent taxes collected against risk, shows a positive slope.[4] As enforcement continues to increase, the risk to tax evasion increases inducing rational taxpayers to reduce their evasion of taxes. Increasing the risk results in declining tax delinquency (increased tax compliance). In this continuum, a given absolute increase in risk becomes relatively smaller while the reduction in tax evasion, as a percentage of the decreasing level of evasion, becomes larger. Eventually, this delinquency effect exceeds the compliance gain so that the collection of delinquent plus current tax revenues declines. At this point the long-run Laffer curve becomes negatively sloped. When the enforcement is so vigorous that detection is almost certain, only risk seekers continue to evade taxes. Thus, unpaid taxes and their collection approach zero though they likely never fall to zero however high the enforcement. The curve labeled $LRLC_{0,}$ in Figure 1B, results with the form that has come to be termed a Laffer curve.

The long-run Laffer curve changes from a positive slope to a negative slope at risk level R_1. Economists recognize this as the point

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[4] When the risk is low, an allocation of additional resources to enforcement enhances tax revenues through the collection of additional unpaid taxes plus it increases immediate compliance with the tax code. It is likely that those under-reporting taxes would argue that the enforcement resources should more wisely be used (have a higher societal return) in some other activity.

of unit elasticity of demand at which revenues from current and delinquent taxes are maximized.

The long-run Laffer curve assumes optimal behavioral including adjustment to enforcement. However, in the short-run tax evasion is adjusted sub-optimally in response to change in enforcement resources, and thus, risk. For example, in the short run, additional enforcement resources increase current tax revenues and collection of delinquent taxes more than in the long run, because evasive behavior has not optimally decreased. Due to the too high level of tax delinquency the stock of delinquent taxes exceeds its optimal level. Obviously, past behavior cannot be altered, nor can current behavior be completely adjusted by a public that knows neither the when, where, nor how of an alteration in enforcement; nor, does the public know whether or not the alteration in resources impacts the rigor of enforcement.[5] Imperfect knowledge exists immediately following any changed allocation of enforcement resources. Until taxpayers learn of and become convinced of a change and its implications, less than full behavioral adjustment occurs. This implies that short-run increases in enforcement detect more tax evasion than in the long run. The opposite holds for short-run reductions in enforcement. Thus, the short-run demand curve D_{SR} (Figure 1A), is less elastic than the long-run curve. The less than full adjustment results in a short-run Laffer curve, $SRLC_0$ in Figure 1B, that is flatter than $LRLC_0$. Short-run Laffer curves always intersect the long-run Laffer curve from left (above) to the right (below).

The short-run Laffer curves depict the outcome of society=s short-run behavior relative to changes in risk. Government sets that risk level through its rigor of tax enforcement. Because scarce resources underpin the risk of tax evasion, society, through government, trades-off increased risk against the enhanced collection of taxes. We model this trade-off using community indifference

[5] For example, more resources could mean more IRS audits, more detailed audits, more vigorous prosecutions, more incarceration, new buildings, or more staff, without actual impact on enforcement.

curves along which societal welfare is held constant as the opportunity cost of risk due to enforcement is traded-off against taxes collected. Each indifference curve such as I_0 or I_1 in Figure 2 has a generally positive slope (but

could become backward bending at high levels of enforcement). The additional tax revenues from enhanced enforcement fund benefits that offset the benefits lost elsewhere from the reallocation of resources into that enforcement. [6] Indeed, a rational law-abiding society demands that more enforcement be offset by evidence of reduced tax evasion or the increased collection of delinquent taxes. In Figure 2, a vertical move to the north, representing increased risk with unchanged collection of current and delinquent taxes, lowers societal welfare. Likewise, a horizontal move to the west, representing reduced collection of current and delinquent taxes in combination with unchanged risk, harms society by advantaging the payoff to non-compliance with tax laws.[7]

Generally, indifference curves to the northwest represent decreases in societal satisfaction. I_1 represents a lower level of societal satisfaction than does I_0. The application of more resources increases the risk from non-compliance. Eventually, diminishing returns requires increasing amounts of enforcement resources in order to achieve a given increase in taxpayer risk. That is, indifference curves, such as I_0 and I_1, become more steeply sloped to the northeast. Plausibly, enforcement could become so intrusive and harassing as to yield negative value to society. If enforcement is widely perceived as intrusive and harassing, the indifference curves would bend backwards as in the example of the indifference curves I_0 and I_1 above R_2 in Figure 2.[8]

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[6] An example might be the federal government=s decision several years ago to use anti-submarine aircraft to patrol in the Caribbean as part of U.S. interdiction forces against drug traffickers. *Ceteris paribus*, the level of national defense must have declined.

[7] The indifference curves do not necessarily begin at the origin.

[8] Indeed, during the fall 1997 Congressional hearings pertaining to IRS enforcement and collection efforts, some presenters quite clearly articulated the belief that IRS tactics had become that intrusive and that citizens would be better off with a shrunken IRS.

Theoretical long-run equilibrium occurs at the tangency between the LRLC and a community indifference curve. The tangency has the community indifference curve I_0, positioned below $LRLC_0$, except at the tangency point.[9] Were the tangency to occur with the indifference curve lying above the Laffer curve, the tangency would identify, not a maximum level of satisfaction, but a minimum level.

The long-run equilibrium is unlikely to be obtained given government policy makers= shorter-run focus (Buchanan and Lee, 1982). More likely, a short-run political equilibrium is approximated that lies on $LRLC_0$ at E_0. E_0 is identified by the tangency between an indifference curve, I_0, and a short-run Laffer curve, $SRLC_0$ (Figure 2). At E_0, the community is in the long run, while the tangency between I_0 and $SRLC_0$ means that the political process is unable to achieve additional short-run gains through a policy of resource reallocation. Similar to the long-run equilibrium, the short-run equilibrium has the short-run Laffer curve above the indifference curve, except at the point of tangency. Most likely, this equilibrium lies along the positively sloped portion of $SRLC_0$.[10] Of course, this equilibrium could be located along either the positively or the negatively sloped portion of $LRLC_0$.

The amnesty literature discusses (and actual experience shows) that either increased or decreased enforcement may follow a tax amnesty.

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[9] If equilibrium occurs in the backward bending region of indifference curves, the equilibrium would necessarily be along the negatively sloped portion of the LRLC. However, it seems most unlikely that a society would knowledgeably push its allocation of enforcement recourses into the backward bending portion of its indifference curves.

[10] See above for the special case of the backward bending region of indifference curves.

A tax amnesty induces a short-run political process that rotates $SRLC_0$ about E_0. The amnesty may either increase tax compliance as citizens use the amnesty to avoid detection and more severe penalty (initially assuming it as a once-in-a-lifetime offer) or decrease tax compliance as they anticipate reduced risk or future amnesties. If amnesty increases tax compliance, only harder-core tax delinquents refuse the amnesty. Therefore, the short-run demand curve for delinquency rotates about its intercept with $LRLC_0$ to become steeper, generally less elastic; and $SRLC_0$ rotates to $SRLC_0'$ in Figure 3. The community indifference mapping remains unchanged. Because the rotation of the short-run demand curve is about its intercept with the long-run demand curve, $SRLC_0'$ continues to intersect $LRLC_0$ at E_0, but $SRLC_0'$ is no longer tangent to I_0. In this case, following the amnesty and the short-run taxpayer response, politicians increase the allocation of enforcement resources. Though the ensuing increased risk to taxpayers leads to both increased tax revenues from the collection of delinquent taxes and tax compliance, these increases are insufficient to offset the increased cost of the enforcement. Because $SRLC_0'$ is steeper than $SRLC_0$ at E_0, this point is no longer an equilibrium. Rather, the tangency (political equilibrium) moves north along $LRLC_0$ to E_1. At E_1, $SRLC_1$ is both tangent to I_1 and intersects $LRLC_0$. The tangency is with community indifference curve I_1, which represents a lower level of satisfaction.

In this short-run time horizon, the equilibrium changes from E_0 to E_1 as policy makers increase the allocation of enforcement resources in accordance with the claimed crackdown on continuing tax cheats. This requires that resources be reallocated from other uses to enforcement. While collection of delinquent and current taxes increases, the increase fails to offset the opportunity cost of the additional enforcement resources used. This cost of enhanced enforcement exceeds the benefit from increased tax compliance resulting in decreased community satisfaction.

This short-run situation is analogous to the Atransitional gains trap@ first developed by Gordon Tullock in 1975. The public is lured, in the short run, by fiscal considerations into accepting increased enforcement. Potential tax evaders observe the higher

levels of enforcement; and, realizing that evasion is now riskier, they factor this increased risk into their behavior. The result is that taxpayers adjust their evasion so that the amount of delinquent taxes collected increases insufficiently relative to the higher level of enforcement and societal welfare decreases. Furthermore, as tax evasion declines, the stock of delinquent taxes available for collection through enforcement declines back towards the original equilibrium. As in Tullock=s Atransitional gains trap,@ society is lured by short-run gains to evoke sub-optimal enforcement efforts with government using too many resources to enforce the tax code. Over time, the political process loses interest in tax enforcement and reallocates resources to competing interests. As this and the amnesty become a memory, society adjusts its behavior back towards the equilibrium at E_0. Society allocates enforcement resources to other uses as the amnesty becomes irrelevant to current tax compliance. $SRLC_0$' rotates B as does $SRLC_1$ B back to $SRLC_0$ so that society returns to equilibrium at E_0.

Of course, taxpayers may not believe that an amnesty is a one-time event. Instead, they may expect that a future amnesty will be granted. Based on this expectation and an unchanged risk level, tax evasion would increase following an amnesty because the expected compliance cost to individuals will have decreased. Therefore, the short-run demand curve (and its short-run Laffer curve) rotates to become more elastic. Indeed, according to Alm, McKee and Beck (1990, p. 23) A...the average level of compliance falls after an amnesty.@ If so, the amnesty reduces voluntary taxpayer compliance.[11] The analysis of the ensuing adjustment process is symmetrical to that in the above paragraph. In this case, the short-run Laffer curve becomes flatter so that the political equilibrium moves southwest along $LRLC_0$, leading politicians to decrease the allocation of enforcement resources in order to adjust to the new short-run equilibrium position. There results an increase in short-run

[11] For a careful analysis of the conditions under which expectations of a future amnesty lessen current compliance see Alm and Beck (1990).

community satisfaction due to the cost savings from the reduced use of some enforcement resources more than offsetting the reduction in tax revenues.

It seems unlikely that an amnesty would induce a permanent or long-run demand shift. Over time, any amnesty would be forgotten and lose its impact, becoming history to the next generation of taxpayers. However, should an amnesty induce a long-run higher level of tax compliance, additional taxpayers would expand the tax rolls. Due to this decrease in tax avoidance, the long-run demand curve in Figure 1A shifts leftward. $LRLC_0$ therefore shifts left to $LRLC_1$ (Figure 4), with $LRLC_1$ lying entirely to the left of $LRLC_0$. E_0 is no longer the political equilibrium. Because the indifference curves have not changed the new political equilibrium lies on indifference curve I_2 tangent to $SRLC_2$ at its intersection with $LRLC_1$. This location is northwest of I_0 at a lower level of community satisfaction. However, it is not necessarily at a lower allocation of enforcement resources. The cost of the added risk due to allocating more resources to enforcement is combined with reduced tax revenues. E_2 may be at a lower risk level (fewer enforcement resources). If so, the reduction in tax revenues exceeds the enforcement cost savings. Thus, the most likely outcome is a political policy that allocates additional resources to enforcement and lowers community satisfaction.

Figure 4
Current & Delinquent Taxes Collected
LR Adjustment to a New Political Equilibrium

Conclusion

The development of the Laffer curve for tax amnesty indicates a short-run cycling from the enforcement of the tax code following an initial amnesty. The development demonstrates that the political process will initially allocate more and then fewer resources to tax code enforcement, depending upon government=s perception of how carefully society is monitoring that enforcement, or the opposite depending upon the publics short-run reaction to the amnesty.

Finally, our analysis seems to extend readily to an immigration amnesty such as in the 1986 Immigration Reform and Control Act (IRCA) and to monitoring cheating during school tests.[12] The concern in both circumstances, as with a tax amnesty, is over the allocation of resources relative to the incentives created by amnesty, forgiveness, or looking the other way.

[12] As recently as 1986 the Immigration Reform and Control Act (IRCA) was passed granting legal status or amnesty for certain illegal aliens who petitioned the Bureau of Immigration and Naturalization during a 12-month period beginning May 5, 1987 (Chiswick 1988). The exact number of illegal aliens residing in the U.S. is unknown; estimates of the number range from 3.5 million to in excess of 10 million. Martin (1997) writes that up to 40 percent of California=s farm workers are illegal immigrants. According to him, this percentage was only 10 percent in 1990 indicating a growing, not a slacken, problem.

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