

**Working Paper Series  
Congressional Budget Office  
Washington, D.C.**

**Will Health Insurance Mandates Increase Coverage?  
Synthesizing Perspectives from the Literature in Health Economics,  
Tax Compliance, and Behavioral Economics**

David Auerbach  
Congressional Budget Office  
Washington, D.C.  
[david.auerbach@cbo.gov](mailto:david.auerbach@cbo.gov)

Janet Holtzblatt  
Congressional Budget Office  
Washington, D.C.  
[janet.holtzblatt@cbo.gov](mailto:janet.holtzblatt@cbo.gov)

Paul Jacobs  
Congressional Budget Office  
Washington, D.C.  
[paul.jacobs@cbo.gov](mailto:paul.jacobs@cbo.gov)

Alexandra Minicozzi  
Congressional Budget Office  
Washington, D.C.  
[alexandra.minicozzi@cbo.gov](mailto:alexandra.minicozzi@cbo.gov)

Pamela Moomau  
Joint Committee on Taxation  
Washington, D.C.  
[pamela.moomau@mail.house.gov](mailto:pamela.moomau@mail.house.gov)

Chapin White  
Congressional Budget Office  
Washington, D.C.  
[chapin.white@cbo.gov](mailto:chapin.white@cbo.gov)

August 2010  
Working Paper 2010-05

Working papers in this series are preliminary and are circulated to stimulate discussion and critical comment. These papers are not subject to CBO's formal review and editing processes. References in publications should be cleared with the authors. Papers in this series can be obtained at [www.cbo.gov](http://www.cbo.gov) (select Publications and then Working Papers).

## **Abstract**

This paper provides an analytical framework for evaluating the effects of individual health insurance mandates on coverage. That framework draws from the literature in three disciplines—health economics, tax compliance, and behavioral economics—to identify the factors that affect people’s responses to health insurance mandates. The health economics literature examines how people value health insurance and how changes in its costs affect coverage. The tax compliance literature indicates that the probability of detection and people’s attitudes toward risk affect perceptions of those costs. The salience of the mandate and social norms—factors identified in the literature of behavioral economics—are also important factors in decisions about coverage.

## **Acknowledgment**

This paper was prepared for the 40th Symposium of the National Tax Association in Washington, D.C., May 13, 2010. The authors thank James Baumgardner, Adam Block, Philip Ellis, Marjorie Hoffman, Rachel Levy, Bernard Schmitt, and Gene Steuerle for their comments. A version of this paper will be published in the December 2010 edition of the *National Tax Journal*.

## **I. Introduction**

Two laws enacted in March 2010, the Patient Protection and Affordable Care Act (PPACA, Public Law 111-148) and the Health Care and Education Reconciliation Act of 2010 (HCERA, P.L. 111-152), require almost every resident of the United States to have health insurance by January 1, 2014. Failure to comply with what is known as the individual mandate can carry a financial penalty, which—when the provisions are fully implemented in 2016—will range from \$695 for a single person with low or moderate income to as much as \$12,500 for a high-income family. This paper provides an overview of the analytical framework used by the Congressional Budget Office (CBO) and the staff of the Joint Committee on Taxation (JCT) to model the effects of an individual mandate on health insurance coverage.

Over the next decade, the two laws also will provide for about \$900 billion in new subsidies, including a substantial expansion of Medicaid and new tax credits to offset the cost of health insurance premiums for low- and middle-income families and small businesses. In each state, exchanges will be established to facilitate the purchase of coverage and the delivery of the subsidies. Some companies whose workers receive subsidies for health insurance through the exchanges could be required to pay penalties. Changes to the existing health insurance system include provisions that guarantee access to health insurance, regardless of preexisting conditions (although that provision would tend to increase the cost for healthier applicants). CBO estimates that, by the end of the decade, policies contained in the two new laws will reduce the size of the uninsured nonelderly population by more than 30 million people, from 54 million to 23 million U.S. residents (CBO, 2010b).

The legislative debate on health reform gave expression to a wide range of views regarding the consequences of the individual mandate. Some analysts argued that a mandate

would encourage more people—especially the young and the healthy—to purchase insurance (for example, Gruber, 2010). Others wondered whether uninsured people—especially the young and the healthy—would forgo coverage even with the mandate, particularly if they could spend less on a penalty than they would to purchase health insurance (Cassidy, 2010; Kling, 2010). Another focus of debate concerned the mandate’s enforceability. Some observers predicted that people would enroll out of fear that an expanded tax agency would have new powers; others suggested that many people would not comply as long as they believed that the Internal Revenue Service (IRS) did not have sufficient authority or resources to enforce the new requirement (Block, 2010; Cassidy, 2010).

Estimating the results of legislative proposals to expand health insurance coverage is challenging, partly because there is so little empirical evidence concerning individual people’s responsiveness to health insurance mandates. Since 2007, adults in Massachusetts have been required to have health insurance or face penalties for noncompliance, but it may be too soon to infer the effect of mandates from that experience. Moreover, that experience itself could be unique to Massachusetts. In the absence of direct empirical evidence, research from three different disciplines—health economics, tax compliance, and behavioral economics—provide alternative perspectives on the effect of the mandate on coverage.

- The literature on health economics examines how people value health insurance and how changes in cost can influence decisions to obtain coverage. Penalties, like subsidies, can affect decisions by making it cost more to be uninsured relative to the cost of being insured.
- The tax compliance literature indicates that the effectiveness of mandates can depend on people’s feelings about risk, about the likelihood of detection for noncompliance, and

about the size of penalties relative to the cost of compliance. But that literature also suggests that models of compliance behavior could consider additional factors, including people's tendencies to be honest; their propensity to feel guilt or shame when they break rules; and their perceptions about the desirability of promoting fairness.

- The literature on behavioral economics provides a framework for explaining why people do not always appear to act rationally or in their own self-interest. The salience of the mandate and social norms—factors identified in the literature of behavioral economics—are important factors in decisions about coverage.

CBO and JCT's analysis of individual mandates represents a synthesis of the three perspectives. This paper describes how those perspectives shaped the development of a model used to estimate the effect of the individual mandate on people's decisions to enroll in health insurance plans.

## **II. Overview of PPACA and HCERA**

PPACA, in combination with HCERA, uses incentives, as well as penalties, to help achieve the goal of increasing health insurance coverage for U.S. residents. Detailed descriptions of those provisions have been presented by JCT (2010). The laws' incentives to encourage people to obtain health insurance coverage include the following:

- Within each state, health insurance exchanges are established to link people with insurance plans and to enroll eligible applicants in new subsidy programs. Four standard health plans, labeled "bronze," "silver," "gold," and "platinum," will cover a specified set of benefits, paying (on average) 60 percent, 70 percent, 80 percent, or 90 percent, respectively, of a beneficiary's claims.

- Medicaid will be extended to most nonelderly legal residents of the United States whose income is below 138 percent of the federal poverty guideline, often called the federal poverty level.<sup>1</sup>
- A new premium assistance tax credit will be offered to taxpayers, depending on their circumstances. Some individuals and families whose income is between 138 and 400 percent of the federal poverty level will be eligible for the new credit. (People who have offers of coverage from their employers generally will not be eligible.) The refundable tax credit equals the difference between a “reference premium” and a specified percentage of income—initially ranging from about 3 percent for people whose income is 138 percent of the poverty level to 9.5 percent for people whose income is 400 percent of the poverty level. The reference premium is based on the silver plan with the second-lowest cost offered in a locality. Some lower income people also will be eligible for subsidies that would reduce the cost-sharing requirements under their insurance plans.
- Changes to the insurance market ensure that people will be offered coverage even if they have preexisting medical conditions; insurers will not be allowed to vary premiums on the basis of applicants’ health.

---

<sup>1</sup> Legal noncitizen residents who have resided in the United States for less than five years are not eligible for Medicaid but could be eligible for refundable tax credits provided through the exchange. Although PPACA by itself requires states to cover most people whose modified adjusted gross income is below 133 percent of the federal poverty level (in 2009, for most of the United States, that amount was \$10,830 for a one-person household), HCERA added a provision that instructs states to reduce the gross income of applicants by an amount equal to 5 percent of the federal poverty level, thus effectively raising the Medicaid income eligibility threshold to 138 percent of the federal poverty level.

- Some small businesses will receive tax credits to offset their contributions to premiums.

To be eligible, a company cannot employ more than 25 workers, and, in 2010, those workers must earn less than \$50,000, on average. Beginning in 2014, the earnings threshold will be indexed to the consumer price index for urban workers (CPI-U).

The legislation's penalties apply to certain employers, as well as to individual people who do not obtain coverage. In particular, a company with at least 50 full-time employees that does not offer insurance could be subject to penalties. Other penalties can be imposed if the insurance offered is deemed unaffordable. In all cases, penalties apply when at least one employee receives a premium assistance credit or cost-sharing subsidy through the state exchange.

### **III. The Health Insurance Mandate**

By January 1, 2014, nearly every resident of the United States will be required to have health insurance coverage. To comply with the new rules, people generally must be enrolled in qualifying plans that provide minimum essential coverage.<sup>2</sup> Subject to certain requirements, the Secretary of Health and Human Services will define "essential" benefits, ensuring that their scope is consistent with what is currently offered by typical employers. Qualifying coverage includes government-sponsored programs, such as Medicare and Medicaid, eligible employer-sponsored plans, and individual plans offered in the state's individual market. Penalties are to be assessed through the individual income tax system.

---

<sup>2</sup> Employer-sponsored and individually purchased plans that provide less extensive benefits are also eligible if they were grandfathered under the acts.

## A. Penalty Amounts

People who do not comply with the mandate will be assessed the greater of two amounts, either a flat rate or a percentage of income:

- *Flat dollar amount.* The flat amount per uninsured adult initially is set in 2014 at \$95 but rises to \$325 in 2015 and to \$695 in 2016. After that, the penalty will be indexed to the CPI-U. For dependent children under the age of 18, the penalty is half the amount a single adult would pay. The penalty for the entire filing unit—that is, the taxpayer, his or her spouse (if married), and any dependents—is capped at three times the amount for one adult (\$2,085 in 2016).
- *Percentage of income.* A penalty also can be set at a percentage of income that is in excess of the filing threshold: 1 percent in 2014, 2 percent in 2015, and 2.5 percent in 2016 and subsequent years. The “income” in question is the sum of the modified adjusted gross incomes of the taxpayer and any dependents who are required to file their own tax returns.<sup>3</sup>

The total penalty for the filing unit cannot exceed the average national cost of a bronze plan offered through the exchange that year. Projections for that value in 2016 range from \$4,500 to \$5,000 for a single plan and from \$12,000 to \$12,500 for a family plan (CBO, 2010a).

Some people can obtain an exemption from the mandate, and some people who are subject to the mandate could be exempt from the penalty. Noncitizens who reside in the United States illegally, members of certain religious groups, and prisoners are not required to have

---

<sup>3</sup> Modified adjusted gross income is adjusted gross income increased by the amount (if any) that normally is excluded by section 911 of the Internal Revenue Code (the exclusion from gross income for citizens or residents living abroad) plus any tax-exempt interest received or accrued during the tax year.



health insurance coverage.<sup>4</sup> People who are subject to the mandate but exempt from the penalty constitute a much larger group:

- *Low income.* Anyone in a filing unit whose income is below the income tax filing threshold is exempt from paying a penalty. The tax filing threshold equals the sum of the applicable standard deduction and the personal exemptions for the taxpayer and his or her spouse. The threshold amount does not include the exemptions for the taxpayer's dependents, so it declines as a percentage of the federal poverty level as family size increases. The filing threshold is typically under the federal poverty level—except for married couples who have no dependents (see Table 1).

**Table 1**  
Thresholds for Filing Returns and Becoming Subject to Mandate Penalties, 2016

Filing Status	Number of Dependents	Filing and Penalty Thresholds	
		Income Threshold (\$)	Relative to Federal Poverty Level (%)
Single	0	10,250	88
Head of Household	1	13,150	84
	2	13,150	66
Married Filing Jointly	0	18,400	117
	2	18,400	77

Source: Authors' calculations.

Note: The filing thresholds were calculated under the assumption that the provisions of the Economic Growth and Tax Relief Act of 2001 would expire.

- *Insurance is deemed unaffordable.* Someone who has an offer of employment-based insurance will be eligible for an affordability exemption if the required contribution for a self-only policy (which covers the worker but not his or her family) exceeds 8 percent of the worker's income. Someone without an employment-based offer will be eligible for an

<sup>4</sup> People who are exempt from the mandate for religious reasons must be members of and adhere to the tenets of a recognized religious sect that is exempt from self-employment taxes.

affordability exemption if the cost (net of subsidies) of the least expensive bronze plan in the local exchange exceeds 8 percent of his or her income.

- *Hardship.* People who experience hardship in obtaining coverage also are eligible for an exemption. How hardship is defined or proven is to be determined by the Secretary of Health and Human Services through regulations.
- *Members of Indian tribes.* All members of Indian tribes are exempt from the penalty.
- *Short coverage gaps.* Penalties are waived for one gap in coverage during a year, as long as the gap is not longer than three consecutive months.

CBO and JCT have estimated that 13 million to 14 million of the 21 million nonelderly people who will be uninsured in 2016 will be exempt from the mandate or its penalties because they are unauthorized immigrants, have low income, have an offer of coverage that is deemed unaffordable, or are members of Indian tribes. Other exemptions, such as those for hardship or religious beliefs, will further contract the population that is subject to penalties (CBO, 2010c).

The effects of those provisions can be illustrated for unmarried people and for four-person families (see Figure 1). A single childless person whose income is less than \$10,250 in 2016 (roughly 90 percent of the projected federal poverty level for that year) will be exempt from penalties because he or she will not have earned enough to be required to file a tax return. Uninsured people whose income is roughly between 90 percent and 300 percent of the federal poverty level amount typically would be subject to the flat dollar penalty of \$695; they also would be likely to be eligible for Medicaid or for tax credits. People whose income was higher would pay a penalty equal to 2.5 percent of family income. For people whose income was above about \$200,000, penalties would be capped at the cost of the lowest-cost bronze plan for an individual (perhaps between \$4,500 and \$5,000 per year). In 2016, a married couple with two

children—if all four family members lacked insurance—would begin paying penalties when their income exceeded \$18,500 (or about 80 percent of the federal poverty level); for families whose income was above that threshold but below 400 percent of the poverty level, the combined penalty would equal \$2,085. Above 400 percent, uninsured families would begin paying 2.5 percent of their income until the maximum penalty—which would equal the cost of the least expensive family bronze plan (estimated at \$12,000 to \$12,500, on average)—is reached when the family’s income exceeds about \$500,000.

## **B. Enforcing the Mandate**

The IRS will be responsible for enforcing the mandate and collecting fines. By January 31 each year, the agency will receive enrollment information from private insurers and public programs for the previous calendar year; that information will include the name and Social Security number of every person covered by each plan and the dates of coverage. Policyholders will receive similar information from insurers. The exchanges will be required to report to the IRS the name and taxpayer identification number of every person who receives an affordability or hardship exemption.

The reporting requirements should provide the IRS with the tools it needs to identify noncompliant people in the same way that it detects underreported income from W-2 forms and other reports. PPACA constrains somewhat the way the IRS may respond to noncompliance: Neither liens nor levies are to be used to collect penalties, nor is the IRS permitted to seek criminal penalties against people who do not comply with the mandate. However, the provisions of the laws do not prevent the IRS from using other common enforcement tools, such as data-matching programs, deficiency procedures (typically, audits), offsets to tax refunds or other

government payments, and civil penalties.<sup>5</sup> It is not yet known how the IRS will actually implement enforcement of the mandate; as is typically the case with authorizing legislation, neither of the acts includes appropriations to cover the costs of enforcement.

#### **IV. Experience with Mandates**

There is little empirical evidence regarding the responsiveness of individuals to health insurance mandates. Two states (Hawaii and Massachusetts) require many of their employers to provide coverage for employees or face penalties, but the responsiveness to a mandate requiring employers to *offer* insurance is likely to be different from the reaction to a broader mandate that individual people *obtain* coverage. Although Massachusetts currently requires adults to have health insurance, that mandate has been in existence for less than four years. State and local governments mandate other types of behavior, however, from requiring drivers to buy auto insurance to requiring school-age children to be vaccinated against a variety of diseases. Moreover, the federal government and many states require workers to pay income taxes and employers to pay minimum wages. Nevertheless, the comparability of such mandates to a health insurance mandate is debatable.

##### **A. The Massachusetts Experience**

As a result of a law enacted in 2006, every Massachusetts resident who is age 18 or older must have health insurance. Implementation of the individual mandate was phased in over three years. By May 1, 2007, everyone had to have health insurance — but there were no penalties for failure to comply during that year as long as coverage was in place on December 31. In 2008,

---

<sup>5</sup> In 2009, the IRS Criminal Investigation Program initiated 3,368 investigations (excluding narcotics-related financial crimes) and referred 2,038 cases for prosecution. Fewer than 1 million federal tax liens were filed in 2009, and about 3.5 million notices of levies were served on third parties. In contrast, the IRS assessed more than 26 million civil penalties related to individual income tax liabilities in 2009 (about 3 million of them were abated) (IRS, 2009).

however, everyone had to have coverage each month. In 2009, everyone was required to have coverage under a health plan with specific benefits. Penalty amounts also were phased in over the first three years—beginning at about \$219 per adult in 2007 and currently ranging from about \$200 to \$1,100 per year for each uninsured adult.<sup>6</sup> Massachusetts subsidizes insurance purchased for people in low-income households, and changes were also made to regulation of the insurance markets.

Although similar to the new national mandate, the Massachusetts mandate is more limited. First, it applies only to adults. Second, penalties begin to be imposed on people at higher incomes (beginning at 150 percent of the federal poverty level instead of somewhat below the level, as under the national mandate), and the maximum penalty in Massachusetts is substantially below the federal amount. Finally, although the Massachusetts Department of Revenue enforces the mandate, its ability to detect noncompliance is somewhat limited by a lack of documentation; in particular, the Social Security numbers of the insured are not included in reports provided by the insurers. Without that information, it is difficult to match tax returns and reports from insurers and thus to detect noncompliance.

The evidence from the Massachusetts mandate is not easy to interpret at this point, in large part because of the number of changes that occurred simultaneously. Among working-age adults, the uninsurance rate fell by 70 percent after the passage of the state's health reform legislation—from 13 percent in the fall of 2006 to 4 percent two years later (see Table 2). That drop, however, reflects all aspects of Massachusetts' health reform initiatives—including a Medicaid expansion, creation of new subsidies, market reforms, and extensive outreach—and

---

<sup>6</sup> Those penalties are adjusted annually and will remain in effect after the federal individual mandate is implemented unless the Massachusetts legislature takes action to reverse the 2006 state law.

thus would be an overestimate of the effect of the mandate itself. Notably, the largest decline in insurance coverage occurred between the fall of 2006 and the fall of 2007, after the requirement to obtain coverage and the subsidies had become effective but several months before imposition of the first penalties for noncompliance. Still, although the most substantial increase in coverage occurred in that first year and among people whose income was below 300 percent of the federal poverty level (and who thus were eligible for subsidies), coverage also expanded throughout the period among people in higher income groups.

**Table 2**  
Uninsurance Rates in Massachusetts Among Adults, Aged 18 to 64

Family Income	Fall 2006 (%)	Fall 2007 (%)	Fall 2008 (%)
Less Than 300 Percent of the Federal Poverty Level	23.8	12.8	7.6
More Than 300 Percent of the Federal Poverty Level	5.3	2.9	1.4
Total	13.0	7.1	4.0

Source: Long and Stockley (2009).

## **B. Other Types of Mandates**

Although experience with enforcing mandates for health insurance is limited, some lessons can be drawn from other types of enforcement. National compliance rates for certain other mandates—such as provisions requiring that workers receive at least the minimum wage, children be vaccinated, drivers purchase auto insurance and wear seat belts, and people pay taxes—range from 63 percent to 85 percent, and the rates appear to improve as enforcement intensifies (Ashenfelter and Smith, 1979; Davis and Gaglia, 2005; Insurance Research Council, 2006; IRS, 2007; NHTSA, 2008). The data from those studies of compliance can provide some insight about compliance overall. The rates of compliance do not necessarily clearly identify the effect of a mandate itself, however, because the figures can include people who might have complied even without a legal requirement to do so. Their actions could be attributable to the

value of a mandated item (such as automobile insurance), the existence of a subsidy (for free or low-cost vaccinations, for example), or changes in social attitudes (for example, when certain behavior—such as driving without ensuring that child passengers have fastened their seat belts—is no longer deemed acceptable and is, instead, frowned upon).

## **V. Perspectives from Health, Tax, and Behavioral Economics**

Data concerning existing federal and state mandates provide insight about compliance generally, but that information alone cannot explain why people comply at all or how different features of a mandate might affect coverage. The economics literature in three disciplines—health economics, tax compliance, and behavioral economics—reveals a variety of perspectives on how and why people might respond to a health insurance mandate.

### **A. Health Economics**

Some analysts have wondered why uninsured people would purchase health insurance as the result of a mandate (Cassidy, 2010; Kling, 2010). After all, for many people the penalty would cost less (at least in the very short-term) than a policy. Health insurance mandates differ from some other requirements, such as the requirement to pay taxes: In exchange for compliance, enrollees individually receive a tangible good—health insurance—that they value.

Health economics provides a framework for considering how changes in the price of health insurance affect coverage.<sup>7</sup> People compare the price of health insurance with their perception of its value. Those who are currently insured have decided that the value of coverage is greater than its cost (including the costs involved with finding and enrolling in a plan).<sup>8</sup> A reduction in the price would cause currently uninsured people to obtain coverage if the new price

---

<sup>7</sup> [\*Key Issues in Analyzing Major Health Insurance Proposals\*](#) (CBO, 2008) provides information on how CBO estimates that changes in the price of health insurance could affect coverage.

<sup>8</sup> Some people with significant health problems might not be able to obtain insurance coverage at any price unless they are guaranteed coverage through the individual market in their state.

is less than or equal to the value they place on health care coverage. Given the tremendous variation in individual “valuations” of health insurance and in the wide range of prices for insurance policies, some people are likely to be near the cusp of the “buy/don’t buy” decision, and moderate changes in price could induce them to purchase coverage. Empirical studies support this notion, suggesting that a new 25 percent subsidy for individually purchased coverage would cause between 2 percent and 6 percent of the uninsured population to buy that coverage (Auerbach and Ohri, 2006; Marquis and Long, 1995).

Because of the pervasiveness of employment-based insurance, the effects of any proposal that changes the opportunity cost of insurance depend not only on how people respond directly to those provisions but also on how businesses respond in their decisions about offering insurance coverage to employees and about paying part of the cost of that coverage. In general, businesses compete for workers by offering wage and benefit packages designed to attract and retain employees. Employers offer health insurance if they believe employees prefer such coverage to cash wages. Consequently, an employer’s response to a change in government policy will be a function of how that policy affects the attractiveness of health insurance to its workforce, on average (Monheit and Vistnes, 1999).

As with employers’ decisions to offer health insurance, workers’ choices to enroll in a plan will depend on the price of employment-based health insurance and alternative coverage options available to them or their spouses. From an employee’s point of view, the relevant price is the portion of the premium paid by the employee, not the total cost of coverage (Cutler, 2003;



Jacobs, 2009).<sup>9</sup>

Generally, empirical studies have considered the effect of subsidies on health insurance coverage. But mandates to obtain health insurance often include monetary penalties for noncompliance, and thus a mandate with a penalty also affects the relative price of health insurance by making it costlier to be uninsured. In this respect, the health economics literature is an obvious starting point to search for information about the possible effects of mandates on coverage choices. When viewed as analogous to subsidies, there can be a straightforward integration of mandate penalties into models of individual and business behavior regarding choices about health benefits. For example, a model of companies' decisions to offer health insurance in response to subsidies can be modified to reflect the average penalty people would face if workers became uninsured. Such penalties could cause a business to offer health coverage if it does not already do so. Likewise, models designed to identify the effects of subsidies on individual choices to obtain insurance or not can be altered to incorporate the effects of penalties.

The analytical framework of this paper, then, models the individual person's decision to obtain insurance in response to a mandate as follows:

$$E_i = Pr(V_i \geq (P_i - M_i)) \quad (1)$$

where  $i$  indexes individuals,  $E_i$  indicates the likelihood of individual enrollment in health insurance,  $Pr(\bullet)$  is the probability of enrolling,  $V_i$  is the valuation of health insurance by the individual,  $P_i$  is the premium (net of subsidies) an individual would pay, and  $M_i$  is the mandate's

---

<sup>9</sup> Even though workers, in the aggregate, ultimately "pay" for employers' contributions to their health insurance, primarily through reduced wages, employees' decisions about enrollment in a plan that their employers have decided to offer are not as sensitive to the amount employers pay.

effect on the individual. Thus, the probability of enrolling in a health insurance plan depends on a person's valuation of health insurance, the premium (net of subsidies), and the effect of the mandate. In this context, the mandate effect could simply be modeled as the amount of the statutory penalty.

Although health economics provides a useful starting point for such analyses of coverage, the ultimate effect of a mandate is not easily reduced to, and in fact could differ from, the predicted effect of treating penalty amounts as dollar-for-dollar equivalents to subsidies. People can respond to penalties and subsidies differently and in ways that are not considered in standard health economics models. As a result, modeling structures originally designed to estimate how coverage choices could change when subsidies are offered could be insufficient for examining mandates alone or in combination with other coverage-related policies.

## **B. Tax Compliance**

Tax compliance researchers begin with the supposition that people compare the marginal benefit of noncompliance (reduced tax payments, for example) with the expected marginal costs, which account for both the likelihood of punishment and its severity. That perspective provides an approach for evaluating the effective penalties uninsured people could anticipate under an individual health mandate.

Allingham and Sandmo (1972) first analyzed tax compliance under the assumption that taxpayers are risk averse and policymakers have three policy tools: the marginal tax rate, the probability of audit, and the penalty for misreporting income. Changes in marginal tax rates can induce offsetting substitution and income effects (the former because the gain from cheating rises with income and the latter because people become more risk averse as after-tax income

falls), and the evidence is mixed regarding which effect dominates (Andreoni, Erard, and Feinstein, 1998). Many of the early compliance models assumed that audits were expensive but that penalties could be imposed at low cost to the enforcing agency once an error had been detected. It is not surprising that those models typically showed that, subject to a fixed-budget constraint, the combination of high penalties and low audit rates was socially optimal (McCubbin, 2004).

Those results are sensitive to several underlying assumptions. First, feelings about risk vary from one group to another; younger people, for example, could be less risk-averse than older people are. Second, penalties are not imposed without cost. If penalties are increased, administering agencies might devote more resources to ensuring that their determinations are correct, and individuals could be more vigorous in defending themselves against a charge of noncompliance as they seek to avoid penalties (McCubbin, 2004). Administrators might, in fact, be unwilling to impose penalties that are thought to be overly severe (Slemrod and Yitzhaki, 1987). Third, taxpayers and tax authorities alike might shape their behavior in response to their best guesses regarding the likely actions of the other: Taxpayers could anticipate enforcement by the tax authorities and respond accordingly, and the tax authorities could try to keep taxpayers guessing about who will be audited, given limited resources (Andreoni, Erard, and Feinstein, 1998).

Evidence gathered from the individual income tax system illustrates how compliance can vary with the likelihood of detection and enforcement. Taxpayers are generally subject to the same penalties for misreported income and deductions, regardless of the source of the error. In 2001, about 84 percent of federal taxes were voluntarily paid on time. However, compliance rates vary substantially depending on a taxpayer's sources of income, and there are differences

from one type to another in the IRS's ability to detect reporting errors. Tax compliance is relatively high when the agency can match data from third parties (such as information on W-2 forms supplied by employers and financial institutions) to income tax returns and notify taxpayers of discrepancies. The net misreporting rate for income that is subject to third-party reporting is less than 5 percent. In contrast, the IRS in many cases cannot verify other forms of income, such as that from self-employment (including net income from nonfarm proprietors and farmers) because most third-party data are not independently reported to the IRS and resources for audits are limited.<sup>10</sup> Largely as a consequence, the rate for misreporting self-employment income and other forms of income that are not subject to third-party reporting exceeds 50 percent (IRS, 2007).

The findings suggest that penalties matter—but so do enforcement mechanisms. Increasing the likelihood that penalties will be imposed and collected increases the incentive to comply. By combining penalties with information-reporting requirements and matching programs, the new health insurance mandate would be expected to yield higher rates of compliance than is the case for equal-sized penalties under a weaker enforcement mechanism.

Still, models of tax compliance that consider only the policymaker's and administrator's tools do not appear to fully explain the relatively high rate of voluntary compliance observed in the United States. Tax compliance researchers have addressed this question by considering factors that tend to fall outside conventional models. The research suggests that compliance is influenced by taxpayers' willingness to be honest and their desire to comply with the law (Erard and Feinstein, 1994a), by the desire to avoid the feelings of guilt and shame that result from tax

---

<sup>10</sup> For individual income tax returns, the audit rate is about 1 percent; audit rates are somewhat higher for returns that report business income.

evasion (Erard and Feinstein, 1994b), by their perceptions of the fairness of the tax system and the way it is administered (Sheffrin and Triest, 1992; Spicer and Becker, 1980), and by their overall satisfaction with government (Alm, Jackson, and McKee, 1992). How to quantify each piece is not obvious, and understanding how they all fit together in explaining people's behavior is not fully explored in the compliance literature.

Nevertheless, the findings from the literature provide insights about how to refine the modeling of the mandate effect ( $M_i$  in Equation [1]). That effect can be divided into two terms: the effective penalty (*effpen*) and a vector of other factors that affect compliance:

$$M_i = M_{i,effpen} + M_{i,other} \quad (2)$$

The effective penalty is a function of the statutory penalty and the probability that it will be imposed and collected by the administering agency is shown by Equation (3):

$$M_{i,effpen} = f(S_i, D) \quad (3)$$

where  $S_i$  is the statutory penalty that applies to individual  $i$ , and  $D$  is the probability that the statutory penalty will be imposed and collected.<sup>11</sup>

The mandate effect includes other factors that affect compliance:

$$M_{i,other} = f(R_i, C_i) \quad (4)$$

---

<sup>11</sup> That probability itself could be partly a function of the size of the statutory penalty. It is likely that the administering agency would weigh the monetary costs of enforcement actions against the likely monetary gains to the government (in this case, the penalty) before taking action. Other factors that affect the probability of detection are the amounts of third-party information and resources available to the administering agency for enforcement.

where  $R_i$  is the individual's attitude toward risk and  $C_i$  is the individual's willingness to voluntarily comply with the mandate. The age of the individual is a proxy for attitude toward risk, with risk aversion assumed to increase with age.  $C_i$  represents other (largely unobservable) factors, such as shame, guilt, anxiety, and perceptions of fairness, that can be associated with voluntary compliance.

### **C. Behavioral Economics**

Sometimes people do not respond in the way that health economics models or tax compliance models would suggest. Behavioral economics can provide additional avenues to understanding a broader range of factors that influence decisions; in this case, decisions to obtain health insurance. (For an overview of that literature, see Liebman and Zeckhauser, 2008.) Behavioral economics considers that the usual assumptions of rationality and self-interest are overstated in conventional economics studies. Instead, rationality is bounded by constraints—decisions are affected by people's limited cognitive skills, by their limited access to information, and by the limited amount of time they have to process that information. Moreover, people sometimes make choices that are guided by their connections to others rather than solely on the basis of self-interest.

From the perspective of behavioral economics, rationality is bounded by asymmetrical preferences. Consider, for example, status quo bias. Samuelson and Zeckhauser (1988) reported that when Harvard University changed some of the health insurance options it offered employees, newly hired personnel were more likely to enroll than were people already on the university's payroll; those employees generally chose to keep their current plans. The appeal of the status quo can be explained, in part, by the concept of loss aversion. People appear to make decisions relative to a reference point—often, the status quo. When judging choices relative to

that status quo, people might weigh losses more heavily than gains. For uninsured people who are deciding whether or not to obtain coverage, that choice can be seen as existing between a certain loss (money spent on premiums) and the status quo (and the risk of some loss if medical assistance is needed later). Loss aversion suggests that people act to avoid the certain loss and, in this case, to remain uninsured (Schoemaker and Kunreuther, 1979).

Incomplete or incorrect information about a mandate also can influence behavior in ways that are not commonly explained by typical assumptions of rationality. There is evidence that people are more responsive the more salient—or more notable—is the true price (or other important attribute) of an item. At the grocery store, a tax that is incorporated into an item’s price (and displayed that way on the shelf) appears to have a greater influence on the decision not to purchase that item than will a sales tax that is added at the register (Chetty, Looney, and Kroft, 2009); toll roads that require cars to stop to pay cash at the booth seem less traveled than roads on which tolls are collected electronically (Finkelstein, 2007); and posting calories on a menu of food items at Starbucks stores in New York City might have contributed to a drop in food consumption per transaction at those locations (Bollinger, Leslie, and Sorensen, 2010).<sup>12</sup>

Some researchers have examined how people respond to social norms—particularly to the behavior of people they are most likely to compare themselves with (another “reference point”). A study of energy consumption in California showed that people who received messages about their neighbors’ utility use rates reduced their own energy consumption by more, on average, than did people who received messages appealing to self-interest, concerns about the environment, or social responsibility (Cialdini and Schultz, 2004). Indeed, results from another

---

<sup>12</sup> Although calories also were posted for beverages, there was almost no change in purchases of beverage calories at the same stores.

study detailed not just reductions in use among people who overconsumed relative to the community average but increases in usage among people whose consumption had been below the group's average (Schultz and others, 2007).

Research on behavioral economics is a relatively new area of inquiry. Some findings are derived from one-time experiments, and it is not clear whether all results could be replicated in other settings or with other types of consumers or products. There also is an identification problem inherent in many studies: There are plausible alternative explanations that could explain some results. Those caveats suggest that the results published in the emerging behavioral economics literature (and extrapolations from those findings) should be viewed with caution.

Still, the behavioral economics literature augments the literatures on health economics and tax compliance by providing a perspective that helps explain how decisions to obtain health insurance coverage could be affected by factors other than valuation of health insurance, feelings about risk, or the prospect of larger or smaller penalties. For example, the literature on loss aversion suggests that a penalty has a larger effect on demand for insurance than will a subsidy of equal value; mandates can effectively change the status quo by increasing the certain costs associated with being uninsured (via the penalty). Extrapolating from the salience studies would suggest that the strength of people's awareness of a mandate or the effective penalty could influence compliance. And the emerging studies of social norms imply that the existence of a mandate—independent of the penalty or the enforcement mechanism—could change attitudes toward the purchase of health insurance if people perceived the mandate as an expression of strongly held views within society.



Those perspectives are reflected in the modeling framework by refinements to the measures both of the effective penalty and of the factors that affect voluntary compliance. First, Equation (3), for the effective penalty, is expanded to include the effects of salience:

$$M_{i,effpen} = f(S_i, D, A_{i,pen}, A_{i,enf}) \quad (5)$$

where  $A_{i,pen}$  is the individual's awareness of the statutory penalty, and  $A_{i,enf}$  is the individual's awareness of the likelihood that a penalty will be imposed. The framework allows the salience of the mandate—and the salience of the enforcement mechanisms—to separately affect people's perceptions of the effective penalties.<sup>13</sup> The effective penalty increases as awareness of the mandate expands among the population, and it declines as the vulnerabilities in the enforcement mechanisms become more visible to people who are subject to the mandate.

Next, social norms are explicitly introduced into the variable representing the factors associated with voluntary compliance:

$$C_i = F(X_i, X, Z_i) \quad (6)$$

where  $X_i$  is an indicator for whether individual  $i$  is exempt from the penalty,  $X$  is the share of the reference group that is exempt from the penalty, and  $Z_i$  is a vector of the remaining other factors associated with voluntary compliance.

---

<sup>13</sup> Salience also can be affected by the actions of mandate administrators: Massachusetts conducted an extensive public education campaign that included mailing out notices about the health insurance mandate and airing television ads during Red Sox broadcasts. Despite those efforts, in the fall of 2008, more than one in four uninsured nonelderly adults was unaware of the mandate (Long and Stockley, 2009). For people who would be aware of a mandate, the gaps in enforcement might not be salient—and, indeed, tax authorities could try to prevent taxpayers from becoming aware of those gaps. One study documented an increase in the number of IRS press releases publicizing successful enforcement as the tax-filing deadline drew near, although the timing of the releases did not coincide with peaks in enforcement. Rather, IRS officials explained that the publicity was part of a deterrence strategy (Blank and Levin, 2010). The authors of the study did not discuss whether the increased press coverage affected taxpayers' compliance.

The identification of social norms as affecting compliance provides a way to link specific features of a mandate with compliance, so that changes in those features could produce changes in coverage. One way that social norms could affect voluntary compliance is through the scope of the mandate. In particular, the treatment of different populations could have spillover effects. For example, people whose income falls below the filing threshold will not be penalized for failing to comply with the mandate. Although it could be expected that people who were exempt from penalties would ignore the mandate, some could comply because they are affected by the prevailing social norm that directs everyone to obtain health insurance (possibly as a result of pressure from health care providers to enroll).<sup>14</sup> In contrast, people who are subject to the penalties might be less willing to comply if they observe others who are like them but avoid the penalties through affordability or hardship exemptions. Thus, the extent to which other people are exempt from the mandate could diminish acceptance of a new social norm about health insurance, causing a decline in compliance with the mandate.

## **VI. Conclusions**

This paper presents an overview of a modeling framework that builds on the health, tax, and behavioral economics literature and incorporates factors suggested by all three disciplines that could influence compliance with the new health insurance mandate.

The health economics perspective provides the starting point by suggesting that penalties raise the cost of being uninsured. That perspective alone implies that a penalty and subsidy of equal dollar amounts would have similar effects on coverage. The tax compliance literature

---

<sup>14</sup> Other factors also might contribute to compliance among people who are exempt from the mandate. Consider people whose income falls just below the filing threshold. Typically, decisions about obtaining coverage would have to be made before a year began, but the exemption is based on total income throughout the year. Because of uncertainty about their annual income, some people might comply because they believe they have a reasonable chance of earning more than the threshold and thus incurring the penalty.

demonstrates that the effective penalty will differ from the statutory penalty, and that the effective penalty generally will be lower because of gaps in enforcement. But that literature also opens the possibility that people respond to the mandate because of such factors as inherent honesty, shame, guilt, or anxiety. The behavioral economics perspective further refines the analysis and provides links between those factors to provisions in the mandate—the size of the effective penalty is affected by the salience of the mandate and the lack of salience regarding IRS enforcement, whereas voluntary compliance is affected by social norms.

To return to the question posed by the title of this paper, the response can be, “Yes, mandates will increase coverage.” The argument that most people would prefer to pay a penalty rather than purchase insurance if the penalty costs less than the premium ignores key considerations. First, most people get something in return when they purchase health insurance. Paying a penalty yields no such benefit. Second, people respond to laws because it is costly not to comply; the statutory penalty is only one determination of that cost, although the expected penalty could be less than the statutory penalty because of gaps in enforcement. The size of those gaps will depend on the amount of information and resources provided to the IRS. Finally, people’s response will be influenced by other factors, including social norms and awareness of the mandate. Although they are more difficult to measure, those factors cannot be ignored in any analysis of the individual mandate to purchase health insurance.

Thus, coverage will increase with the size of penalties, the scope and awareness of a mandate, and strength of enforcement (or at least people’s perception of its strength). In combination, those factors would probably increase health insurance coverage significantly from a policy that includes a mandate relative to an otherwise comparable policy that does not.

## References

- Allingham, Michael G., and Agnar Sandmo. 1972. "Income Tax Evasion: A Theoretical Analysis." *Journal of Public Economics*, 1(4), 323–338.
- Alm, James, Betty Jackson, and Michael McKee. 1992. "Deterrence and Beyond: Toward a Kinder, Gentler IRS." In Slemrod, Joel (ed.). *Why People Pay Taxes: Tax Compliance and Enforcement*. University of Michigan Press, Ann Arbor, Mich. 311–329.
- Andreoni, James, Brian Erard, and Jonathan Feinstein. 1998. "Tax Compliance." *Journal of Economic Literature*, XXXVI(2), 818–860.
- Ashenfelter, Orley, and Robert S. Smith. 1979. "Compliance with the Minimum Wage Law." *Journal of Political Economy*, 87(2), 333–350.
- Auerbach, David, and Sabina Ohri. 2006. "Price and the Demand for Nongroup Health Insurance." *Inquiry*, 43(2), 122–134.
- Blank, Joshua, and Daniel Levin. 2010. "When Is Tax Enforcement Publicized?" Law and Economics Research Working Paper 10-12. New York University School of Law, New York, N.Y.
- Block, Sandra. 2010. "IRS Lacks Clout to Enforce Mandatory Health Insurance." *USA Today*, April 29. [www.usatoday.com/money/perfi/insurance/2010-04-29/healthirs28\\_CV\\_N.htm?loc=interstitialskip](http://www.usatoday.com/money/perfi/insurance/2010-04-29/healthirs28_CV_N.htm?loc=interstitialskip).
- Bollinger, Bryan, Phillip Leslie, and Alan Sorensen. 2010. "Calorie Posting in Chain Restaurants." Working Paper 15648. National Bureau of Economic Research, Cambridge, Mass. [www.nber.org/papers/w15648](http://www.nber.org/papers/w15648).
- Cassidy, John. 2010. "ObamaCare by the Numbers." *New Yorker*, Posted March 26. [www.newyorker.com/online/blogs/johncassidy/2010/03/obamacare-by-the-numbers-part-2.html](http://www.newyorker.com/online/blogs/johncassidy/2010/03/obamacare-by-the-numbers-part-2.html).
- Chetty, Raj, Adam Looney, and Kory Kroft. 2009. "Salience and Taxation: Theory and Evidence." *American Economic Review*, 99(4), 1145–1177.
- Cialdini, Robert, and Wesley Schultz. 2004. *Understanding and Motivating Energy Conservation Via Social Norms*. Report prepared for the William and Flora Hewlett Foundation. [www.opower.com/LinkClick.aspx?fileticket=LOsDr3HVWdU%3D&tabid=76](http://www.opower.com/LinkClick.aspx?fileticket=LOsDr3HVWdU%3D&tabid=76).
- CBO (Congressional Budget Office). 2008. *Key Issues in Analyzing Major Health Insurance Proposals*, December. [www.cbo.gov/doc.cfm?index=9924](http://www.cbo.gov/doc.cfm?index=9924).
- CBO (Congressional Budget Office). 2010a. Letter to the Honorable Olympia Snowe about estimated premiums for "Bronze" coverage under the Patient Protection and Affordable Care Act. January 11. [www.cbo.gov/ftpdocs/108xx/doc10884/01-11-Premiums\\_for\\_Bronze\\_Plan.pdf](http://www.cbo.gov/ftpdocs/108xx/doc10884/01-11-Premiums_for_Bronze_Plan.pdf).

CBO (Congressional Budget Office). 2010b. Cost estimate for H.R. 4872, Reconciliation Act of 2010. March 20. <http://www.cbo.gov/ftpdocs/113xx/doc11379/AmendReconProp.pdf>.

CBO (Congressional Budget Office). 2010c. "Payments of Penalties for Being Uninsured Under the Patient Protection and Affordable Care Act." Posted April 22, revised April 30. [www.cbo.gov/ftpdocs/113xx/doc11379/Individual\\_Mandate\\_Penalties-04-30.pdf](http://www.cbo.gov/ftpdocs/113xx/doc11379/Individual_Mandate_Penalties-04-30.pdf).

Cutler, David M. 2003. "Employee Costs and the Decline in Health Insurance Coverage." *Frontiers in Health Policy Research*, 6(3), 27–53.

Davis, Matthew M., and Michael A. Gaglia. 2005. "Associations of Daycare and School Entry Vaccination Requirements with Varicella Immunization Rates." *Vaccine*, 23(23), 3053–3060.

Erard, Brian, and Jonathan Feinstein. 1994a. "Honesty and Evasion in the Tax Compliance Game." *Rand Journal of Economics*, 25(1), 1–19.

Erard, Brian, and Jonathan Feinstein. 1994b. "The Role of Moral Sentiments and Audit Perceptions in Tax Compliance." *Public Finance/Finances Publiques*, 49(Supplement), 70–89.

Finkelstein, Amy. 2009. "EZTax: Tax Salience and Tax Rates." *Quarterly Journal of Economics*, 124 (3), 969–1010.

Gruber, Jonathan. 2010. "Why We Need the Individual Mandate." Posted April 8. Center for American Progress, Washington, D.C. [www.americanprogress.org/issues/2010/04/pdf/individual\\_mandate.pdf](http://www.americanprogress.org/issues/2010/04/pdf/individual_mandate.pdf).

Insurance Research Council. 2006. *Uninsured Motorists, 2006 Edition*. Insurance Research Council, Malvern, Pa.

IRS (Internal Revenue Service). 2007. *Reducing the Federal Tax Gap: A Report on Improving Voluntary Compliance*. IR-2007-137. Department of the Treasury.

IRS (Internal Revenue Service). 2009. *Internal Revenue Service Data Book*. Publication 55B. Department of the Treasury.

Jacobs, Paul. 2009. "Health Insurance Demand and the Generosity of Benefits: Fixed Effects Estimates of the Price Elasticity." *Forum for Health Economics and Policy*, 12 (2), 1–25. [www.bepress.com/fhep/12/2/3](http://www.bepress.com/fhep/12/2/3).

JCT (Joint Committee on Taxation). 2010. *Technical Explanation of the Revenue Provisions of the "Reconciliation Act of 2010," as Amended, in Combination with the "Patient Protection and Affordable Care Act*. JCX-18-10. U.S. Congress. [www.jct.gov/publications.html?func=startdown&id=3673](http://www.jct.gov/publications.html?func=startdown&id=3673).

Kling, Arnold. 2010. "Incentives vs. Intentions." Posted March 24, Library of Economics and Literature, Indianapolis, Ind., [http://econlog.econlib.org/archives/2010/03/incentives\\_vs\\_i.html](http://econlog.econlib.org/archives/2010/03/incentives_vs_i.html).

Liebman, Jeffrey, and Richard Zeckhauser. 2008. "Simple Humans, Complex Insurance, Subtle Subsidies." In Aaron, Henry, and Leonard Burman (eds.). *Using Taxes to Reform Health Insurance: Pitfalls and Promises*. Brookings Institution Press, Washington, D.C. 230–255.

Long, Sharon, and Karen Stockley. 2009. "An Update on Insurance Coverage and Support for Reform as of Fall 2008." Massachusetts Health Reform Survey Policy Brief, Urban Institute, Washington, D.C.

Marquis, M. Susan, and Stephen Long. 1995. "Worker Demand for Health Insurance in the Non-Group Market." *Journal of Health Economics*, 14(1), 47–63.

McCubbin, Janet. 2004. "Optimal Tax Enforcement: A Review of the Literature and Practical Implications." OTA Working Paper. 90. Department of the Treasury, Office of Tax Analysis.

Monheit, Alan, and Jessica Vistnes. 1999. "Health Insurance Availability at the Workplace: How Important Are Worker Preferences?" *Journal of Human Resources*, 34(4), 770–785.

NHTSA (National Highway Transportation Safety Administration). 2008. *Seat Belt Use in 2007—Use Rates in the States and Territories*. DOT HS 810 949. Department of Transportation, National Center for Statistics and Analysis.

Samuelson, William and Richard Zeckhauser, 1988, "Status Quo Bias in Decision Making." *Journal of Risk and Uncertainty* 1 (1), 7-59.

Schoemaker, Paul, and Howard Kunreuther. 1979. "An Experimental Study of Insurance Decisions." *Journal of Risk and Insurance*, 46(4), 603–618.

Schultz, Wesley, Jessica Norma, Robert Cialdini, Noah Goldstein, and Vladas Griskevicius. 2007. "The Constructive, Destructive, and Reconstructive Power of Social Norms." *Psychological Science*, 18(5), 429–434.

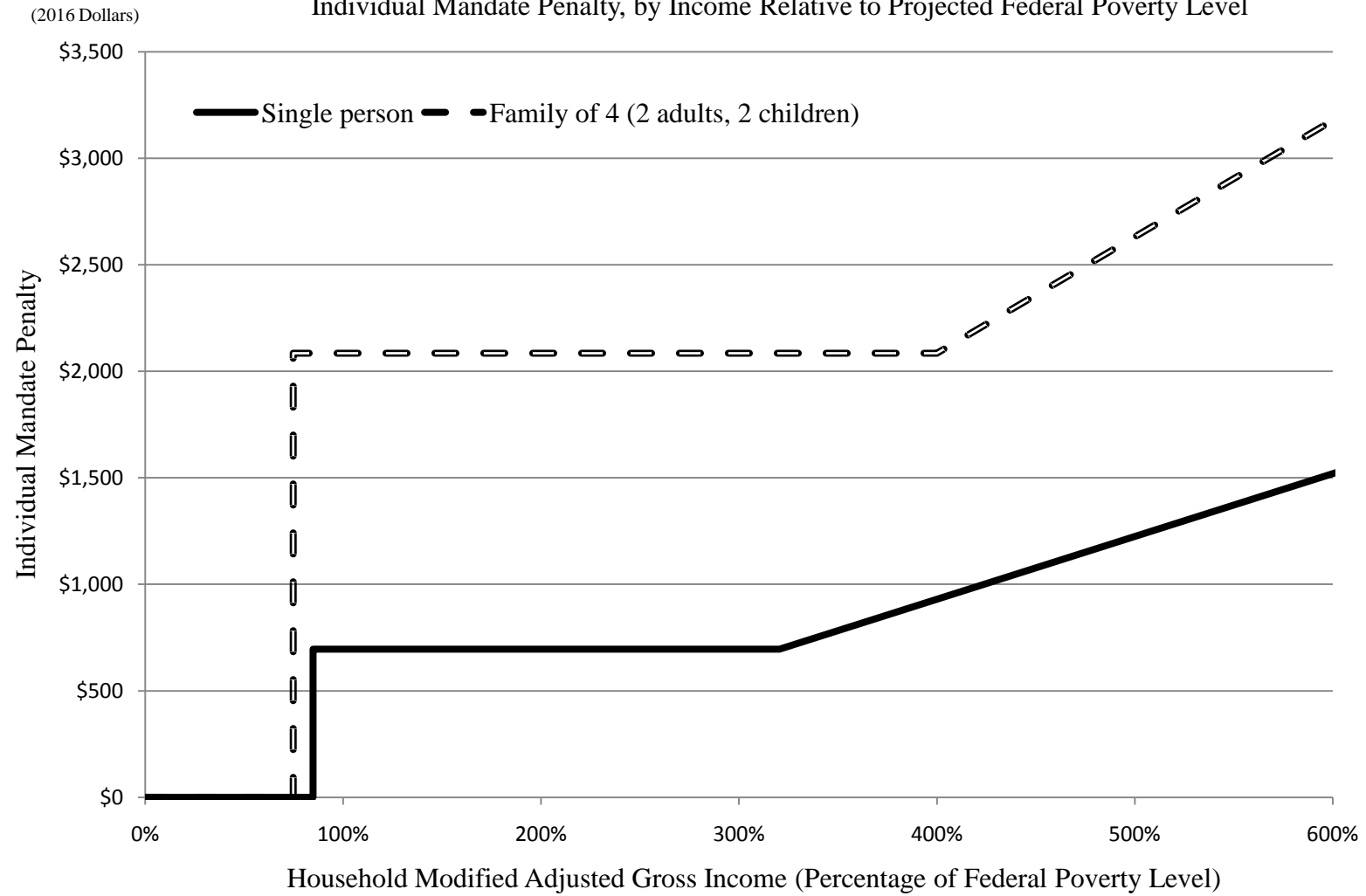
Sheffrin, Steven, and Robert Triest. 1992. "Can Brute Deterrence Backfire? Perceptions and Attitudes in Taxpayer Compliance," in Slemrod, Joel (ed.), *Why People Pay Taxes: Tax Compliance and Enforcement*. University of Michigan Press, Ann Arbor, Mich. 193–218.

Slemrod, Joel, and Shlomo Yitzhaki. 1987. "The Optimal Size of a Tax Collection Agency." *Scandinavian Journal of Economics*, 89(2), 183–192.

Spicer, Michael, and Lee Becker. 1980. "Fiscal Inequity and Tax Evasion: An Experimental Approach." *National Tax Journal*, 33(2), 171–175.

**Figure 1.**

Individual Mandate Penalty, by Income Relative to Projected Federal Poverty Level



Source: Authors' calculations.