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# THE ARCHITECTURE OF CONTEMPORARY HEALTHCARE REFORM AND EFFECTIVE MARGINAL TAX RATES

Seth J. Chandler\*

## I. THE STORY

*It is the year 2014. You are thirty-five years old with a wife and two kids, and you have recently graduated law school. You've set up a small criminal defense practice right here in Jackson, Mississippi. Last year, you earned \$85,000. Not bad. But, there's a problem. Your wife developed a chronic medical condition a few years back that costs \$30,000 per year on average.<sup>1</sup> You worry it could go higher if she has a bad year. Paying this amount has just about exhausted an inheritance she received from her mother. Until this year, you hadn't been able to get health insurance at a price you could afford,<sup>2</sup> particularly given those education loans you still have to pay off.<sup>3</sup> And you were concerned that in another year or so you'd be bankrupt. Who knows how your wife would get medical care after that.*

*But, things are looking up. Late in 2013, pursuant to section 1311(b) of the federal Patient Protection and Affordable Care Act (PPACA),<sup>4</sup> which, as*

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\* Law Foundation Professor of Law, University of Houston Law Center, Co-Director, Health Law & Policy Institute. A.B., 1979, Princeton University; J.D., Harvard Law School, 1983. I would like to dedicate this article to the late Professor David F. Bradford (Princeton University), who got me interested thirty years ago in issues such as those raised by the passage of the Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (to be codified in scattered sections of 26 & 42 U.S.C.). I hope he would not be embarrassed by what his teachings have wrought.

1. You believe your median medical expenses are about \$28,000 per year.

2. Prior to the enactment of the Patient Protection and Affordable Care Act, (PPACA) Pub. L. No. 111-148, 124 Stat. 119, federal law did not generally prohibit insurers of individual families from imposing pre-existing condition limits or charging premiums that reflect risk. Health Insurance Portability and Accountability Act of 1996 (HIPAA), Pub. L. No. 104-191, 110 Stat. 1936 (codified in scattered sections of 26, 29, and 42 U.S.C.), did limit the circumstances under which insurers could impose pre-existing condition limits, but did not place serious limits on the prices these insurers could charge persons with pre-existing conditions. See Sara Rosenbaum, *Insurance Discrimination on the Basis of Health Status: An Overview of Discrimination Practices, Federal Law, and Federal Reform Options*, 37 J. L. MED. & ETHICS 103, 109-10 (2009); Catherine Chou, *Insuring Medically Uninsurable Individuals*, 27 J. LEGAL MED. 443, 451-52 (2006). Mississippi is typical of many states in likewise permitting pre-existing condition exclusions and in not heavily regulating health insurance premiums. Georgetown University Health Policy Institute, Mississippi Consumer Guide to Getting and Keeping Health Insurance (2007), <http://healthinsuranceinfo.net/getinsured/mississippi/individual-health-plans/individual-health-insurance-sold-by-private-insurers/>.

3. The average cumulative educational debt burden of students graduating American law schools was about \$85,000 as of 2007-08, and is likely higher now given significant escalation in the price of legal education. MARK KANTROWITZ, *GROWTH IN CUMULATIVE EDUCATION DEBT AT COLLEGE GRADUATION* (2009), <http://www.finaid.org/educators/20090730cumulativedebt.pdf>. An earlier report by the American Bar Association had reported median law student debt on graduation as between \$60,000-\$80,000 as of 1999-2000. ABA COMM'N ON LOAN REPAYMENT AND FORGIVENESS, *LIFTING THE BURDEN: LAW STUDENT DEBT AS A BARRIER TO PUBLIC SERVICE* (2003), <http://www.abanet.org/legal/services/downloads/lrap/lrapfinalreport.pdf>.

4. Pub. L. No. 111-148 (2010). The provisions of this statute will be codified at various places in the United States Code. Although this codification is not complete, the Office of the Law Revision Counsel has published a table on the Internet indicating where various provisions will be codified. See

amended,<sup>5</sup> became law in 2010, Mississippi created a “Health Benefit Exchange.”<sup>6</sup> You can now buy a “silver plan” without pre-existing conditions or medical underwriting that affects your non-smoking family.<sup>7</sup> In many ways, it’s been a great thing. Your gross premium is \$8,722,<sup>8</sup> but because

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OFFICE OF THE LAW REVISION COUNSEL, UNITED STATES CODE TABLE OF CLASSIFICATIONS FOR PUBLIC LAWS, [http://uscode.house.gov/classification/tbl111pl\\_2nd.htm](http://uscode.house.gov/classification/tbl111pl_2nd.htm). Most of the bill will be codified within title 42 (the Public Health and Welfare) and title 26 (the Internal Revenue Code) of the United States Code. References to the United States Code in this article rely on the information contained in this table.

5. PPACA was amended less than two weeks later by the enactment of the Health Care and Education Reconciliation Act of 2010 (HCEARA), Pub. L. No. 111-152, 124 Stat. 1029 (2010).

6. The consequences under PPACA of a state’s failure to establish a health benefit exchange are important yet not entirely clear. Section 1311 of PPACA, 42 U.S.C. § 18031, is written in mandatory terms. It provides: “Each State shall, not later than January 1, 2014, establish an American Health Benefit Exchange (referred to in this title as an ‘Exchange’) for the State that— (A) facilitates the purchase of qualified health plans; (B) provides for the establishment of a Small Business Health Options Program (in this title referred to as a ‘SHOP Exchange’) that is designed to assist qualified employers in the State who are small employers in facilitating the enrollment of their employees in qualified health plans offered in the small group market in the State; and (C) meets the requirements of subsection (d).” If, indeed, states suffer some sort of loss in the event they fail to establish an exchange, the prospect of constitutionally suspect “commandeering” arises. See *New York v. United States*, 505 U.S. 144, 161 (1992) (stating that Congress “may not simply ‘commandeer[r] the legislative processes of the States by directly compelling them to enact and enforce a federal regulatory program.’” (quoting *Hodel v. Va. Surface Mining & Reclamation Ass’n, Inc.*, 452 U.S. 264, 288 (1981))). Section 1321(c) of PPACA, 42 U.S.C. § 18041, which is captioned “Failure to Establish Exchange or Implement Requirements,” appears to suggest, however, that the only consequence of such a failure is that the federal government “shall (directly or through agreement with a not-for-profit entity) establish and operate such Exchange within the State . . . .” A lawsuit filed by thirteen state attorneys general seven minutes after the passage of PPACA (and joined by five additional attorneys general in April 2010) alleges that a state not forming an exchange must either drop out of the Medicaid program or provide coverage for uninsured individuals with incomes between 133 percent and 200 percent of the federal poverty level. Complaint at 10-11, *Florida v. U.S. Dep’t of Health and Human Servs.*, Case No. 3:10-CV-91(N.D. Fla. filed March 23, 2010). The plaintiffs cite no statute or other authority to support this position.

7. Section 1201 of PPACA, 42 U.S.C. § 300gg et. seq., amends the Public Health Service Act, 58 Stat. 682 to prohibit pre-existing condition exclusions in any group health plan or in group or individual health insurance. It likewise prohibits medical underwriting except for tobacco use. These provisions takes effect on January 1, 2014, pursuant to section 1253 of PPACA, 42 U.S.C. § 300gg (notes following).

8. There are different estimates of how many gross premiums will be in policies purchased through the Exchange. The Congressional Budget Office in its modeling of the effects of healthcare reform has used numbers such as \$14,100 in its work. Congressional Budget Office, Letter to Sen. Harry Reid (Nov. 20, 2009), [http://www.cbo.gov/ftpdocs/108xx/doc10822/Reid\\_Subsidy\\_Examples\\_11-20.pdf](http://www.cbo.gov/ftpdocs/108xx/doc10822/Reid_Subsidy_Examples_11-20.pdf). Currently, health insurance for families costs about \$13,375. The Kaiser Family Foundation & Health Research & Educational Trust, *Employer Health Benefits (2009)*, available at <http://ehbs.kff.org/pdf/2009/7936.pdf>. The Kaiser Family Foundation also has a calculator that allows one to compute the estimated gross premium for health insurance in 2009 dollars under PPACA as a function of age and whether a single or family policy is purchased. See *Health Reform Subsidy Calculator — Premium Assistance for Coverage in Exchanges/Gateways*, <http://healthreform.kff.org/SubsidyCalculator.aspx>. Some exploration of that calculator suggests that the costs of health insurance in 2009 dollars under the Kaiser model can be very well approximated using the following cubic polynomials. For individuals, the formula is  $2,258 + 0.02396 x^3$ , where “x” is the rated age of the enrollee. For families, the formula is  $6,322 + 0.05598 x^3$ , where “x” is the rated age of the enrollees. There is reason to believe the Kaiser estimates are systematically low because the premiums they generate are less than current amounts, but I use them in this article, as they are a generally accepted reference and because they provide a conservative estimate of the effects of PPACA on effective marginal tax rates. One possible explanation of the low estimates provided by Kaiser is that the “Silver” policies on which they are based require greater cost-sharing than many current policies provided through an employer.

*you're not really wealthy, you get a \$647 tax credit.<sup>9</sup> So, the net cost is \$8,075, which you find you can just afford. Plus, although the cost-sharing maximum on these policies is normally \$12,000,<sup>10</sup> because of your moderate wealth, it's been reduced to \$8,000. So, you end up spending less on average on medical care than you used to and you have security against risk. You certainly don't have to pay any sort of penalty for failing to purchase insurance.<sup>11</sup> You're glad you voted to re-elect Obama in 2012. In fact, a local Congressman who bucked local sentiment and voted for PPACA back in 2010, wants you to appear in a commercial as a "success story of ObamaCare."*

*You now have the possibility of expanding your practice and hiring a bright young graduate of Mississippi College of Law. You figure that if you do so, you can increase your yearly gross by \$8,500 to \$93,500. And you could help the economy, too. There are some risks, to be sure, but it seems like a good idea. You realize, however, that 14.3% of the increase is going to go to Uncle Sam for federal income taxes.<sup>12</sup> And another 15.3% is going to be chewed up by FICA. And the State of Mississippi would take another 4.8% because of its state income tax. So, even before PPACA, you were only going to keep about 65.6%. That would have been better than nothing. But, you now discover that with increased income, your health insurance premium tax credit is going to shrink to zero, and your expected out-of-pocket costs are going to go from \$7,938 to \$10,622.<sup>13</sup> So, you're going to end up paying about \$3,331<sup>14</sup> more in medical expenses than you otherwise would. Thus, your net upside on taking a risk that might earn you \$8,500 is an unsatisfying \$2,252. You decide that with an effective marginal tax rate of*

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9. 26 U.S.C. § 36B (2010).

10. Under section 1302(c)(1)(A) of PPACA, 42 U.S.C. § 18022, the cost-sharing maximums for an "essential health benefits plan" cannot exceed those used by "high deductible health plans," as defined in 26 U.S.C. § 223(c)(2)(A)(ii), which is currently \$11,600 for families. See Rev. Proc. 2009-29, 2009-22 I.R.B. 1050. This ceiling is adjusted each year pursuant to 26 U.S.C. § 223(g) (2006) to take account of inflation. I assume that this number will have increased slightly by 2014.

11. Section 1501 of PPACA, as amended, creates a new section 5000A of the Internal Revenue Code that requires that once the health benefit Exchanges come on line, most persons who do not have health insurance ultimately pay the greater of \$695 per uninsured household member (up to \$2,085) or roughly 2.5% of their income as a federal tax penalty. The amount will be phased in, however, so that in 2014 and 2015 the tax penalties will be less. There are exceptions for certain religious groups and members of health-sharing ministries, as well as an exemption for persons for whom the net premium is more than 8% of their income. This latter group is likely to be composed primarily of persons who are older, who thus have high premiums, and who are not extremely wealthy. A family charged a premium on the basis of a person being age sixty and whose income is 6 FPL (\$132,000 for a family of four) is likely to be exempt from the section 1501 payment.

12. This article contains a number of computations of federal income tax liability along with FICA tax liability and state income tax liability. These figures must be estimates because individual personal and financial circumstances can affect tax liability significantly. The estimates are obtained by running data on representative individuals through the TAXSIM 9.6 software. See National Bureau of Economic Research, TAXSIM Related Files at the NBER, <http://www.nber.org/~taxsim/> (last visited May 20, 2010).

13. The details behind this computation are shown in section V of this article.

14. This number is the sum of the lost \$1,120 tax credit and an extra \$3,670 in out-of-pocket medical expenses.

*73.5%, you're going to forget about hiring. And appearing in that commercial doesn't seem as good an idea anymore.*

The story told here is a realistic prediction of what could happen to one American family if PPACA is not significantly altered. Although these experiences are more extreme than those that will confront some other American families, and while the story fails to depict fully the benefits wrought by enactment of PPACA, it nonetheless illustrates a fundamental issue with the sort of healthcare reforms that were explored at the time PPACA was enacted. Reform proposals, like PPACA, that share three premises are likely to create high effective marginal tax rates that may affect both national productivity and national tax revenue. These three premises are: (1) a refusal to subsidize purchase of health insurance by persons of more than moderate income; (2) an eagerness to extend private health insurance coverage to people of very modest means; and (3) an inability to reduce substantially the cost of health care provided through insurance. More broadly, given the current price of medical procedures, it is nearly impossible to achieve anything close to affordable health insurance for lower income levels without either imposing high marginal tax rates or creating an extraordinarily expensive healthcare program funded through deficit spending or higher taxes. As will be explored in this article, PPACA does not even achieve the frontier of tradeoffs between these contradictory objectives, however, because it is also infected with a phenomenon known as "notching" in which marginal tax rates spike to levels over 100% as enrollees in insurance provided through the Exchanges move between discrete income categories. Although the notching problem can, and should be, cured before the program takes effect in 2014, it will still be difficult to avoid high marginal tax rates on many Americans that distort economic behavior without more fundamental changes to the architecture of contemporary healthcare reform.

## II. PPACA SECTION 1401 (INTERNAL REVENUE CODE SECTION 36B)

I begin with a study of section 1401 of PPACA, which is captioned "Refundable Tax Credit Providing Premium Assistance for Coverage Under a Qualified Health Plan." Section 1401 is a central component of a web of statutory provisions intended to make it possible for individuals and families of moderate means to acquire health insurance through government-sponsored health benefit "Exchanges" that are supposed to exist beginning in 2014. The web addresses the current problem of perceived "unavailability" and "unaffordability" in two ways: first, by limiting the underwriting practices in which insurers selling through the exchange can engage; and second, by making the effective price paid by purchasers of insurance sold through the exchange an increasing function of income, poorer purchasers will tend to pay less than wealthier purchasers, even if they both pose the same risk or, absent income differences, would pay the same premium.

Section 1401(a), which adds section 36B to the Internal Revenue Code, implements the idea of an income-variant price for health insurance through the mechanism of a refundable tax credit. The availability of this credit depends on whether the collective incomes of group I will term “the enrollees” – the persons covered under a policy issued through an Exchange – fall within a statutory window. The window is defined by a ratio I will call “relative income,” which is the household income of the enrollees divided by the federal poverty line applicable to a family with that number of enrollees. Thus, if a family had a household income of \$44,100 and had four enrolled members, its relative income would be 200% because, at present, and as determined by the Office of Management and Budget,<sup>15</sup> the federal poverty line for a family of four in the continental United States is \$22,050. If the enrollees’ relative income for a taxable year is 100% or below, the enrollees are too poor to qualify for the tax credit, though they may well be eligible for other forms of arguably more generous forms of government assistance. If the enrollees’ relative income is above 400%, they do not qualify because they are too wealthy.<sup>16</sup>

For enrollees who fall within the statutory window created by section 36B and who are otherwise eligible,<sup>17</sup> the concept is that the enrollees never ultimately pay more for health insurance premiums than the amount that the government believes is affordable for them. This concept is implemented by making the amount of the credit roughly equal to the amount for which the policyholder could purchase a decent (if not lavish) health insurance policy through an Exchange – the “second lowest silver plan” – minus the amount it is believed that the taxpayer could afford.” This latter number is an “applicable percentage,” itself a piecewise linear function of the ratio between the enrollees’ household income (a variant of adjusted gross income) and the enrollees’ applicable federal poverty level, multiplied by the enrollees’ “household income.”<sup>18</sup> This applicable percentage goes from 2% up to 9.5% in a piecewise linear fashion. Thus, for a person with a relative income of 2.4, the amount he or she would be deemed able

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15. Internal Revenue Code § 36B(d)(3)(A) (section 1401(a) of PPACA) piggybacks the computation of the poverty line on to section 2110(c)(5) of the Social Security Act, 42 U.S.C. § 1397jj(c)(5) (2006), which in turns relies on 42 U.S.C. § 9902(2) (2006).

16. If one were searching for a single key that explained why PPACA creates such high effective marginal tax rates, the best answer is the coupling of new section 36B(c)(1) of the Internal Revenue Code and section 1402(b)(2) of PPACA, 42 U.S.C. § 18071. These provisions respectively limit eligibility for premium tax credits and eligibility for cost-sharing subsidies to households below 400% of the applicable FPL. Because PPACA provides fairly generous subsidies up until this threshold, the consequences of earning just more than 400% of FPL are very high.

17. The Chief Actuary of the Center for Medicare and Medicaid Services estimates that 79% of the enrollees in Exchange-based insurance plans will receive some form of subsidy. See RICHARD S. FOSTER, DEP’T OF HEALTH & HUMAN SERVS, CTRS. FOR MEDICARE & MEDICAID SERVS., ESTIMATED FINANCIAL EFFECTS OF THE “PATIENT PROTECTION AND AFFORDABLE CARE ACT,” AS AMENDED, (2010), [http://republicans.waysandmeans.house.gov/UploadedFiles/OACT\\_Memorandum\\_on\\_Financial\\_Impact\\_of\\_PPACA\\_as\\_Enacted.pdf](http://republicans.waysandmeans.house.gov/UploadedFiles/OACT_Memorandum_on_Financial_Impact_of_PPACA_as_Enacted.pdf).

18. The exact formula for the applicable percentage is set forth below, where “r” is the ratio of household income to the applicable federal poverty line:

to pay without undue financial strain would be 7.7% of his or her household income. By contrast, a person with a relative income of 2.6 would be deemed able to afford 8.34% of his or her household income for health insurance premiums.<sup>19</sup>

The amount of the tax credit is potentially quite substantial. To take an extreme example, consider a family of four with a relative income of 134%<sup>20</sup> that lives in a part of the country in which health costs are high and which is rated by the insurer based on the relevant policyholder being sixty-four years old. The Kaiser Family Foundation estimates that the gross annual premium for a plan purchased through an exchange will be \$25,591.<sup>21</sup> The enrollees will be assumed to be able to pay about 3.1% of their income, or \$904, towards health insurance, and will receive a tax credit for the difference of \$24,687. Even in a less extreme case, say the family with relative income of 178% that lives in a part of the country in which health costs are average and which is rated by the insurer based on the relevant policyholder being fifty years old, the tax credit will be \$11,036.

The section 36B tax credit is refundable. This means that if the taxpayer would ordinarily owe \$2,000 in taxes, and the premium tax credit is \$3,000, the tax does not simply go to zero. Instead, the government pays the taxpayer \$1,000. The premium tax credit is, therefore, difficult to distinguish from cash. Not only is the section 36B tax credit refundable, but, pursuant to section 1412 of PPACA,<sup>22</sup> it will generally be paid mostly in advance. Consider, for example, enrollees with \$30,000 in household income who face a premium of \$4,320. Paying that amount up front, or even at a rate of \$360 per month, could be challenging for the many in this group without sufficient savings. Under section 1412 of PPACA, however, the government effectively advances the enrollees a monthly portion of the estimated amount of the premium tax credit for the year by paying a monthly portion of the estimate to the insurer. The insurer then credits this government payment against the enrollees' premium bill. The government usually gets "repaid" for the advance because the amount of the actual premium tax credit under section 36B is generally reduced by the amount of these pre-payments. Thus, for example, if it turned out the taxpayer noted above was actually entitled to a premium tax credit of \$3,300 rather than \$3,000, the taxpayer's net premium tax credit would be \$300. On the other hand, if

$$\frac{1}{100} \left( \begin{array}{ll} 2 & r < 1.33 \\ -4.82353 + 5.88235 r & 1.33 \leq r < 1.5 \\ -2.9 + 4.6 r & 1.5 \leq r < 2 \\ -0.7 + 3.5 r & 2 \leq r < 2.5 \\ 0.8 + 2.9 r & 2.5 \leq r < 3 \\ 9.5 & 3 \leq r < 4 \end{array} \right)$$

19. The amount these families are likely to pay for health care (premiums plus cost-sharing) is likely to be considerably more than these percentages due to the existence of deductibles, coinsurance, and copayments.

20. Currently, this would be \$29,547.

21. Health Reform Subsidy Calculator, *supra* note 8.

22. 42 U.S.C. § 18082.

it turned out the taxpayer noted above was actually entitled to a premium tax credit of \$2,800, the taxpayer would have to add \$200 to its federal income taxes because the government would have advanced the insurer too much money on the taxpayer's behalf.

The section 36B scheme is, however, ultimately more complex. First, under section 36B(b)(2) of PPACA, the premium assistance amount is capped by the cost of the cheapest policy actually sold in the applicable Exchange. So, if the enrollees could purchase a "bronze" policy<sup>23</sup> in the Exchange for \$380 per month, the premium assistance amount cannot be more than \$380. Second, under section 36B(f)(2)(B) of PPACA, the amount of the subsidy can end up being more than one might suppose from the basic formula. If, for example, the taxpayer described in the preceding paragraph had actually been entitled to a premium tax credit of \$2,500, the taxpayer would have received the benefits of \$3,000 in premium subsidies, but would only have to repay the government \$400 in additional taxes. This is because PPACA caps taxpayer liability at \$400 per year, with an index for inflation.<sup>24</sup> Finally, there are numerous other qualifications and provisos dealing with such matters as pediatric dental coverage, the treatment of enrollees in states that increase premiums by requiring benefits in addition to those required by section 1302 of PPACA,<sup>25</sup> the treatment of families that have lawfully present and unlawfully present members, and various rules about indexing for inflation.

Economically, the subsidy provided by new section 36B of the Internal Revenue Code decomposes into a lump sum payment (the amount the enrollees would have received in a premium tax credit if they were at the low end of the eligibility window) and an income-contingent tax. Consider, for example, enrollees who, if they had a "relative income" of 133% and purchased a policy through an Exchange would have received a tax credit of \$12,208, but because they in fact had a relative income of 300% (while still purchasing a policy through the Exchange), received a tax credit of just \$6,827.<sup>26</sup> These enrollees may be thought of as having received \$12,208 in cash from the federal government as a reward for purchasing a policy through the Exchange but paying an extra tax of \$5,381 because of their income.

The magnitude of the effective income tax created by section 36B is not trivial. Although in the example above, the average marginal tax rate

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23. A bronze policy provides "a level of coverage that is designed to provide benefits that are actuarially equivalent to 60 percent of the full actuarial value of the benefits provided under the plan." PPACA § 1302(d)(1)(A), 42 U.S.C. § 18022(d)(1)(A). This percentage is determined by reference to a "standard population" and (explicitly) "without regard to the population the plan may actually provide benefits to." PPACA § 1302(d)(2)(A), 42 U.S.C. § 18022(d)(2)(A).

24. PPACA § 1401(a); I.R.C. § 36B(f)(2)(B).

25. 42 U.S.C. § 18022.

26. Such could be the case for a family living in a medium cost area and as to whom the insurer rated the policyholder of being age fifty.



imposed by section 36B on the enrollee above would be “just” 14.7%,<sup>27</sup> some enrollees will face considerably higher rates. Indeed, the rate may exceed 100%. Consider, for example, the family of three with a relative income of 390%, which with current rates would be \$71,409. Suppose further that the premium to cover the entire family with the second lowest cost silver plan is \$12,000.<sup>28</sup> That family would receive a premium tax credit of \$5,216. Now suppose the family earns an extra \$4,000 in income, taking them to \$75,409. They now receive a tax credit of zero because their relative income exceeds 400%. Thus, their average marginal tax rate for this increment in income is 130%. The family is better off forgoing the raise or just giving the money away to charity. This high rate exists because of the “cliff” created by denying any premium tax credit to persons with relative incomes of more than 400% of FPL, while offering substantial premium tax credits to persons with relative incomes just below 400% of FPL. Alternatively, consider the family identical to that described above but with a relative income of 280% and the opportunity to earn an additional 0.2 FPL in income. Their average marginal tax rate over that increment in income is 17.6%.

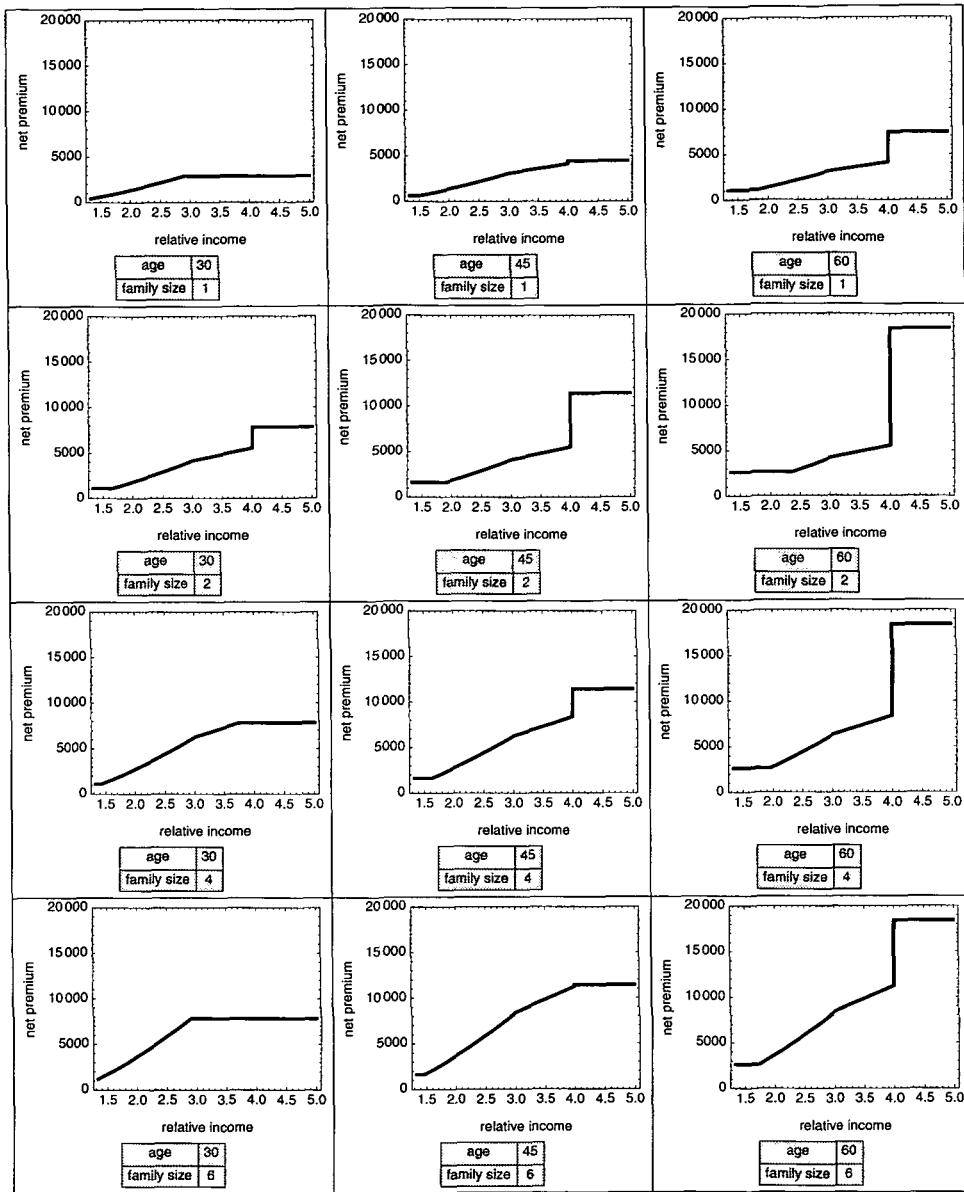
Of course, for others, the effective marginal tax rate will be lower than the 14.7% in the initial example. The family with an income that is 1.5 times the applicable FPL, but which has the opportunity to earn an additional 0.2 FPL in income, pays an average marginal tax rate on that increment of 11.8%.

Two sets of graphics help summarize these findings. The first set shows net premiums (premiums after the tax credit) as a function of relative income for enrollees of different ages and different family sizes. For each graphic, the x-axis shows the relative income of the enrollees. The y-axis computes net premium.

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27. This is because the incremental tax the enrollee paid is \$5,371, and the incremental income the enrollee earned was 1.66 (300% less 134%) multiplied by \$22,050, the current FPL for a family of four. This latter product is \$36,603. The quotient of \$5,371 and \$36,603 is 0.147.

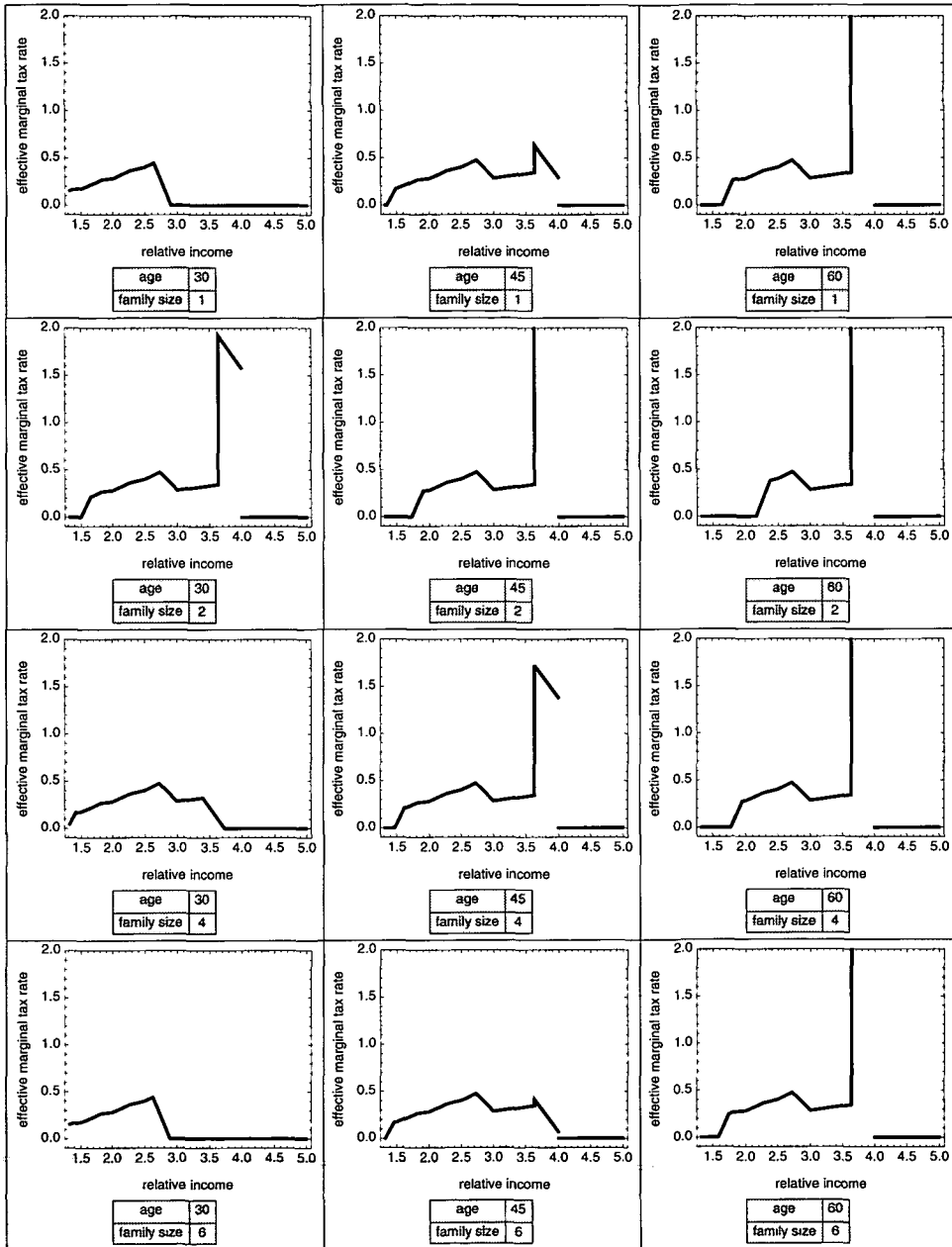
28. The Kaiser Family Foundation estimates that a family “silver” policy in a medium cost area in which the policyholder is forty-seven years old will face a gross plan premium of \$11,950. See The Kaiser Family Foundation, *supra* note 8.



Net Premiums For Different Ages and Family Sizes

The second set of graphics shows the effective marginal tax rate created by section 36B. Again, the x-axis shows the relative income of the enrollees. The y-axis now shows the ratio of the change in net premiums that would result from a 10% increase in relative income to the dollar increase in income resulting from a 10% increase in relative income. The y-axis thus reflects the effective marginal tax rate. Notice that the rate, though generally significant over most levels of relative income between

1.33 and 4, and over most ages, spikes to extraordinarily high levels as relative income hits the eligibility cutoff of 4. Here, particularly for older individuals who will face higher premiums, the effective marginal tax rate literally goes “off the chart” and exceeds 200%.



Effective Marginal Tax Rates For Different Ages and Family Sizes Resulting from Section 36B (PPACA section 1401) Tax Credit

These graphics suggest that, if the effective tax created by section 1401 of PPACA were the only consideration, the effect on incentives to work

and to take risk would be significant yet somewhat moderate, except when enrollees facing high premiums had incremental incomes that would place them above the 400% eligibility threshold. As discussed further below, however, other provisions of PPACA impose additional marginal taxes that augment a background of existing income-based taxes, such as federal income tax, "FICA," and, in many states, a state income tax. The accumulation of these taxes gives rise to the most significant effects on effective marginal tax rates and, derivatively, incentives to work.

### III. PPACA SECTION 1402<sup>29</sup>

In addition to reducing premiums for many persons purchasing health insurance through an Exchange, PPACA also reduces the amount many of these persons can expect to pay for "out-of-pocket" (OOP) costs. These are costs that would have been covered by enrollees' health insurance but for the existence of deductibles, coinsurance, and copays. This reduction in what is commonly called "cost-sharing" is accomplished by section 1402, captioned "Reduced Cost-Sharing for Individuals Enrolling in Qualified Health Plans." Just as section 1401(a) of PPACA makes the reduction in premium assistance depend inversely on "income," so too does section 1402.

#### A. *The Basic Relationship*

The relationship created by section 1402 of PPACA between cost-sharing and income is considerably more complex than that existing under section 1401. The key is to understand that the policies sold by the Exchange will come bundled with several cost-sharing parameters: (1) deductibles, the amount that enrollees must first pay before the insurer has an obligation to pay; (2) coinsurance, the percentage of covered medical expenses in excess of the deductible that enrollees must pay; (3) copayments, the amount enrollees must pay for certain treatments or prescriptions regardless of the amount of the expense; and (4) an "out-of-pocket" maximum (the "OOP limit") that caps the amount the enrollees must pay notwithstanding what would otherwise be called for.<sup>30</sup>

Although section 1402 sketches out how these cost-sharing parameters will respond to changes in the relative income of enrollees in insurance plans sold through an Exchange, the precise details, some of which will be important, remain to be developed by through the administrative process. Section 1402 works primarily, but not exclusively, by reducing OOP limits faced by poorer persons acquiring health insurance through an Exchange. The first step is for the Secretary of Health and Human Services to take the

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29. Section 1402 of PPACA is preliminarily codified at 42 U.S.C. § 18071.

30. Section 1302(c)(1) of PPACA (42 U.S.C. § 18022) caps the unmodified OOP limit at the amount used for what are called "high deductible health plans." Currently these amounts are \$5,800 for individual coverage and \$11,600 for family coverage, Press Release, Treasury, IRS Issue 2009 Indexed Amounts for health Savings Accounts, <http://www.ustreas.gov/press/releases/hp975.htm>, although these amounts adjust each year with inflation.

estimates of income made in connection with determining premium tax credits under new section 36B of the Internal Revenue Code (PPACA Section 1401) and to use those estimates to reduce the OOP limit of enrollees with incomes in the same 100% to 400% relative income window used by section 1401 of PPACA and who likewise purchase a silver plan. The amount of the initial reduction in the OOP limit component of cost-sharing is a function of relative income.

Unlike section 1401, in which the amount of government assistance varies continuously with relative income, section 1402 of PPACA places relative income in bins and adjusts cost-sharing parameters according to the bin in which the enrollees' relative income falls. If the relative income is between 100% and 200%, the OOP limit is initially reduced by two-thirds. Thus, if the OOP limit for wealthy purchasers of an exchange silver plan was \$4,000, the modified OOP limit for a person with a relative income of 180% would be \$1,333. If the relative income is between 200% and 300%, the OOP limit is initially reduced by one-half. In the example above, the modified OOP limit would thus be \$2,000. And if it is between 300% and 400%, the OOP limit is initially reduced by one-third. In the example above, the modified OOP limit would be \$2,667. These provisions significantly limit the risk of high and potentially bankrupting medical expenses faced by lower income enrollees.

### B. CAVL and ARLII

The "Coordination with Actuarial Value Limit" (CAVL) proviso in section 1402(c)(1)(B) of PPACA may truncate these reductions in the OOP limit. A reduction in out-of-pocket limits invariably increases the plan's expected share of covered health expenses because there will invariably be at least one individual who would not have hit the unmodified OOP limit, but will hit the lower modified OOP limit, and will thus pay less under the unmodified policy. The plan must make up the difference between the amount the individual would have paid and the amount the individual does pay. In mathematical terms, the reduction in the OOP limit has further right-censored the distribution of payments by enrollees and thus mathematically must increase the expected payments of the plan.<sup>31</sup>

31. If medical expenses are, as is commonly assumed, distributed lognormally (with mean  $m$  and median equal to the product of  $k$  ( $0 < k < 1$ ) and the mean), the distribution of expenses ( $u$ ) paid for by the insured under a policy that has, as its cost-sharing elements, a deductible ( $d$ ), a coinsurance rate ( $c$ ) and an out-of-pocket limit (*oop limit*) may be written using the piecewise formula set forth below:

$$\begin{cases} \frac{1}{2} \operatorname{Erfc}\left[\frac{\operatorname{Log}\left[\frac{km}{u}\right]}{2\sqrt{-\operatorname{Log}[k]}}\right] & u < d \\ \frac{1}{2} \operatorname{Erfc}\left[\frac{\operatorname{Log}\left[\frac{ckm}{(-1+c)d+u}\right]}{2\sqrt{-\operatorname{Log}[k]}}\right] & d \leq u < \text{ooplimit} \\ 1 & u > \text{ooplimit} \end{cases}$$

The actuarial value of such a policy may be written as:

The CAVL proviso states that for that for enrollees with relative incomes between 100% and 150%, the Secretary of Health and Human Services will adjust the modified OOP limit upwards until the “plan’s share of the total allowed costs of benefits provided under the plan” is 94%.<sup>32</sup> For enrollees with relative incomes between 150% and 200%, the Secretary adjusts the modified OOP limit upwards until the “plan’s share of the total allowed cost of benefits provided under the plan” is 87%. For enrollees with relative incomes between 200% and 250%, the Secretary adjusts the modified OOP limit back upwards until the “plan’s share of the total allowed cost of benefits provided under the plan” is 73%. And any doubts that the mechanism for decreasing the plan’s share of the total allowed cost of benefits is to increase the modified OOP limit appear to be dispelled by section 1402(c)(1)(B)(ii) of PPACA, which provides: “The Secretary shall adjust the out-of-pocket limits under paragraph (1) if necessary to ensure that such limits do not cause the respective actuarial values to exceed the levels specified in clause (i).”<sup>33</sup>

$$\begin{aligned}
 & 1 - \frac{1}{2m} \left[ \text{ooplimit} + (d - c) \text{Erf} \left[ \frac{\text{Log} \left[ \frac{km}{d} \right]}{2\sqrt{-\text{Log}[k]}} \right] + \right. \\
 & c m \text{Erf} \left[ \frac{-2 \text{Log}[k] + \text{Log} \left[ \frac{km}{d} \right]}{2\sqrt{-\text{Log}[k]}} \right] - d \text{Erf} \left[ \frac{\text{Log} \left[ \frac{ckm}{(-1+c)d + \text{ooplimit}} \right]}{2\sqrt{-\text{Log}[k]}} \right] + \\
 & c d \text{Erf} \left[ \frac{\text{Log} \left[ \frac{ckm}{(-1+c)d + \text{ooplimit}} \right]}{2\sqrt{-\text{Log}[k]}} \right] + \text{ooplimit} \text{Erf} \left[ \frac{\text{Log} \left[ \frac{ckm}{(-1+c)d + \text{ooplimit}} \right]}{2\sqrt{-\text{Log}[k]}} \right] - \\
 & \left. c m \text{Erf} \left[ \frac{-2 \text{Log}[k] + \text{Log} \left[ \frac{ckm}{(-1+c)d + \text{ooplimit}} \right]}{2\sqrt{-\text{Log}[k]}} \right] + m \text{Erf} \left[ \frac{-2 \text{Log}[k] + \text{Log} \left[ \frac{km}{d} \right]}{2\sqrt{-\text{Log}[k]}} \right] \right]
 \end{aligned}$$

32. This is a higher value of expected plan payments than exists even under a “Platinum Plan,” in which expected plan payments are 90% and which is the level at which cost-sharing is least. PPACA § 1302(d) (42 U.S.C. §18022).

33. Whether PPACA requires any similar adjustment takes place for enrollees with income-to-FPL ratios between 250% and 400% is not entirely clear. Section 1402(c)(1)(B)(i)(IV) of PPACA appears to state that the OOP limit should be increased until the plan’s share of the total allowed costs of benefits provided under the plan is equal to 70%. One might thus expect that the enrollee’s share of the total allowed cost of benefits provided under the plan would then be 30%. The problem with this reading, however, is that the silver plan (which insureds must purchase to be eligible for section 1402 assistance) *already* has, by definition, an actuarial value of 70%. It thus seems bizarre for section 1402(c)(1)(A)(ii)-(iii) of PPACA to call for a reduction in the OOP limit when section 1402(c)(1)(B)(i)(IV) of PPACA calls for a second stage that would raise the OOP limit to precisely where it began. If that were the intent, it would have been far simpler simply to delete sections 1402(c)(1)(A)(ii)-(iii) and 1402(c)(1)(B)(i)(III) of PPACA. Any hope that the two provisions might be reconciled by distinguishing between the “plan’s share of the total allowed cost of benefits provided under the plan,” the standard used in section 1402(c)(1)(B) of PPACA, and “actuarial value” used in section 1302 of PPACA, defining the silver plan, appears dashed by both the caption of section 1402(c)(1)(B) – “Coordination with Actuarial Value Limits” – and the precise language of section 1402(c)(1)(B)(ii) of PPACA in which the adjustments in the prior subparagraph are referred to as adjustments in the “respective actuarial values.”

A second provision of section 1402, the “Additional Reductions for Low Income Insureds” (ARLII), provides for further reduction in expected cost-sharing by the poorest purchasers of health insurance acquired through an Exchange. Individuals with relative incomes between 100% to 150% see the cost-sharing parameters reduced until their share of expected “total allowed costs of benefits provided under the plan” is just 6% (94% for the plan); individuals between 150% to 200% have a corresponding figure of 13% (87% for the plan) and individuals between 200% to 250% now have a corresponding figure of 27% (73% for the plan) rather than the 30% (70% for the plan) existing under unmodified silver plans.<sup>34</sup> The interaction of CAVL, which sets a cap on the actuarial value of the plan, and ARLII, which sets a floor on the actuarial value of the plan, could thus result in a very steep decline in the actuarial value of the plan – and a corresponding major change in its cost-sharing parameters – as the relative income of the enrollees crosses 250%.

### C. *The Economic Effects of Section 1402*

The increase in expected cost-sharing as a function of income can likewise be decomposed into a lump sum benefit (distribution of the maximum amount of expected cost-sharing reductions) plus an expected tax that depends on income. Consider, for example, a family that knows to a certainty they will have cost-sharing of more than the out-of-pocket limit under their unmodified silver plan. If that family earned a relative income of 3.9, section 1402 of PPACA potentially reduces their OOP limit by up to one-third. Thus, if the unmodified OOP limit under their policy is \$12,000, and the modified OOP limit is thus \$8,000, they will end up spending just \$8,000 out of pocket on medical expenses.<sup>35</sup> If that family’s relative income increases by 0.2 FPL to 4.1, the family will likely spend \$12,000 out of pocket on medical expenses.<sup>36</sup> Since the current FPL for a family living in the continental United States is currently \$22,050, an increase in income of \$4,410 will result in an effective “cost-sharing tax” of \$4,000, or 90.7%.

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The only other apparent possibility for how to handle OOP limits for enrollees with income-to-FPL ratios between 200% to 400% would appear to be one under which the Secretary pays the plan as if the modified OOP limits had been adjusted upwards to restore 70% actuarial value, but the enrollees pay according with the unadjusted modified OOP limits in place. Although this interpretation reconciles sections 1402(c)(1)(A)(ii)-(iii) and 1402(c)(1)(B)(i)(III) of PPACA and might be permitted by section 1402(c)(3) of PPACA, which calls for the Secretary to subsidize the plans to account for reductions in cost-sharing, it makes it very difficult to understand the requirement in section 1402(c)(1)(B)(ii) that the Secretary adjust the out-of-pocket limits to ensure that the actuarial values meet the requirements of section 1402(c)(1)(B)(i).

34. The figures under the original version of PPACA were less generous. Section 1001(b) of HCEARA modified PPACA, 42 U.S.C. § 18071, however, to require even greater cost-sharing subsidies than the original PPACA.

35. If the family’s medical payments are \$30,000, they will hit the \$8,000 OOP limit so long as the coinsurance percentage under the plan is greater than the quantity \$8,000 minus the deductible divided by \$30,000. This is almost certain to be true for all silver plans.

36. The family will end up paying \$12,000 out of pocket so long as the coinsurance percentage under the plan is greater than the quantity \$12,000 minus the deductible divided by \$30,000. This is likely to be true for all silver plans.

Again, it is easy to find other situations in which section 1402 by itself generates high effective marginal tax rates for enrollees with these sorts of high expected medical expenses. A high-expense family of two with a relative income of 2.95 is quite likely<sup>37</sup> to face an effective marginal tax rate of 137.3% if its income increases by 0.1 FPL.<sup>38</sup> On the other hand, a family of six with a relative income of 2.7 faces an effective marginal tax rate of just 16.9% if its income increases by 0.4 FPL.<sup>39</sup> And a family of four fortunate enough to see its relative income double from 2.1 to 4.2 would face an effective marginal tax rate of “just” 13%.<sup>40</sup> Because of the discontinuities in the relationship between cost-sharing and income, effective marginal tax rates can vary significantly depending on the precise before and after incomes of the enrollees.

The picture is more complicated for enrollees with low expected medical expenses because there are two potential effects of section 1402 of PPACA: (1) a change in deductibles, copayments, and coinsurance for enrollees with relative incomes under 250%; and (2) a change in OOP limits for all those eligible, though the limit is unlikely to be hit. Suppose, for example, an unmodified family silver plan has a deductible of \$4,000, a coinsurance percentage of 20%, no copayments, and an \$11,600 OOP limit. It is plausible to believe that, for an enrollee family with a relative income of 1.9, section 1402 of PPACA would modify those terms to a \$1,330 deductible, a coinsurance percentage of 9%, and an OOP limit of \$4,000. Consider the situation of a family who has purchased and who believes they have a 40% chance of having expenses covered by the plan of \$1,500, a 50% chance of having expenses covered by the plan of \$3,000, and a 10% chance of having expenses covered by the plan of \$25,000. This family would expect on average to pay about \$1,624 in out-of-pocket medical expenses.<sup>41</sup> Now, suppose, however, this family has the option to increase its income by 0.2 FPL. The family would now quite likely face a modified silver plan with far less generous cost-sharing subsidies – perhaps a \$4,000 deductible, 30% coinsurance, and a \$6,000 OOP limit. If so, the Jones’ expected out-of-pocket expenses would be \$2700.<sup>42</sup> Thus, by earning 0.2

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37. One must say “quite likely” because one does not know for sure how the CAVL proviso in section 1402 of PPACA will be implemented by the Secretary of Health and Human Services and whether the out-of-pocket limit will in fact respond to it.

38. Assuming the out-of-pocket limit for the plan for persons with a relative income over four was \$12,000, the amount this family will pay out of pocket increases from \$6,000 (half the regular out-of-pocket limit) to \$8,000 (two-thirds of the regular out-of-pocket limit), while the family’s income increases by just \$1,457.

39. The amount the family will pay out of pocket increases from \$4,000 to \$6,000 when the family’s income increases by \$11,812.

40. The amount the family will pay out of pocket increases from \$6,000 to \$12,000, while the family’s income increases by \$46,305.

41. There is a 40% chance this family will pay \$1,345, a 50% chance they will pay \$1,480, and a 10% chance they will pay \$3,460. The weighted average of these payments is \$1,624.

42. There is a 40% chance this family will pay \$1,500, a 50% chance they will pay \$3,000, and a 10% chance the family will pay \$6,000. The weighted average of these payments is \$2,700.



FPL more, they would lose \$1,075. If the FPL for this family was \$22,050, the average marginal tax rate on this income would thus be 24.4%.<sup>43</sup>

By contrast, some families with low expected medical expenses will face much smaller marginal tax rates caused by section 1402's tying of cost-sharing subsidies to income. Suppose, for example, that the Jones family initially had a relative income of 3.5 and had the option to increase that relative income to 4.5. Assuming the CAVL proviso is not binding, the only thing they would lose as a result of the income gain would be 10% of facing the full \$12,000 OOP limit, rather than a reduced \$ 8,000 OOP limit. Thus, the effective average marginal tax rate the family would face from section 1402 when considering their option to increase income would be just 1.0%.<sup>44</sup> The low risk of confronting the lowered OOP limit, coupled with the absence of any changes to deductible and coinsurance rates when one starts at substantial relative incomes, keeps the numerator in this computation small and the large possible increase in income keeps the denominator large.

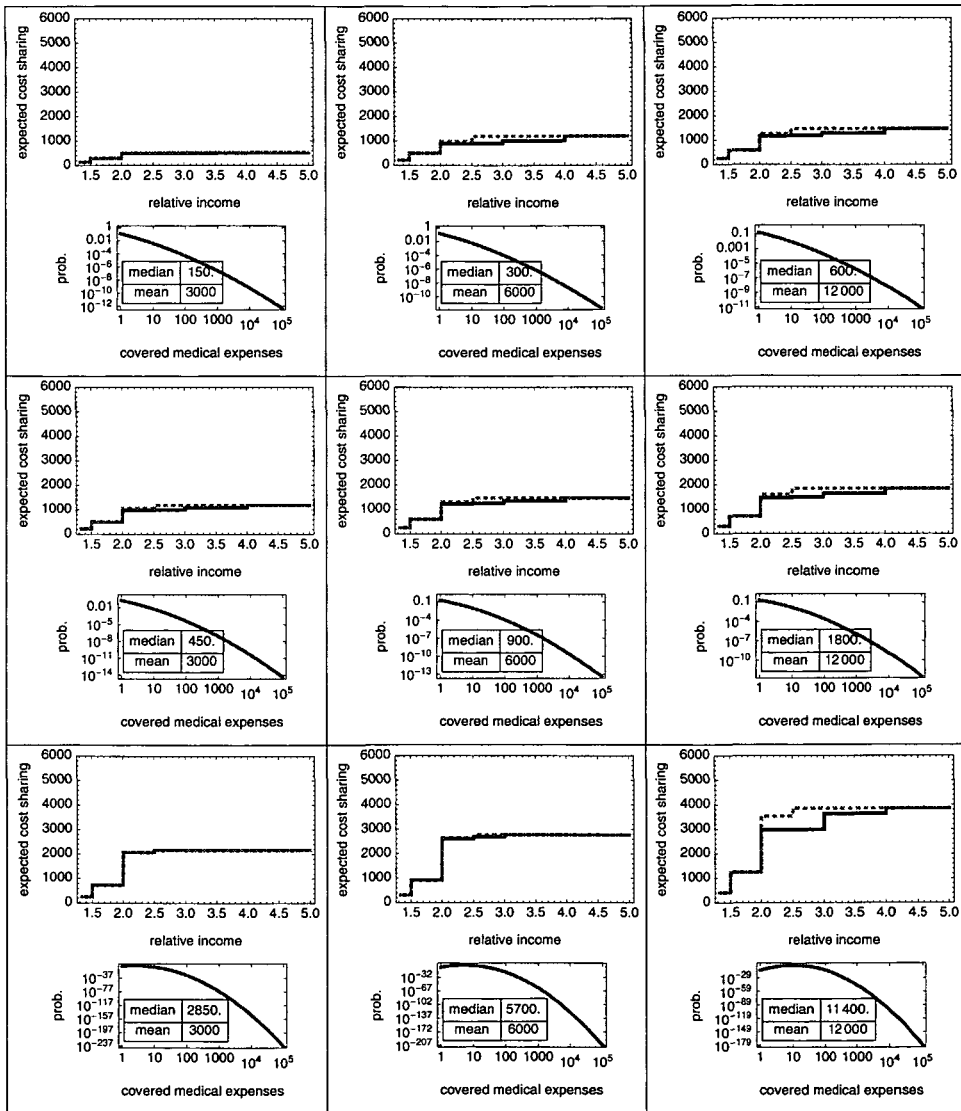
The following four sets of graphics summarize the effects of section 1402 of PPACA for hypothetical families. The first set considers single-member families. In each graphic, the x-axis measures the relative income of the enrollees. The y-axis measures the expected cost-sharing the individual will face. Two lines are generated. The solid line shows the effect on expected cost-sharing, assuming the CAVL proviso is not binding, and the default reduction in the out-of-pocket limit provided for by PPACA takes full effect. The dotted line shows the effect on expected cost-sharing, assuming that the CAVL proviso is binding, and the default reduction in the out-of-pocket limit provided for by PPACA does not take full effect for persons with a relative income over 250%. Each graphic is labeled with a plot summarizing the distribution of healthcare expenses of the individual. Notice that in each graphic there are various notches in which the expected cost-sharing lurches upwards. These notches correspond to relative income levels at which section 1402 of PPACA, with all of its complexity, is likely to result in significant changes in cost-sharing arrangements. Also notice

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43. Families with low expected medical expenses and yet lower incomes could also face steep marginal tax rates. It is plausible that in order to bring the enrollee's expected share of the total allowed cost of benefits down to 6% as required by section 1402 for enrollees with relative incomes of 100% to 150%, a silver plan would have to be modified so that its deductible was \$400, its coinsurance was 3%, and its OOP limit was \$4,000. If so, a family with a distribution of medical expenses such as the family discussed here but with a relative income of 1.4 who managed to purchase a policy through an Exchange would have expected out-of-pocket expenses of \$526. If the family gained 0.2 FPL in income, the terms of their silver plan would become less generous with respect to cost-sharing. One possibility is that the policy terms would change to a \$1,330 deductible, a coinsurance percentage of 9%, and an OOP limit of \$4,000, which would mean that their expected out-of-pocket expenses would be \$1,624. Thus, this family would lose \$1,098 as a result of gaining \$4,410 in income (0.2 of an FPL for a family of four), which would create an average marginal tax rate of 24.9%.

44. The family would have a 10% chance of paying \$2,300 more in out-of-pocket expenses than they would otherwise. Two hundred thirty dollars divided by \$22,050 is about 1.0%.

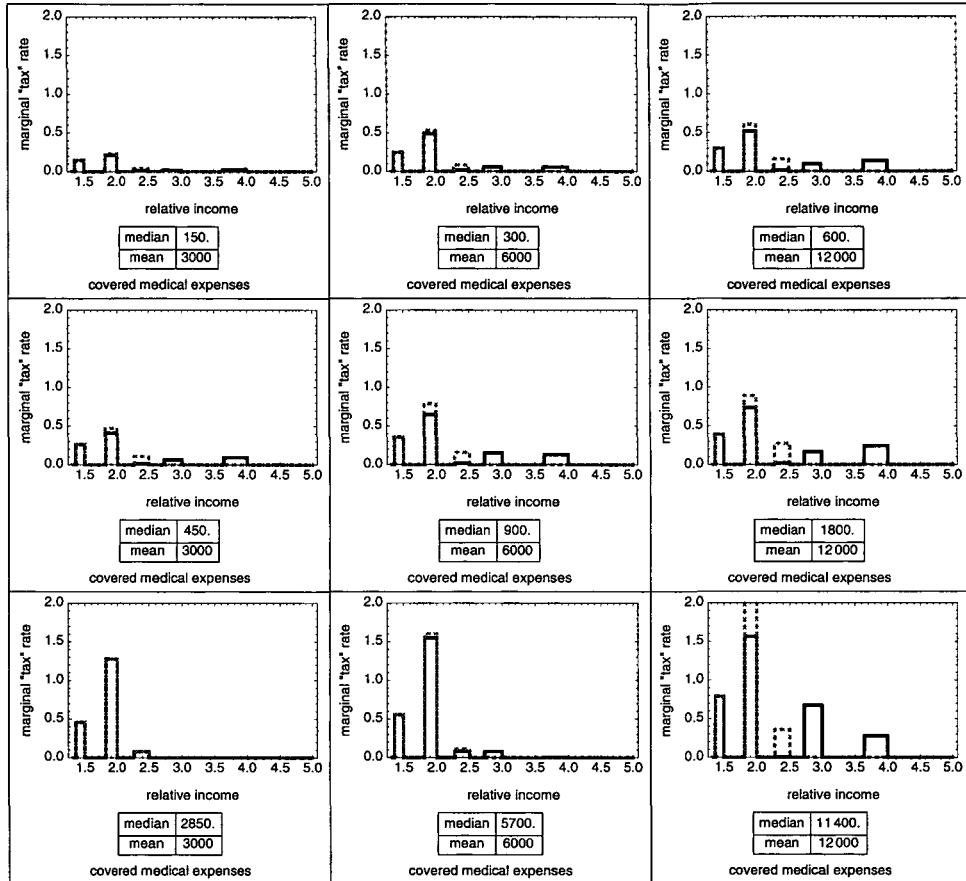
that, notches aside, the amount of cost-sharing can increase swiftly as relative income goes up. Often, over a distance of just 2 FPL, there is an increase in expected cost-sharing of several thousand dollars. The graphic thus recapitulates the fact that section 1402 of PPACA, even without its notches, creates relatively high rates of effective marginal taxation.



Expected Cost Sharing for Individual Contracts

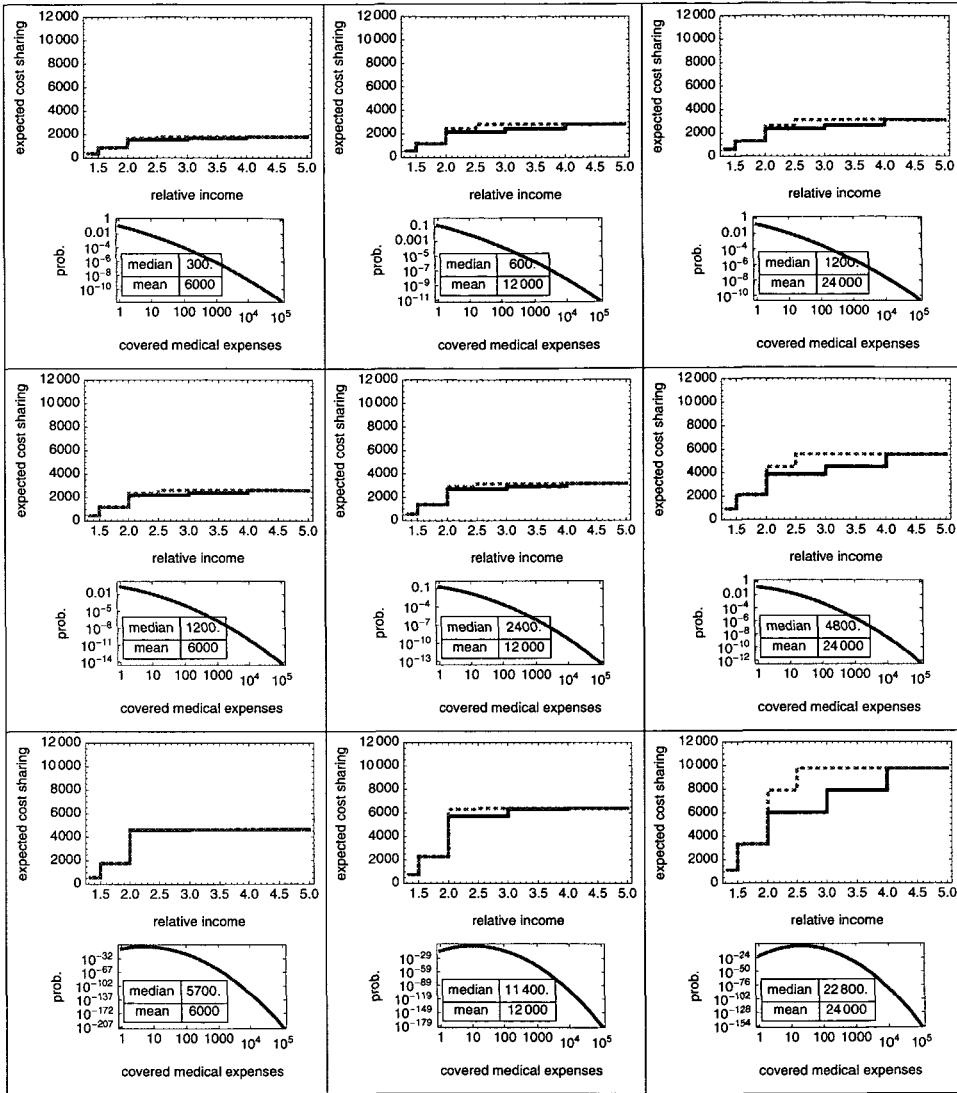
The second set of graphics explores the effective marginal tax rates for individuals resulting from increased expected cost-sharing that results from a 10% change in the relative income of individual enrollees. The x-axis on each graphic shows the relative income of the individual. The y-axis shows the effective marginal tax rate. Notice that tax rates are often zero but

show very high notches over limited domains on initial relative income. Frequently, marginal tax rates approach or exceed 50%. Marginal tax rates are particularly high where the underlying distribution of medical expenses has both a high mean and a high median.



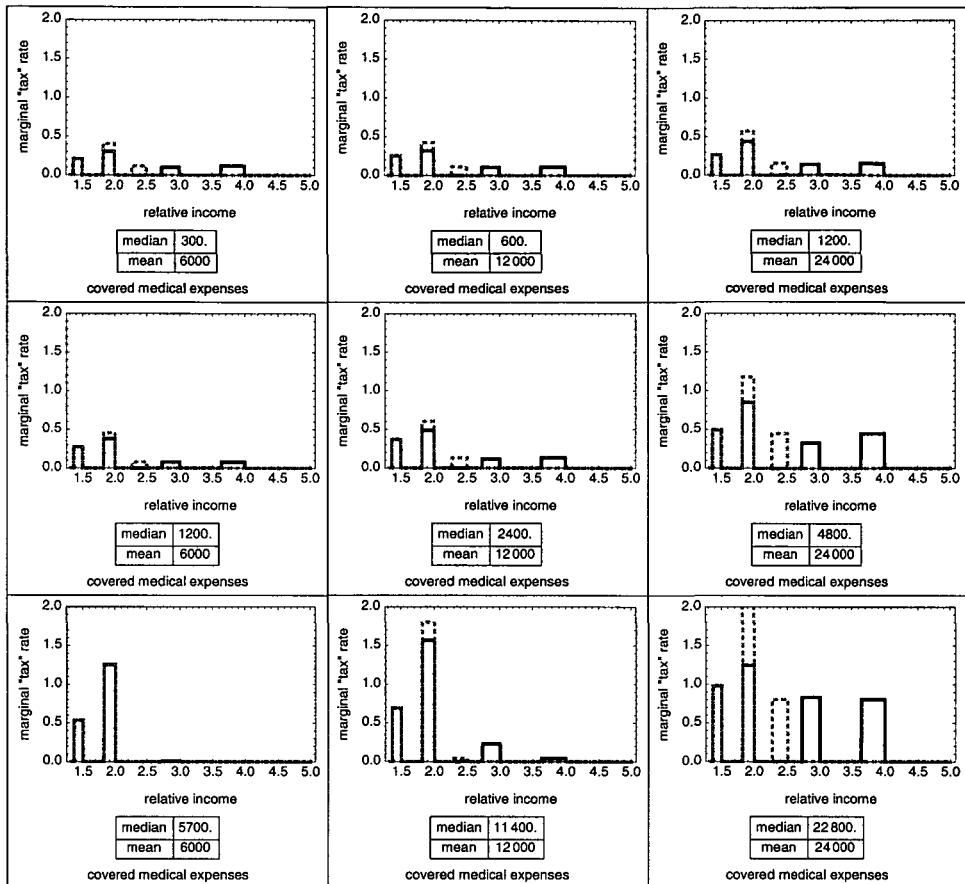
Effective Marginal Tax Rates from Cost Sharing for Individual Contracts

The third set of graphics shows considers four-person families. As before, in each graphic, the x-axis measures the relative income of the enrollees. The y-axis measures the expected cost-sharing the family will face. Each graphic is labeled with a plot, summarizing the distribution of health-care expenses of the family. Notches are present, just as was the case for individuals. And, again, as was the case with individuals, the amount of cost-sharing can increase swiftly as relative income increases. Often, over a distance of just 2 FPL, there is an increase in expected cost-sharing of several thousand dollars.



Expected Cost Sharing for Family Contracts

The fourth set of graphics shows the effective marginal rate of taxation on these families of four created by section 1402 of PPACA. The pattern is similar to that seen with individuals. Although for some domains the effective marginal rate of tax is zero, in other domains the effective marginal tax rate can be extremely high. Where mean and median medical expenses are high, for example, the marginal tax rate increases over 200% for some values of relative income.

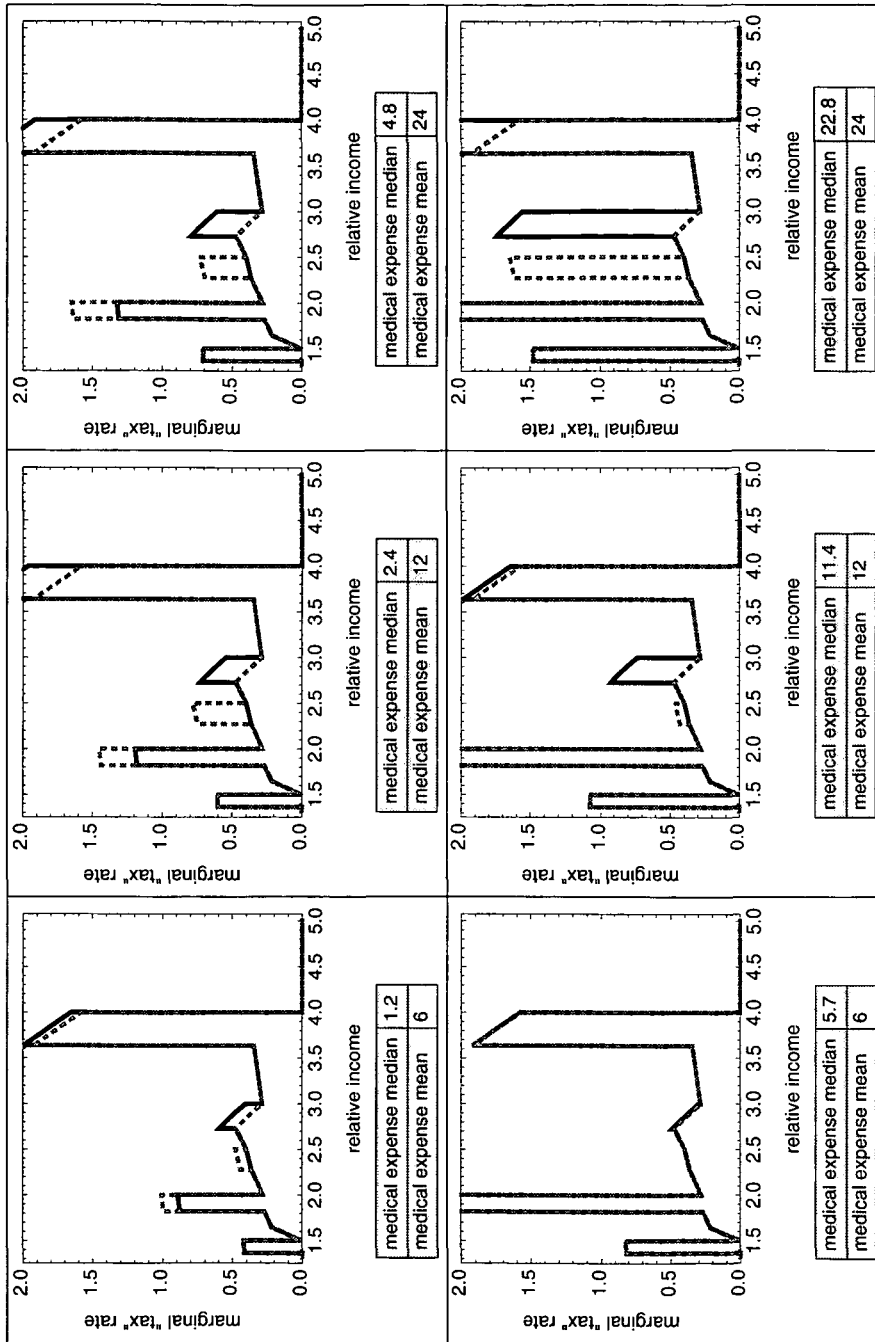


Effective Marginal Tax Rates from Cost Sharing for Family Contracts

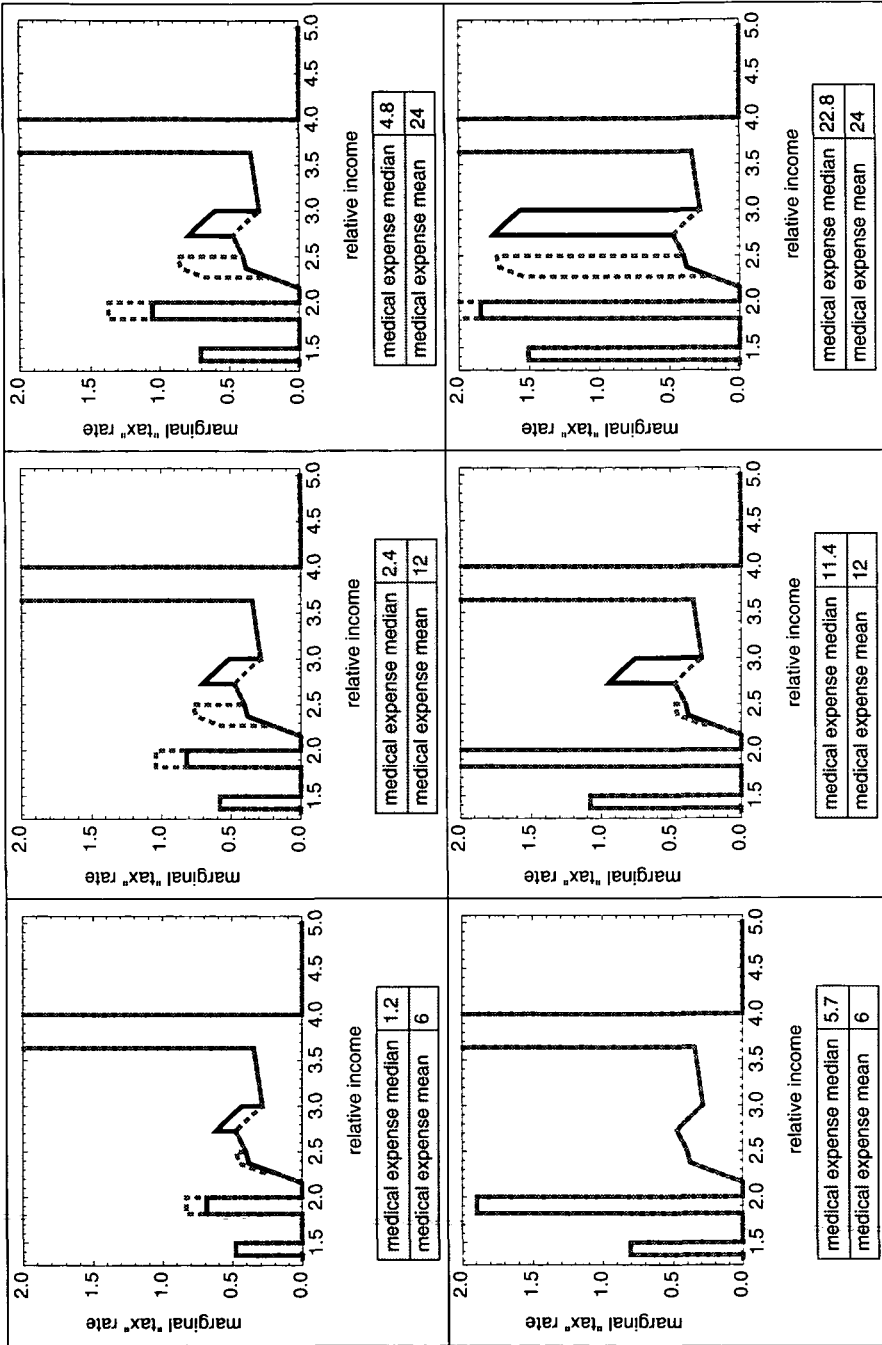
#### IV. COMBINING SECTIONS 1401 AND 1402 WITH EXISTING INCOME BASED TAXES

The real issue facing enrollees in insurance policies purchased through an Exchange will not be the marginal tax rate created by section 1401 standing alone, or section 1402 standing alone, or even sections 1401 and 1402 standing together. It will be the cumulative effect of all taxation effectively based on income, including federal income tax, FICA, and state income taxes.<sup>45</sup> The following six sets of graphics summarize the marginal rates of taxation created by sections 1401 and 1402 of PPACA working together. Each set of graphics shows places relative income on the x-axis and an effective marginal rate of taxation on the y-axis. The sets are broken down according to the age and family size of the enrollees.

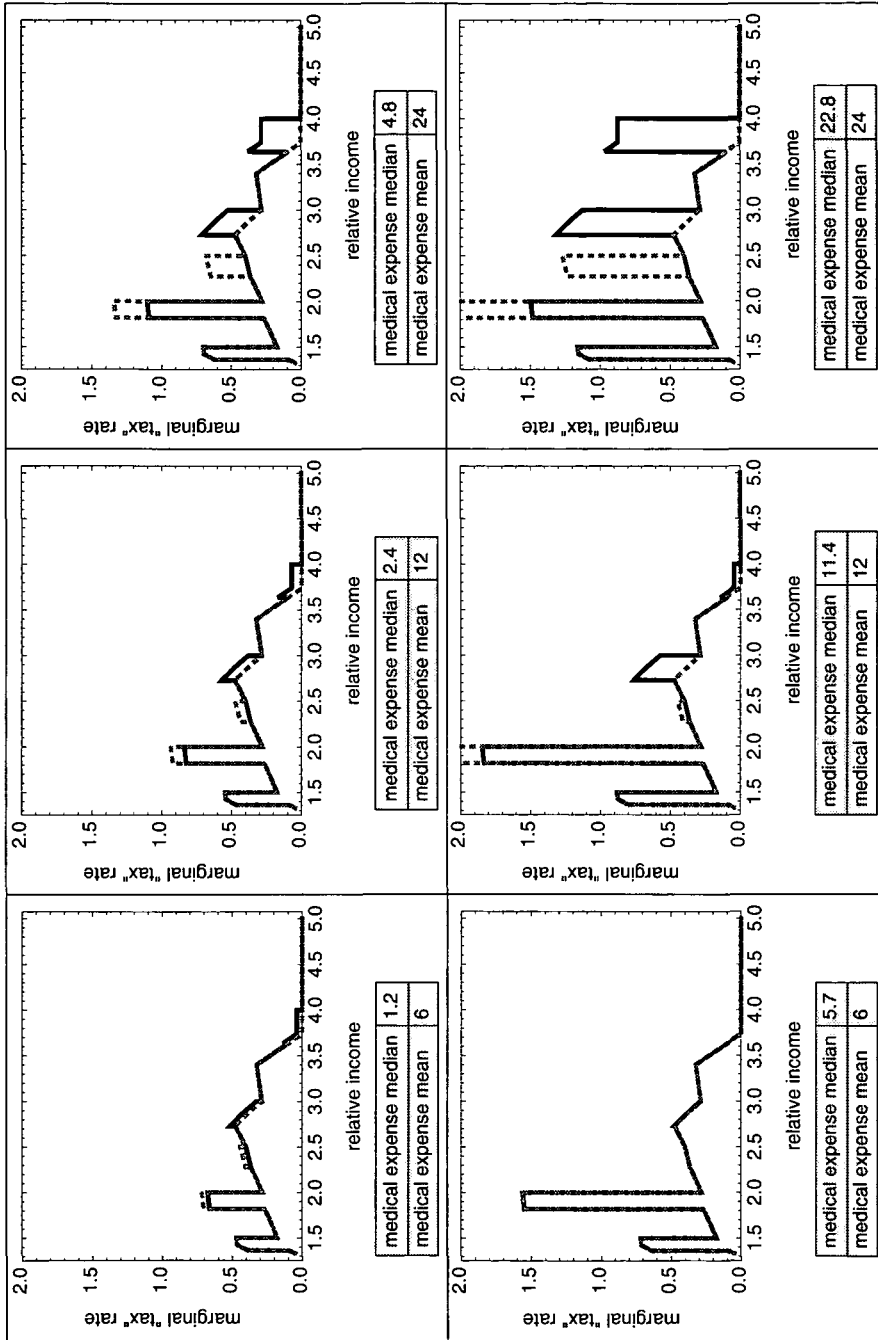
45. Other programs, state and federal, may further increase the effective marginal tax rate for persons eligible for premium assistance and cost-sharing reductions under PPACA. These programs include income-based repayment plans under the College Cost Reduction Act of 2007, Pub. L. No. 110-84, 121 Stat. 784 (2007), the National School Lunch Program, and the Low-Income Home Energy Assistance Program. For a definitive discussion of the problem under discussion here, see Daniel Shaviro, *Effective Marginal Tax Rates on Low-Income Households*, 84 TAX NOTES 1191 (1999), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=162569](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=162569).



PPACA Effective Marginal Tax Rates Age=30, Family Size=2

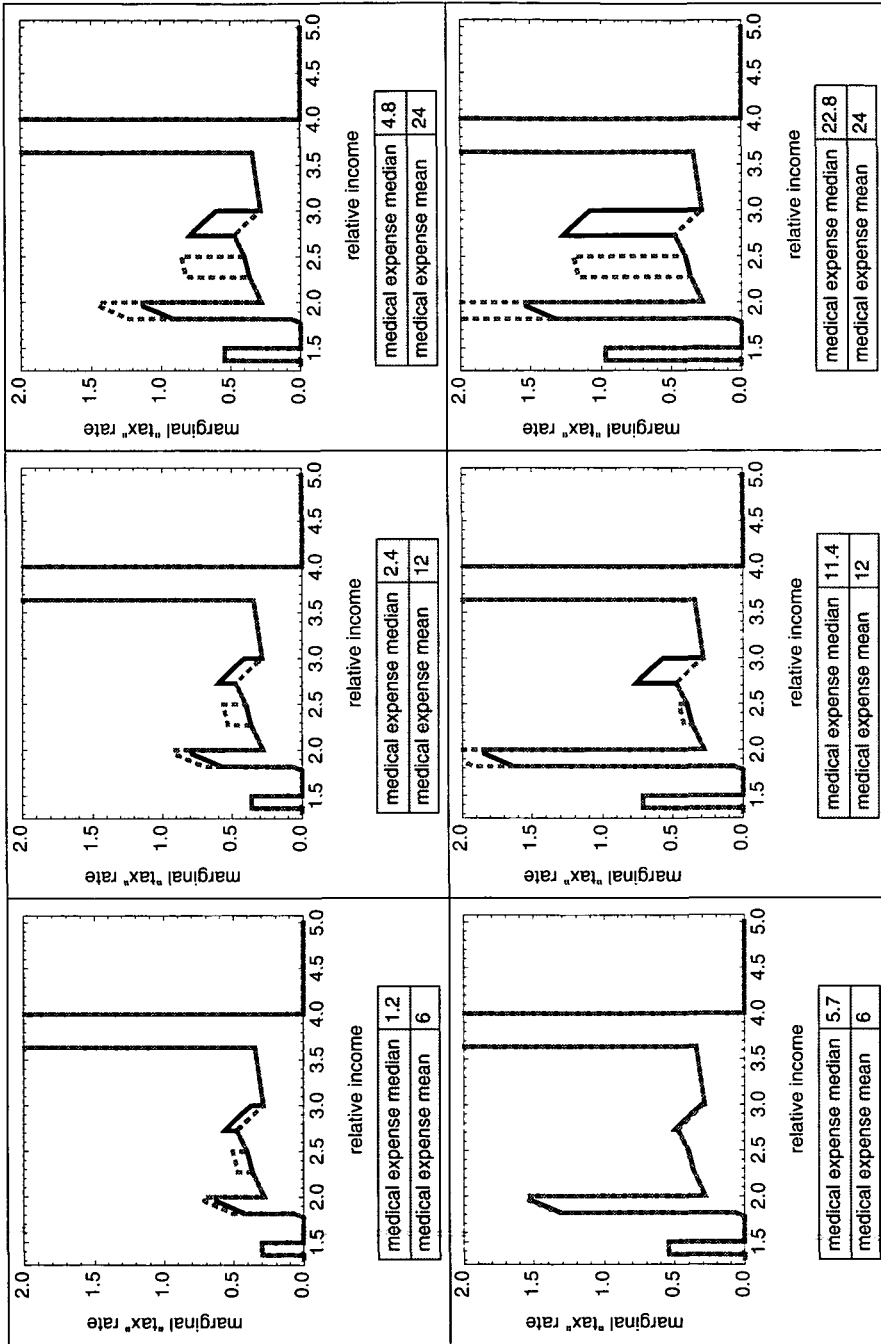


PPACA Effective Marginal Tax Rates Age=60, Family Size=2

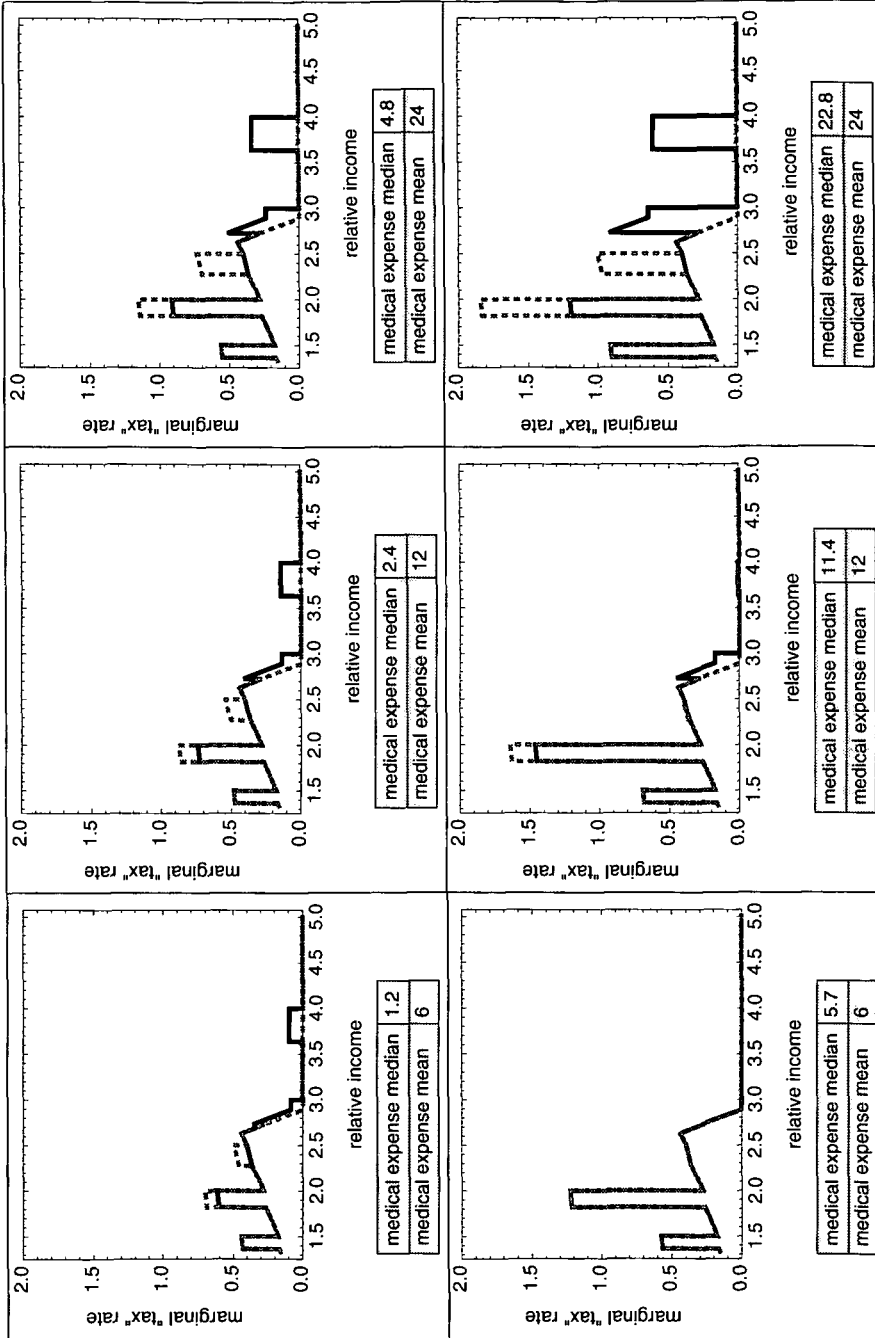


PPACA Effective Marginal Tax Rates Age=30, Family Size=4

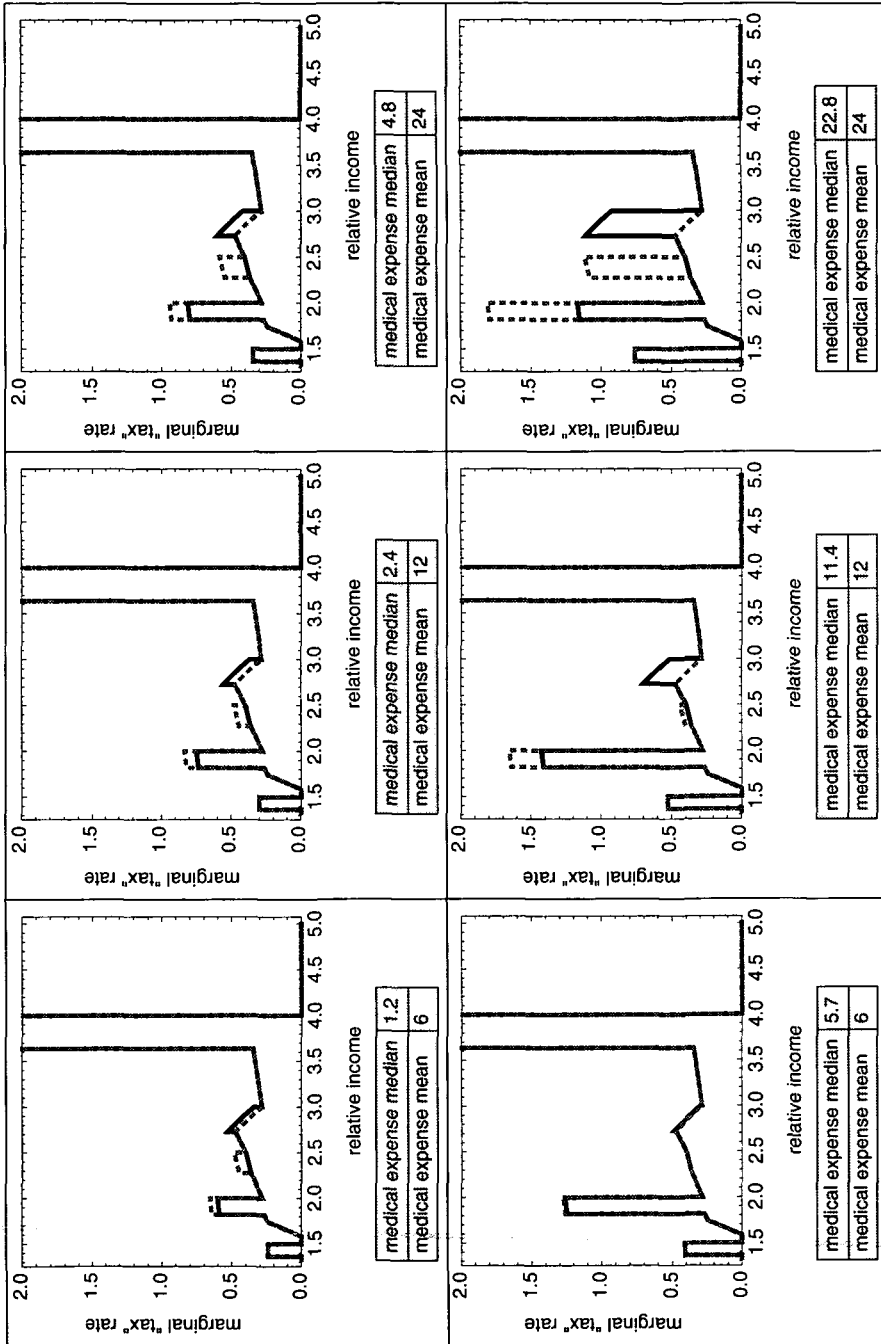




PPACA Effective Marginal Tax Rates Age=60, Family Size=4



PPACA Effective Marginal Tax Rates Age=30, Family Size=6



PPACA Effective Marginal Tax Rates Age=60, Family Size=6

The graphics show that PPACA's conditioning of premium subsidies and cost-sharing reductions on relative income creates significant effective marginal rates of taxation for virtually all levels of eligibility. This is true regardless of the age of the enrollee, size of the enrollee's family, the enrollee's mean medical expenses, or the enrollee's median medical expenses. Rates of more than 30% created by PPACA are common, and there are frequently marginal rates of over 50%, particularly where section 1402 creates "notches." The rates of marginal taxation for older Americans frequently exceed 100%. For reasons that will be set forth in more detail below, but that should be apparent, these high rates of marginal taxation have troubling implications for productivity. Persons faced with taxation rates of more than 50% often decide to reduce their tax – generating activities or develop elaborate and costly tax avoidance schemes.

The situation, however, is actually more serious than the above graphics suggest because PPACA "taxation" is not the only tax on income most individuals will face. Most individuals also face federal income tax, FICA tax, and state income tax. When these taxes are added in, the marginal rates of taxation more frequently exceed 50% over far larger domains of eligibility for PPACA subsidies.

## V. FIVE FAMILIES

The combination of PPACA with existing income taxation schemes can be examined by studying five hypothetical sets of enrollees – none of whom have health insurance apart from purchase through an Exchange created pursuant to PPACA. For each set of enrollees, I use the National Bureau of Economic Research's "TAXSIM" project<sup>46</sup> to calculate likely marginal federal and state tax rates. I use simulation software I have developed here to determine the effective marginal tax rates created by PPACA's conditioning of both premium subsidies and cost-sharing reductions on relative income.

### A. *The Jones Family*

The Jones family, the family described in the introduction to this article, is a family of four residing in Mississippi with a relative income of 3.85 (\$85,000). The family has high medical expenses. The family incurs a median amount of \$28,000 and a mean amount of \$30,000. The Exchange rates the family as being thirty-five years old and thus facing a gross premium of \$8,722. For that, the family gets a contract with a \$4,000 deductible, 30% coinsurance, and an \$8,000 out-of-pocket limit. The family's net premium is \$8,075, due a premium tax credit under section 36B of the Internal Revenue Code. Given the family's high medical expenses, their expected cost-sharing is \$7,938. Before PPACA, this family would have faced

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46. See Daniel Feenberg & Elisabeth Coutts, *An Introduction to the TAXSIM Model*, 12 J.POL'Y ANALYSIS & MGMT. 189 (1993). A wealth of information on the TAXSIM model as well as a TAXSIM calculator may be found on the Internet at <http://www.nber.org/~taxsim/> (last visited May 20, 2010).

a marginal income tax rate of 34.4%, resulting from 14.3% federal income tax, 15.3% FICA tax and 4.8% state income tax. Now, however, when the Jones family increases their relative income by 10%, the family receives no premium tax credit and thus has a net premium of \$8,722. This amounts to an additional 7.6% marginal tax on their income. Moreover, the family faces an increase of \$2,684 in expected cost-sharing because the out-of-pocket limit on their policy, which they are likely to hit, increases from \$8,000 to \$12,000. Thus, after PPACA, the family faces a marginal tax rate of 73.5%, an increase of 114.1% over their previous marginal rate.<sup>47</sup>

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47. This calculation assumes the Secretary does not readjust the contract parameters to take account of the CAVL proviso. If the Secretary readjusted the parameters, the results could be substantially different. It is possible that at an initial relative income of 3.85 the Jones family would already have an out-of-pocket limit of \$12,000. Increasing their relative income by 10% would not change this fact. Thus, in this particular instance, making the CAVL provision binding would result in PPAA's increasing the Jones marginal tax rate by only 22.2% to 42%. The Jones family is an example of a case in which it makes a big difference whether the Secretary of Health and Human Services is compelled to readjust insurance contract parameters to comply with the CAVL proviso.

Jones

family size	4		
state	Mississippi		
relative income	3.85 (\$85,000.)		
federal poverty line	22,050		
distribution of medical expenses	median	28,000.	
	mean	30,000	
age	35		
premiums		relative income	relative income
		3.85	4.24
	gross premium	8,722	8,722
	net premium	8,075	8,722
cost sharing		relative income	relative income
		3.85	4.24
	contract parameters (CAVL not binding)	{4000, 0.3, 8000}	{4000, 0.3, 12 000}
	expected cost sharing (CAVL not binding)	7,938	10,622
	contract parameters (CAVL binding)	{4000, 0.3, 12 000}	{4000, 0.3, 12 000}
	expected cost sharing (CAVL not binding)	10,622	10,622
federal income tax marginal rate	0.143		
FICA marginal rate	0.153		
state income tax marginal rate	0.048		
marginal rates before PPACA	0.344		
section 36B (PPACA 1401) rate	0.076		
section 1402 marginal rate	CAVL not binding	0.316	
	CAVL binding	0	
total effective marginal income tax rate	CAVL not binding	0.735	
	CAVL binding	0.42	
increase in marginal income tax rate caused by PPACA	CAVL not binding	1.141	
	CAVL binding	0.222	

### B. The Gonzalez Family

The Gonzalez family is a family of four residing in Texas with a relative income of 2.8 (\$61,740). The family has a risk of substantial medical expenses. The median amount the family incurs is just \$2,400 but the mean is \$12,000. The Exchange rates the family as being thirty years old and thus facing a gross premium of \$6,267. For that, the family gets a contract similar to the Jones' family's contract: a \$4,000 deductible, 30% coinsurance, and an \$8,000 out-of-pocket limit. The family's net premium is \$5,507, due a premium tax credit under section 36B of the Internal Revenue Code.

Given the family's significant medical expenses, their expected cost-sharing is \$2,906. Before PPACA, this family would have faced a marginal income tax rate of 30.3%, resulting from 15% federal income tax, and a 15.3% FICA tax. Texas has no state income tax. As with the Jones family, however, when the Gonzales family now increases their relative income by 10%, however, the family receives a smaller premium tax credit and thus has a net premium of \$6,267. This amounts to an additional 12.3% marginal tax on their income. Their contract becomes less advantageous, with an \$8,000, rather than \$6,000, out-of-pocket limit. This increases the family's expected cost-sharing to \$3,222. Thus, after PPACA, the family faces a marginal tax rate of 47.7%, an increase of 57.5% over their previous marginal rate.<sup>48</sup>

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48. If the CAVL constraint were binding, the family's marginal tax rate would increase by only 40.6% to 42.6%.

## Gonzalez

family size	4		
state	Texas		
relative income	2.8 (\$61,740.)		
federal poverty line	22,050		
distribution of medical expenses	median	2,400.	
	mean	12,000	
age	30		
premiums		relative income 2.8	relative income 3.08
	gross premium	6,267	6,267
	net premium	5,507	6,267
cost sharing		relative income 2.8	relative income 3.08
	contract parameters (CAVL not binding)	(4000, 0.3, 6000)	(4000, 0.3, 8000)
	expected cost sharing (CAVL not binding)	2,906	3,222
	contract parameters (CAVL binding)	(4000, 0.3, 12000)	(4000, 0.3, 12000)
	expected cost sharing (CAVL not binding)	3,599	3,599
federal income tax marginal rate	0.15		
FICA marginal rate	0.153		
state income tax marginal rate	0		
marginal rates before PPACA	0.303		
section 36B (PPACA 1401) rate	0.123		
section 1402 marginal rate	CAVL not binding	0.051	
	CAVL binding	0	
total effective marginal income tax rate	CAVL not binding	0.477	
	CAVL binding	0.426	
increase in marginal income tax rate caused by PPACA	CAVL not binding	0.575	
	CAVL binding	0.406	

## C. The Sutters Family

The Sutters family is a family of six residing in California with a relative income of 2.4 (\$70,872). As the heads of their household are somewhat older, the Exchange rates them as being fifty years of age. The family has higher medical expenses than many with a median of \$12,000 per year and a mean of \$24,000 per year. Due to the family's lower relative income, they receive a more advantageous contract than the Jones family or the Gonzalez family. It has a deductible of \$4,000, coinsurance of 30%, and an out-of-pocket limit of \$6,000. Their gross premium is \$10,656, but their net



premium is only \$5,457, thanks to a generous premium tax credit. Due to substantial medical expenses, the Sutters family's expected cost-sharing is \$5,026. Before PPACA, the Sutters family would have faced a combined marginal tax rate of 36.3%. PPACA creates an issue for the Sutters family when their relative income increases by 10%. As with the other families, the Sutters family's premium tax credit declines so that their net premium for insurance increases to \$6,592. Thus, PPACA imposes a 16% marginal tax for the reduction in premium subsidies. The result is that the Sutters family now has a hefty marginal tax rate of 52.3%, a 44.1% increase over the rate they faced before PPACA was enacted.<sup>49</sup>

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49. If the CAVL proviso were binding, PPACA would have a more dramatic effect. It is likely that the Sutters family originally would have had an out-of-pocket limit of \$8,000, which would have risen to \$12,000. Their expected cost-sharing would have gone from \$5,931 to \$7,062. Thus, they would have faced a marginal tax rate of 68.3%, an increase of 88.1% over the rate they paid before PPACA.

## Sutter

family size	6		
state	California		
relative income	2.4 (\$70,872.)		
federal poverty line	29,530		
distribution of medical expenses	median	12,000.	
	mean	24,000	
age	50		
premiums		relative income 2.4	relative income 2.64
	gross premium	10,656	10,656
	net premium	5,457	6,592
cost sharing		relative income 2.4	relative income 2.64
	contract parameters (CAVL not binding)	(4000, 0.3, 6000)	(4000, 0.3, 6000)
	expected cost sharing (CAVL not binding)	5,026	5,026
	contract parameters (CAVL binding)	(4000, 0.3, 8000)	(4000, 0.3, 12000)
	expected cost sharing (CAVL not binding)	5,931	7,062
federal income tax marginal rate	0.15		
FICA marginal rate	0.153		
state income tax marginal rate	0.06		
marginal rates before PPACA	0.363		
section 36B (PPACA 1401) rate	0.16		
section 1402 marginal rate	CAVL not binding	0	
	CAVL binding	0.16	
total effective marginal income tax rate	CAVL not binding	0.523	
	CAVL binding	0.683	
increase in marginal income tax rate caused by PPACA	CAVL not binding	0.441	
	CAVL binding	0.881	

*D. The Van Ost Family*

Mr. Van Ost is a single forty year-old man living in New York with a relative income of 2.9 (\$31,407). He is about average for medical expenses with a median expense of \$1,000 and a mean expense of \$4,000. His gross premiums for insurance are \$4,538, but the section 36B tax credit lowers his net premium to \$2,893. His expected cost-sharing is \$1,316. Before PPACA, Mr. Van Ost faced a marginal tax rate of 37.2%. With PPACA, however, Mr. Van Ost sees his net premium increase to \$3,282, and his out-

of-pocket limit on his contract increase from \$3,000 to \$4,000. His expected cost-sharing thus increases to \$1,418. The net result is that Mr. Van Ost sees his effective marginal tax rate increase by 41.3% to 52.5%.<sup>50</sup>

Van Ost

family size	1		
state	New York		
relative income	2.9 (\$31,407.)		
federal poverty line	10,830		
distribution of medical expenses	median	1,000.	
	mean	4,000	
age	40		
premiums		relative income 2.9	relative income 3.19
	gross premium	4,538	4,538
	net premium	2,893	3,282
cost sharing		relative income 2.9	relative income 3.19
	contract parameters (CAVL not binding)	{2000, 0.2, 3000}	{2000, 0.2, 4000}
	expected cost sharing (CAVL not binding)	1,316	1,408
	contract parameters (CAVL binding)	{2000, 0.2, 6000}	{2000, 0.2, 6000}
	expected cost sharing (CAVL not binding)	1,498	1,498
federal income tax marginal rate	0.15		
FICA marginal rate	0.153		
state income tax marginal rate	0.068		
marginal rates before PPACA	0.372		
section 36B (PPACA 1401) rate	0.124		
section 1402 marginal rate	CAVL not binding	0.03	
	CAVL binding	0	
total effective marginal income tax rate	CAVL not binding	0.525	
	CAVL binding	0.496	
increase in marginal income tax rate caused by PPACA	CAVL not binding	0.413	
	CAVL binding	0.334	

50. If the CAVL proviso were binding, Mr. Van Ost's marginal tax rate would have increase by only 33.4% to 41.3%. The smaller increase would have occurred because his expected cost-sharing would not have increased as a result of the change in relative income.

*E. The Lincoln Family*

The Lincoln family is a lower income family of three residing in Illinois. Their relative income is 1.4 (\$25,634). Led by a sixty year-old mother, the Lincoln family has significant medical expenses: a median of \$5,000 per year and a mean of \$18,000 per year. The gross premium charged by the Exchange is high – \$18,414 per year – but tax credits decrease it to a far more manageable \$2,631. The low relative income also gets the Lincoln family an advantageous insurance contract: a deductible of just \$400, coinsurance of 3% and a \$4,000 out-of-pocket limit. Thus, notwithstanding high medical expenses, their expected cost-sharing is just \$792. An increase in the Lincoln family's relative income has a serious effect. Although their premium tax credit does not decline, they are now subject to a less advantageous contract. The deductible has increased to \$1,330 and the coinsurance to 9%, though the out-of-pocket limit has remained unchanged at \$4,000. Now, the Lincoln family's expected cost-sharing is \$1,926. Although even before PPACA the Lincoln family faced a high marginal rate of 53.9%, owing to the operation of earned income credit, the increase in cost-sharing has brought the effective marginal tax rate to a staggering 98.2%. PPACA has increased marginal tax rates by 82.1%.<sup>51</sup>

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51. Whether the CAVL constraint was binding or not would not affect this result because the relevant CAVL constraint operates only where relative incomes are more than 2.5.

## Lincoln

family size	3		
state	Illinois		
relative income	1.4 (\$25,634.)		
federal poverty line	18,310		
distribution of medical expenses	median	5,000.	
	mean	18,000	
age	60		
premiums		relative income 1.4	relative income 1.54
	gross premium	18,414	18,414
	net premium	2,631	2,631
cost sharing		relative income 1.4	relative income 1.54
	contract parameters (CAVL not binding)	(400., 0.03, 4000)	(1330., 0.09, 4000)
	expected cost sharing (CAVL not binding)	792	1,926
	contract parameters (CAVL binding)	(400., 0.03, 4000)	(1330., 0.09, 4000)
	expected cost sharing (CAVL not binding)	792	1,926
federal income tax marginal rate	0.323		
FICA marginal rate	0.153		
state income tax marginal rate	0.063		
marginal rates before PPACA	0.539		
section 36B (PPACA 1401) rate	0		
section 1402 marginal rate	CAVL not binding	0.442	
	CAVL binding	0.442	
total effective marginal income tax rate	CAVL not binding	0.982	
	CAVL binding	0.982	
increase in marginal income tax rate caused by PPACA	CAVL not binding	0.821	
	CAVL binding	0.821	

## VI. CONCLUSION

A. *The Problem*

The examples above confirm the earlier analysis that, in many instances, the federal health care reforms enacted in 2010 will significantly increase total effective marginal tax rates to an extraordinarily high level. As I will now discuss, this dramatic increase in effective marginal tax rates among a significant part of the American population creates the potential for a significant diminution in economic activity.

One of the usual concerns raised by high marginal tax rates is their proclivity to diminish economic activity or to shift economic activity into less productive forms that manage to evade the tax. Increases in marginal tax rates may be enough to deter some individuals from taking the effort and risk implicit in many forms of income-seeking activity. Moreover, research suggests that the distorting effects of increases in marginal tax rates increase not in a linear fashion, but generally with the square.<sup>52</sup> Thus, a 50% marginal tax rates distorts choices not twice as much as a 25% marginal tax rate, but four times as much.

PPACA creates exactly the sort of high marginal rates likely to cause trouble. It would not be surprising to see significant reaction among persons with marginal tax rates at the 50% level. As effective marginal tax rates head towards or even in some instances over 100%, this possibility of diminished economic activity grows. Some persons, for example, who need or want health insurance acquired through an Exchange, may cut back as a result on activities generating cash income. Similarly, PPACA may lead second earners in a family to decide to perform domestic services personally rather than purchase such services in the marketplace. Experience with the program and a likely growth in educational materials (beyond this law review article) on the consequences of PPACA should further exacerbate the problem. Although the precise magnitude of the problem will depend in part on the number of persons eligible for subsidies through purchase of health insurance through an Exchange,<sup>53</sup> any significant cut-back in economic activity will reduce the very state and federal tax revenues needed to support PPACA expenditures.

### *B. Why Does the Problem Exist?*

The high effective marginal rates of tax created by the current health-care reform bills are the result of two problems: “notching” and “architecture.”

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52. HARVEY ROSEN, PUBLIC FINANCE, IN *ENCYCLOPEDIA OF PUBLIC CHOICE* 252, 256 (Charles K. Rowley & Friedrich Schneider eds., 2004).

53. This number is likely to depend on at least three factors: (1) the number of employers who stop providing health insurance coverage in light of the new regulatory system; (2) the success of the penalty provisions contained in PPACA section 1501, 26 U.S.C. § 5000A, on the failure to purchase insurance; and (3) the diminution in the effectiveness of the penalty created by various exceptions and exemptions, such as those created for participation in “health sharing ministries” or an inability to purchase insurance for less than 8% of income. With respect to the first factor, a recent poll shows that 14% of employers believe they would be better off dropping benefits as a result of PPACA. See Regis Coccia, *Most Employers Won't Drop Health Care Benefits: Poll*, BUSINESS INSURANCE MAGAZINE, April 12, 2010, available at <http://www.businessinsurance.com/article/20100411/ISSUE01/304119948>. There is a serious question as to whether the exemption for only those health sharing ministries in continuous existence since December 31, 1999, renders that part of the statute constitutional on equal protection or establishment clause grounds, since, so far as can be determined, the only qualifying ministries require belief in Christianity as a condition of membership.

## 1. Notching

Notching is another way of saying that there are discontinuities in the subsidy amounts as a function of income, something that government programs generally attempt to avoid. Mathematically, this means that there can be extremely high rates of effective taxation when “before” and “after” incomes closely straddle the notch. A person who loses \$1,000 in subsidies as a result of earning one additional dollar, which can happen under PPACA if, for example, the person crosses one of the cost-sharing subsidy thresholds or crosses the 400% relative income cap on premium subsidies, faces a marginal tax rate of over 100,000%. The frequency of notches, the size of the discontinuities, and the distribution of differences between before and after incomes all contribute to the overall magnitude of the notching problem.<sup>54</sup>

## 2. Architecture

The second problem, which I would term one of “architecture,” is far less tractable. It comes from attempting to render market-provided health insurance affordable without undertaking fundamental reforms to the healthcare payment system, and while declining to increase the cost of the program by extending benefits to even wealthier Americans than the current reform provides. To try a back-of-the-envelope style of computation, if we are going to (1) subsidize people with relative income of 133% at something like 80% of the full cost of health insurance coverage,<sup>55</sup> a figure that likely ranges from about \$2,300 per person per year for a young person in a low cost area up to \$10,800 per year for an older person in a high cost area;<sup>56</sup> and (2) phase that down to zero by the time relative income is 400%, then, even without notching, the increment to marginal tax rates created by healthcare reform has got to be on the order of six to thirty percentage points.<sup>57</sup> The computation is roughly the same if we look at a family of four. With a family of such size, the government will need to reduce subsidies from about \$6,000 to \$26,000 over 2.67 of FPL, which for a

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54. An extremely sophisticated family might be able to reduce the effective rate of taxation by limiting the difference between before and after income so that they just missed hitting a notch. In most realistic circumstances, however, such fine tuning will be extremely difficult.

55. If one computes the quotient of (1) the sum for a person with a relative income of 1.33 of (a) the net premium for enrollees purchasing insurance through an Exchange and (b) the expected cost-sharing for such enrollees and divides that by (2) the sum for a person with a relative income of 4.01 of (a) the net premium for enrollees purchasing insurance through an Exchange and (b) the expected cost-sharing for such enrollees, one generally gets about 20%. Thus, the maximum subsidy for health coverage provided through an Exchange is about 80%. This figure varies depending on particulars such as the family size involved, the age of the enrollees, and the health costs in the region where they purchase the policy, but in the experiments I have conducted it tends to stay between about 78% and 82%. Whether the CAVL proviso is binding does not significantly affect the outcome.

56. These figures are based on a calculator provided by the Kaiser Family Foundation. *See supra* note 8. One takes 94% of the Kaiser-estimated premium and divides that by 0.7 (the actuarial value of the policy) to obtain the total expected cost of the coverage provided by the insurance.

57. The change in subsidy ranges from \$3,300 to \$10,700. That is the numerator of the fraction. The denominator is the change in income, which is 267% multiplied by the federal poverty line for an individual. As of 2010, this amount is \$10,830.

family of four is about \$58,900. Thus the increment to marginal tax rates created by healthcare reform for families will need to be on the order of eight to thirty-five percentage points. While an increase of six or even eight percentage points to marginal tax rates is probably tolerable, an increase of thirty to thirty-five percentage points should concern almost everyone.<sup>58</sup> The problem is particularly grave when one is discussing either poor families who face high marginal rates owing to the operation of the earned income tax credit or larger families who may already be facing substantial pre-existing marginal taxes from a combination of federal income tax, FICA tax, and state income tax. Thus, even if the notching problem is reduced, we will still face a tradeoff between creating incentives that may reduce the incentive to work and healthcare reforms that do not require significant increase in taxes (or deficit finance) that affect large numbers of Americans.

### *C. Curing Most of the Notching Problem*

Most of the notches created by PPACA are the result of the mechanics by which cost-sharing subsidies occur. Under sections 1402, 1411, and 1412 of PPACA, it appears that potential enrollees submit documentation relating to their family size and income to the relevant Exchange, which in turn passes it to the Secretary of Health and Human Services. After going through a variety of internal processes to determine the enrollees' eligibility for subsidization, the Secretary informs the ultimate insurance issuer of the amount of premium subsidization and level of cost-sharing subsidies the enrollee is to receive. So, for example, the Secretary might specify that the enrollees are to receive a \$150 per month premium subsidy and are to face an out-of-pocket limit equal to two-thirds of the usual amount. Thus, enrollees should know, at least in theory, in advance of each medical treatment how much they will be required to pay out of pocket. There are no rebates, and there are no additional payments required from the enrollees to the plan or to the government. Moreover, the schedule translating income ratios to cost-sharing amounts should be a relatively simple one: five relative income bins and five resulting cost-sharing parameters.

Elimination of most of the notches would require cost-sharing parameters to vary more or less continuously with the relative income of the enrollees. Much as section 1401 of PPACA uses specified applicable percentages at certain relative income pegs to permit interpolation of an "applicable percentage" for all levels of income, so, too, section 1402 could be modified to permit cost-sharing parameters to vary continuously throughout the eligibility band. Thus, if the out-of-pocket limit were set at

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58. The back-of-the-envelope method actually understates the magnitude of the problem. This is because we are approximating the relationship between subsidy and income as a line with a constant slope (the marginal effective tax rate). In fact, however, the way sections 1401 and 1402 of PPACA operate, the relationship is nonlinear. It is a mathematical fact that in connecting two points with a continuous locus, the way to minimize the maximum absolute slope between the two points is with a line. Thus, the nonlinear relationships created by PPACA actually result, at least for certain values of income, in marginal tax rates higher than those shown by the back-of-the-envelope computation.



one-third of the normal limit for enrollees with relative income of 133% and set at one-half of the normal limit for enrollees with relative incomes of 200%, one could linearly interpolate the out-of-pocket limit for a person with a relative income of, say, 180%, to be 45%. Or, if the deductible was pegged at \$200 for an enrollee with relative income of 133%, \$1,000 for an enrollee with a relative income of 200%, and at \$2,000 for an enrollee with relative income of 400%, the deductible for a person with relative income of 350% could be linearly interpolated as \$1,750.

Few perceptible problems would be created by moving to a system that avoided notching with respect to cost-sharing subsidies. The computations are no more difficult than those used to compute premium subsidies and are well within the capacities of the government and insurers. Drafting statutory language to accomplish linear interpolation would require nothing more complex than exists in section 1401 of PPACA. Providing substantial cost-sharing subsidies to the poorest families could be retained by pegging high subsidy rates to relative incomes of 150% or even 200%. A reasonable system that required linear interpolation should be roughly budget-neutral. And while it would re-introduce some very modest notching, “roughness” such as copays of \$13.12 per visit or coinsurance of 16.37% could be avoided through rounding to the nearest dollar or percentage point.

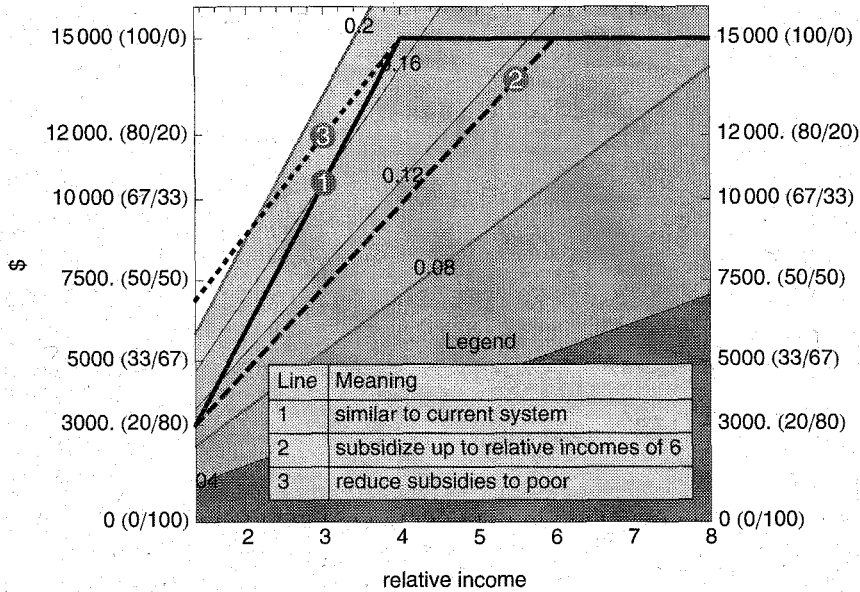
#### *D. Curing the Architecture Problem*

The final notch – the elimination of either premium reductions or cost-sharing subsidies at a relative income of 400% – is part of what creates the “architecture problem.” Curing it is far more difficult than curing the notching problem. Unless one figures out a way substantially to cut the cost of health care or possibly the scope of coverage provided by health insurance, one is left with unenviable choices. Otherwise, as now set forth, to diminish the effective marginal tax rate, either the subsidies have to be lower for the poor – which will enable yet fewer of them to purchase policies – or one has to extend subsidies to wealthier persons, such as a cutoff at 600% of FPL. This latter approach has the potential to substantially increase the cost of the program and require the government to obtain additional tax revenue.

The graphic below illustrates the dilemma. The x-axis of the graphic shows the relative income of the enrollees. The y-axis measures dollars. Thin gray contour lines show combinations of income and net dollars spent on health care that would yield the same percentage of income spent on health care.<sup>59</sup> Three dark lines numbered one to three are also present in the graphic.

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59. The contour for 8% is made thicker because that is the level at which the individual mandate to purchase health insurance takes effect.



applicable FPL                    22 050  
 expected healthcare costs   15 000

Line 1 is the first of three lines showing a simplified relationship between relative income and the net expected cost of health care for a representative family.<sup>60</sup> It presents a linearized and de-notched version of the relationship created by PPACA. In Line 1, government subsidies are phased out over 267% of relative income. The split between the enrollees and the government for the total expected cost of covered health care (premiums plus cost-sharing) goes from 20/80 at 133% relative income and phases out linearly to 100/0 at 400% relative income. The relatively steep slope of Line 1 indicates that the effective marginal tax rate is high. The net payment increases greatly as relative income increases from 133% to 400%. For the representative family displayed, the effective marginal tax rate induced by PPACA is about 20%. Notice also that with residual cost-sharing included almost all of the individuals receiving subsidies are paying well above 10% of their income for health care. Some pay more than 16%. People do not pay less than 8% of their income for healthcare until they have a relative income of more than eight (\$176,400 for a family of four).

One way to reduce the effective marginal tax rate is to increase the PPACA eligibility maximum. Line 2 shows the relationship between relative income and the net expected cost of health care for the same representative family where government subsidies are phased out from paying for approximately 80% of expected health care coverage to 0% as the enrollees move from relative incomes of 133% to 600%. The new marginal tax rate induced by PPACA thus declines from 20% (as was the case under Line 1) to 11%. Moreover, notice that the percentages of income families pay for healthcare has declined significantly as a result of the liberalization

60. The family in question has four enrollees and is rated as being forty-three years old.

of PPACA eligibility. No family expects to pay more than 12% of their income for health care.

Although a program such as that shown via Line 2 increases the affordability of healthcare and reduces the marginal effective rate of taxation created by income-sensitive subsidies, those successes come at a price. The cost of a subsidy program can be thought of as the subsidy per set of enrollees for each income level multiplied by the number of sets of enrollees at each income level. Those costs must be met either by deficit finance or by some form of taxation, one that likely depends substantially on income.<sup>61</sup> Programs such as that in Line 2 substantially increase both the subsidies received over all income levels from 133% of FPL to 600% of FPL, sometimes quite dramatically. They thus require substantial amounts of tax revenue, perhaps on the order of double that required by programs such as Line 1. Raising that tax revenue will require increases in marginal tax rates over some group of American taxpayers. If only a small subset of American taxpayers are asked to foot the bill, the increase in marginal tax rates could be substantial.

The price of phasing out healthcare subsidies more slowly diminishes, however, if a broad portion of American income is taxed to pay for the increases in the costs of the program that will occur as a result. Suppose, for example, it took \$100 billion per year to pay for subsidies that did not phase out until 600% of FPL. If the United States GDP is on the order of \$14 trillion, a tax of less than 1% will raise more than enough money. Of course, if it took more than \$100 billion per year and the taxable income were less than \$14 trillion, the marginal tax rate could go significantly higher. The former possibility is more likely if the extension of subsidies to the upper middle class leads more large employers to drop healthcare coverage. Still, it is hard to imagine marginal tax rates approaching anything like the double-digit levels routinely created by PPACA as it stands.

Phasing out the subsidies more slowly would make healthcare more affordable for many and reduce the problem of high effective marginal tax rates highlighted in this article. It would, however, require more money to pass through the hands of the federal government and likely at least somewhat increase federal income tax rates. It would be far more difficult to maintain, as was done during the 2009 and 2010 debate over healthcare reform,<sup>62</sup> that a significant expansion of access to care could be had for a price tag less than \$1 trillion.

For those queasy about increases in tax burdens or transfer payments to the upper middle class, the only other way to lower the marginal effective tax rates created by PPACA without fundamentally altering the cost of healthcare delivery is to decrease the maximum subsidy. Line 3 shows the

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61. Unfortunately, the data needed to perform this computation is not readily available. Thus, only very crude estimates of the actual numbers are possible.

62. The accuracy of that claim has come under increasing question recently. The Chief Actuary for the Center for Medicare and Medicaid services issued a report in April 2010 indicating PPACA will result in higher healthcare costs than had previously been acknowledged. See Foster, *supra* note 17.

relationship between relative income and the net expected cost of health care for the same representative family where government subsidies are phased out from paying for approximately 46% of expected health care coverage to 0% as the enrollees move from relative incomes of 133% to 400%. As with Line 2 (and by construction) the marginal effective tax rate is now just 11%.

Moving to a system such as Line 3 also has significant costs, however. The poor will be asked to pay about 20% of their income on health care expenses, something unlikely to be within the means of many. Thus, while moving to a system such as that represented in Line 3 reduces the marginal effective tax rates created by healthcare reform, it seriously undermines a major purpose of having healthcare reform in the first place.

### *E. A Path to Reform*

As Professor Daniel Shaviro wrote a decade ago, “[a] little-known effective marginal tax rate structure, which results from layering multiple income-conditioned transfer phaseouts on top of various income-related taxes, is hard to rationalize.”<sup>63</sup> The problem Professor Shaviro noted years ago, which then manifested in a family earning \$25,000 doing no better than a family earning \$10,000, has now recurred with the passage of PPACA, and has again done so under the radar screen. While there was extensive debate on whether the premium tax credits and cost-sharing subsidies under PPACA were large enough – witness the effects of the HCEARA bill generally enlarging tax credits and cost-sharing subsidies from the original PPACA – there has been precious little written about the effects of generous subsidies on effective marginal tax rates.<sup>64</sup> This is a serious omission from the debate.

The behavioral distortions induced by high effective marginal tax rates could well be significant. Standard economic theory suggests that it should lower the supply of labor produced by the millions of workers whose income falls within 100% to 400% of FPL, particularly from those workers whose income falls near the section 1402 notch points and among those who have high expected medical expenses. The result is in turn likely to be an increase in the price of the labor these groups tend to provide. The price increase is likely to cause transfer of some jobs to humans overseas or to replacement of human labor by machines, even where it might not be economically efficient to do so. To the extent these substitutions do not

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63. Shaviro, *supra* note 45.

64. One exception is Professor Greg Mankiw of Harvard whose blog entry of October 10, 2009, makes many of the same points made in this article. See Greg Mankiw, *Marginal Tax Rates from Health Reform* (Oct. 10, 2009), <http://gregmankiw.blogspot.com/2009/10/marginal-tax-rates-from-health-reform.html>. The Congressional Budget Office also noted the issue in a July, 2009 white paper, *Congressional Budget Office, Economic and Budget Issue Brief, Effects of Changes to the Health Insurance System on Labor Markets* (July 13, 2009), <http://www.cbo.gov/ftpdocs/104xx/doc10435/07-13-HealthCareAndLaborMarkets.pdf>. However, little if any discussion appeared in the later CBO reports to Congress as the health care bills evolved. None of the public debate on the House floor immediately prior to the bill's passage referenced any effect on marginal tax rates.

incur, the increased price for labor is likely to result in an increase in the price of goods and services produced by these low and middle income workers.<sup>65</sup> Were such a depression in employment to occur, it could not only have ripple effects throughout the economy but also decrease the income-contingent tax revenue needed to fund the bill, as well as the remainder of the federal budget and state budgets.

Fortunately, it is not yet 2014. There is time to consider modifications to the bill that would reduce its most drastic effects. One such fix would be to eliminate the “cliff effect” of cutting off the 36B tax credit at a relative income of 400%. Rather the tax credit could be phased out a linear way so that it was zero at relative income of 600%. A second fix would be, as set forth above, to permit cost-sharing parameters to vary more or less continuously with the relative income of the enrollees.

The impediments to reform prior to 2014 are multiple. At bottom, we currently have an intellectual failure, a blindness almost engineered by the zeal to get health care “done” while not totally reneging on challenging promises to make health care coverage affordable while keeping the costs of the reform at least somewhat under control. In describing the failure, I can do little better than Professor Daniel Shaviro in an article written a decade ago about a different set of government wealth transfers.<sup>66</sup> We have “a failure to understand that the circumstances of the poor are only marginally, not fundamentally, different than those of the near-poor. [. . .] [T]here has been a widespread failure to understand that phasing out a benefit as income increases has identical incentive and distributional effects to explicitly imposing a positive marginal income tax rate.”<sup>67</sup> Until we cope more honestly with the tradeoffs involved, the result of the current healthcare reforms on productivity and tax revenue is likely to be considerably more significant than is generally understood.

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65. See Shaviro, *supra* note 45.

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