

An estimate of the cost of Executive branch actions on the costs of the Risk Corridors program

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- Testimony before the Subcommittee on Economic Growth, Job Creation and Regulatory Affairs, June 18, 2014

Introduction

I am Seth J. Chandler, a Foundation Professor of Law at the University of Houston Law Center where I have taught for the past 24 years. My areas of expertise include insurance law and the use of mathematics in the understanding of legal rules. I am also the principal of a blog <http://acadeathspiral.org> which has examined issues associated with the Affordable Care Act with significant emphasis on the so-called 3Rs of Transitional Reinsurance, Risk Corridors and Risk Adjustment.

I am here primarily to advise Congress on the effects of insurer profitability on Congressional expenditures under the Risk Corridors program contained in 42 U.S.C. § 18032 and to discuss the costs of recent executive branch decisions in the implementation of Risk Corridors. I am concerned that a combination of insurer losses and the recent Executive Branch changes to the Risk Corridors program will result in this provision costing the federal government more than budgeted or anticipated. I am equally concerned that the contrary predictions of the Congressional Budget Office are difficult to reconcile with mathematical reality. I also hope to be able to advise Congress on some areas of inquiry relating to the Risk Adjustment program contained in 42 U.S.C. § 18033.

Risk Corridors can best be thought of as a derivative, not unlike a synthetic collateralized debt obligation, issued by the government to insurers participating on the Exchanges. The program significantly shifts the risk of entering an insurance market whose characteristics are not well known from participating insurers to the federal government. Unlike the transitional reinsurance program (42 U.S.C. § 18031) and the permanent risk adjustment program (42 U.S.C. § 18033), there simply are no failsafe mechanisms in the Risk Corridor statute or the regulations enacted thereunder that induce it to be budget neutral. Although it is not impossible that, as the CBO has most recently asserted, Risk Corridors will be budget neutral or, as the CBO earlier asserted -- it could even be a source of net revenue for the

federal government, it is more likely, in my view, that it will add significantly to the cost of Title I of the Affordable Care Act over the three years in which it is projected to be in effect. Despite significant research, I have not been able to figure out how the CBO concluded, as it did in February of 2014, that Risk Corridors would be likely to earn the government \$8 billion. Nor have I been able to figure out how the changes in implementation of the ACA -- in particular the changes in the profit margin floor and administrative cost allowance created by HHS in April of 2014 would, as the CBO now asserts (see CBO table below), wipe out that \$8 billion gain and leave the program budget neutral.

Table 4.
Comparison of CBO and JCT's Current and Previous Estimates of the Effects of the Insurance Coverage Provisions of the Affordable Care Act

	February 2014 Baseline	April 2014 Baseline	Difference
Change in Insurance Coverage Under the ACA in 2024 (Millions of nonelderly people, by calendar year)^a			
Insurance Exchanges	24	25	*
Medicaid and CHIP	13	13	1
Employment-Based Coverage ^b	-7	-7	-1
Nongroup and Other Coverage ^c	-5	-5	*
Uninsured ^d	-25	-26	-1
Effects on the Cumulative Federal Deficit, 2015 to 2024^e (Billions of dollars)			
Exchange Subsidies and Related Spending ^f	1,197	1,032	-164
Medicaid and CHIP Outlays	792	792	**
Small-Employer Tax Credits ^g	15	15	**
Gross Cost of Coverage Provisions	2,004	1,839	-165
Penalty Payments by Uninsured People	-52	-46	6
Penalty Payments by Employers ^g	-151	-139	12
Excise Tax on High-Premium Insurance Plans ^g	-108	-120	-12
Other Effects on Revenues and Outlays ^h	-206	-152	54
Net Cost of Coverage Provisions	1,487	1,383	-104
Memorandum:			
Net Collections and Payments for Risk Adjustment, Reinsurance, and Risk Corridors ⁱ	-8	0	8

Source : <http://www.cbo.gov/sites/default/files/cbofiles/attachments/43900-2014-02-ACAtables.pdf>

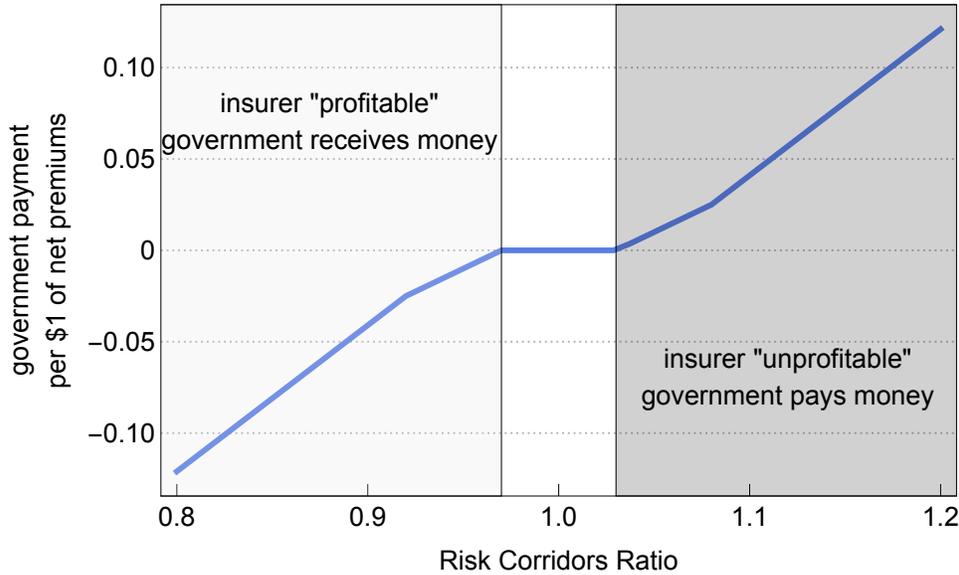
■ Figure 1

The idea behind the Risk Corridors statute

Individual insurer level

The graphic below illustrates the idea behind Risk Corridors. It looks at the situation from the perspective of an individual insurer and the federal government. The line going from bottom left to top right shows the amount of money paid under the Risk Corridors program by the government per \$1 of net premiums an insurer receives. The line shows this payment amount as this statutory creation called the Risk Corridor Ratio varies. As a first approximation, you can think of the Risk Corridors Ratio as a

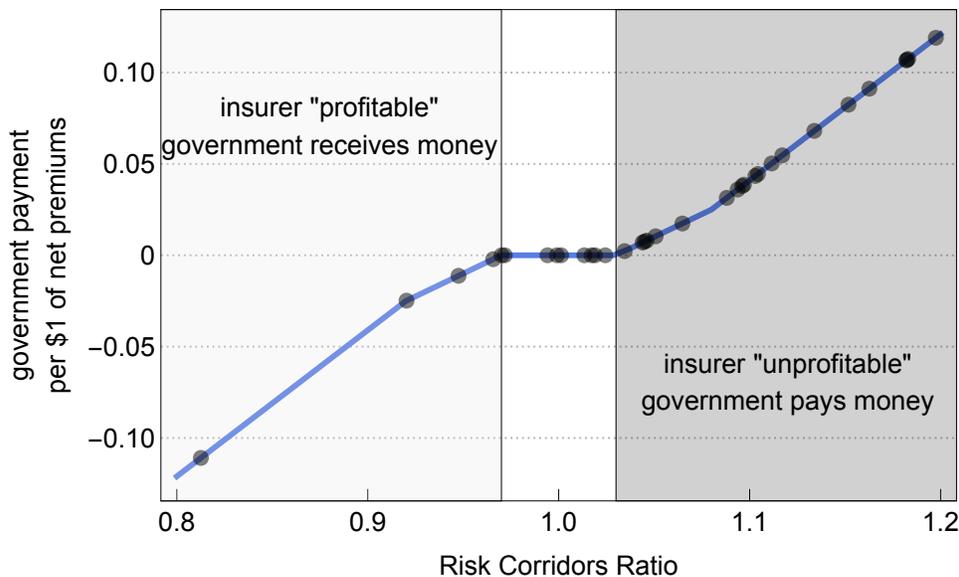
measure of insurer profitability. Roughly speaking, if the Risk Corridor Ratio is below 0.97, the government thinks of the insurer as if it were profitable and taxes the insurer on its ACA-based profits, potentially at a rate of up to 80%. If the Risk Corridor Ratio is above 1.03, the government thinks of the insurer as if it were unprofitable and covers up to 80% of the insurers losses. Between 0.97 and 1.03, the government does nothing.



■ Figure 2

Aggregate level

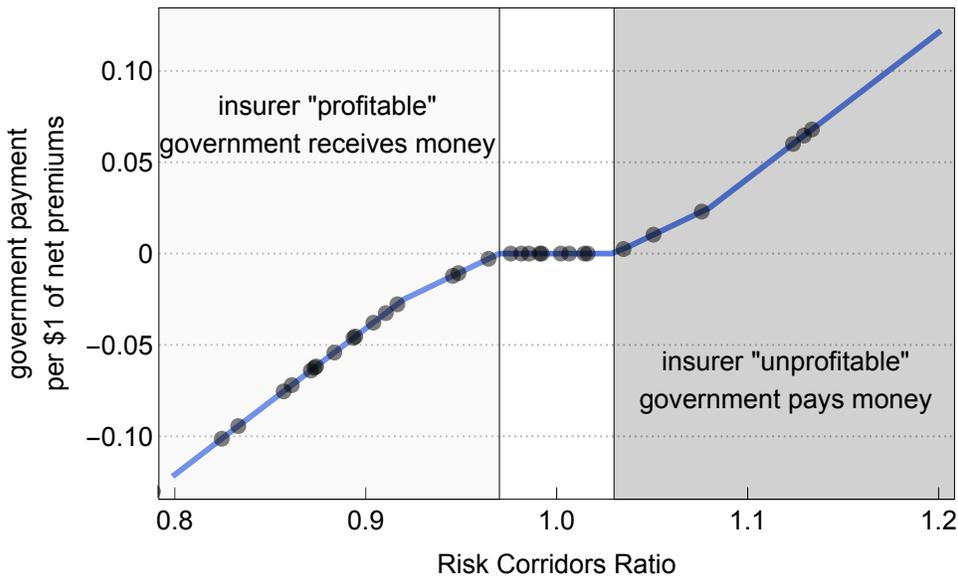
We now start looking at the situation in aggregate. If insurers are mostly in the gray zone on the right side, which is illustrated in the graphic below -- or, to oversimplify a bit -- if insurers are "unprofitable" as computed by the government -- the government pays money to insurers.



■ Figure 3

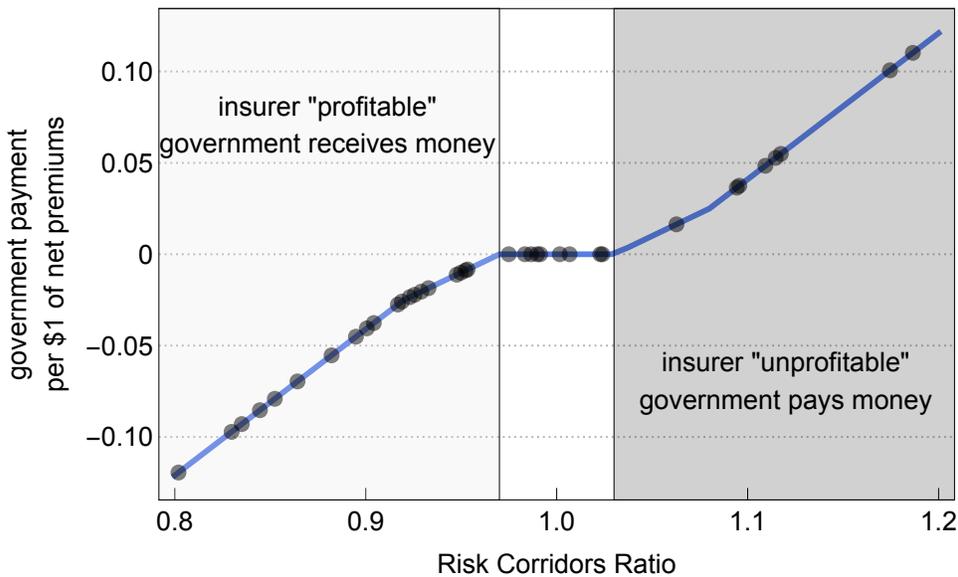
If insurers are mostly in the white zone, in which the Risk Corridors Ratio is less than 1 or -- again to

oversimplify a bit -- if insurers are "profitable" as computed by the government, the government receives money from insurers.



■ Figure 4

And if insurers are scattered pretty evenly throughout the gray and white zones, the government will break even.

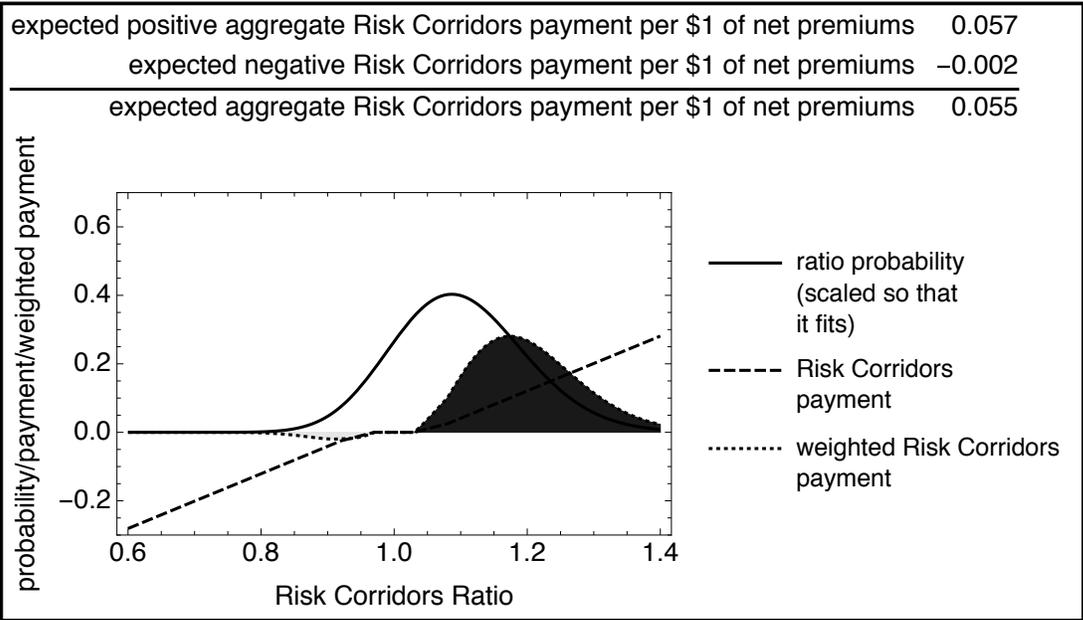


■ Figure 5

Now let's look more closely at the situation in aggregate. What I hope you can see even before I get more elaborate is that the profitability of insureds selling in the Exchanges will affect the aggregate amount of money the government receives from insurers or -- more likely -- pays to insurers through the Risk Corridors program. You can see this in the graphics below. In each of the three graphics, the dashed line is the Risk Corridors payment as a function of the Risk Corridors Ratio. The dotted line is the probability of an insurer incurring that Ratio and the sold line shows what happens when I multiply each Risk Corridor payment by the probability of the government paying that sum. The dark gray area

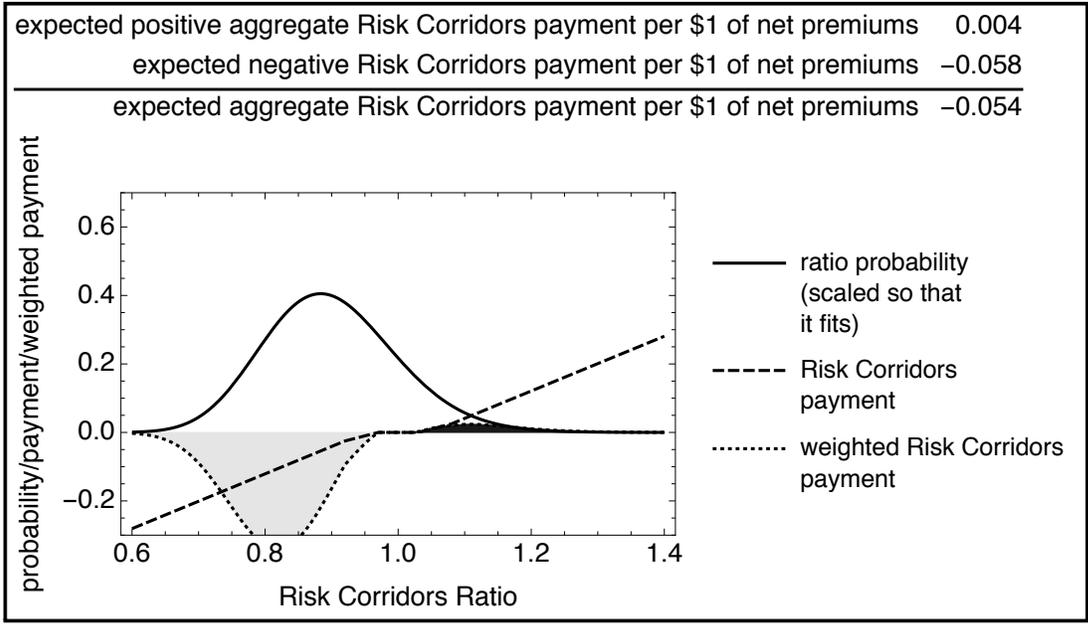
thus becomes a geometric representation of the amount of money the government pays to “unprofitable” insurers and the light gray area becomes a geometric representation of the amount of money the government receives from “profitable insurers.” (In a color version of this testimony, the colors are red and green respectively). This means that the dark gray area minus the light gray here is a geometric representation of the amount the government owes. I’ve also included a little table at the top to summarize that arithmetic.

In the first example, insurers tend to be unprofitable and the government pays about 5.5 cents for every dollar of net premium insurers receive.



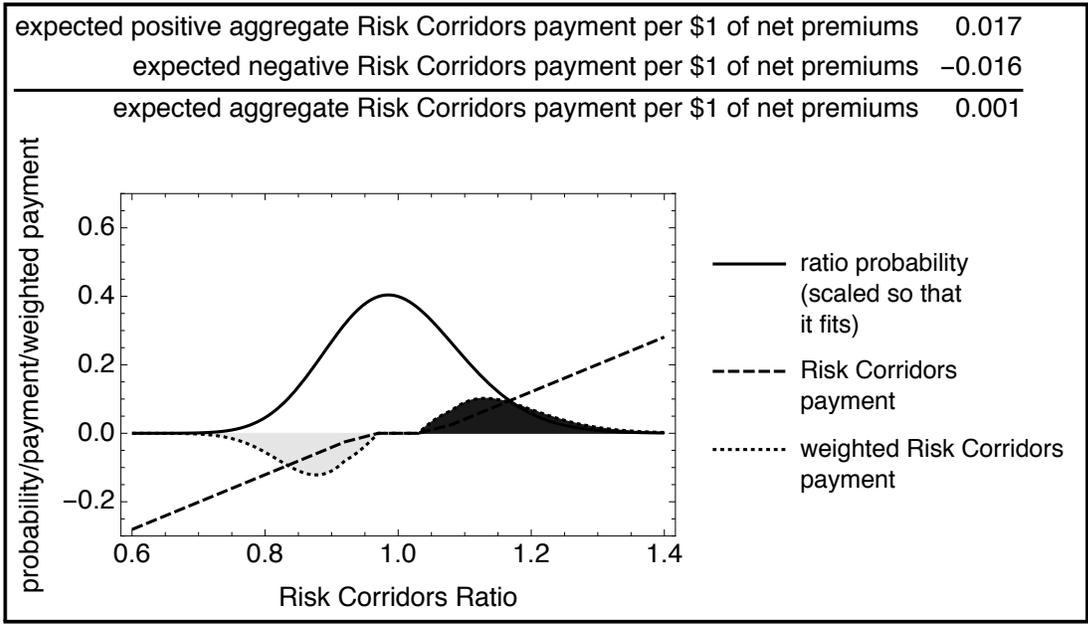
■ Figure 6

In the second example, insurers tend to be profitable and the government receives about 5.4 cents for every dollar of net premium insurers receive.



■ Figure 7

In the third and final example, insurers are equally likely to be profitable and unprofitable so Risk Corridors is essentially budget neutral.



■ Figure 8

Implementation of Risk Corridors by the Obama administration

The two relevant Executive branch actions

Thus far I have presented Risk Corridors as it was actually enacted by Congress. The Executive Branch, however, has implemented Risk Corridors and other ACA provisions, however, with definitions and various complications that push the Risk Corridors Ratio away from insurer profitability.

There are two Executive branch actions of which Congress needs to be mindful in evaluating the real costs of Risk Corridors. The first is the effect of the so - called "transitional policy" created by the Obama administration after the political firestorm created by the realization that people were not going to be able to keep their health plans, period, even if they liked them. Without statutory authorization, the Obama administration delegated to states the authority, now exercised by about 60%, to permit insurers to continue selling policies that violated numerous provisions of the ACA such as bars on more health-based underwriting and pricing and requirements to provide Essential Health Benefits. This action undermined the delicate mechanisms in the ACA intended to prevent an adverse selection death spiral. It meant that generally healthier insureds could leave the community rated pools of policies sold inside the Exchange, perhaps forgo benefits they did not want, and leave the pools inside the Exchange generally smaller, less healthy, and thus more likely to result in losses for insurers. The second step, taken to try to prevent the unraveling of the ACA mechanism created by the first executive action, and also without statutory authorization, was to modify 45 C.F.R. § 153.500 (shown below) essentially to permit certain insurers to count phantom costs in the computation of its Risk Corridor Ratios. It was and is a mechanism by which the Obama administration has, quite frankly, decided to make sure that insurers -- on whose voluntary participation in the Exchanges the whole ACA edifice depends -- are "taken care of." As I will discuss, CMS changed these parameters this past spring for 2014 in certain states not because there was anything wrong with the old formula -- indeed the only comments it published on the matter argued for the reverse of what it most recently did -- - but, as it admitted, to provide insurers selling in the Exchanges in those states more money.

 § 153.500 Definitions.

Adjustment percentage means, with respect to a QHP:

(1) For benefit year 2014, for a QHP offered by a health insurance issuer with allowable costs of at least 80 percent of after-tax premium in a transitional State, the percentage specified by HHS for such QHPs in the transitional State; and otherwise

(2) Zero percent.

Allowable administrative costs mean, with respect to a QHP, the sum of administrative costs of the QHP, other than taxes and regulatory fees, plus profits earned by the QHP, which sum is limited to the sum of 20 percent and \square the adjustment percentage of after-tax premiums earned with respect to the QHP (including any premium tax credit under any governmental program), plus taxes and regulatory fees.

Profits mean, with respect to a QHP, the greater of:

(1) The sum of three percent and the adjustment percentage of after-tax premiums earned; and

(2) Premiums earned of the QHP minus the sum of allowable costs and administrative costs of the QHP.

Transitional State means a State that does not enforce compliance with §§ 147.102, 147.104, 147.106, 147.150, 156.80, or subpart B of part 156 of this subchapter for individual market and small group health plans that renew for a policy year starting between January 1, 2014, and October 1, 2014, in accordance with the transitional policy outlined in the CMS letter dated November 14, 2013.

■ Figure 9

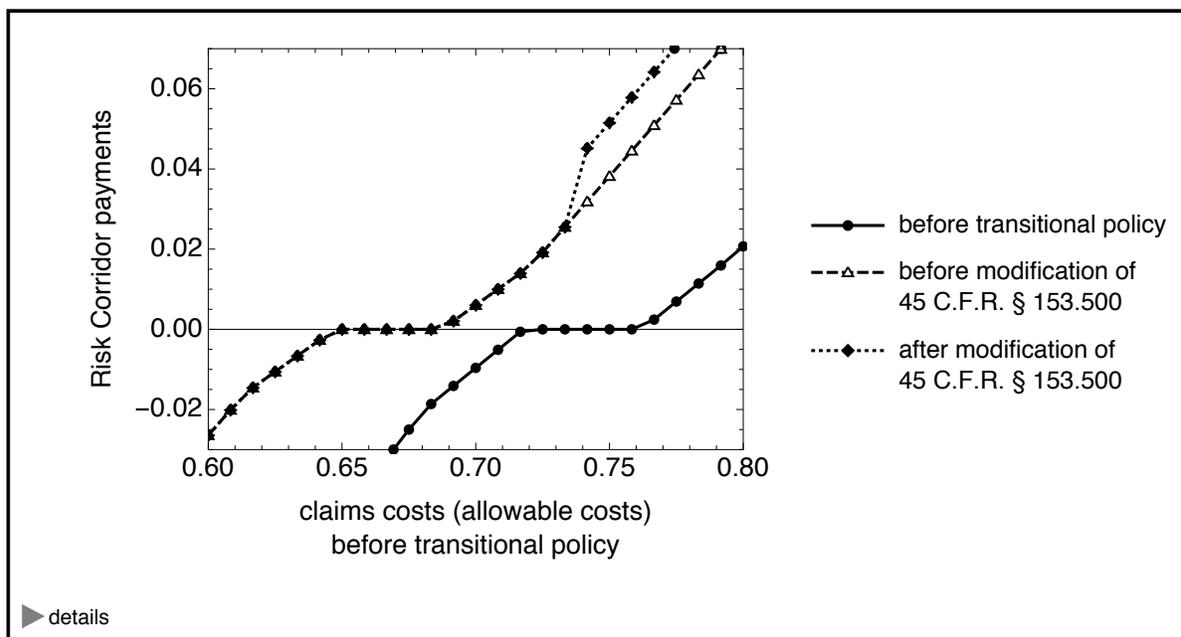
But how much money are we talking about? I have researched in some detail the likely costs of the Risk Corridors program using the methodologies described by CMS in its Notice of Benefit and Payment Parameters dated March 11, 2013 and the subsequent revisions of that methodology by CMS. (See Appendix 2). That research has permitted me to derive a mathematical formula for the Risk Corridor payments by the government per dollar of adjusted premiums. The formula, which is provided in the Appendix to my written testimony, is a function of such items as claims costs incurred and of regulatory parameters. These parameters include esoteric and non-statutory values such as the "profit margin floor" and the "allowable administrative costs cap. " I first consider the effect of the two Executive branch actions at the level of an individual insurer and the government. Then, as before, I consider the

effect of these two actions at an aggregate level.

Effects at an individual insurer level

Although the formula is gruesomely complex, we can use computer algebra systems to visualize the effects of both of these administrative actions. To do so, I am going to use the case of the hypothetical insurer created by CMS in its March 11, 2013, exposition of Risk Corridor mechanics. This insurer earns \$200 in gross premiums and has claims costs of \$140. I've attached a copy of the relevant pages of the CMS document as Appendix 2 to make it easier to follow along.

The graphic below shows the relationship between what the claims cost of the insurer would have been but for either of the administrative actions and the Risk Corridor payment by the government. The circle line (the lowest line) shows the situation before either of the executive branch actions. Notice that the government breaks even or makes money so long as the claims costs would have been below about 76% of the adjusted premiums. The triangle line (the one next above the circle line) shows the situation resulting from the transitional policy. Lower cost insureds disproportionately exit the exchanges resulting in higher per member mean claims costs and fewer insureds over which to spread non-claims costs of running the plan. As a result, insurers that would have been profitable now lose money and are entitled to Risk Corridor benefits. But, Risk Corridors never fully indemnifies an insurer for its losses. So, the diamond line (the highest line) shows the situation after the second executive action, tampering with section 153.500 by creating this "adjustment percentage" that modifies the minimum profits an insurer is permitted to claim and the maximum amount of non-claims expenses an insurer, most of whom sell all sorts of plans, can attribute to plans sold on an Exchange. Notice that the diamond line tracks the triangle line up until claims costs as a fraction of net premiums hits a certain threshold. At that point, in the transitional states, the "adjustment percentage" kicks in, the Executive branch treats insurers as losing more money than before, and Risk Corridor payments can grow significantly.

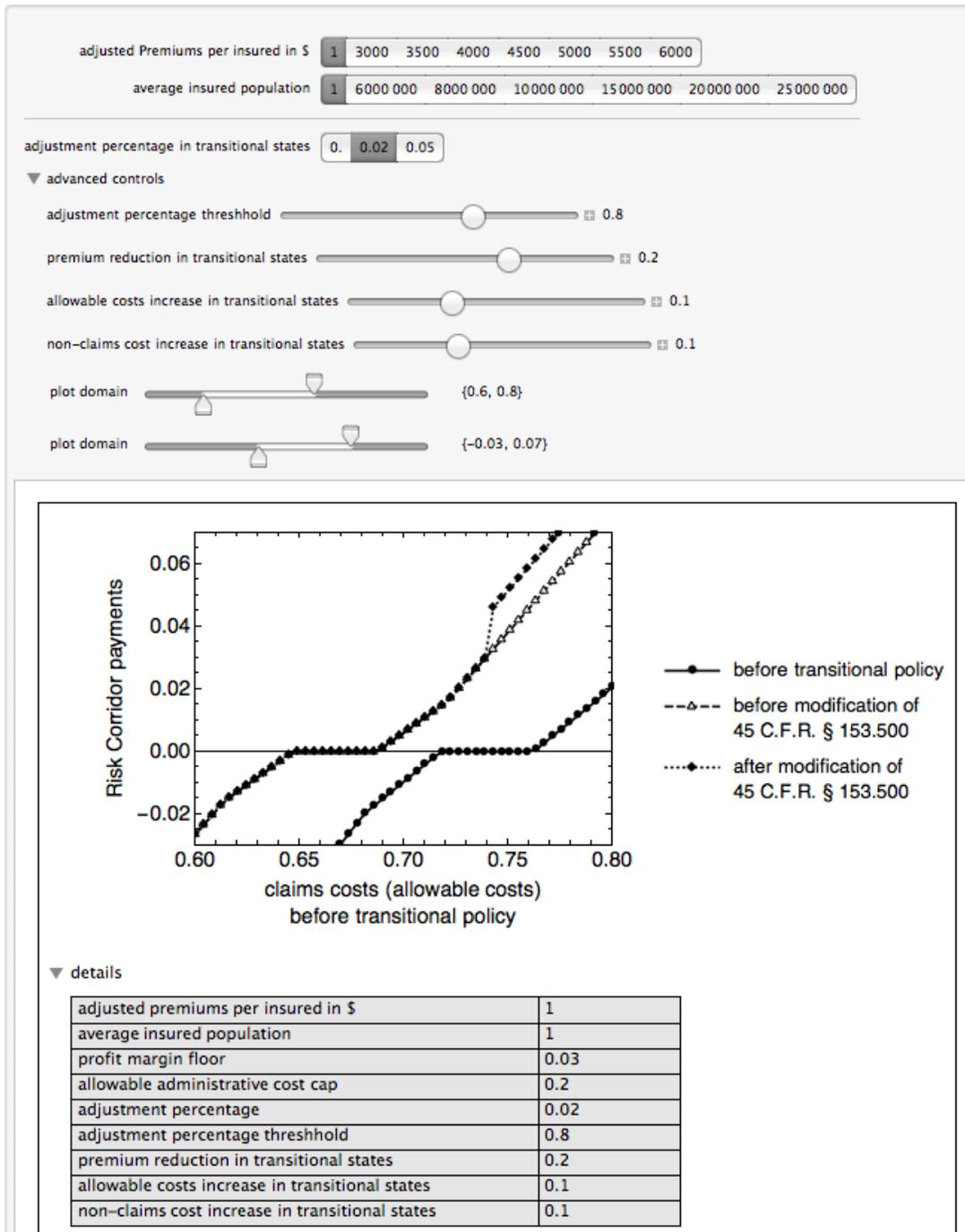


■ Figure 10

I want to be clear that the first Executive action -- the per se refusal to enforce provisions of the ACA in certain states -- indeed created a problem for the Obama administration, even if it was one of its own

making. If the Obama administration had not subsequently changed the way in which the internal computations of Risk Corridors worked, insurers selling on the Exchanges would have lost money relative to what would have happened had no “transitional policy” been developed. Some might have fled the Exchanges or decided not to reenlist for 2015. The Affordable Care Act is extraordinarily vulnerable to voluntary participation by private and often profit-driven insurance companies. But, instead of coming to Congress and asking that the Risk Corridor parameters be changed or that Transitional Reinsurance be made more generous to compensate for the shift in the likely distribution of claims costs induced by the Transitional Policy, or, for that matter, seeking a statutory change that would align campaign rhetoric with the realities of the ACA, the Obama administration added a conditional “adjustment percentage” to further complicate its Risk Corridor algorithm. (45 C.F.R. § 153.500) and move it farther away from what the statute specified. By regulation, CMS increased in certain states the minimum amount an insurer could claim as profit and it increased the amount an insurer could treat as an administrative expense. It did so in states that would permit insurers to continue to sell policies that violate various provisions of the Title I of the ACA. Doing so made insurers look less profitable than they had been under the prior regulations and thus increased the amount the government would owe them under Risk Corridors or, at least, decrease the amount the insurers would pay the government to help balance the Risk Corridor account. The upside, at least in some eyes, of having taken this latter action is that the entire ACA edifice retained a higher probability of stability. The downsides, however, is the expensive, heightened subsidization of the insurance industry by the federal government.

In the oral presentation of this testimony I hope to be able to show an interactive graphic that will demonstrate these effects yet more clearly and that will permit examination of different assumptions. Here is what it will look like.

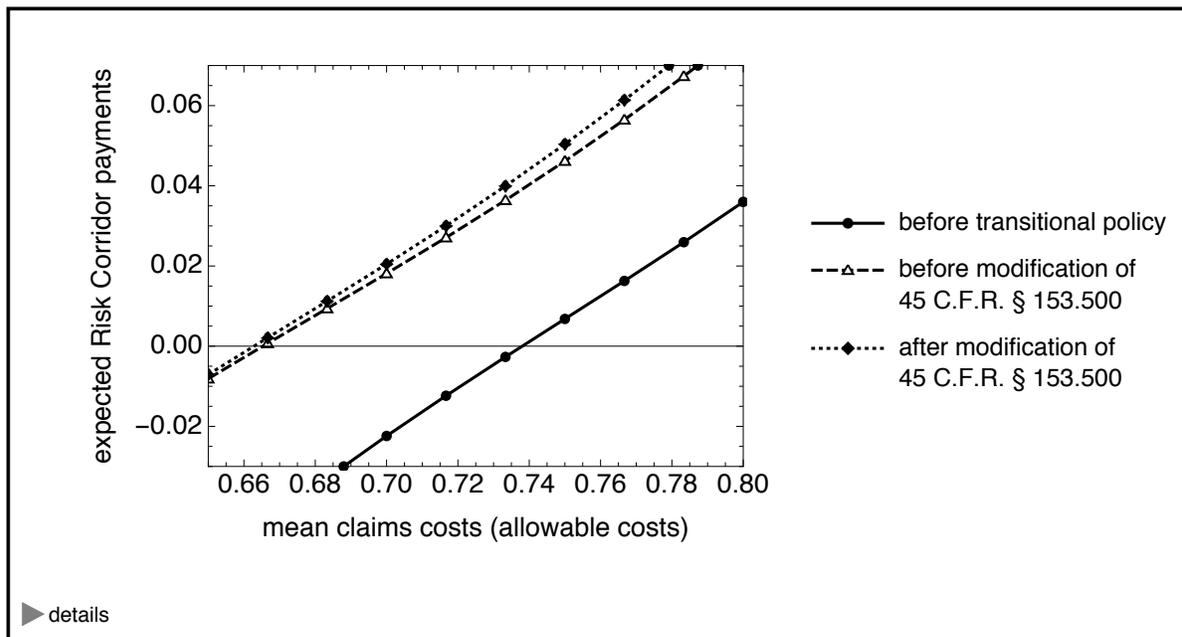


■ Figure 11

Aggregate effects

The above graphic and analysis looks only at an individual insurer, however. What should matter more to Congress is the effect of these Executive branch changes on the overall cost of the Risk Corridors program. And this depends substantially on the distribution of claims costs relative to premiums. What I show in the graphic below is how various assumptions about overall premium revenue under the ACA and the distribution of claims costs relative to premiums for insurers selling on the Exchanges affect the expected costs of the Risk Corridors program. I do not pretend that this computation will be accurate to the penny -- there are far too many variables to do so -- but I do claim that it provides a pretty good estimate of what is likely to happen.

The graphic below illustrates the computation. It shows the cost to the government per dollar of net premium from running Risk Corridors as the mean of the distribution of claims costs varies. The y-axis shows the expected Risk Corridor payment as a fraction of the adjusted premiums collected by insurers. One can see that as the mean claims cost increases, the expected Risk Corridor payment increases in a fairly linear way. The circle line shows how matters might have stood had no transitional policy been announced. The triangle line shows the situation with just the transitional policy in effect but no attempt to further subsidize -- or "bailout" as some have termed it -- the insurance industry. And the diamond line shows matters given both the transitional policy and the changes to section 153.500 of the Code of Federal Regulations.

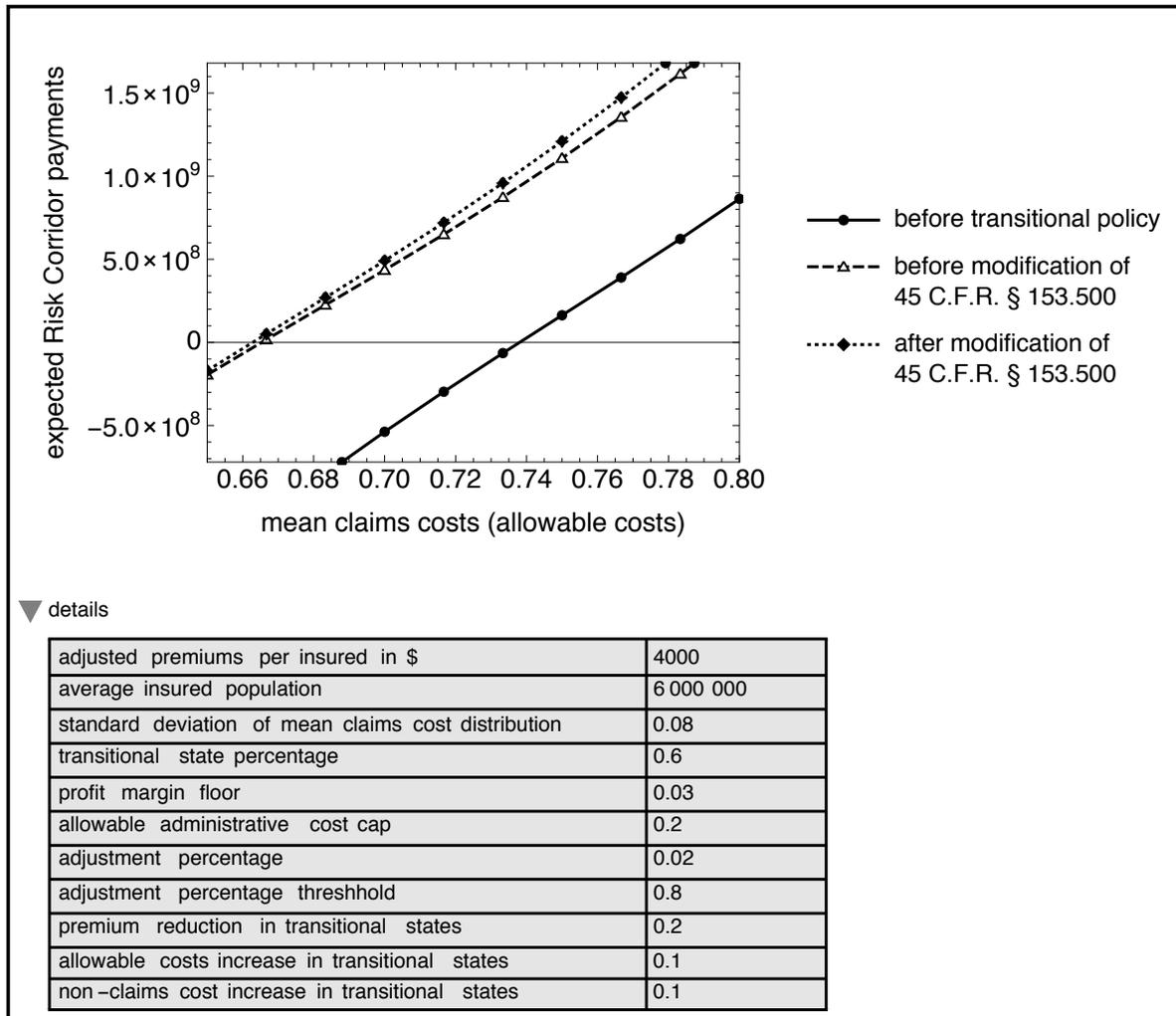


■ Figure 12

This is just the payment per dollar. How many dollars are involved? CMS says 153.500 is just modified for 2014, but it also says it reserves the right to rethink. It would be doing a disservice to the insurance industry to suggest that it would not urge continuation of the more liberal formula through 2015 and 2016 and substituting hope for realism to suggest that, if insurers indeed lose money, the Executive branch and some in Congress would not be sympathetic to such pleas. We also don't know what future enrollments and premiums will look like. Finally, we don't know how many states will continue to be "transitional states" assuming the Obama administration permits continued violation of the ACA by insurers in order to preserve its campaign promises. In the end, we have to make some reasonable assumptions.

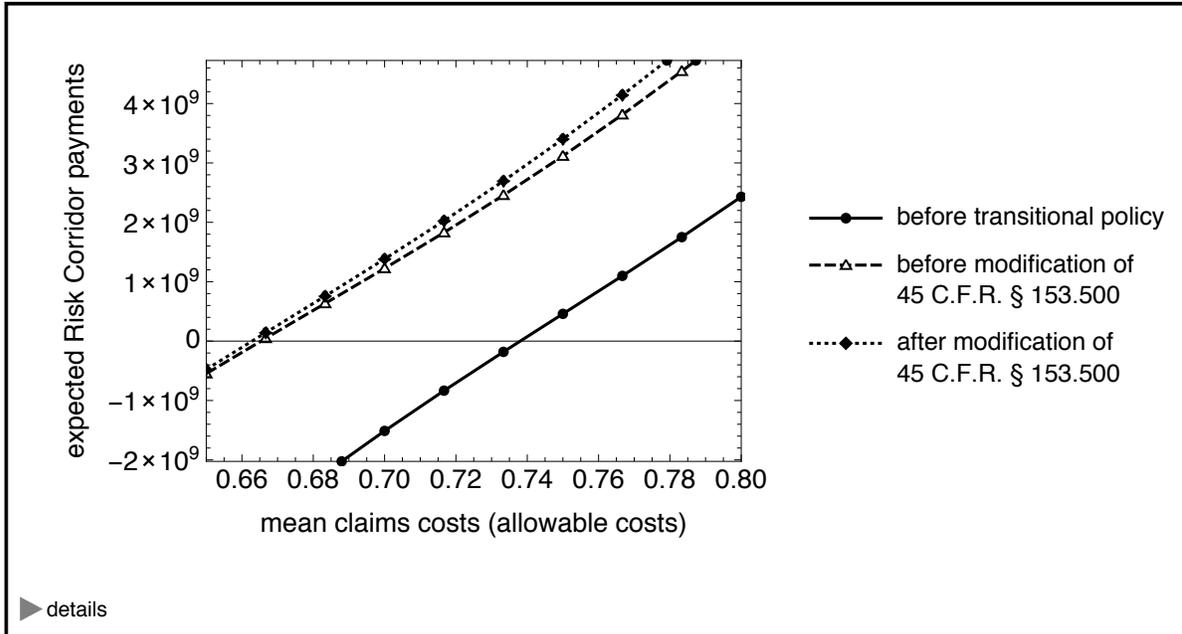
The graphic below shows the situation for one set of assumptions. I accept CMS's hedged promise that the transition and the relief lasts just one year. In that setting, the transition probably increased the Risk

Corridors bill by about \$1 billion and the modification to section 153.500 probably tagged on an extra \$100 million to the price tag. These bills are on top of whatever the cost would be of running Risk Corridors in the first place in a setting in which insurers stand a good likelihood of losing money in the Exchanges.



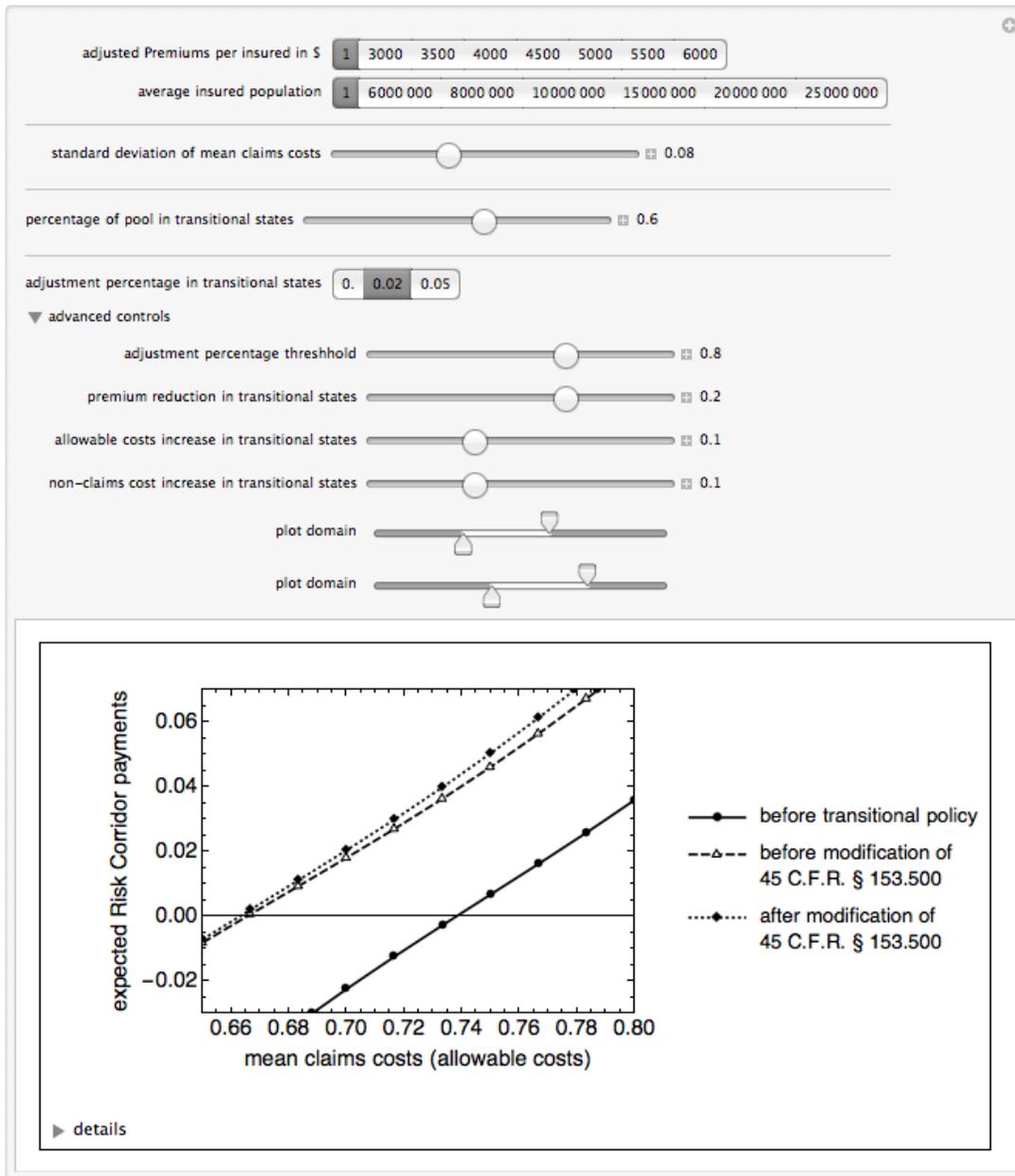
■ Figure 13

The second graphic shows the situation for an alternative scenario: the transition lasts for three years and so too does the modification to section 153.500. In that case, the incremental average cost for Risk Corridors could be \$2.5 billion per year from the transition and perhaps \$200 million from the modification to section 153.500. Of course, if more states become transitional states, the bill goes higher.



■ Figure 14

Again, in the oral presentation of this testimony I hope to be able to show an interactive version of this graphic that looks like this. It would permit different assumptions to be used.



■ Figure 15

In sum, Risk Corridors might possibly have been budget neutral had the Executive branch not sabotaged the ACA by creating incentives for healthier insureds to drop out of the Exchanges and then not compounded the situation by propping up insurers by inserting an "adjustment percentage" into the regulations that made insurers appear poorer than perhaps they were. Having taken both of these actions, however, the probability that Risk Corridors will, ultimately, cost the federal government and taxpayers money is high. The Executive branch has asserted that any such costs should not be a cause for concern since fact that the Obama administration will attempt to hide this imbalance by violating the statute and shorting insurers for a year, making up the deficit the following year using that year's collections. This is the position taken by CMS in its Fact Sheet of April 11, 2014. (<http://www.cms.gov/CCIIO/Resources/Fact-Sheets-and-FAQs/Downloads/faq-risk-corri->

dors-04-11-2014.pdf). The problem, of course, in addition to the fact that the statute does not call for insurers to float the federal government a loan, is that there is an end game. In the final year or years of the program there may be no future receipts with which to make the statutorily required payments to insurers. CMS says it does not anticipate this problem occurring but says, “[W]e will establish in future guidance or rulemaking how we will calculate risk corridor payments if risk corridor collections ... do not match risk corridors payments as calculated under the risk corridors formula for the final year of the program.” I believe a pithier translation of this comment is that “We have no idea what to do if in the end there is not enough revenue.” Congress should monitor CMS's promised attempt to escape this predicament.

The Congressional Budget Office Scoring

The issue I must confront in saying all of this is that the Congressional Budget Office seems to disagree. It is worth noting that the CBO did not include Risk Corridors in any visible way in their scoring of the cost of the Affordable Care Act. Then, as shown in Figure 1 above, in February of 2014, after a bill was introduced by Senator Marco Rubio to repeal Risk Corridors, the CBO said it would actually net the government \$8 billion (\$16 billion in revenue from profitable insurers and \$8 billion in payments to unprofitable insurers). (<http://www.cbo.gov/sites/default/files/cbofiles/attachments/45010-breakout-AppendixB.pdf>) The CBO purported to base its analysis on a comparison with Medicare Part D programs without perceptible consideration as to whether that program was fully relevant to the far more complex provisions of the Affordable Care Act and without apparent consideration of what then appeared to be the then-woefully low levels of enrollment (or the unknown level of actual purchases) in the Exchanges. No comparison was made with a more recent part of the ACA, the Pre-Existing Condition Insurance Program, in which claims expenses had proven to be about triple of what had been expected. Moreover, even if, as the CBO claimed, insurer premiums would exceed costs by “a few percent” such as the 2% or 3% levels it cited with respect to Medicare Part D, the mathematical analysis done here suggests that such modest insurer profits would not have raised the \$8 billion in Risk Corridor revenues asserted by the CBO. Raising \$8 billion it would have required insurers to have premiums 7% or higher of costs on average -- a level for which there was (and is) no factual support.

Then, in April of 2014, after the "transitional policy" was announced, the CBO said Risk Corridors would break even. Apparently it did so based on an April 11, 2014, “Fact Sheet” issued by CMS purporting to resolve the question of “What risk corridors payments will HHS make if risk corridors collections for a year are insufficient to fund risk corridors payments for the year, as calculated under the risk corridors formula?” (<http://www.cms.gov/CCIIO/Resources/Fact-Sheets-and-FAQs/Downloads/faq-risk-corridors-04-11-2014.pdf>). CMS asserted that it would simply use the proceeds from the following year to pay off insurers from the preceding year. This, of course, would hurt insurer cashflow. More importantly, however, what would happen if, as we headed for the end of the Risk Corridors program, because of all this borrowing against future receipts, there was no money to pay the 2016 or 2017 Risk Corridor obligations? As discussed above, CMS has presently not expressed any idea as to what it would do in such a scenario.

I doubt many accountants would accept that a program that depended on nebulous future revenues would be considered budget neutral. Rather than consider the actual likelihood, however, that there would be any money left to pay for the final years of Risk Corridors payments, the CBO apparently just accepted CMS's vapor funding. Had CBO used critical thinking skills, I believe the picture would be less benign. Insurance policy sales in the Exchange are subject to “The Winner's Curse” in which the policies most likely to be purchased are those most likely to be underpriced. While perhaps insurer pricing in the final year of the Risk Corridors program will be better informed than it is presently, the spectres of adverse selection and moral hazard create a substantial risk that losses in the first years of the program will be sufficiently large to make the entire program a loser for the government. What appears to have happened here is a CBO capitulation to the Executive Branch's ipse dixit that the program would break even.

I would urge Congress to take a closer look at the CBO methodology here. If we are going to have government programs as complex as the ACA and with as long a time horizon as it envisions, it becomes even more critical that we have a strong, independent and technically adept agent to estimate their costs as well as possible. To be sure, it may well be that were Congress to take a closer look it would find that the CBO's methodology was plausible and that it is just a case of two experts disagreeing in good faith. It might even find that the CBO with superior resources and information was taking into

account facts and issues I have neglected. The world can live with this testimony being wrong. What it will not do well with, however, is a CBO that is not acutely aware of the need to separate as much as is possible politics and opinion from law and fact. Unfortunately, in my opinion there is enough smoke here to warrant a closer look by Congress.

The Risk Adjustment Program

Let me spend a few brief moments on the Risk Adjustment Program; it, unlike Risk Corridors, is a permanent feature of the ACA. In my opinion, Risk Adjustment contains incentives for insurer fraud and manipulation that need to be monitored carefully but whose very monitoring creates the potential for patient privacy invasions, not just among those who accept subsidies for policies purchased on the Exchanges but also for insureds in the small group market who are in plans protected by Risk Adjustment.

The idea of Risk Adjustment is again to detach insurer profitability from the relative riskiness of the pool it insures. But one needs to state the form of protection afforded by this program very carefully. Risk Adjustment will not protect insurers against the risk most likely to materialize -- the aggregate pool -- the one covered by all relevant insurers -- having higher medical expenses than expected. Risk Adjustment leaves that risk on the insurance industry. Instead, insurers are expected by 2017 to figure out how much it should cost to insure a pool if it is composed of average pool members and to do so without the protection currently afforded by Transitional Reinsurance or Risk Corridors. Risk Adjustment just protects the insurer who prices accurately on the basis of a standard pool but finds for some reason that its pool is populated by those government models say are likely to incur higher than average medical expenses.

The incentives for an insurer under Risk Adjustment are simple. First, seek out those insureds for whom the government estimated cost is most at variance with the actual projected costs. There is no current legal barrier against this behavior. Indeed, there is already a study by the Milliman Actuarial firm on how to undertake this coding arbitrage for fun and profit.

(<http://us.milliman.com/uploadedFiles/insight/2013/adverse-selection-aca.pdf>) The government expense model, though complex, is not as complex either as reality or as insurers are able themselves to create. Second, give as many insureds as possible those diagnoses that the federal government, using Hierarchical Condition Codes, believes create high medical expenses.

Congress needs to be vigilant in making sure that opportunities for coding arbitrage are few and short lived. This will require oversight of administrative agencies to ensure that they are gathering the proper information on the actual costs of treatment for each condition code and to consider whether finer grained methods should be employed in determining the projected claims costs of individuals.

Congress also needs to be very concerned about enforcement of Risk Adjustment. Laxity will result in insurers getting away with upcoding: honest insurers will end up subsidizing the shady based on the latter's bogus projections of future claims costs. Overly vigilant enforcement is problematic as well, however. Insurers can not operate in an environment of terror in which a mistake in selecting from among closely competing diagnoses leaves them vulnerable to recapture or claims of fraud. Moreover, the opportunities for release of private, sensitive information abound in the validation process necessitated by Risk Adjustment. Auditors of Risk Adjustment coding by insurers will need to take a look at the complete medical histories of sexual assault victims, HIV patients, cancer patients, individuals suffering miscarriages, persons with various mental illnesses and other areas of medical sensitivity in order to determine whether the insurer coded correctly and whether any errors are the product of mistake or

fraud. Moreover, audits will need to be done of the auditors to ensure that any of their claims of error are in fact correct. The more people that poke around in these records, the greater the opportunity for inadvertent or advertent release.

Conclusion

I wish to make clear that the cost of Risk Corridors is not congruent to the wisdom of Title I of the ACA. There may be some who believe that, even if Risk Corridors costs billions, it is a necessary component of a system that manages to insulate insureds from most of the costs of their own medical characteristics but remains sufficiently attractive to insurers that they voluntarily participate in an insurance market notwithstanding the many prior failures and continuing hazards of community rating. There is also nothing automatically wrong with subsidizing insurers, even ones who have earlier achieved high profits in a fair market, to achieve government goals if they are worthy. Elimination of Risk Corridors could have serious consequences on the stability of the insurance Exchanges and, indeed, the complex web of Obamacare. But because the complexities of the ACA are by no means the only way of extending access to healthcare to more Americans or improving the health of Americans, the true aggregate cost of Title I of the ACA -- of which Risk Corridors is a component -- are highly relevant for Congress to examine. And because insurance companies would not usually be high on my list of those in need of government assistance, Congress should consider whether the implementation of Risk Corridors has been consistent with the statutory objectives. Congress should pay close attention to executive branch decisions regarding administration of Risk Corridors that significantly affect its ultimate price tag. It should be concerned about responses from the Executive branch such as that found in the April 11 Fact Sheet that induce the federal budget to be viewed as a discretionary fund rather than a set of appropriations and have the potential to reallocate taxpayer funds to large insurance corporations. Finally, Congress needs to make sure that its own budgeting office is engaged in independent, objective, and replicable research in determining the cost of large and complex government programs.

Disclaimer

The views expressed here are my own and do not necessarily represent those of the University of Hosuton.

Appendix I : Derivation of Relationship between mean and standard deviation of a lognormal distribution and the aggregate net payment under Risk Corridors

Government payment

The Risk Corridor payment of the government is equal to the following :

$$(\phi - \text{Min}[\delta, \epsilon + \text{Max}[\alpha, \beta]]) \left(\begin{array}{l} \left[\begin{array}{l} \left[\begin{array}{l} \frac{1}{40} + \frac{4}{5} \left(\frac{23}{25} - \gamma \right) \\ \frac{1}{2} \left(\frac{97}{100} - \gamma \right) \\ 0 \end{array} \right. \\ \left. \begin{array}{l} \gamma < \frac{23}{25} \\ \frac{23}{25} \leq \gamma < \frac{97}{100} \\ \text{True} \end{array} \right. \end{array} \right] \gamma < 1 \\ \left[\begin{array}{l} \frac{1}{2} \left(-\frac{103}{100} + \gamma \right) \\ \frac{1}{40} + \frac{4}{5} \left(-\frac{27}{25} + \gamma \right) \\ 0 \end{array} \right. \\ \left. \begin{array}{l} \frac{103}{100} \leq \gamma < \frac{27}{25} \\ \gamma \geq \frac{27}{25} \\ \text{True} \end{array} \right. \end{array} \right] \gamma \geq 1 \\ 0 \qquad \qquad \qquad \text{True} \end{array} \right)$$

where

$$\begin{aligned} \gamma &\rightarrow (\text{ac} (1 + \text{aci}) (1 - \text{pr})) / \\ &(\text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t - \\ &\text{Min}[\text{aacc} (\text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t), \\ &\text{ncc} (1 + \text{nci}) (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t + \\ &\text{Max}[-\text{ac} (1 + \text{aci}) (1 - \text{pr}) - \\ &\text{ncc} (1 + \text{nci}) (1 - \text{pr}) + \text{pe} (1 - \text{pr}), \\ &\text{pmf} (\text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t)])] \\ \alpha &\rightarrow \\ &-\text{ac} (1 + \text{aci}) (1 - \text{pr}) - \text{ncc} (1 + \text{nci}) (1 - \text{pr}) + \text{pe} (1 - \text{pr}) \\ \beta &\rightarrow \text{pmf} (\text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t) \\ \text{aacc} &\rightarrow \text{aacc} (\text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t) \\ \epsilon &\rightarrow \text{ncc} (1 + \text{nci}) (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t \\ \phi &\rightarrow \text{pe} (1 - \text{pr}) - (1 + \text{nci}) (1 - \text{pr}) t \end{aligned}$$

where aacc is the allowed administrative cost cap, ac is allowable costs (claims and related), aci is the percentage increase in per member allowable costs caused by the transitional policy, ncc is the non-claims cost, nci is the percentage increase in per member non-claims costs caused by the transitional policy, pe is the (gross) premiums earned, pmf is the profit margin floor, pr is the percentage reduction in (gross) premiums caused by the transitional policy, and t are the fees and taxes.

Expected government payment

If we assume that allowable costs (ac) follow a lognormal distribution (bounded below by zero) of which the mean is μ and the standard deviation is σ then we can find the expected Risk Corridor payment is equal to the following:

$$\int_0^{\infty} \frac{\text{payment}(\text{ac}) \exp\left(-\frac{\left(\log(\text{ac}) + \frac{1}{2} \left(\log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right) - 2 \log(\mu)\right)\right)^2}{2 \log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right)}\right)}{\sqrt{2\pi} \text{ac} \sqrt{\log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right)}} d\text{ac}$$

This is so in part because, as shown below, a conventionally parameterized lognormal distribution can be reparameterized directly using its mean and standard deviation. The *Mathematica* code below shows how this is done.

```
reparameterizationEquations = Reduce[{Mean[LogNormalDistribution[a, b]] == μ,
  StandardDeviation[LogNormalDistribution[a, b]] == σ, b > 0},
  {a, b}, Reals, Backsubstitution -> True]
```

$$\mu \neq 0 \ \&\& \ \sigma \neq 0 \ \&\& \ \mu > 0 \ \&\& \ \sigma \geq 0 \ \&\& \ a = \frac{1}{2} \left(2 \text{Log}[\mu] - \text{Log}\left[\frac{\mu^2 + \sigma^2}{\mu^2}\right] \right) \ \&\& \ b = \sqrt{\text{Log}\left[\frac{\mu^2 + \sigma^2}{\mu^2}\right]}$$

The probability density function of such a reparameterized lognormal distribution is computed using the following *Mathematica* code :

```
Refine[PDF[LogNormalDistribution[1/2 (2 Log[μ] - Log[μ² + σ² / μ²]),
  Sqrt[Log[μ² + σ² / μ²]], ac],
  ac > 0] // TraditionalForm
```

$$\frac{\exp\left(-\frac{\left(\log(\text{ac}) + \frac{1}{2} \left(\log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right) - 2 \log(\mu)\right)\right)^2}{2 \log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right)}\right)}{\sqrt{2\pi} \text{ac} \sqrt{\log\left(\frac{\mu^2 + \sigma^2}{\mu^2}\right)}}$$

Appendix 2 : The CMS Explanation of its computation

The preamble to our proposed rule contained an example that illustrated the proposed operation of the risk corridors calculation. We have included a minor correction to the calculation of profits in this example:

Premiums earned: Assume a QHP with premiums earned of \$200.

Allowable costs: Assume allowable costs of \$140, including expenses for health care quality and health information technology, and other applicable adjustments.

Non-claims costs: Assume that the QHP has non-claims costs of \$50, of which \$15 are properly allocable to licensing and regulatory fees and taxes and assessments described in Sec. 158.161(a), Sec. 158.162(a)(1), and Sec. 158.162(b)(1) (that is, "taxes").

The following calculations result:

"Taxes": Under the proposed definition of taxes, the QHP's "taxes" will be \$15.

Administrative costs are defined as non-claims costs. In this case, those costs would be \$50. Administrative costs other than "taxes" would be \$35.

After-tax premiums earned are defined as premiums earned minus "taxes," or in this case $\$200 - \$15 = \$185$.

Profits are proposed to be defined as the greater of: 3 percent of premiums earned, or $3 \text{ percent} * \$185 = \5.55 ; and premiums earned by the QHP minus the sum of allowable costs and administrative costs, or $\$200 - (\$140 + \$50) = \$200 - \$190 = \10 . Therefore, profits for the QHP would be \$10, which is greater than \$5.55

Allowable administrative costs are defined as the sum of administrative costs, other than "taxes," plus profits earned by the QHP, which sum is limited to 20 percent of after-tax premiums earned by the QHP (including any premium tax credit under any governmental program), plus "taxes."

$= (\$35 + \$10)$, limited to 20 percent of \$185, plus \$15
 $= \$45$, limited to \$37, plus \$15
 $= \$37$, plus \$15
 $= \$52$.

The target amount is defined as premiums earned reduced by allowable administrative costs, or $\$200 - \$52 = \$148$.

The risk corridors ratio is the ratio of allowable costs to target amount, or the ratio of \$140 to \$148, or approximately 94.6 percent (rounded to the nearest one-tenth of one percent), meaning that the QHP issuer would be required to remit to HHS 50 percent of approximately $(97 \text{ percent} - 94.6 \text{ percent}) = 2.4 \text{ percent}$, or approximately 1.2 percent of the target amount, or approximately

0.012 * \$148, or approximately \$1.78.

[Federal Register Volume 78, Number 47 (Monday, March 11, 2013)]

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