National Tax Journal, June 2011, 64 (2, Part 2), 511–530

THE TAX EXCLUSION FOR EMPLOYER-SPONSORED HEALTH INSURANCE

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This paper reviews the issues raised by and the impacts of the tax exclusion for employer-sponsored health insurance. After reviewing the arguments for and against this policy, I present evidence from a micro-simulation model on the impacts on federal revenue, insurance coverage, and income distribution of various reforms to the exclusion.

Keywords: health insurance, tax expenditures

JEL Codes: I18, H51, H24

I. INTRODUCTION

Spending on health care is the largest and fastest growing element of government budgets in the United States. Despite our ostensibly private health care system, almost half of medical spending is done by the government, primarily through the $400 billion Medicare program and the $300 billion Medicaid program. Yet the third largest government expenditure on health care is not included in this calculation: the exclusion of employer-sponsored insurance (ESI) expenditures from taxable income. In 2009 U.S. state and federal governments will lose roughly $260 billion from the fact that expenditures by employers (and more than 80 percent of expenditures by employees) on ESI are not taxed as compensation. This is by far the largest of the tax expenditures by the federal government.

There are a number of coherent rationales for the ESI exclusion. In particular, in the absence of viable pooling mechanisms outside the employment setting in the United States, the exclusion can be rationalized as the "glue" that holds employer pools together. At the same time, there are a number of problems associated with the exclusion. In particular, a number of studies document that the ESI exclusion leads to (likely inefficient) increases in insurance plan generosity. The exclusion is also highly regressive

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as both tax rates and ESI expenditures rise with income. As a result, economists have advocated reform of this tax expenditure for years.

Recently, policy makers have taken up this charge as well. Most notably, President Bush's 2008 budget proposed to replace the ESI exclusion with an individual deduction of $7,500 for individuals holding health insurance. The Senate Finance Committee initially proposed to finance part of its expansion of health insurance in 2009 through a cap on the exclusion of high cost insurance plans. The Senate chose instead a "Cadillac tax," an excise tax on high-cost insurance plans (with premiums of more than $8,500 for singles and $23,000 for families) levied on insurers. Given that this excise tax would be likely to be passed on as higher insurance prices, it has roughly the same impact as capping the tax exclusion at the same levels as the tax is imposed.

In this paper, I discuss the ESI exclusion and options for reform. I begin by providing background on the ESI system and its place in the larger insurance context in the United States. In Section III, I discuss the pros and cons of the ESI exclusion, and review evidence on the impacts of the exclusion on individual and firm behavior. Section IV discusses the issues in modeling reform to the ESI exclusion. Section V presents estimates of the extent of the ESI exclusion, and discusses a variety of reform options for the exclusion. Section VI concludes.

II. BACKGROUND ON ESI AND INSURANCE COVERAGE IN THE UNITED STATES

The goal of insurance providers is to create large pools of individuals with predictable distributions of risk. These pools can be created in many different ways; in the limit, a national health insurance plan, such as that provided in Canada, provides pooling across the nation. The United States has long relied on the employer as the main pooling device for insurance. The growth in ESI dates back to the wage and price controls of World War II, which could be evaded through more generous provision of (untaxed) employee benefits, although the exclusion itself was not codified until several years later; these issues are reviewed in Thomasson (2000) and Helms (2008).

Table 1 shows the distribution of insurance coverage in the United States in 2008 (Fronstin, 2009). Over 61 percent of the non-elderly population receives ESI, which is 70 percent of all individuals who are privately or publicly insured and 91 percent of those who are privately insured. The Medicare program universally covers those over age 65, although a major expenditure of the ESI system is retiree coverage. The major non-ESI source of coverage for those under age 65 is the Medicaid program, which provides insurance to low income families, the disabled, and the elderly.

Only 10 percent of private insurance is provided outside of the employment setting in the non-group market. While there are variations in the extent and regulation of this market across states, by and large it is a market where prices are high and variable, and where (in most states) individuals can be excluded entirely from coverage based on their health status. At a basic level, most argue that there is a fundamental failure of

Table 1

Non-Elderly Americans' Source of Health Insurance Coverage

	People (Millions)	Percentage of Population
Total Population	262.8	100.0
Private	177.3	67.5
Employment-based	160.6	61.1
Individually purchased	16.7	6.4
Public	51.0	19.4
Medicare	7.7	2.9
Medicaid	39.2	14.9
Military health	7.8	3.0
Uninsured	45.7	17.4

Notes: These data are from Fronstin (2009). Figures may not sum to 100 percent due to rounding error.

insurance pooling in this market.[1] Attempts to remedy this in states such as New York through community rating laws have led to excessively high premiums on average and an exit of healthy individuals from the market (America's Health Insurance Plans, 2007).

The ESI exclusion initially applied only to expenditures by employers. But over time there has been a sizeable growth in Section 125 cafeteria plans, which allow employees (since 1978) to shelter their contributions to ESI from personal taxation as well. Currently, roughly 80 percent of those with ESI have access to a Section 125 account, although coverage is still very incomplete among small firms.

III. BENEFITS AND COSTS OF THE ESI EXCLUSION

A. Why Have an ESI Exclusion?

In this section I review the arguments for and against an ESI exclusion. As discussed earlier, the ESI exclusion grew out of a compensation anomaly around World War II, not any coherent rationale. Nevertheless, as we consider reforming the ESI exclusion, it is important to contemplate its benefits and costs.

[1] There are some dissenting voices on this issue. Pauly and Herring (1999), for example, argue that prices in the non-group market do not vary much more by health status than do group premiums. An important problem with their analysis, however, is that it only examines the premiums paid by those who are allowed into the non-group market; if individuals are excluded based on health conditions, as seems to be the case, then the analysis would understate the true underlying variation in the price of health insurance.

The main argument for continuing the ESI exclusion is that it is the glue that holds together our existing system of employer-provided insurance. Repealing the exclusion by taxing health insurance benefits, some argue, will lead employers to stop offering health insurance to their employees. This will leave employees without access to actuarially fair pooling mechanisms and at the whim of the non-group market. But the non-group market may exclude those who are sick, leading to a large welfare cost from the reduction in insurance coverage for those who value it most.

The extent to which this concern is valid depends on two factors. The first is how large an effect removing the ESI exclusion would have on employer offering of insurance. Employees value employers as an insurance purchasing mechanism for several reasons, of which the exclusion is only one; there are also the benefits of group purchase, the negotiating power obtained with group size, and ease of plan choice and administration. These factors will still be present even if the ESI exclusion is ended. Indeed, virtually all medium size and large firms in the United States have offered health insurance continuously over the past thirty years, despite enormous swings in the effective tax price of health insurance.

Gruber and Lettau (2004) examine the impact of tax price variation on employer-provided insurance; the larger literature on this topic is reviewed in Gruber and Madrian (2004). They find that medium-sized firms are only very modestly sensitive, and large firms not at all sensitive, to the tax price of ESI. They do find that small firms are price sensitive, with an elasticity of small firm offering with respect to the tax price of –0.69. Therefore, while predicting the impacts of removing the exclusion goes out of sample, there is no reason to think that there will be a whole scale exit of medium and large firms from ESI. I incorporate these estimates into the modeling below.

The second unknown factor is how a major influx of individuals into the non-group market will affect pricing in that market. The non-group market might function much better if its scale were dramatically increased by individuals leaving employer-sponsored insurance. While this may lower overall costs, however, there is little reason to think that it would reduce the enormous disparities in price and access by health status. Therefore, absent other reforms to make insurance available to all outside the employer setting, there is a reasonable second-best argument for maintaining the ESI exclusion.

B. Costs of an ESI Exclusion

Offsetting these benefits are the major costs of the ESI exclusion. First is the revenue cost of the exclusion, estimated below. Second, this tax expenditure is highly regressive, as documented below, as both tax rates and ESI expenditures rise with income. The ESI exclusion also biases individuals towards purchasing excessively generous insurance because they are paying with after-tax dollars on the margin.

There is a sizeable literature that tries to estimate the elasticity of health spending with respect to the tax exclusion, as reviewed in Gruber (2005). Gruber and Lettau (2004) estimate a sizeable elasticity of employer-spending among those firms offering insurance with respect to the tax price of –0.7. This, however, reflects both reductions in insurance

generosity and reductions in employer contributions that are shifted to employee contributions. Direct evidence on plan generosity comes from Gentry and Perress (1994), who use city-level variation in tax rates to show that the more "elective" elements of benefits packages, such as dental and vision coverage, are very price sensitive.

Of course, elasticity of spending with respect to the tax price does not necessarily imply a distortion, if there is a pre-existing bias to too little health insurance spending. But this does not appear to be the case. Existing evidence, particularly from the RAND Health Insurance Experiment, is clear that the optimal health insurance plan features high initial cost-sharing with protection against extreme out of pocket risk (Gruber, 2006). Yet, even in today's high health cost environment, the vast majority of employer-insured individuals have very modest cost sharing, with a relative paucity of high deductible plans in the ESI setting. While there are several competing explanations for this "over-insurance," a leading contender is the tax subsidy for ESI.

Finally, the promotion of the employer-sponsored insurance system is not necessarily a benefit to society. A large literature documents the distortions to the labor market associated with such a system, as reviewed in Gruber and Madrian (2004), including limited job-to-job mobility and distorted retirement decisions.

IV. MODELING THE ESI EXCLUSION

To model the cost of the existing ESI exclusion, and to consider the impacts of options for reforming the exclusion, I turn to a micro-simulation model that I have developed over the past decade to model health insurance reform. This model is described in great detail in Gruber (2009), so I just summarize the key elements here, focusing in particular on the newly updated matching of employer premium costs that is central to the revenue estimate for the ESI exclusion.

The model is based on data from the February and March 2005 Current Population Survey (CPS), recalibrated to 2008 populations. These data are matched to information on health insurance premiums and health costs. Data on the premiums for employer insurance, and the distribution of premiums between employers and employees, come from the 2004 Medical Expenditure Panel Survey (MEPS). For non-group insurance, I use data from the MEPS to compute the underlying distribution of health spending by age and health status, and then add a load factor such that the distribution of premiums by age matches available data. All figures in the analysis are in 2009 dollars, using the tax law as of 2009. I assume that the reaction to reform is immediate; in reality there could be a transition to the new equilibrium simulated in the model.

These data are used to develop a micro-simulation model that computes the effects of health insurance policies on the distribution of health care spending and private and public sector health care costs. This model takes as inputs both the data sources described above and the detailed parameterization of reform options. The model first turns these policy rules into a set of insurance price changes; for example, if the policy intervention is a tax credit for non-group insurance, then the model computes the implied percentage change in the price of non-group insurance for each individual in the model.

The effects of these price changes are then simulated, using a detailed set of behavioral assumptions about how changes in the absolute and relative prices of various types of insurance affect individuals, families, and businesses.

The key concept behind this modeling is that the impact of tax reforms on the price of insurance continuously determines behaviors such as insurance take-up by the uninsured and insurance offering by employers. The model assiduously avoids "knife-edge" type behavior, where some critical level is necessary before individuals respond, and beyond which responses are very large. Instead, behavior is modeled as a continuous function of how policy changes (net of tax) insurance prices.

An important element of the modeling is therefore properly measuring the impact of the tax exclusion on the price of employer-sponsored insurance. The impact of the exclusion is to alter the tax price of employer sponsored insurance to

$$TP = \frac{(1 - \tau_f - \tau_s - \tau_{ss} - \tau_{MC})}{1 + \tau_{ss} + \tau_{MC}},$$

where τ_f is the federal income tax marginal rate; τ_s is the state income tax marginal rate; τ_{ss} is the marginal payroll tax rate for the OASDI program (the 6.2 percent tax rate that is levied equally on employees and employers); and τ_{MC} is the marginal payroll tax rate for the Medicare HI program.[2] I differentiate the latter two programs because, beginning in the early 1990s, the taxable maximum for the HI program was increased above that for the OASDI program (and was eventually removed altogether); by comparison, the marginal tax rate is zero above the taxable maximum for payroll taxation under the OASDI program. For a typical worker in the 15 percent tax bracket, facing a 5 percent state tax rate and a 15.3 percent combined payroll tax rate, this tax price is roughly 0.65; that is, a dollar of health insurance costs 35 cents less than a dollar of other goods purchased with after-tax wages.

In doing this type of analysis, a number of assumptions must be made about how individuals will respond to tax subsidies, through their effect on the price of insurance. These assumptions have been developed based on the available empirical evidence reviewed above, although there are many gaps in this literature that must be filled in order to be able to accurately simulate the effects of policy changes. These assumptions are reviewed in detail in Gruber (2009).

A key aspect of modeling health insurance policy is accurately modeling the decisions of firms. Economists tend to model firm decision-making as reflecting the aggregation of worker preferences within the firm. The exact aggregation function is unclear, as reviewed in Gruber (2002); in my model I assume that the mean incentive for the firm (e.g., the average subsidy rate for non-group insurance) is what matters for firm decision-making.

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[2] The reason that the payroll tax rate is additive in the denominator is that the employer is indifferent between purchasing one dollar of benefits or paying wages of $1/(1+ \tau_{ss} + \tau_{MC})$, since each dollar of wages requires a payroll tax payment as well.

The fundamental problem faced by individual-based micro-simulation models is that data on individuals do not reflect the nature of their coworkers, so that it is impossible to compute exactly concepts such as the average non-group subsidy in a worker's firm. I address this problem by building "synthetic firms" in the CPS, assigning each CPS worker a set of coworkers selected to represent the likely true set of coworkers in that firm. The core of this computation are data from the Bureau of Labor Statistics that show, for workers of any given earnings level, the earnings distribution of their coworkers, separately by firm size, region of the country, and health insurance offering status. Using these data, I randomly select 99 individuals in the same firm size/region/health insurance offering cell as a given CPS worker in order to statistically replicate the earnings distribution for that worker's earnings level. These 99 workers then become the coworkers in a worker's synthetic firm.

These synthetic firms then face three decisions about insurance: (1) offering (whether to offer, if now not offering, or whether to drop, if now offering); (2) the division of costs between employer and employees; and (3) the level of insurance spending. Each of these decisions is influenced by the tax treatment of ESI expenditures. For example, if both employer and employee ESI expenditures are subject to taxation, this will lower offering, lead to some shifting of premiums to individuals (since there was much less than full Section 125 coverage so the existing exclusion led to a bias in the aggregate to greater employer spending), and lead to a reduction in the generosity of ESI. Taxing just employer spending on ESI (while leaving employee contributions untaxed if through a Section 125 plan), however, will lead to a small reduction in offering and plan generosity, but a much larger shift from employer to employee financing of the premiums. Likewise, removing the Section 125 tax shield but retaining the exclusion for employer spending will lead to a smaller reduction in offering and plan generosity, but a shift from employee to employer financing of premiums.

While there are a large number of assumptions underlying the model, I focus here on the key assumptions about firm behavior. Firm decisions to offer insurance if the tax price falls (or to drop insurance, if the tax price rises) are based on the firm-size-specific elasticities of insurance offering estimated in Gruber and Lettau (2004). In particular, that paper finds that small firms (with fewer than 100 employees) are fairly price elastic in their insurance decisions, with an elasticity of insurance offering with respect to its price of –0.69. On the other hand, they estimate only a small and insignificant impact on medium-size firms, and an even smaller effect for large firms (more than 1,000 employees).

A key assumption for this type of modeling concerns the incidence on wages of changes in employer-insurance spending. Gruber (2002) reviews the literature on incidence, and concludes that there is strong evidence for full shifting to wages of firm-wide changes in insurance costs, with some evidence of shifting to sub-groups within the workplace as well. I make a mixed incidence assumption for this model. Any firm-wide reaction, such as dropping insurance or lowering employee contributions, is directly reflected in wages. Yet any individual's decision, such as switching from group to non-group insurance, is not reflected in that individual's wages; rather, the savings

to the firm (or the cost to the firm) are passed along on average to all workers in the firm.

This analysis is subject to three major limitations. First, I approximate the tax expenditure associated with retirees that receive tax-favored employer spending. It is difficult to estimate the cost of this element of the tax expenditure, but based on estimates from the Joint Tax Committee I estimate that firms spend 10 percent of their ex-ante spending on retirees. Therefore, I calculate the effects of tax policy in the ex-ante world, and adjust overall tax changes upward by 10 percent of that ex-ante amount.

Second, I do not consider any feedback effects due to the changing composition of insurance pools. In current employer-sponsored insurance pools, healthy and young workers cross-subsidize their sick and older coworkers by paying community-rated insurance premiums that do not vary by age or health. Part of the reason that they are willing to undertake this cross-subsidization is that it is the only tax-subsidized route to health insurance. If that tax subsidy is removed (or mitigated), then healthy workers may find better prices in a more closely experience-rated non-group market, and to some extent abandon the cross-subsidized employer pools. This will raise the price of ESI, which could exert further pressure on healthy workers to exit. This potentially important spiral of rising premiums is not included in the analysis. This effect could be reinforced through the reduced influence of non-discrimination rules that are enforced indirectly through the tax exclusion.

Third, and most importantly, there is an enormous amount of uncertainty associated with such a modeling exercise. A number of the key parameters on which these results depend, such as the tax-price elasticity estimates in Gruber and Lettau (2004), are estimated based on within sample variation in tax rates, which is very modest relative to the change that would occur with complete elimination of the tax exclusion. As a result, the farther out of sample is the projected policy, the larger is the uncertainty attached to the estimates below.

V. THE ESI EXCLUSION: COSTS AND REFORM OPTIONS

A. Base Case

The base results for the cost and distributional impacts of the ESI exclusion are presented in Table 2. The first row provides the total federal revenue cost of the ESI exclusion, which is $263 billion. The next two rows divide that into federal income tax and federal payroll tax components; roughly 60 percent of the revenue cost of the exclusion is through reductions in federal income taxes.

The next row shows as a note that there is a major state income tax revenue loss from the exclusion as well of over $30 billion in 2009 dollars. The analysis in the remainder of the paper will focus on federal revenue effects only, but this is an important consideration for states if the reforming the exclusion is used to finance coverage expansions for which the states bear some costs.

Table 2

The Cost and Distributional Implications of the ESI Exclusion ($Million)

Federal revenue raised	263,000	
Federal income taxes	157,000	
Federal payroll taxes	106,000	
Note: State income taxes	31,000	
Revenue Burden	**Dollars**	**Percentage**
Decile 1	2,000	1
Decile 2	2,000	1
Decile 3	6,000	2
Decile 4	13,000	5
Decile 5	20,000	8
Decile 6	26,000	10
Decile 7	34,000	13
Decile 8	42,000	16
Decile 9	55,000	21
Decile 10	62,000	24
	Ex-Ante ESI Spending	**Average Marginal Tax Rate**
Decile 1	13,000	16
Decile 2	12,000	20
Decile 3	25,000	29
Decile 4	43,000	30
Decile 5	58,000	32
Decile 6	78,000	34
Decile 7	101,000	36
Decile 8	115,000	39
Decile 9	134,000	41
Decile 10	151,000	42

Notes: These results are from the micro-simulation model described in the text. All figures are in 2009 dollars. The top panel shows revenue raised and its subdivision into sources. The second panel shows the distribution of the increased revenue across deciles of the income distribution. The third panel shows the distribution of aggregate ex-ante ESI spending and average marginal tax rate across deciles of the income distribution. Deciles are defined separately for single and married taxpayers.

The second panel of the table displays the distribution of the benefits of the ESI exclusion. About one-sixth of the benefits of the exclusion go to those in the lower half of the income distribution, and about five-sixths to the upper half. The share of the benefits that go to the top income decile is more than thirty times as large as that to the bottom income decile. As noted earlier, this skewed distribution reflects both rising tax rates and rising ESI expenditures with income. This is illustrated in the third panel, which shows that both aggregate ESI expenditures and tax rates rise with income.

B. Options for Repeal

Table 3 extends the analysis to consider various reforms that would repeal or limit the ESI exclusion. The second column of Table 3 shows the results of repeal of the ESI exclusion. The financial results are identical to Table 2, but I also show impacts on insurance spending and coverage; the first column provides the ex-ante means of these variables. Recall that these findings must be interpreted with considerable caution, as they are using the price elasticity estimated from existing variations in the tax price to estimate the impact of a much more radical change in tax price due to repeal of the exclusion.

I find that this policy leads to a reduction in employer insurance spending of almost $183 billion, or about one-third of ex-ante employer spending. I also find that employee insurance spending falls by $17 billion, or about 10 percent of ex-ante employee spending. The last row of the second set of figures shows the average employer annual premiums and employee annual contributions for a single plan. At baseline, on average in our sample, employers contribute $6,850 and workers contribute $2,030. When the exclusion is removed, the employer contribution falls dramatically, while the worker contribution rises slightly; overall worker spending falls, however, due to the reduction in the ESI covered population.

I estimate that the removal of the ESI exclusion leads to a reduction in the number of individuals with ESI of 15 million, which is roughly 10 percent of the number of ex-ante individuals with employer-provided insurance. This is a large number relative to the ex-ante stock of uninsured individuals, 49 million, but is modest relative to the ex-ante stock of individuals with employer-provided insurance. I also estimate that a number of those losing employer insurance will gain insurance through other channels; roughly 30 percent of those losing ESI will choose to purchase non-group insurance or move to public coverage. So only about 70 percent of those losing ESI become uninsured according to these estimates.

Given the results in the Gruber and Lettau (2004) paper that drive the estimated employer responses, most of the reaction by employers happens in the small employer sector; large employers have offered insurance fairly consistently over time as the tax price has varied. There is relatively little change in employee take-up — most of the reaction is in employer offering. Once again, as with other estimates, it is important

Table 3

Revenue and Population Impacts of Reforming the ESI Exclusion

		Income & Payroll Taxes		
Changes in:	Ex-Ante Levels	Complete Repeal	Employer Share Only	Employer Share Only
Federal revenue ($million)	1,707,000	263,000	184,000	42,000
Federal income taxes	700,000	157,000	109,000	27,000
Federal payroll taxes	833,000	106,000	74,000	15,000
ESI (millions of people)	152	–15	–13	–2
Uninsured (millions of people)	49	11	10	1
Employer spending ($million)	563,000	–183,000	–172,000	27,000
Employee spending ($million)	167,000	–17,000	66,000	–42,000
Firm/worker premium ($)	6,850/2,030	5,180/2,060	5,330/3,150	7,280/1,560
Revenue burden				
Decile 1 cutoff	0	1	1	0
Decile 2 cutoff	0	1	1	0
Decile 3 cutoff	1	2	3	2
Decile 4 cutoff	3	5	5	5
Decile 5 cutoff	5	8	8	7
Decile 6 cutoff	7	10	10	10
Decile 7 cutoff	9	13	13	12
Decile 8 cutoff	13	16	16	17
Decile 9 cutoff	19	21	21	21
Decile 10 cutoff	42	24	23	26

		Income Taxes Only		
Changes in:	Ex-Ante Levels	Total Repeal	Boss Repeal	Worker Repeal
Federal revenue ($million)	1,707,000	172,000	120,000	32,000
Federal income taxes	700,000	155,000	110,000	30,000
Federal payroll taxes	833,000	18,000	10,000	2,000
ESI (millions of people)	152	–10	–8	–2
Uninsured (millions of people)	49	8	6	1
Employer spending ($million)	563,000	–118,000	–112,000	17,000
Employee spending ($million)	167,000	–14,000	41,000	–30,000
Firm/worker premium ($)	6,850/2,030	5,800/1,990	5,910/2,720	7,130/1,700

Table 3 (Continued)

Revenue and Population Impacts of Reforming the ESI Exclusion

		Income Taxes Only		
Changes in:	Ex-Ante Levels	Total Repeal	Boss Repeal	Worker Repeal
Revenue burden				
Decile 1 cutoff	0	0	0	0
Decile 2 cutoff	0	1	0	0
Decile 3 cutoff	1	2	2	0
Decile 4 cutoff	3	5	4	3
Decile 5 cutoff	5	7	7	6
Decile 6 cutoff	7	9	9	9
Decile 7 cutoff	9	12	12	13
Decile 8 cutoff	13	15	15	16
Decile 9 cutoff	19	22	22	22
Decile 10 cutoff	42	28	29	31

Notes: These results are from the micro-simulation model described in the text. All dollar figures are in 2009 dollars. The top panel shows changes to both the income and payroll tax treatment of ESI spending; the bottom panel shows reforms to the income tax treatment only. The first column shows ex-ante taxation/spending and population distribution; the second column shows the changes from total repeal of the exclusion; the third column shows the change from repealing the exclusion only for the employer's share of ESI expenditures; the last column shows the change from repealing only the employee's share of ESI expenditures. The top rows in each panel show the ex-ante levels and changes in tax revenues, in total and by source, in millions of dollars. The next rows show ex-ante levels and changes in insurance coverage, by source, in millions of persons. The next rows show ex-ante levels and changes in insurance spending by employers and employees, overall, and in terms of average premiums. The remaining rows show the distribution of the increased revenue across deciles of the income distribution; deciles are defined separately for single and married taxpayers.

to remember that this is a largely out of sample prediction. In particular, if there is significant adverse selection in the ESI pool of the type described above, the reduction in ESI could be larger.

Nevertheless, the policy leads to an increase in the uninsured population of roughly 22 percent of the ex-ante number of uninsured. Table 4 shows the age and health characteristics of those ex-ante uninsured and group insured, and then Table 3 shows for each run the comparable characteristics of those who become uninsured and those who move to non-employer insurance (non-group or public). Ex-ante, the uninsured are somewhat younger than the employer-insured, but in significantly worse health: 75 percent of those on ESI are in excellent or very good health, compared to only 60 percent of the uninsured, and only 5 percent of those with ESI are in fair or poor health, compared to over 10 percent of the uninsured.

When the exclusion is repealed, those becoming uninsured look very much like those who are ex-ante employer-insured. They are slightly older, but of comparable health. Relative to the ex-ante uninsured, this is a much healthier population, so the overall health of the uninsured improves. Those becoming non-group or publicly insured are much healthier than the average person in ESI; as noted earlier, it is the young and healthy who will find it most attractive to "peel off" from ESI to other sources of coverage when the tax subsidy is eroded. But this is a small share of those who were on ESI. Overall, there does not appear to be much of a change in the health mix of those remaining on ESI. This mitigates against any concern that we are missing dynamic impacts on ESI premiums from an eroding ESI health pool.

The third column of Table 3 (and the third set of columns of Table 4) considers the impact of removing the subsidy to employer spending only, maintaining the deductibility of section 125 accounts. Such a policy raises only $184 billion in new revenues, or about 70 percent of the total from removing the exclusion on both employer and employee spending. This is lower than the ex-ante proportion of insurance spending that is done by employers, 75 percent, because of a shift of spending from newly taxed employer spending to tax-sheltered employee spending. Indeed, employer insurance spending falls by almost as much as in the previous column, while employee insurance spending rises by $66 billion. This highlights the leakages in revenue raising that can arise from partial reform. Moreover, this is likely an underestimate of such leakage, since the model does not endogenize adoption of Section 125 accounts. Such a policy would likely lead to an expanded use of Section 125 accounts, and thereby even further shifting to employee contributions (and out of taxable employer contributions).

Column 4 shows the impact of the complementary policy: retaining the exclusion for employer spending but removing the tax deductibility of employee contributions through Section 125 accounts. This policy change raises $42 billion in revenues, or only 16 percent as much as the full removal of the subsidy, despite employee contributions being 25 percent of employer spending ex-ante. Once again, the reason is an endogenous shift from employee to employer spending under this policy; employer spending actually rises while employee spending falls by $42 billion, more than twice the amount than in the case where the exclusion is fully repealed.

The distribution of impacts is fairly similar in these two runs to the base case run, shown in column 2. The repeal of section 125 is slightly more progressive than the other reforms, reflecting the fact that tax-favored employee payments are even more concentrated with income than is employer spending.

The bottom of Tables 3 and 4 show the results of repeating the analysis, considering only the removal of the tax exclusion for income tax purposes, but retaining the exclusion for payroll tax purposes. If employer and/or employee spending on insurance was included in the wage base and taxed for payroll tax purposes, then there would be some offsetting increase in the social insurance benefits financed by those taxes. We may therefore overstate the net revenue gain by considering the revenues raised by inclusion of ESI spending in both the income and payroll tax bases.

Table 4

Population Composition Effects of Reforming the Exclusion

			Income and Payroll Taxes					
			Complete Repeal		Employer Share Only		Employee Share Only	
	Ex-Ante Uninsured	Ex-Ante ESI	Moving Unins.	Moving NG/Public	Moving Unins.	Moving NG/Public	Moving Unins.	Moving NG/Public
Total number (million)	49	156	11	4	10	3	1	1
Average age	32	33	34	27	35	26	33	24
Percentage in excellent health	28	40	37	44	37	43	38	43
Percentage in very good health	33	35	36	36	36	36	35	33
Percentage in good health	29	20	22	18	22	18	21	22
Percentage in fair health	8	4	4	2	4	3	4	2
Percentage in poor health	3	1	1	0	1	0	1	0

			Income Tax Only					
			Complete Repeal		Employer Share Only		Employee Share Only	
	Ex-Ante Uninsured	Ex-Ante ESI	Moving Unins.	Moving NG/Public	Moving Unins.	Moving NG/Public	Moving Unins.	Moving NG/Public
Total number (million)	49	156	7	2	6	2	1	1
Average age	32	33	34	26	34	24	34	23
Percentage in excellent health	28	40	39	45	37	44	36	40
Percentage in very good health	33	35	35	35	36	35	38	35
Percentage in good health	29	20	21	17	21	18	22	22
Percentage in fair health	8	4	4	3	5	3	4	2
Percentage in poor health	3	1	1	0	1	0	1	0

Notes: These results are from the micro-simulation model described in the text. The top panel shows changes to both the income and payroll tax treatment of ESI spending; the bottom panel shows reforms of the income tax treatment only. The first two columns show ex-ante characteristics of the uninsured and employer-insured before reform, in terms of population size, average age, and distribution of health status. The next two columns show the number and characteristics of the population (1) moving into uninsured status, and (2) moving onto non-group or public insurance, as a result of repealing the exclusion. The next sets of columns show the same facts for repeal of the employer subsidy only, then for the employee subsidy only.

Including ESI expenditures in the income tax base leads to an increase in Federal revenues of almost $172 billion, which is roughly 65 percent of the revenues from including payroll taxes as well. The impacts on insurance coverage, employer spending, and employee spending are likewise proportionately smaller. Including ESI spending in the income tax base leads to a reduction in individuals covered by ESI of almost 10 million persons, and a rise in the uninsured of almost 8 million. Employer insurance spending falls by $118 billion, and employee insurance spending falls by $14 billion.

The distributional impacts of this policy differ significantly, however, from including ESI in both the payroll and income tax bases. This policy is much more progressive because income tax rates are much more progressive than those of the flat (and capped) payroll tax. If only the income tax exclusion is removed, then the top half of the income distribution bears 85 percent of the revenue burden.

The remaining columns of the second panel show the effects of including only employer spending in the tax base, and of including tax-sheltered employee spending (i.e., repealing section 125 for these purposes). Once again, each of these partial reforms is somewhat blunted by the shift across types of insurance spending. The sum of the revenues raised by these partial reforms, $152 billion, is about 10 percent less than the revenue raised by full repeal, or $172 billion.

C. Options for Capping the Exclusion

Full repeal of the ESI exclusion is perceived as a radical policy prescription and faces enormous political opposition. A natural alternative is to cap the ESI exclusion at some level, perhaps high at first, and then gradually reducing the cap. This was the approach endorsed by the Report of the President's Advisory Panel on Federal Tax Reform (2005), which proposed that ESI spending above the typical cost of a Federal Employee Plan (at the time, $11,500 for a family) be included in the base of taxable income. And 2008 Presidential candidate Hilary Clinton included a cap on the exclusion of ESI premiums from taxation at the average premium level for families making more than $200,000 per year.

In Table 5, I examine the impact of proposals to cap the exclusion rather than remove it all together. I assume initially that there is a total cap on employer plus employee spending, and then vary this assumption below. There are many possible levels at which the exclusion could be capped, and for this exercise I choose the median national level of premiums; using the mean instead of the median yields similar results but about 17 percent less revenues. In this table, I show paired results for (1) capping for both income and payroll tax purposes, and (2) capping just for income tax purposes. The cap is at $5,176 for single plans and $13,675 for family plans.

I estimate that capping the ESI exclusion at this level would raise about $47 billion if the cap were applied to both income and payroll taxes, and about $32 billion if the cap were applied just to income taxes. This is about 18 percent of the amount raised

Table 5

Capping the Exclusion

	Income and Payroll Tax		Income Tax Only	
Changes in:	Both Capped	Employer Cap Only No Employee Repeal	Both Capped	Employer Cap Only No Employee Repeal
Federal revenue ($million)	47,000	36,000	32,000	25,000
Federal income taxes	30,000	24,000	29,000	22,000
Federal payroll taxes	17,000	12,000	3,000	3,000
ESI (millions of people)	–2	–2	–1	–2
Uninsured (millions of people)	1	2	1	1
Employer spending ($million)	–26,000	–34,000	–17,000	–22,000
Employee spending ($million)	–7,000	8,000	–7,000	3,000
Firm/worker premium ($)	6,600/1,980	6,570/2,190	6,880/1,970	6,670/2,110
Revenue burden				
Decile 1 cutoff	0	0	0	0
Decile 2 cutoff	0	0	0	0
Decile 3 cutoff	0	0	0	0
Decile 4 cutoff	2	3	3	4
Decile 5 cutoff	4	6	3	4
Decile 6 cutoff	7	6	7	8
Decile 7 cutoff	13	11	10	12
Decile 8 cutoff	17	17	17	15
Decile 9 cutoff	24	26	23	23
Decile 10 cutoff	33	31	37	35

Notes: These results are from the micro-simulation model described in the text. All dollar figures are in 2009 dollars. The first set of columns shows changes to both the income and payroll tax treatment of ESI spending; the second set shows reforms of the income tax treatment only. The first column within each set shows the impact of capping the sum of the employer and employee exclusion at the median employer plus employee contribution to ESI; the second shows the impact of capping the employer exclusion at the median employer contribution to ESI. The top rows in each panel show the ex-ante levels and changes in tax revenues, in total and by course, in millions of dollars. The next rows show ex-ante levels and changes in insurance coverage, by source, in millions of persons. The next rows show ex-ante levels and changes in insurance spending by employers and employees overall, and in terms of average premiums. The remaining rows show the distribution of the increased revenue across deciles of the income distribution; deciles are defined separately for single and married taxpayers.

from full repeal. On the other hand, capping the exclusion is much more progressive than removing it. For example, while about 17 percent of the revenues from repeal for both income and payroll tax purposes are raised from the lower half of the income distribution, only 6 percent of revenues from capping are raised from the lower half of the income distribution. Capping does lead to a large reduction in employer and employee spending, but it is only a fraction of the earlier amounts.

Capping also has the virtue of being much less disruptive to existing insurance arrangements. Modeling the impact of the cap on insurance coverage is challenging, of course, because, in principle, capping at the median should not cause any firm to offer insurance, but in practice some firms will be uninterested in offering insurance unless it is very generous — and some firms will not be able to find an insurance policy that will be taken up by their employees unless it is very generous. In those cases, capping the exclusion could lead firms to drop insurance coverage. I model the impact of a cap as proportional to the impact of full repeal; that is, I compute the impact of the cap on the effective tax subsidy facing firms and have firms react to the effective reduction in their tax subsidy. Doing so, I find a fairly modest impact of capping on insurance arrangements, as only about 2 million individuals lose ESI, and the rolls of the uninsured increase by only about 1 million.

In the next set of columns in the table, I show the impact of capping the exclusion solely for employer spending at its median level, $4,378 for singles and $10,177 for families. Capping only employer spending raises only three-quarters as much as capping total spending, due to a large evasion of the cap through shifting to employee contributions. As noted above, this estimate likely understates the shifting since I do not endogenize the Section 125 decision.

A major controversy with such tax caps, however, would arise around the issue of who bears the burden of the caps. Taxing the highest levels of insurance spending will reduce the incentives for excessively generous insurance — but it will also lead to the largest burdens in high cost states and for firms with high cost workers. One response to this point is to note that these groups are exactly the ones who have benefited for years from this tax exclusion, and all this policy does is remove a tax bias in their favor. This argument faces political difficulties, however, as individuals will inevitably compare the effects of the policy change to a baseline with the full exclusion in place.

Some of this disparity could be readily addressed through adjustments to the level of the cap. For example, the caps could be set on a state-specific basis, with the levels reflecting the difference in premiums in that state relative to the national average, while holding total revenues constant. The cap could also readily be adjusted for the average age mix of employees in a health plan. These adjustments are not perfect, as they would not capture variations in worker health other than age. But if the tax exclusion were removed in the context of a larger reform that moved the insurance system toward community rating, these concerns would be minimized.

VI. CONCLUSIONS

While the public and policymakers often debate the structure of the two largest government expenditure programs for health care, Medicare and Medicaid, there has traditionally been little discussion of the third largest government (tax) expenditure, the exclusion of ESI premiums from income and payroll taxation. However, reforms of the ESI exclusion have attracted increased attention in recent years. In this paper I discuss the implications of the existing exclusion and the impacts of various reforms.

I conclude that the existing ESI exclusion is both very expensive and highly regressive, with five-sixths of the benefits flowing to the top half of the income distribution. Repealing or capping the exclusion could result in significant increases in government revenues and an increase in the progressivity of the tax system. Yet it would also lead to a significant reduction in insurance coverage. Thus, repeal of the exclusion would make the most sense in the context of a system-wide reform that provided broader non-ESI options for insurance coverage.

ACKNOWLEDGMENTS

I am grateful to Len Burman, Jim Poterba, and conference participants in the NBER Tax Expenditure Project conference for helpful discussions.

REFERENCES

America's Health Insurance Plans, 2007. "Individual Health Insurance 2006–2007: A Comprehensive Survey of Premiums, Availability and Benefits." Center for Policy and Research, America's Health Insurance Plans, Washington, DC.

Fronstin, Paul, 2009. "Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 2009 Current Population Survey." EBRI Brief No. 334. Employee Benefits Research Institute, Washington, DC.

Gentry, William, and Eric Peress, 1994. "Taxes and Fringe Benefits Offered by Employers." NBER Working Paper No. 4764. National Bureau of Economic Research, Cambridge MA.

Gruber, Jonathan, 2002. "Taxes and Health Insurance." In Poterba, James M. (ed.), *Tax Policy and the Economy Volume 16*, 37–66. MIT Press, Cambridge, MA.

Gruber, Jonathan, 2005. "Tax Policy for Health Insurance." In Poterba, James M. (ed.), *Tax Policy and the Economy 19*, 39–63. MIT Press, Cambridge, MA.

Gruber, Jonathan, 2006. "The Role of Consumer Copayments for Health Care: Lessons from the RAND Health Insurance Experiment and Beyond." Report for the Kaiser Family Foundation.The Kaiser Family Foundation, Menlo Park, CA, http://www.kff.org/insurance/7566.cfm.

Gruber, Jonathan, 2009. *Documentation for GMSIM Model*. Unpublished manuscript. MIT, Cambridge, MA.

Gruber, Jonathan, and Michael Lettau, 2004. "How Elastic is the Firm's Demand for Health Insurance?" *Journal of Public Economics* 88 (7–8), 1273–1294.

Gruber, Jonathan, and Brigitte C. Madrian, 2004. "Health Insurance, Labor Supply, and Job Mobility: A Critical Review of the Literature." In McLaughlin, Catherine (ed.), *Health Policy and the Uninsured*, 97–178. Urban Institute Press, Washington, DC.

Helms, Robert, 2008. "Tax Policy and the History of the Health Insurance Industry." In Aaron, Henry J., and Leonard E. Burman (eds.), *Using Taxes to Reform Health Insurance: Pitfalls and Promise*s, 13–35. Brookings Institution Press, Washington, DC.

Pauly, Mark V., and Bradley Herring, 1999. *Pooling Health Insurance Risks*. American Enterprise Institute Press, Washington, DC.

President's Advisory Panel on Federal Tax Reform, 2005. *Simple, Fair, and Pro-Growth: Proposals to Fix America's Tax System.* U.S. Government Printing Office, Washington DC.

Thomasson, Melissa, 2000. "The Importance of Group Coverage: How Tax Policy Shaped U.S. Health Insurance." NBER Working Paper No. 7543. National Bureau of Economic Research, Cambridge, MA.