Tax Subsidies for Employer-Sponsored Health Insurance: Updated Microsimulation Estimates and Sensitivity to Alternative Incidence Assumptions

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Objective. To estimate 2012 tax expenditures for employer-sponsored insurance (ESI) in the United States and to explore the sensitivity of estimates to assumptions regarding the incidence of employer premium contributions.

Data Sources. Nationally representative Medical Expenditure Panel Survey data from the 2005–2007 Household Component (MEPS-HC) and the 2009–2010 Insurance Component (MEPS IC).

Study Design. We use MEPS HC workers to construct synthetic workforces for MEPS IC establishments, applying the workers' marginal tax rates to the establishments' insurance premiums to compute the tax subsidy, in aggregate and by establishment characteristics. Simulation enables us to examine the sensitivity of ESI tax subsidy estimates to a range of scenarios for the within-firm incidence of employer premium contributions when workers have heterogeneous health risks and make heterogeneous plan choices.

Principal Findings. We simulate the total ESI tax subsidy for all active, civilian U.S. workers to be \$257.4 billion in 2012. In the private sector, the subsidy disproportionately flows to workers in large establishments and establishments with predominantly high wage or full-time workforces. The estimates are remarkably robust to alternative incidence assumptions.

Conclusions. The aggregate value of the ESI tax subsidy and its distribution across firms can be reliably estimated using simplified incidence assumptions.

Key Words. Microsimulation, health insurance, tax subsidy

For many readers the term “microsimulation” may connote the use of data on persons (or establishments) to evaluate the possible consequences of a new or proposed policy. Such a definition, however, captures only some of

the ways simulation is used within health services research. Consider studies that call for measures of after-tax income, eligibility for public insurance, or adherence to treatment regimes. In each case, micro data are *enhanced* using information from outside the dataset (tax rules, eligibility rules, or treatment guidelines), creating measures of value for researchers and policy makers. Simulated measures such as these can serve as building blocks for policy evaluations, but they may also play important roles in descriptive or behavioral analyses.

In this article, we simulate the tax subsidy to private employer-sponsored insurance (ESI). ESI is the predominant form of health insurance in the nonelderly US population, covering 67.7 percent of adults and 58.3 percent of children for at least part of the year in 2009 (authors' calculations using the 2009 MEPS-HC). Current tax law provides strong subsidies to ESI by exempting employer premium contributions and most employee contributions from income and payroll taxes. The resulting "tax expenditure" is more than twice the tax expenditure for home mortgage interest and approximately half the size of Medicare or Medicaid.¹

ESI tax subsidies are an ongoing source of policy debate. On the one hand, some have argued that ESI subsidies serve as the "glue" holding ESI risk pools together, mitigating predictable losses as low-risk workers cross-subsidize those with higher expected spending (Monheit, Nichols, and Selden 1996; Selden 1999; Selden and Bernard 2004). On the other hand, ESI subsidies tend to be poorly targeted, conferring the largest benefits on higher income families who are the least likely to be uninsured or covered by public insurance (Gruber 2002; Chernew, Cutler, and Keenan 2005). ESI subsidies may also encourage higher than optimal levels of coverage and medical care consumption (Feldstein 1973; Pauly 1986; Newhouse 1992). The Patient Protection and Affordable Care Act (PPACA) modifies ESI tax subsidies in several respects, increasing subsidies for small employers and reducing subsidies for high-premium plans (Kaiser Family Foundation 2011a). Nevertheless, concerns over equity and efficiency, in conjunction with concerns over federal debt, have motivated proposals for additional changes in this largest of individual tax preferences (Antos,

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Wilensky, and Kuttner 2008; Buchmueller et al. 2008; Furman 2008; Pauly 2008).

Despite the policy importance of the ESI tax subsidy, the implicit nature of this “expenditure” means that it cannot be directly measured. Rather, it must be *simulated*. In principle, this appears to involve straightforward calculations based on marginal tax rates and premium contributions. However, worker marginal tax rates and employer/employee contributions are generally not found on a common dataset, so researchers must combine information from multiple sources (Gillette et al. 2010; Gruber 2011). Indeed, prior to 2012 even Internal Revenue Service (IRS) tax records have not contained the premium contribution data required to calculate ESI tax expenditures.² Our approach uses data on workers from the Medical Expenditure Panel Survey Household Component (MEPS-HC) to create synthetic workforces for each establishment in the MEPS Insurance Component (IC), refining the method developed in Selden and Gray (2006).

Another computational challenge is that tax subsidy calculations require assumptions regarding the incidence of employer contributions. Economists generally agree that workers bear the burden of employer ESI premium contributions through lower cash wages. There is far less agreement, however, on exactly how employers adjust cash wages when workers have heterogeneous health risks and make heterogeneous decisions regarding take-up and plan choice. Tax subsidy estimates typically rely on the “Statutory” assumption that each enrolled worker bears the cost of the employer’s premium contribution to the plan in which he/she enrolled. The (implicit) assumption is that employers set cash wages after observing take-up and plan choice and that cash wage offsets do not reflect the health risks of workers (or their covered dependents). Relatively little is known, however, about the sensitivity of tax subsidy estimates to assumptions regarding the incidence of employer contributions. Selden and Bernard (2004) used simulation to explore the implications of alternative incidence assumptions for studies examining progressivity across households and worker incentives for risk pooling. We build on their approach, using simulation to explore the implications of assumptions regarding employer targeting of cash wage offsets for estimates of the aggregate ESI subsidy and its incidence across establishments.

The next two sections describe the MEPS-IC and HC databases that we use and our simulation methods. The last two sections present our results and conclusions.

DATABASES

MEPS Insurance Component

The MEPS-IC is an annual survey containing data on approximately 34,000 private and state and local government establishments each year. The survey is conducted by the U.S. Bureau of the Census under the sponsorship of the Agency for Healthcare Research and Quality (AHRQ).³ Due to the large sample size and high response rate, the MEPS-IC is the leading source of data on ESI. The MEPS-IC is a stratified sample with weights that produce nationally representative estimates for a range of measures of ESI, including the number of employees eligible for, and enrolled in, single, employee-plus-one, and family coverage, as well as the employer and employee premium contributions for each type of coverage and whether employee contributions are tax-preferred under Section 125 of the IRS Code. We use 2010 MEPS-IC data for private establishments and 2009 MEPS-IC data for state and local governments, and project the data to 2012.⁴

MEPS Household Component

The MEPS-HC is an annual survey of the civilian noninstitutionalized population sponsored by AHRQ and the National Center for Health Statistics. It is a stratified and clustered random sample with weights that produce nationally representative estimates for insurance coverage, medical expenditures, and a wide range of other health-related and socioeconomic characteristics. The survey has an overlapping panel design, gathering 2 years of data for each household over five survey rounds. We use a point-in-time sample of workers ages 16 and older in the first round of data collection. To obtain a sufficient sample of workers to match to the MEPS-IC, we pool workers from the 2005–2007 MEPS-HC. This yields an overall sample of 41,719 workers with 35,006 private sector workers, 5,590 state and local workers, and 1,123 federal workers.⁵

SIMULATION METHODOLOGY

Constructing Synthetic Workforces

We construct synthetic workforces by statistically matching MEPS-HC workers to MEPS-IC establishments in a two-step process that first uses establishment-level characteristics to draw a sample of workers for each establishment and then uses information on worker characteristics to fine-tune the match.

In the first step, we draw a sample of workers from the MEPS-HC that matches as nearly as possible the MEPS-IC establishment on the following dimensions: industry, Census Division, number of employees, multi-location status, and whether the employer offers insurance. Wages are an important determinant of marginal tax rates, so we ensure that each sample includes at least 100 low-wage, 100 medium-wage, and 100 high-wage workers. MEPS-HC workers are sampled with replacement and each worker may link to multiple establishments.

Next, we implement a raking poststratification of the MEPS-HC sampling weights within each establishment so that each establishment's synthetic workforce matches the establishment's reported workforce characteristics. That is, we iteratively adjust the worker weights to align the synthetic workforce by the percentage of employees who are as follows: female, age 50 and older, in unions, full-time workers, low-wage, and high-wage employees.

Finally, we place workers within each establishment into one of the following categories: ineligible, eligible but did not take up, single, employee-plus-one, and family coverage (using the establishment's average employee and employer contributions across plan offerings of each type if the employer offers more than one). The result is a synthetic workforce of MEPS-HC workers that matches as nearly as possible all the establishment characteristics used for linking and for raking. Because federal establishments are out of scope for the MEPS-IC, we develop tax subsidy estimates for the federal sector using the MEPS-HC distribution of federal employees combined with data on FEHBP premiums.

Simulating Marginal Tax Rates

To simulate taxes for MEPS-HC workers, we use the National Bureau of Economic Research (NBER) TAXSIM model (Feenberg and Coutts 1993). Marginal tax rates reflect not only each worker's earnings from his or her main job but also earnings from miscellaneous jobs, spousal earnings, unearned income from a wide range of sources, family composition, and home ownership. We compute marginal tax rates for federal, state, and Social Security/Medicare taxes over an increment to worker incomes approximately equal to the average employer contribution. This approach yields relevant marginal tax rates for estimates of the subsidy to ESI and reduces issues with tax "notches" that may result from evaluating smaller increments to income. We also account for state and local government employee "Section 218" exemptions from Social Security taxation (Nuschler, Shelton, and Topoleski 2011). For each worker,

we simulate state and federal marginal taxes for every state (and the District of Columbia), selecting for each synthetic workforce the appropriate marginal tax rates for the establishment's state.

Constructing ESI Tax Subsidies

Throughout the analysis, we assume the burden of employer premium contributions is shifted to workers in the form of lower cash wages. A general expression for the ESI tax subsidy per worker is therefore:

$$\text{Tax Subsidy} = \left[\frac{(t^{\text{FED}} + s^{\text{ST}} + 2t^{\text{SS}})}{(1 + t^{\text{SS}})} \right] [\pi^{\text{W}} + B^{\text{F}}] \quad (1)$$

where t^{FED} and t^{ST} are marginal federal and state income tax rates, t^{SS} is the marginal payroll tax rate paid by employers and employees for Social Security/Medicare ("FICA"), π^{W} is the employee premium contribution (if tax preferred), and B^{F} is the portion of the employer's premium contribution borne by the worker.⁶

Estimating tax subsidies requires assumptions regarding how B^{F} , the incidence of employer premium contributions, is distributed across workers in a firm. The literature typically assumes the cash wage offset for a given worker is based on the employer contribution to the plan the employee actually chooses. In this "Statutory" scenario, $B^{\text{F}} = \pi^{\text{F}}$, where π^{F} is the employer's premium contribution by plan type for those taking up coverage (with $B^{\text{F}} = 0$ for workers not taking up coverage).

Alternate Incidence Scenarios

The conventional approach simplifies the ESI subsidy calculation but entails a number of strong assumptions. It assumes that employers, when setting cash wages, know whether the worker will take up coverage and which plan he/she will choose. In practice, however, it is more likely that employers can at best form expectations regarding these outcomes at the time cash wages are set. In this case, eligible workers would bear a portion of the employer's costs even if they do not take up coverage. This is consistent with findings from the take-up literature that employee decisions regarding take-up and plan choice are driven by out-of-pocket rather than total premiums.⁷ Employees offered coverage appear to treat employer contributions as sunk costs that would be borne regardless of their health insurance choices.

In the extreme case, employers might impose uniform cash wage offsets across all workers who are eligible for ESI. We model this “Uniform” incidence scenario by setting B^F for all eligible workers equal to the employer’s average cost of ESI *per eligible worker*, reducing the incidence on workers taking up coverage (and especially family plans) and increasing the incidence on workers not taking up coverage at all. The Uniform scenario serves as a lower bound on employers’ use of information to target wage offsets. In practice this scenario also tends to provide a lower bound on our tax subsidy estimates by removing the within-establishment correlation between B^F and marginal tax rates that would arise from higher income workers exhibiting more take-up or choosing higher cost plans.⁸

At the opposite extreme in terms of employer information and behavior, cash wage offsets could be linked not only to take-up and plan choice but also to the health risks of employees and their covered dependents. There is growing evidence that at least some expected cost differences are reflected in cash wages.⁹ Gruber (1994) finds that employer costs associated with state-mandated maternity benefits are borne in large part by women of child-bearing age, who receive lower cash wages than similar workers in states without such mandates. Similarly, Sheiner (1999) finds that older workers bear the burden of their higher ESI costs, with age-wage profiles being flattest in markets where health care prices are the highest. Pauly and Herring (1999) examine wage-tenure profiles for workers with and without coverage from their current jobs, finding evidence that wage offsets may reflect age-based differences in health risk. Whether employers move beyond readily observable characteristics (such as age, sex, and tenure) to factor in other correlates of health risk (of workers and their dependents) is less well understood. On the one hand, Pauly and Herring (1999) find no link between wage offsets and a more detailed measure of health risk. On the other hand, the “job lock” literature finds that workers with the highest health risks have the lowest mobility (with constrained mobility likely resulting in lower wages).¹⁰

Following Pauly and Herring, we label this the “Laser Beam” model of incidence. We simulate this in several steps. Working with the MEPS-HC, we sum annual private insurance health expenditures at the policyholder level. Next, we regress these expenditures on a range of policy-level characteristics, including the type of coverage (single, employee + 1, family) and policyholder/dependent indicators for gender, age, health status, and chronic conditions. We use the regression results to obtain predicted expenditures for each policyholder and his/her covered dependents. Finally, we construct B^F for each worker in each establishment by allocating the employer’s total cost of

ESI in proportion to predicted expenditures for each worker (and any covered dependents).

In our final incidence scenario, we assume that employers allocate ESI costs across all eligible workers in proportion to workers' earnings. Although this scenario might be difficult to derive from the economic theory of the firm and competitive labor markets, it might arise in practice as a rule-of-thumb percentage reduction or as an attempt to distribute burdens equitably. It might also arise if employers perceive a correlation between worker earnings and take-up or plan choice. More important for our analysis, this "Ability to Pay" scenario will tend to provide an upper bound on our tax subsidy estimates, because it forces a strong positive correlation between B^F and marginal tax rates.

To summarize, we examine three alternatives to the conventional (Statutory) assumption. Two of the assumptions (Uniform and Laser Beam) stand at opposite extremes in terms of the employer's use of information about take-up, plan choice, and health risk to set cash wage offsets. And two of the assumptions (Uniform and Ability to Pay) serve as useful bounds on the extent to which cash wage offsets correlate with marginal tax rates across employees.

Standard Errors

All standard errors and statistical tests are adjusted to account for the complex design of the MEPS-IC. However, they do not reflect the intrinsic uncertainty arising from the creation of synthetic workforces.

RESULTS

Tax Subsidy Estimates for 2012

Table 1 presents aggregate tax subsidy estimates for active workers in the U.S. civilian, noninstitutionalized population. In our baseline estimates, we assume Statutory incidence. Under this assumption, we estimate the total ESI tax subsidy to be \$257.4 billion in 2012. More than three-quarters (\$199.9 billion) of the subsidy goes to the 112.2 million workers in the private sector, \$47.3 billion goes to the 19.0 million workers in state and local governments, and the remaining \$10.2 billion goes to the 2.9 million civilian, federal workers. The federal income tax component accounts for more than half (\$138.5 billion) of the subsidy, Social Security and Medicare taxes (FICA) account for about one-third (\$88.1 billion) of the subsidy, and the state tax component accounts for the remaining \$30.8 billion, or about 12 percent of the subsidy.

Table 1: Aggregate Tax Expenditures for Employment-Related Group Coverage of Current Workers in Private and Public Establishments, 2012

	Subsidy by Tax (\$ Billions)						Tax Subsidy as a Percentage of Premiums	
	Federal Income		FICA and Medicare		State Income		Total	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
All establishments	138.5		88.1		30.8		257.4	34.9
Federal government	5.7	0.4	3.3	0.2	1.2	0.1	10.2	37.7
State and local government	27.3	0.3	13.7	0.2	6.3	0.1	47.3	0.6
Private sector	105.5	1.6	71.1	1.0	23.3	0.4	199.9	32.9
Private sector subsidies: Under alternative incidence assumptions								0.1
Uniform	103.1	1.5	72.1	1.0	22.9	0.4	198.1	34.9
Laser beam	105.6	1.6	71.0	1.0	23.3	0.4	199.9	35.3
Ability to pay	110.3	1.7	68.5	1.0	23.6	0.4	202.4	35.7

Sources. Authors' calculations using data from the Medical Expenditure Panel Survey Insurance Component (MEPS-IC) and Household Component (MEPS-HC) and Federal Employment Health Benefits (FEHBP) premium data. Tax subsidies in all sectors are estimated assuming Statutory incidence. Estimates were constructed using worker-level, not establishment, sampling weights. For private and state-local government estimates, standard errors reflect sampling error in the MEPS-IC. No adjustment is made for sampling variation in constructing synthetic workforces. The MEPS-IC contains data on 31,545 private and 2,602 public establishments after excluding railroads because of concerns involving confidentiality. Standard errors for federal government estimates reflect sampling variation in the MEPS-HC. Estimates for "All Establishments" are sums of separate estimates from the MEPS-IC and the MEPS-HC. Standard errors were not available for these estimates.

Comparison to Other Estimates

The most comparable, widely cited source of ESI tax subsidy estimates is the Department of Treasury (Office of Management and Budget 2012). The Treasury tax expenditure estimate of \$279.5 billion for 2012 federal income tax and FICA is 23.3 percent higher than our estimate of \$226.6 billion. Treasury estimates, however, include tax subsidies to retiree medical insurance coverage, long-term care insurance, and flexible savings accounts, which could easily explain why the Treasury estimates are higher than ours.¹¹ Unlike our estimates and those of Treasury, tax expenditure estimates by the Joint Committee on Taxation (JCT) assume that individuals would greatly increase their medical expense deductions if ESI premium contributions were to become taxable, causing JCT estimates of the federal income tax subsidy to be 25.0 percent below those of Treasury. Neither source provides estimates of state tax subsidies.

Gruber's (2011) estimate of \$294 billion, for the combined federal, FICA, and state tax subsidy in 2009, is 14.2 percent larger than our estimate for 2012 (\$257.4 billion). The real difference in our estimates is substantially larger given that a 2009 estimate should be 10–20 percent lower than our 2012 estimate (due to premium increases and the rebound in employment between 2009 and 2012). Several factors account for this difference. First, Gruber includes retiree coverage (a 10 percent increase). Second, his weighted average premium of \$8,880 in 2009, constructed by aging 2004 MEPS-IC data, is 7.2 percent above our estimate for that year (based on 2009 MEPS-IC and FEHBP data). Also, Gruber calibrates enrollment to the March 2008 Current Population Survey, which would miss the sharp downturn in employment during the remainder of that year. Finally, Gruber's average subsidy rate is 1.7 percentage points higher than ours, despite both models relying on NBER TAXSIM simulations.¹²

Sensitivity of Aggregate Estimates to Incidence Assumptions

The bottom panel of Table 1 presents estimates of the private sector tax subsidy under alternative incidence scenarios. Under the assumption of Uniform incidence, the point estimate for the total private sector subsidy falls slightly, to \$198.1 billion, versus \$199.9 billion in the Statutory scenario. This difference reflects the somewhat lower marginal tax rates among eligible employees who do not take up coverage, but it is small in practical terms and not statistically significant. In the Laser Beam scenario, in which workers who

hold coverage bear the incidence of employer contributions in proportion to their predicted plan expenditures, the point estimate for the total private sector subsidy remains virtually unchanged from the Statutory case. This suggests that there is no overall correlation between workers' predictable health care costs and their marginal tax rates. In the Ability to Pay model, in which incidence of employer contributions is in proportion to usual weekly earnings, the federal income tax component of the subsidy increases to \$110.3 billion, from \$105.5 billion in the Statutory case, due to the progressive structure of Federal taxes. The FICA-Medicare component, however, falls to \$68.5 billion from \$71.1 billion, as some high wage workers have earnings that are not subject to FICA taxes. The net effect is a small and statistically insignificant rise in the total private sector subsidy to \$202.4 billion.

Per Worker Tax Subsidies

Table 2 presents average tax subsidies per worker for private establishments by type, under each of our four incidence models. Focusing on the first column of results, we see Statutory incidence results that mirror those found for earlier years in Selden and Gray (2006) and Miller, Selden, and Banthin (2012). The average tax subsidy per worker depends on the percentage of workers who are eligible, the percentage of workers who take up, the plans offered and taken up, and the marginal tax rates of the enrolled workers. Not surprisingly, we see the largest tax subsidies per worker in establishments of larger firms and those with higher percentages of high-wage and full-time workers. We also see variation across Census divisions and industries. (See Appendix SA2 for more detailed Statutory results.)

The more important issue for this analysis is the comparison of estimates across incidence scenarios. Results in Table 2 show that in nearly every case, the Statutory estimate lies between the Uniform and Ability to Pay estimates, and in all cases the estimates from all four scenarios exhibit remarkable stability.

LIMITATIONS

Several important caveats should be noted. First, the model assumes that employer premium contributions are shifted forward to workers in the form of lower cash wages, thereby justifying our use of worker marginal tax rates to value the subsidy. Second, we rely on synthetic workforces formed by aligning

Table 2: Private Sector Tax Subsidy per Employee, by Alternative Incidence Assumptions and Selected Establishment Characteristics, 2012

	<i>Incidence Assumption</i>							
	<i>Statutory</i>		<i>Uniform</i>		<i>Laser Beam</i>		<i>Ability to Pay</i>	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
Firm size (no. of workers)								
<10	777	17	771	17	776	17	784	18
10–24	1,090	29	1,082	29	1,091	29	1,101	29
25–99	1,405	31	1,394	31	1,405	31	1,421	31
100–999	1,900	43	1,883	43	1,900	43	1,923	43
1,000 or more	2,227	32	2,206	32	2,226	32	2,255	32
Percent full-time workers								
<25%	254	19	239	19	254	19	251	20
25–49%	636	30	613	29	636	30	638	30
50–74%	1,357	47	1,330	46	1,358	47	1,372	47
75%+	2,195	22	2,182	22	2,194	22	2,223	23
Wage rate								
>50% low wage	742	30	712	29	743	30	741	30
>50% medium wage	1,968	26	1,956	26	1,968	26	1,994	27
>50% high wage	2,929	53	2,938	54	2,924	53	2,965	54
Other firms	1,913	44	1,886	44	1,913	44	1,946	45
Industry								
Agriculture/fish/forestry	779	100	773	99	781	100	785	101
Mining, manufacturing	2,601	48	2,585	47	2,599	48	2,633	48
Construction	1,548	67	1,535	66	1,551	67	1,556	67
Utilities, transportation	2,505	137	2,475	138	2,515	137	2,526	139
Wholesale trade	2,302	62	2,286	61	2,297	61	2,342	63
Finance, real estate	2,532	57	2,526	58	2,527	57	2,564	58
Retail trade	1,065	27	1,037	26	1,066	27	1,075	27
Professional services	2,193	37	2,180	37	2,192	37	2,222	38
Other services	868	28	851	27	868	28	878	28
Census division								
New England	2,119	56	2,108	56	2,111	55	2,148	56
Middle Atlantic	2,001	57	1,980	57	1,995	57	2,022	58
East North Central	1,827	45	1,808	45	1,827	45	1,843	46
West North Central	1,784	49	1,770	48	1,784	49	1,804	49
South Atlantic	1,712	47	1,697	47	1,713	47	1,730	48
East South Central	1,624	49	1,606	48	1,621	49	1,641	49
West South Central	1,544	53	1,524	53	1,548	54	1,558	54
Mountain	1,554	47	1,548	47	1,556	47	1,578	48
Pacific	1,821	53	1,809	52	1,825	53	1,859	54

Source. Authors' calculations using data from the Medical Expenditure Panel Survey Insurance Component (MEPS-IC) and Household Component (MEPS-HC). Estimates were constructed using worker-level, not establishment-level, sampling weights. Standard errors reflect sampling error in the MEPS-IC. No adjustment is made for sampling variation in constructing synthetic workforces. The MEPS-IC contains data on 31,545 private establishments after excluding railroads because of concerns involving confidentiality. Each establishment may have its own definition of "full time." In the 2010 MEPS IC, wage categories are defined (in \$2010) as follows: low wage, <\$11.50 per hour; medium wage, \$11.50 to <\$26.00 per hour; high wage, \$26.00 or more per hour.

matched MEPS-HC workers to MEPS-IC establishment workforce characteristics, with the potential for error in linking ESI plans with enrollee marginal tax rates. Third, estimates apply only to active employees. Retiree coverage and self-employment coverage, for individuals in single-person firms, are not included in our model. Fourth, we focus solely on the tax subsidy for employer-provided insurance. Our estimates do not include tax subsidies on contributions to health savings accounts or flexible spending accounts. Nor do we include the tax subsidy for itemized medical expenditures (or any changes therein if the ESI exclusion were removed).

CONCLUSION

We estimate the tax expenditures for ESI and explore the sensitivity of these estimates to assumptions regarding the incidence of employer premium contributions. On the basis of conventional Statutory assumptions regarding the incidence of employer premium contributions, we project the total tax subsidy for ESI for active workers in the U.S. civilian, noninstitutionalized population to be \$257.4 billion in 2012.

Obtaining reliable estimates of the cost and incidence of the ESI tax subsidy is of considerable importance to U.S. public policy making. The ESI tax subsidy is by far the largest individual tax preference and is likely to figure in deficit reduction debates for this reason. Moreover, this tax preference provides a large (34.9 percent) subsidy to the ESI system, which is likely to remain the primary source of health insurance coverage in the United States for nonelderly individuals and families for the foreseeable future. In this article, we simulate alternative scenarios for how worker cash wages adjust when employer premium contributions are shifted forward to workers. The scenarios we consider span a wide range, from equal incidence across all eligible workers to narrowly targeted incidence on workers taking up coverage according to plan type and predicted health expenditures. As Selden and Bernard (2004) demonstrate, alternative incidence scenarios can have important implications for the overall progressivity/regressivity of the tax subsidy and for worker incentives regarding ESI risk pooling. In contrast, the estimates we present in this article show that aggregate ESI subsidy estimates and analyses of subsidy incidence across establishments are remarkably robust across models, even when we link incidence to worker earnings. As a result, we conclude that the aggregate value of the ESI tax subsidy and its distribution across firms can be reliably estimated using simplified incidence assumptions.

ACKNOWLEDGMENTS

Joint Acknowledgment/Disclosure Statement: Blaine Byars provided invaluable programming support while he was an employee of Social and Scientific Systems.

Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

Disclaimer: Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the Agency for Healthcare Research and Quality, the Department of Health and Human Services, or the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.

Declaration of Conflicting Interests: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

NOTES

1. The Department of Treasury projects the 2012 federal income tax reduction from deductibility of home mortgage interest to be \$86.9 billion, versus \$279.5 billion for the reductions in federal income tax and FICA related to employer spending on “medical insurance...and medical care” (Office of Management and Budget 2012). Although a portion of this tax subsidy pertains to other spending, including long-term care insurance and flexible spending accounts, it is predominantly for ESI. Projected 2012 expenditures on Medicaid and Medicare are \$458.9 billion and \$590.8 billion, respectively (Centers for Medicare and Medicaid Services 2012), so that each is approximately twice our \$257.4 billion estimate of the combined federal and state tax subsidy for current workers.
2. PPACA requires that firms report premium contributions on employee W-2 forms. This requirement is being phased in, with mandatory reporting for firms with over 250 employees beginning in 2012 (IRS 2012a,b).
3. Our model was approved by the Census research proposal process and resides at their Research Data Center.
4. We use Bureau of Labor Statistics data to adjust workers’ weights by sector and industry. We adjust premiums using information on 2011 premiums (Kaiser Family Foundation 2011b) and information on projected 2012 premiums from Mercer (<http://www.mercer.com/press-releases/1425785>).
5. More specifically, we construct the MEPS-HC sample at the job level, with some workers holding more than one job.
6. The first bracketed term on the right-hand side of equation 1 is equal to 1 minus the “tax price” of insurance. The numerator is foregone tax revenue (including the employee and employer share of the Social Security/Medicare tax) for each 1 dollar

reduction in wages. The denominator reflects employers' indifference between paying $(1 + t^s)$ dollars in premiums versus 1 dollar in cash wages and t^s dollars in payroll taxes. We include FICA-related tax subsidies without adjusting for the potential future reduction in Social Security income from excluding ESI premiums from current earnings. Our estimates do not include the small employer tax credit established by PPACA, estimated to total only \$0.5 billion in 2010 (General Accountability Office 2012). Moreover, we do not include the 2 percentage point employee payroll tax reduction enacted under the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (and subsequently extended to 2012), because payroll taxes are slated to return to 2010 levels once it expires.

7. See, for instance, Chernew, Frick, and McLaughlin (1997), Blumberg, Nichols, and Banthin (2001), Cutler (2003), and Cooper and Vistnes (2003).
8. The Uniform case provides a lower bound on our subsidy estimates in a strict mathematical sense only if take-up and plan choice are increasing functions of marginal tax rates. Although we observe a positive correlation, this relationship is far from exact due to nonmonotonicities in marginal tax rates and the influence of factors other than income on take-up and plan choice. We also explored imposing a requirement that wages not fall below the minimum wage (Sommers 2005), but this had very little impact on our results.
9. Employers may at least partially factor health risk variation directly into employee premiums, rather than indirectly through cash wage offsets. However, the scope for these adjustments is limited by the 1996 Health Insurance Portability and Accountability (HIPA) Act, which requires incentives to be limited to 20 percent of premiums and tied to attainable wellness plan goals. Although the prevalence of such plans is growing (Mincer 2011) and may expand further in 2014 due to PPACA, current limits on such plans and their low prevalence led us to focus on cash wage offsets as the main pathway for employers to shift ESI burdens onto higher cost enrollees.
10. See Monheit and Cooper (1994) and the references therein. HIPA may have at least partially helped to alleviate job lock since these studies were conducted.
11. The JCT estimates that "cafeteria plan" federal income tax subsidies (primarily for health care but also including dependent care) will be \$32.3 billion in 2012 (Joint Committee on Taxation 2010). Moreover, Gruber (2011) cites JCT estimates that tax subsidies to retiree coverage are approximately 10 percent of current worker tax subsidies.
12. Note that in our analysis, we calculate marginal tax rates by running TAXSIM twice (first with observed income and then with increments equal to the average employer premium contribution) to avoid tax notches that can arise with the \$1 increment used by TAXSIM.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendic SA1: Author Matrix.

Appendix SA2: Eligibility, Take-Up, and Average Tax Subsidy per Employee, by Selected Establishment Characteristics, 2012.