Technical Appendix to State and Federal Approaches to Health Reform:
What Works for the Working Poor?

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Ellen Meara[a,c]
Meredith Rosenthal[b]
Anna Sinaiko[a]
Katherine Baicker[b,c]

The following tables and text provide details on the tax credit analyzed in the paper, the source of parameter estimates used to estimate who is covered by insurance policies, and the sensitivity of our estimates to the choice of key parameters.

Table A1	Tax Credit Schedule				
		Other filer with insurance policy covering:			
	Single filer	**1 adult**	**1 adult & 1 child**	**2 adults no child**	**2 adults & 2+ children**
Maximum Adjusted Gross Income that is eligible for 90% of premium up to cap	$15,000	$25,000	$25,000	$25,000	$25,000
Range over which credit phases out from 90% to 50%	$15,000-$20,000	n/a	n/a	n/a	n/a
Phaseout range to 0%	$20,000-$30,000	$25,000-$40,000	$25,000-$40,000	$25,000-$60,000	$25,000-$60,000
Maximum value of credit	$1,000	$1,000	$1,500	$2,000	$3,000
Maximum cost of eligible insurance policy	$1,111	$1,111	$1,111	$2,222	$3,334
Maximum # of adults covered	1			2	
Maximum # of children covered	0			2	

Source: Bush Administration proposed budget for 2006 (United States Department of the Treasury, 2005)

Table A1 provides detail on the proposed tax credit used in the simulations, and Table A2 gives a detailed description of the parameter estimates used in the simulations presented in the text, including the source of each estimate and ranges in the literature.

Table A2 Parameter Estimates

Simulation & estimate needed

	Estimate	Source
Employer Mandate		
Average cost of single employer-sponsored health insurance coverage, 2005	$4,024	(Kaiser/HRET, 2005)
Average cost of family employer-sponsored health insurance coverage, 2005	$10,880	(Kaiser/HRET, 2005)
Average cost of coverage per private worker with ESI	$7,697	Authors' calculations based on 2005 CPS estimate that 46.43% of insured workers have single coverage and the rest have family coverage, and Kaiser/HRET (2005) survey estimates of average cost of policies
Effect of a 10% increase in health insurance premiums on:		
▪ Aggregate probability of being employed	-1.2%	(Baicker, and Chandra, 2006)
▪ Hours worked per employee	-2.4%	(Baicker, and Chandra, 2006)
▪ Wages	-2.3%	(Baicker, and Chandra, 2006)
Medicaid Expansion		
Fraction of eligible adults and children who will take-up Medicaid coverage	13%	(Lo Sasso, and Buchmueller, 2004)
Fraction of newly insured who drop prior health insurance coverage (crowd-out)	.35	Midpoint of range of estimates (.2 to .5) in the literature, in (Blumberg, Dubay, and Norton, 2000; Cutler, and Gruber, 1996; Dubay, and Kennedy, 1996; Lo Sasso, and Buchmueller, 2004; Yazici, and Kaestner, 2000)
Cost of Medicaid per non-disabled child in 2000 ($2005)	$1,343[a]	(U.S. House of Representatives, 2004)
Cost of Medicaid per non-disabled adult in 2000 ($2005)	$2,204[a]	(U.S. House of Representatives, 2004)
Average cost of single employer-sponsored health insurance coverage, 2005	$4,024	(Kaiser/HRET, 2005)
Average cost of family employer-sponsored health insurance coverage, 2005	$10,880	(Kaiser/HRET, 2005)
Average cost of coverage per private worker with ESI	$7,697	Authors' calculations based on 2005 CPS estimate that 46.43% of workers have single coverage and the rest have family coverage, and Kaiser/HRET survey estimates of average cost of

		policies (2005)
Deadweight loss of taxes	.30	(Poterba, 1995)
Effect of a 10% increase in health insurance premiums on:		
▪ Aggregate probability of being employed	-1.2%	"
▪ Hours worked per employee	-2.4%	"
▪ Increase in likelihood of working part-time instead of full-time	1.9%	"
▪ Wages	-2.3%	"
Tax Credits		
Price elasticity of demand for health insurance	-.10	Based on (Blumberg, Nichols, and Banthin, 2001; Chernew, Frick, and McLaughlin, 1997; Cutler, 2002; Gruber, and Washington, 2005). These estimates range from -.02 to -.12
Fraction of eligible and previously uninsured population who take-up tax credit	3.8%	Authors' estimates using above price elasticity and March 2005 CPS.
Deadweight loss of taxes	.30	(Poterba, 1995)

All costs in 2005 dollars
a. 2000 estimates inflated to 2005 dollars

Sensitivity analyses of the choice of parameter estimates

Some of the estimates used in the analysis are either controversial or based on relatively scant empirical evidence. For example, the crowd-out estimates from the literature range from a low of .17 to a high of .49. Table A3 shows how estimates change when the lowest and highest crowd-out estimates are substituted for the midpoint crowd out estimate used in our baseline simulation. The ranking of health reforms in terms of which is most effective at reducing the number uninsured, and which has the highest level of public spending per newly insured, or the largest change in private spending per newly insured remain unchanged for a wide range of crowd-out estimates. The labor market effect rankings of each expansion approach are also unchanged by differences in the parameter estimate. This sensitivity analysis highlights an unusual tension between crowd-out, which policy typically tries to minimize, and labor market effects. For Medicaid expansions, a higher rate of crowd out, while depressing the number newly insured and increasing the public costs per newly insured, carries larger positive employment effects.

Table A3: Sensitivity of Exhibit 3 Medicaid expansion estimates to crowd-out parameter used in calculation*

Change In:	Employer Mandates	Medicaid Expansions by crowd-out estimate:			Tax Credits
		.17	**.35**	**.49**	
Take-up by previously insured	NA	1,307,097	2,691,082	3,767,515	11,905,709
Number newly insured	13,030,547	6,381,709	4,997,724	3.921,291	1,568,628
Percent reduction in uninsured	28.6%	14.0%	11.0%	8.6%	3.5%
Public spending					
Per newly insured	None	$2,576	$3,289	$4,192	$12,644
Deadweight loss/newly insured		$773	$987	$641	$3,793
Private spending					
Total	$36.1 billion	-$4.0 billion	-$8.3 billion	-$11.7 billion	
Per newly insured	$7,697	-$634	-$1,084	-$1,518	
Deadweight loss/newly insured	$409	na	na	na	None
Labor market effects per 10% reduction in uninsured					
Change in:					
Employed workers	-370,402	79,623	209,326	373,504	
(% change)	(-.38)	(0.08)	(0.22)	(0.39)	None
Hours worked/week	-450,656	96,875	254,680	454,430	
(% change)	(-.77)	(0.17)	(0.43)	(0.78)	None
Annual wages, $millions	-$26,545	$5,706	$15,001	$26,767	
(% change)	(-.74)	(0.16)	(0.42)	(0.74)	None

* Estimates not shown in this table are unchanged by changes in the crowd-out parameter used in calculation. Figures for the employer mandate and tax credits are unaffected by the crowd-out figure, but are shown for comparison.

A second consideration is the sensitivity of our results to the estimates in Baicker and Chandra (2006), the only available evidence of employment effects based on a within-state longitudinal analysis directly addressing the potential endogeneity of health care costs. If the true labor market response to health care costs were half of those estimated in Baicker and Chandra (2006), one would simply halve the employment effects shown in the bottom panel of table A3. For the lowest crowd out estimate, the employment effects of a Medicaid expansion would be much more modest, with an increase of about 40,000 workers, 48,000 hours worked per week, and $2.85 billion in wages. Similarly, the negative impact of the employer mandates would be half as big.

Third, our principal simulation of the tax credit approach to insurance expansion uses the average price of insurance for single and family coverage in the non-group market to model the reference plan ($2,076 for single coverage and $4,500 for family coverage). In most areas, however, there are high-deductible and other low-cost plans available that might appeal to many buyers in the non-group market. As a sensitivity analysis we examine the implications of the tax credit policy if individuals purchase insurance from health plans offering low-cost health savings account plans with high-deductibles (HSA-compatible plans) rather than the average plan.

We use alternative premium information from two sources. First, America's Health Insurance Plans (the health plan trade organization) reported that the average premium for single coverage in the non-group market for the most popular HSA-compatible plan in January 2006 was $1,121, $1,914, and $3,157 for subscribers aged 20-29, 30-54, and 55-64 respectively. For family coverage, premiums for the most popular plan were $2,507, $3,951, and $5,690 for subscribers aged 20-29, 30-54, and 55-64 respectively. Based on those eligible for the tax credit, the population-weighted average premium for these HSA-compatible plans are $1750 for single coverage and $3935 for family coverage, only slightly lower than the average non-group market plan.

Second, Feldman and colleagues (Feldman et al., 2005) simulated the growth in HSA-compatible plans under a number of policy scenarios using data from eHealthinsurance.com. Their simulations use the average premium for a 40-year-old non-smoking male for a plan with a $3,500 deductible ($7,000 for family coverage). The premiums for these HDHP plans are $1,233 for single coverage and $2,724 for family coverage. In Table A-4 below, we compare key results of the tax credit simulation under the three sets of alternative premiums. The numbers of newly insured increases by roughly 50% the model using the premiums from Feldman et al. (2005) compared to the baseline estimates. The cost per newly insured using these lower premiums declines by roughly 50% compared to the baseline model, as well.

Under a range of reasonable assumptions about the premiums of eligible plans taken up by the newly insured, the tax credit approach yields many fewer newly insured and much higher public spending per newly insured than the employer mandate or Medicaid expansion. Moreover, we note that the increased numbers of newly insured and lower costs per newly insured associated with the simulations using the lowest premium estimates come at a cost of reduced coverage (i.e., high deductibles and possibly coinsurance).

Appendix A-4: Sensitivity of Tax Credit Simulation Results to Premium of Eligible Plan

Table A4	Tax credit insurance effects for individuals up to $40,000 and families up to $60,000 of adjusted gross income assuming different types of insurance policies		
	Baseline (average) health insurance premium estimates	**AHIP-reported HSA/HDHP premiums**	**Feldman et al. HSA/HDHP premiums**
Newly insured	1,568,628	1,816,306	2,641,899
Cost per newly insured (DWL)	$3,793	$3,336	$2,432
Public expenditures per newly insured	$12,644	$11,121	$8,106

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