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Comparing The Effects Of Health Insurance Reform Proposals: Employer Mandates, Medicaid Expansions, And Tax Credits

By Ellen Meara, Meredith Rosenthal, and Anna Sinaiko
Harvard University
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The Employment Policies Institute (EPI) is a nonprofit research organization dedicated to studying public policy issues surrounding employment growth. In particular, EPI research focuses on issues that affect entry-level employment. Among other issues, EPI research has quantified the impact of new labor costs on job creation, explored the connection between entry-level employment and welfare reform, and analyzed the demographic distribution of mandated benefits. EPI sponsors nonpartisan research that is conducted by independent economists at major universities around the country.

Ellen Meara received her B.A. in Mathematical Methods for the Social Sciences and Political Science from Northwestern in 1991 and her Ph.D. in economics from Harvard in 1999. She is an Assistant Professor of Health Economics in Harvard Medical School's Department of Health Care Policy and a faculty research fellow at the National Bureau of Economic Research. She has also been a faculty affiliate of the Irving B. Harris School of Public Policy at the University of Chicago. Her fields of interest include: health economics, public economics, and labor economics. Her current research focuses on public programs and their effect on health, labor market outcomes, and other measures of well-being.

Meredith Rosenthal, Ph.D. is Assistant Professor of Health Economics and Policy in the Department of Health Policy and Management at Harvard University. She received her Ph.D. in health policy at Harvard University in 1998. Dr. Rosenthal's principal research interests revolve around economic incentives that influence consumer and provider health care decisions. Her other substantive interests include the pharmaceutical industry, mental health policy, and the economics of smoking. She is currently working on a series of related projects that examine evolving trends in the health insurance market, including consumer-directed health plans and financial incentives for improving health care quality and patient safety.

Anna Sinaiko received a B.A. from the Woodrow Wilson School of Public and International Affairs at Princeton University in 1998 and her Masters in Public Policy from the John F. Kennedy School of Government at Harvard University in 2004. She is currently a doctoral student in Health Policy with a concentration in Economics at Harvard University. Prior to her graduate work, she worked as a research assistant at the Center for Health Policy/Center for Primary Care and Outcomes Research at Stanford University. Her current research focuses on public and private sector reforms that can improve access to, and the efficiency of, health insurance and health care markets.

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Table of Contents

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Executive Summary

Overview

Over 46 million Americans lacked health insurance in 2005. This problem has increasingly drawn the attention of policymakers at the local, state, and federal levels. Attempts to increase health coverage have generally focused on three main types of policy proposals: mandating employer-paid health insurance, providing tax credits for low-income individuals to buy insurance, and expanding Medicaid to cover more of the uninsured. While many studies have considered the impact of these policies on the number of uninsured and the cost to the federal government, the additional impacts on employer costs and the labor market have generally been ignored.

In this study, Ellen Meara, Meredith Rosenthal, and Anna Sinaiko of Harvard University use data from the March 2005 Annual Earnings Supplement and the February 2005 Contingent Worker Supplement of the Current Population Survey (CPS) to provide a comprehensive view of the pros and cons associated with each policy. Their analysis includes estimates of eligibility, the number of individuals predicted to take up a policy, the number of individuals switching from private coverage to a policy's coverage, changes in spending on health insurance (both private and public), and changes in wages and employment levels.

In terms of labor market effects, employer mandates are by far the most costly. The authors find that although these mandates successfully increase the number of newly insured individuals, they do so at the cost of over 995,000 jobs. In addition, over 1.5 million employees would find themselves unwillingly shifted from full-time to part-time employment status. This would result in 1.2 million fewer hours worked per week and decrease aggregate annual wages by nearly $71 billion. Medicaid expansions, on the other hand, would actually be expected to have a positive employment impact, while still increasing the newly insured by nearly 5 million. A Medicaid expansion to 300 percent of the poverty line would increase employment by nearly 230,000 jobs. It would also shift over 57,000 employees from part-time to full-time work, increase weekly hours by nearly 280,000, and increase aggregate annual wages by almost $16.5 billion. While tax credits have negligible employment effects, the authors find they also have a much smaller impact on the uninsured.

Policy Alternatives

Employer mandates are the most popular proposal at the state level, although Hawaii is currently the only state with an active mandate in place. In the late 1980s, both Oregon and Massachusetts attempted to implement mandates, and a California mandate was narrowly defeated in 2004. In January 2006, Maryland passed a mandate that was later struck down by the courts on the grounds that it was preempted by the Employee Retirement Income Security Act (ERISA). These mandates are often constructed as "pay-or-play," where employers have the option to either "pay" a fee to the state to provide insurance for their employees or "play" by providing coverage themselves. Legislation often exempts smaller firms (defined anywhere from 10 to 50 employees), and part-time employees (often defined as 20 hours per week). Coverage for dependents varies, but will clearly

increase both the potential costs and benefits of a proposal. This study considers a mandate for full-time (35 or more hours per week) employees and their dependents at firms with more than 25 employees. In addition, the study simulates an employer mandate where employees are required to accept coverage (individual mandate) and one that does not.

Expanded access to Medicaid is another widely considered alternative to reduce the number of uninsured. Such an expansion would be authorized and funded (in part) at the federal level, with states allowed some flexibility in the actual design and implementation of the program. One recent example is the creation of the State Children's Health Insurance Program (SCHIP) by Congress in 1997, which extended Medicaid to children in families that previously earned too much to qualify for public insurance. Studies suggest that this program was responsible for covering 4 million additional children by 2003. This study examines the effect of a Medicaid expansion up to 300 percent of the federal poverty line.

The final policy proposal considered in this study is a tax credit that would allow low-income individuals to claim a federal tax credit to offset some of the cost of private insurance. This is similar to the 2006 budget proposal by President Bush. The policy considered in this study would allot up to $1,000 per adult and $500 per child with a maximum of $3,000 per family. Single individuals earning up to $30,000 and families earning up to $60,000 could qualify for this credit.

Results

The authors confirm that the uninsured are a more diverse group than is often portrayed. However, compared to individuals with insurance they are more likely to have low incomes and education levels and to be from a racial minority group. They are also more likely to be under the age of 35, unmarried, and single parents. Among adults, the uninsured are also somewhat more likely to be employed and working full-time than insured individuals.

An employer mandate for firms with at least 25 employees would affect 8.2 million workers who are currently uninsured, including about 2 million workers who currently refuse employer-sponsored coverage offered through the workplace. Assuming dependent coverage is included under the mandate, this translates into new coverage for 13 million people without an individual mandate and 22.8 million people with an individual mandate. Health costs for private employers would increase by 8.6% or 15.1% with an individual mandate. For workers earning well above the minimum wage, we would expect additional health care costs to be fully offset by lower wages, resulting in a 1.98% decrease in wages or 3.47% with an individual mandate. The added health care costs would lead to a 1.03% decrease in employment or 1.81% with an individual mandate, or the loss of nearly 1 million jobs (1.7 million with an individual mandate). These job reductions arise because wages cannot adjust downward for workers near the minimum wage. In addition, we would expect 1.6 million workers to shift from full-time to part-time work (2.8 million with an individual mandate), decreasing hours worked by 2.1% or 3.6% with an individual mandate. If part-time workers were also included in the mandate, these labor market effects would be even more pronounced.

The authors estimate that expanding Medicaid to cover all adults and children with a family income up to 300 percent of the poverty level would extend eligibility to over 59 million people. The authors estimate that 7 million adults and nearly 591,000 children would take up the benefit. Most of these would be adults because children living in low- and moderate-income families already qualify for State Children's Health Insurance Programs. Because some of those individuals would be dropping private coverage, the policy would decrease the number of uninsured by 4,997,724. However, a Medicaid expansion is expected to add 230,000 new jobs, as employers take on low-wage workers with fewer concerns about the inability to adjust wages downward as health care costs increase,

since many of these workers would take up Medicaid. Other labor market benefits include: reducing health costs for private employers by 2%; increasing wages among existing workers by 0.46%; shifting 57,000 workers from part-time to full-time employment; and increasing hours worked per week by 279,741. However, these benefits would require approximately $16.4 billion in new public funds, some of which are required to cover reduced private spending.

Finally, the authors find that the tax credit option would be available to over 54.5 million individuals, 41.3 million of whom are currently uninsured. Because take-up rates for the previously uninsured are relatively low, however, only about 1.6 million previously uninsured individuals (310,000 of whom are children) would receive coverage as a result of the credit, while 11.9 million previously insured individuals would take up the credit. Public expenditures would increase by $19.8 billion in the form of foregone federal income tax revenue and payouts for refundable credits. The public expenditures per newly insured individual would be quite high ($12,644), due to the fact that the credit would be disproportionately used by those with prior insurance coverage (a ratio of nearly 7:1).

Conclusion

The results of this paper suggest that while the employer mandate may provide the largest drop in the number of uninsured, it does so at the highest cost in terms of lost jobs, foregone wages, and increased employer spending. A Medicaid expansion, on the other hand, will actually increase employment at roughly the same cost per newly insured individual as the employer mandate. Tax credits represent the least effective way to expand health insurance coverage of the three alternatives. Although they are expected to have negligible labor market effects, their impact on newly insured individuals is lower than the other alternatives and comes at a higher public cost.

—Jill Jenkins
Chief Economist

Comparing the Effects of Health Insurance Reform Proposals: Employer Mandates, Medicaid Expansions, and Tax Credits

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Over 46 million Americans lack health insurance coverage. A number of alternative policies have been proposed to increase health care coverage in the United States. Three of the most prominent proposals are to mandate that employers offer coverage to their full-time workers, to expand Medicaid eligibility to other demographic groups and those with higher incomes, and to provide tax credits for the purchase of (some kinds of) health insurance by individuals. A substantial body of research examines the effect of each of these proposals on the number of uninsured people, as well as their cost to the federal government. Only a subset considers the broader costs to employers and the inefficiencies generated by the taxes raised. Almost none consider the effects on employment.

This policy brief examines the effect of each reform proposal on insurance coverage, public and private health expenditures, wages, and employment. These broader effects should be a crucial part of any analysis of the efficiency and distributional implications of proposals to expand health insurance coverage. In our analysis, we use data from the March 2005 Annual Earnings Supplement and the February 2005 Contingent Worker Supplement of the Current Population Survey (CPS), a household survey targeting a representative sample of the non-institutionalized U.S. population. We apply the CPS data to current estimates of key parameters from the economics literature to estimate: (1) the number of individuals eligible for each of these policies, (2) anticipated changes in health insurance coverage, (3) the expected number of newly insured, and (4) changes in wages and employment that might be expected in response to these policies.

Background

The effects of health insurance expansions depend on the specific provisions of the policy and on key assumptions about the dynamics of the labor market and individual behavior.

Employer Mandates

The employer mandate is currently at the forefront of state-level health insurance reform debates. Until recently, only Hawaii had enacted an employer mandate, although Massachusetts and Oregon passed but did not implement an employer mandate in the late 1980s, and an employer mandate was narrowly defeated by referendum in California in 2004. In January 2006, Maryland passed a law requiring companies with more than 10,000 employees to spend at least 8 percent of their payroll on health benefits, or pay the balance into a state low-income health insurance fund (Barbaro, 2006). In practice, such a law affects a single large employer in the state (Walmart). This law was later struck down by the courts on the grounds that it was preempted by the Employee Retirement Income Security Act (ERISA). In March of 2006, the Massachusetts legislature passed a comprehensive health reform bill combining an individual mandate, or requirement that individuals obtain health insurance coverage, with a more modest employer mandate than that originally debated. According to the new law, which takes effect in 2007, firms with more than 10 employees who do not offer health insurance must pay $295 per employee to a pool to subsidize health insurance coverage for individuals who are not publicly or privately insured. In 2006, the New York state

legislature continues to debate legislation that would require employers with over 100 employees to pay $3 per hour per employee towards health insurance or towards a state pool to provide health insurance (Yelowitz, 2006).

Popular with state legislatures because they present an off-budget alternative to expand health insurance coverage, employer mandates generally stipulate that employers contribute a minimum percentage of the cost of their employee's health insurance and that the insurance include coverage for a minimum set of benefits. Often smaller firms (those under 10, and in some cases those under 50 employees) are exempt from proposed mandates. Most part-time workers are exempt, though some proposals do include workers with as few as 20 hours per week. In some proposals, coverage of dependents is exempt. The specific provisions of the mandate will affect the proportion of uninsured who gain eligibility for health insurance under the mandate, the cost of the mandate, and the labor market and employment effects.

As employers bear a larger percentage of the costs of an employer mandate, the labor market effects of this policy reform will become more substantial. Economic theory on mandated benefits predicts that when possible, employers will pass on the cost of benefits to employees through lower wages (Summers, 1989). Unlike a tax on wages, where the burden of the tax is determined entirely by the elasticity (or responsiveness) of workers and employers to wages, mandated benefits differ because employees value the health benefits. If employees value the benefits to an equal or greater degree than the cost of providing them, employers can pass on the full cost of the benefit and employees will accept the lower wage and still be better off (Summers, 1989). Empirical evidence from mandated maternity benefits and workers' compensation benefits supports the theory, in that workers' wages are fully offset by the cost of mandated benefits (Gruber, 1994; Gruber and Krueger, 1991). However, for some workers, such as workers at firms that do not offer health insurance or workers with insurance coverage through a spouse, we may not expect workers to fully value benefits. Economic theory suggests that these employees would have negotiated for employer-sponsored health benefits had they valued them, in exchange for a reduction in other compensation. The burden of insurance costs as a percentage of total employee compensation is higher for employers of low-wage workers and, when shifted to these workers, represents a greater percentage reduction in net wages.

The ability of some employers to shift the effect of the mandate to employees will be restricted by minimum wage laws, in which case the mandate will have the same effect as an increase in the minimum wage (Baicker and Levy, 2005), and potentially result in increased unemployment. If the mandate extends health benefits to part-time workers, employing these workers will become much more expensive. Employers are likely to avoid this cost by restructuring jobs, which is supported by Cutler and Madrian (1998) who show that as health costs rise, firms substitute hours per worker for the number of workers employed, resulting in a 3% increase in the hours worked by insured workers.

If the mandate does not cover part-time workers, the opposite may occur, because employers may shift full-time workers (who are eligible for health benefits under the mandate) to part-time work by reducing hours. Recent work by Baicker and Chandra (2006) suggests that in the face of rising health care costs, employees' wages fall (when there is room for them to adjust downward), employment falls (in cases where wages cannot adjust), and hours worked decreases, primarily because there is a shift from full-time to part-time work (Baicker and Chandra, 2006a, 2006b).

Another potential effect of employer mandates relates to the notch created by cutoffs for firm size or hours worked (Yelowitz, 2006). If an employer mandate to provide health coverage applies to firms with 100 or more workers, firms near the 100 worker cutoff can reduce their total number of workers, and avoid the cost of the mandate. Similarly, when employer mandates apply only to workers working 35 or more

hours per week, firms may restructure so that more or most workers work less than 35 hours per week. The issue of the notch will be most important in firms where many workers are near the minimum wage (where wages cannot adjust downward) and in firms where workers do not fully value the additional health insurance benefits mandated (so that the mandate acts like a tax on wages). In both of these cases, firms will have an incentive to restructure jobs in ways that avoid the mandate. Because there is no evidence on the notch issue from actual policies enacted, we focus our analysis on the direct effect of employer mandates on wages, hours, and employment.

Medicaid Expansions

Proposals to expand Medicaid are enacted at the federal level and funded with general revenues, but may allow states some flexibility in how to design and implement the program. To assess the effect of such programs on the uninsured population and the estimated cost to the government, we must determine who will be eligible for the expanded benefit, how many of these individuals will choose to take up the new benefit and, of those taking up the benefit, how many currently do not have health insurance. Some people who would be eligible for a Medicaid expansion have private sources of insurance coverage, but would switch to Medicaid if it were available. This phenomenon, called "crowd out," occurs when people find public insurance less expensive than, and an acceptable alternative to, available private insurance. As these proposals extend eligibility to individuals and families earning higher percentages of the federal poverty level, the proportion of newly eligible with private insurance increases, and the potential for crowd out increases. The most recent example of this type of reform is the State Children's Health Insurance Program (SCHIP), created by Congress in 1997. SCHIP provided federal matching funds that states can use to extend Medicaid eligibility to low-income children in families earning too much to qualify for public insurance. Studies suggest that while SCHIP was responsible for covering 4 million additional children in 2003 (Kaiser Family Foundation, 2005), take-up of the benefit was lower than that of Medicaid expansions in the 1980s and 1990s (Cutler and Gruber, 1996; Lo Sasso and Buchmueller, 2004). In addition, Lo Sasso and Buchmueller (2004) show that nearly one of every two enrollees in SCHIP previously had private insurance; however, these estimates of crowd out are sensitive to state-specific provisions that require children be uninsured for a period up to six months before enrolling in SCHIP.

Along with analysis of the newly eligible, one must consider employers' response to expansions of public insurance. Employers may choose to stop offering coverage, limit the benefits they offer, or increase the employee-paid portion of the premium if their workers are eligible for public insurance (Shore-Sheppard et al., 2000; Gruber and McKnight, 2003). Some workers who qualify for a Medicaid expansion will switch to public benefits in the medium run, or within about 12 months depending on when individuals can change their selections of employer-sponsored benefits. However, other workers near the cutoff for public coverage may simply receive less generous health insurance benefits. Eventually, within several years of a change in health costs, most economists believe that any decrease in generosity of health insurance benefits will be made up in the form of higher wages, holding total compensation to workers constant (Gruber, 1994; Gruber and Washington, 2005). However, the price workers face for coverage on the individual market is often higher than premiums available through employers, especially if workers have any preexisting conditions, which might prevent workers from obtaining an alternative source of insurance altogether.

The Medicaid expansions induce an additional distortion in the labor market, because they change the relative value of working versus not working. When a Medicaid expansion covers a wide population, as in this analysis, two different groups are affected. First, there

are low-wage workers who currently collect Medicaid benefits, earn little or collect income through public assistance, and in the absence of the expanded Medicaid eligibility, might lose Medicaid coverage once employed. The Medicaid expansion makes working more attractive to these workers. Second, consider a set of workers near 300% of federal poverty levels who are currently employed but could not have collected Medicaid benefits before the expansion, regardless of their work status, due to earnings of a spouse. Once Medicaid covers everyone under 300% of the federal poverty level, these workers may choose not to work or to reduce labor supply in other ways, since they can receive public health insurance. In this way, the Medicaid expansion makes not working seem more attractive to workers previously ineligible for Medicaid.

Previous research models the behavior of low-wage single mothers, demonstrating that Medicaid expansions of income eligibility have a positive impact on labor supply since they allow these women to work and continue to be covered through Medicaid (Yelowitz, 1995). For each 25% increase in income eligibility cutoffs for Medicaid in the late 1980s and early 1990s, Yelowitz (1995) estimates a 3.3% increase in the probability of labor force participation. Because some workers just above the income eligibility cutoff might change their behavior by working less or otherwise reducing earnings slightly to qualify for Medicaid, the net effect on total hours and earnings worked is ambiguous.

Individual Tax Credits

Refundable tax credit policies encourage individuals to purchase coverage in the non-group (or individual) insurance market, through a state high risk pool, or in some cases, through employers. These policies aim to reduce the cost of coverage to individuals who are not covered through employer-sponsored insurance or through a public insurance program. Some proponents also believe they address the inequity in the tax treatment of coverage for those covered through an employer and those purchasing health insurance on their own. In general, these proposals offer a refundable tax credit and are targeted at low-income individuals and families (e.g. up to $1000 for individuals and up to $3000 for families) for which eligibility phases out as people's earnings reach specified levels (e.g. individual tax credit phases out between income of $15,000 and $30,000; family tax credit phases out between income of $25,000 and $60,000). Because they are refundable, the tax credits are available for use at the time of the health insurance purchase.

There are few examples of tax credits for workers enacted in the U.S. Recently, a provision in the Trade Act of 2002 made certain early retirees and workers who have been displaced by international trade eligible for refundable tax credits that pay 65% of premiums for qualified health coverage; the effects of this policy are just starting to be analyzed (Dorn and Pervez, 2005). President Bush's budget proposal for 2006 also included this type of tax credit, and it forms the basis of our tax credit simulation (United States Department of the Treasury, 2005).

As with the Medicaid expansions, the health insurance and labor market effects of a refundable tax credit policy depend on the scope of the population eligible for the benefit, the take-up of the benefit, employers' response to the new policy, and the extent to which those using the benefit have prior insurance coverage. Take-up will depend on the generosity of the tax credit and the cost and availability of health insurance plans covered by the credit. These tax credits will have the greatest impact if the low-income uninsured whose earnings meet the eligibility requirements for the tax credit decide to purchase health insurance as its price decreases. This responsiveness, which economists term 'price elasticity,' has been estimated to be quite low for workers offered employer-sponsored insurance (Gruber and Washington, 2005), but higher for the self-employed (Gruber and Poterba, 1994). In addition, because anyone currently purchasing a health insurance policy who meets

the income requirements for the tax credits will become eligible for them, the extent of crowd out under this type of reform and the cost per newly insured individual (measured as foregone tax revenue) could be quite high, and will increase with the generosity of the credits.

Employers are likely to account for the availability of tax credits in their decision of whether to offer employer-sponsored health insurance, and thus employers of eligible workers (most often, low-wage workers) may stop offering health insurance in response to these policies. Though some estimates of employers' response to tax credits are quite high (Gruber, 2004), there is little direct evidence on this employer behavior, and estimating this response is controversial, in part because there is great heterogeneity in the effects of any policy across demographic groups and states (Glied and Gould, 2005). Nonetheless if employers do drop coverage and if these workers do not choose to purchase health insurance on their own, they will offset reductions in the number of uninsured achieved by the policy reform.

Methods

To facilitate comparison of these 3 different approaches to expanding coverage, we have portrayed relatively simple versions of each type of policy. Table 1 briefly describes the relevant eligibility rules, the size of benefits such as tax credits, and other information about the 3 policy simulations. Each analysis below is restricted to the non-elderly (under 65 years of age), non-institutionalized population represented by CPS respondents. Each analysis estimates eligibility for the proposed policy, the number of individuals predicted to take up that policy, the number of individuals who had insurance coverage prior to the policy (an estimate of crowd out), changes in private employer spending on health insurance, and changes in public spending on health insurance.

In addition to the above estimates, an important element of the costs of expanding insurance through Medicaid or a tax credit stems from deadweight loss, or the cost of raising public funds through taxes. This loss arises because mutually beneficial transactions between workers and firms or other types of buyers and sellers that would occur in the absence of the tax never happen.[1] The calculations are based on parameter estimates detailed in Appendix Table A4, though we describe each policy simulation briefly below.[2]

We simulate a Medicaid expansion policy similar to that proposed in a recent Lewin Group analysis of health insurance expansions (Sheils, Haught, and The Lewin Group, 2003). In this policy, individuals up to 300% of the federal poverty level would be eligible for Medicaid coverage. For children in many states, the State Children's Health Insurance Program covers children living in families near or at this income level, however, few states cover adults at this income level. In the Lewin Group's analysis of a Medicaid expansion (2003), the Medicaid expansion was combined with an employer tax credit, but we prefer to consider the Medicaid expansion effect in isolation to clearly illustrate the public and private expenditures and potential labor market effects at play when we compare effects across policy alternatives.

Using the CPS, we estimate the number of people eligible for the benefit, showing the number of adults and children separately. The key assumptions required for this simulation include the rate of take-up of publicly provided coverage for groups in this more moderate income range, the crowd out of coverage from those previously covered through private, employer-sponsored coverage, and the potential labor market effects of any resulting change in employer spending on health care that accompanies crowd out from private to public coverage.

A variety of papers assess the take-up rate for public insurance through the Medicaid expansions of the late 1980s and early 1990s, as well as from the State Children's Insurance program. These papers suggest that take-up rates are highest for pregnant women, among whom 35% take up newly available Medicaid cover-

age when income eligibility increases (Currie and Gruber, 1996). Among children newly eligible for coverage through SCHIP, take-up, or the percent of eligible individuals who enroll in the program, is low. Only 13% of eligible children enrolled in states that do not prevent crowd out from private to public coverage, and 9% in states with anti-crowd out provisions (Lo Sasso and Buchmueller, 2004). In this policy simulation, men and non-pregnant women are the main targets of the expansion (since most children and pregnant women are already eligible for public insurance up to similar income cutoffs), and direct estimates of their take-up rates do not exist. However, given the lower health care spending of working age males compared with working age females, one might expect lower take-up rates for men versus women because coverage will be of less value. Because we assume no anti-crowd out measures in this expansion, we use LoSasso and Buchmiller's 13% estimate of take-up for the population of individuals newly eligible for Medicaid (including men, women, and children).

A controversial literature documents crowd out from private to public coverage in many settings. Although there is little agreement on the exact magnitude of crowd out, each study consistently finds some crowd out effects when public insurance eligibility expands. Estimates of crowd out range from lows of .17 (Shore-Sheppard, Buchmueller, and Jensen, 2000) to the upper bound of .50 (Cutler and Gruber, 1996; Lo Sasso and Buchmueller, 2004). We use the mid-range estimate .35, favored by Feder and colleagues in their Medicaid simulation.[3] Our estimates of private employer spending on health care, and concomitant labor market effects can be scaled up or down in absolute value to fit a higher or lower estimate of the crowd out effect.

In theory, one might expect employers to offer employer-sponsored coverage less frequently in the face of a Medicaid expansion. In firms with large numbers of low-income or moderate-income workers, the Medicaid expansion increases the relative price of obtaining health insurance coverage through one's employer. In practice, there is little evidence that employers curtail their offers of insurance coverage, and we have chosen not to model this behavioral response here. Even in Cutler and Gruber's paper (1996) documenting the largest crowd out effects, employees and dependents switching from private to public coverage did so mainly by refusing employer-sponsored coverage, or by switching from family to single coverage. There was little evidence of changes in willingness to offer employer-sponsored coverage.

To estimate the cost of Medicaid coverage, we use the average Medicaid spending per non-disabled adult recipient and the average spending per non-disabled child recipient reported in the 2004 Green Book (U.S. House of Representatives, 2004), inflated to 2005 dollars, or $2,204 for adults and $1,343 for children. Total public spending from the benefit is the sum of spending on adults and children using these estimated costs. Private spending is estimated by taking the crowd out number (which is assumed to come only from individuals insured through private employer-sponsored coverage) and dividing this by the total population of private workers. This gives a percentage change in private employers' aggregate health care costs on workers, assuming that those who leave to take up Medicaid are, on average, equally expensive compared with those who keep private coverage.

We estimate the aggregate reduction in private spending by estimating the average cost per worker of private, employer-sponsored coverage. First, we calculated the share of workers with family (54%) v. single coverage (46%) from the CPS. Then, using estimated average costs of family coverage, single coverage, and the respective employee share of these insurance premiums from the Kaiser Family Foundation's 2005 survey of employers (Kaiser/HRET, 2005), we estimated the cost of health insurance per worker as $7,697. Because the average family size per worker with family coverage is

2.78, the average cost per individual insured is $2,769. In theory, the resource cost of insuring individuals should not differ between Medicaid and the private market. However, because the price faced by employers in the private market differs from the prices Medicaid sets, and because the generosity of coverage differs across policies since Medicaid caps the amount it will pay for many services, these costs do differ. To reflect the public funds costs accurately, we use Medicaid spending as the measure of public spending.

Finally, we estimate the deadweight loss effects of raising public revenue to fund the Medicaid expansion. The public economics literature has produced various estimates of deadweight loss. For every dollar of public funds raised, there is a 30 cent (Poterba, 2004), to 2 dollar (Feldstein, 1999) deadweight loss cost of raising those funds. We choose an estimate closer to 30 cents for each dollar raised since most estimates fall in this range and it represents a consensus estimate among most public economists. Because additional funds could be raised through additional taxes on labor income, one might expect employment effects from raising additional public funds. However, compared with total income tax receipts or earned income in the U.S., the revenue required by these expansions is small, and thus any aggregate labor market effects would be trivial. We set these possible labor market effects equal to zero.

The final piece of the estimation reflects the employment, wage, and hours effects that occur in response to changes in the aggregate health care costs of private employers. By treating the crowd out from private coverage to Medicaid as a reduction in health care costs, one can use previously estimated employment, wage, and hours effects to obtain the implied labor market effects of this change in employer health care costs. Baicker and Chandra (2006a and b) estimate such effects in response to health care cost changes related to changing malpractice premiums from 1996 to 2000. Although this setting is not directly comparable to the current setting, the estimates seem relevant given economic predictions about employer response to changes in health care costs. Given evidence from a variety of settings suggesting full offset of mandated benefits, these simulations assume that for workers at private firms who drop private coverage to take up newly available Medicaid benefits, full offset of wages will occur. Estimates of the predicted labor market effects for a 10% rise in health care costs, based upon Baicker and Chandra (2006), are shown in Appendix Table A4.

One should note that the estimates from Baicker and Chandra (2006) provide one of the few available estimates of the causal impact of rising health care costs on employment. The strategy used in Baicker and Chandra helps to establish a causal relationship between health care costs and employment, but there is still uncertainty about the magnitude of these effects. For example, these effects exceed the employment effects implied by recent literature on minimum wage laws (Neumark and Wascher, 2000). When we make final comparisons between alternative expansion approaches, we will discuss the sensitivity of our results to alternative assumptions about how health care costs affect employment, hours, and wages.

Employer Mandate

Past and current mandate proposals differ in the size of firms exempt from the policy, whether the policy applies to part-time or full-time work, and whether dependent coverage is included in the policy. Because the most recent employer mandate proposals include dependents, we have chosen to model a policy covering these individuals. We simulate effects of a policy that applies to firms with 25 or more workers. Most mandate proposals would cover firms with 50 or more workers, though a few, as in the new Massachusetts law, cover firms as small as 10 workers. We use 25 to reflect the bulk of policies, and because we do not observe the distribution of workers across firms between 25 and 99, which represent a single category in the CPS.

We simulated a benefit for full-time workers, those defined by the CPS as working 35 or more hours per week. About 7% of uninsured workers are employed but work part-time, so any effects considered here may understate the true size of the labor market effects of policies covering part-time work as well. Part-time workers would be even more vulnerable to any negative labor market effects estimated here, since their wages cannot adjust downward as easily as full-time workers making the same hourly rate. Some employer mandate proposals include a concurrent individual mandate, requiring workers to take up employer-sponsored coverage when available. We show estimates with and without the individual mandate, though we treat employer mandates without the individual mandate as our base case, for comparison across policies.

We first estimate eligible workers as private, full-time workers at firms with 25 or more employees. We then exclude employees eligible for coverage through their own employers in the absence of any mandate, but who have refused it. In the policy with an individual mandate, we do not make this latter exclusion since workers refusing available coverage would be required to accept insurance offered to them. Analysis of the February 2005 Contingent Workers Supplement of the CPS, which asks about employer offer of coverage, suggests that about 24% of uninsured, full-time workers refuse coverage offered through their employers. We use this number to estimate the share of newly eligible workers under the mandate who will refuse the coverage. Together, these estimates yield an estimate of workers newly covered by the legislation. We use this along with the distribution of workers across family and single coverage to obtain an estimate of adults and children eligible and newly covered by the mandate. Because the mandate asks employers to foot the bill for health care coverage, there are no deadweight loss costs of raising public funds. As in the Medicaid expansion, we use the labor market responses of Baicker and Chandra (2006) as the basis of our simulation. For newly insured workers who remain at a firm, we expect full offset of wages. However, one might expect the increased health care costs imposed by a mandate to push some workers out of employment, or to force a shift from full-time work, in which workers are eligible for health benefits, to part-time work, in which they are not eligible.

Tax Credit

We base our tax credit simulation on President Bush's proposed tax credit (United States Department of the Treasury, 2005). The credit gives all individuals with adjusted gross income under $15,000 a refundable, advanceable (available at the time of purchase) tax credit worth 90% of insurance premium, up to a $1000 cap per adult and $556 per child covered, with a maximum of two children. Depending on one's tax status (single filer or other) and whether those filing a tax return cover one or multiple individuals, the credit phases out from 90% to zero between $15,000 and $30,000 for single filers, $25,000 to $40,000 for non-single filers buying single coverage, and $25,000 to $60,000 for non-single filers covering multiple individuals. Details of the tax credit schedule are in Appendix Table A3. The credit would be available only to those without employer-sponsored or public coverage.

Using the CPS, we first compute eligibility for the credit based on adjusted gross income, health insurance status (not covered by employer-sponsored or public insurance), tax filing status, and family structure (number of adults and children in family).[4] We then assume that those buying individual coverage in the absence of a tax credit would continue to buy coverage with the credit, and the vast majority, 90%, would take up the credit.[5] Among those previously uninsured, estimated take-up in response to subsidies for health insurance premiums is low with elasticity estimates of -.03 to -.12 (Blumberg, Nichols, and Banthin, 2001; Chernew, Frick, and McLaughlin, 1997; Gruber and Washington, 2005). We use -0.1 as our elasticity of the demand for health insurance, but the range of estimates is fairly narrow, and close to zero, so estimates of the number newly insured would change little with alternative numbers.

To obtain estimated take-up of the tax credit by the uninsured, we estimate the change in the price of health insurance coverage, or the value of the tax credit relative to the price faced by individuals and families in the individual market. The value of the credit is based on seven possible groups: single tax filers, non-single tax filers buying individual coverage, non-single filers buying coverage for one adult and one child, one adult and multiple children, two adults with zero children, two adults with one child, or two adults with multiple children. Among eligible individuals, we calculate the credit rate (ranging from 0 to .9) based on Adjusted Gross Income and family structure. Using the credit rate and limits on the tax credit, we estimate a dollar value of the credit and compare this to the average price of single coverage purchased in the individual market, about $2,000, and family coverage bought through this non-group market, about $4,500. This estimated price of coverage may reflect a relatively high estimate of the plans that would be available under a tax credit. In many areas of the country, there are high-deductible health insurance plans or other low-cost plans available that might appeal to buyers in the non-group market. Table A5 shows how our tax credit estimates change if we assume that all those taking up the credit would purchase high deductible plans with health savings accounts, the lowest cost plans available on the market. This represents an extreme assumption given that many individuals buying coverage currently on the individual market choose not to purchase available low-cost plans. Premiums for plans with health savings accounts and high deductibles can be cheap, $1,121 per year for individuals aged 20-29. However, only 40% of workers purchasing single coverage and 18% of workers purchasing family coverage fall in this age range. If one considers how the price of high deductible plans varies with age (single coverage is $3,951 for those aged 55-64), the average premium among plans offering such low-cost options differs little from the average price in the individual market (America's Health Insurance Plans Center for Policy Research, 2006). A recent simulation of premiums for high-deductible plans with health savings accounts purchased by 40-year old non-smoking males estimated lower premiums: $1,233 for single coverage and $2,724 for family coverage (Feldman et al., 2005). These lower price plans, if widely available under the tax credit, would change the estimated number of newly insured substantially, because more individuals would be expected to take up the credit to purchase new coverage. However, given the spike in the price of coverage for older workers, we think that the higher-priced estimates suggested by average premiums on the individual market, or age-specific premiums of available low-cost plans yield more accurate estimates of the total number newly insured because of a tax credit.

Using the expected price of coverage among those taking up the credit, we then calculate an average price change implied by the tax credit. We multiplied the percentage change in price by the elasticity estimate of the demand for health insurance (-0.10) to obtain the estimated rate of take-up. Because we know the credit amount available to each individual, we can obtain the public spending for the credit simply by summing up the total value of the credit among individuals expected to use it. The estimated crowd out figure in this case equals the number of individuals with prior non-group coverage who opt to use the tax credit. Estimates of deadweight loss are as described before. In this case, there is no change in employer health care costs, and thus no direct labor market effects.

Several studies have looked at firm response to changes in the effective (after-tax) price of group (employer-sponsored) vs. non-group (individual) health insurance, but broad consensus on the magnitude of this response has not been reached (Glied and Gould, 2005; Gruber, 2004; Gruber and Lettau, 2004; Gruber and Poterba, 1994). Because of this uncertainty we do not account for these effects in our model. Microsimulation estimates by Gruber (2004), however, suggest that for every 2.5 newly-insured persons under a tax credit, there would be one newly uninsured person as a result of employer deci-

sions to drop group coverage in the face of a tax credit that applies only to non-group coverage. In other words, one could cut our estimate of the reduction in the number uninsured by 40% to incorporate this effect on employer offer and the uninsured.

Results

We present data on the demographic and employment characteristics of the non-elderly non-institutionalized population as the starting point for comparing alternative policies. We then present the changes in insurance, labor market outcomes, and costs associated with the Medicaid expansion, employer mandate, and tax credit in turn. Finally, we compare the labor market effects across the three policies in light of their impact on reducing the number of uninsured.

Characteristics of the Uninsured

Table 2 illustrates a widely documented fact, that the uninsured are a diverse group of individuals, when considering age, income, marital status, and work status. While the overall picture shows many similarities between the non-elderly insured and uninsured, the uninsured are more likely to have low income and education, and to be from a racial minority group. Among adults, the uninsured are somewhat more likely to be employed and working full-time than insured individuals, likely because of the role of public insurance. Uninsured adults are also much more likely than the insured to be under age 35, unmarried, and single parents. Appendix Tables A1 and A2 provide further detail on characteristics of uninsured workers.

Medicaid Expansion Results

Expanding Medicaid to cover all adults and children with family income up to 300% of poverty would extend eligibility to over 59 million people (Table 3), most of whom are adults. The benefit disproportionately extends to adults because children living in low- and moderate-income families already qualify for State Children's Health Insurance Programs. Assuming that 13% of newly eligible adults and children take up the benefit, there would be 7 million adults and nearly 591,000 children taking up the new benefit. Table 3 summarizes these changes in insurance status separately for children and adults. Because some of those individuals taking up coverage would be dropping private coverage to do so, the policy would result in a net decrease in the number of uninsured of 4,997,724.

Although crowd out of individuals with employer-sponsored coverage into the Medicaid program may not achieve the goal of reducing the number of uninsured in the U.S., this reduction in employer-sponsored coverage would reduce health costs for private employers by nearly 2% (Table 4). Table 4 illustrates the full set of labor market effects discussed earlier. The change in health care costs is expected to be fully offset in wages, resulting in a wage increase among existing workers of 0.46%. Of course, when considering low-wage workers (including those in the labor force but not currently employed), the change in health care costs among low-wage workers who now can access Medicaid is expected to increase employment, as employers now take on low-wage workers with fewer concerns about the inability to adjust wages downward as health care costs increase, since many of these workers would take up Medicaid. This represents an increase in jobs of 230,000 (0.24%). Closely related effects of this reduction in expected health care costs would make employers more willing to employ additional full-time workers, reducing the number of part-time workers. This is expected to yield a shift from part-time to full-time work for 57,000 workers (0.38%), and a concomitant increase in hours worked of 0.48%. These aggregate labor market effects hide considerable heterogeneity in employment effects. Yelowitz's (1995) estimates based on Medicaid expansions suggest that the labor supply of low-income mothers could rise by as much as 10% depending on the percent change in Medicaid income eligibility cutoffs. His estimates do not directly suggest how this would translate into employment changes among other groups, though.

Table 5 outlines the private and public costs associated with the Medicaid expansion. Expanding Medicaid up to 300% of the federal poverty level would require approximately $16.4 billion in new public funds and would reduce private health benefit spending by almost $8.3 billion, yielding a net increase in spending for health insurance of about $8.1 billion. Because of the need to raise taxes to pay for the benefit, this policy would result in a deadweight loss of over $4.9 billion. Per newly insured person, the deadweight loss (cost of raising public funds) is $987, while the analogous increase in public spending per newly insured is $3,289 and the decrease in the employer share of private spending is $1,668 per newly insured. The value of insurance provided to individuals who take up the expansion is $2,138 per new Medicaid recipient.

Employer Mandate Results

An employer mandate for firms with at least 25 employees would affect 8.2 million workers who are currently uninsured (Table 6), including about 2 million workers who refuse employer-sponsored coverage offered through their employer. Without an individual mandate, we assume these workers would continue to refuse employer-sponsored coverage. Assuming dependents are also covered by the mandate, in total, 17.3 million uninsured adults and 5.5 million uninsured children, about 22.8 million individuals in total, would be eligible for the employer mandated coverage. Without an individual mandate, 4.7 million workers would take up the new benefit. If dependents were also covered by the mandates, the employer-only and employer-plus-individual mandates, respectively, would result in approximately 13.0 million and 22.8 million newly insured.

Table 7 shows the accompanying labor market effects of employer mandates. The employer mandate would increase health costs for private employers by 8.62% and 15.08% without and with an individual mandate, respectively. In the case of workers who earn well above the minimum wage, we would expect additional health care costs to be fully offset in wages, resulting in a 1.98% and 3.47% decrease in wages for employer mandates without and with an individual mandate, respectively. The added health care costs would be expected to lead to a 1.03% decrease in employment, or the loss of nearly 1 million jobs without an individual mandate. With an individual mandate, the additional health care costs would reduce employment by about 1.81%, or 1.7 million jobs. In both cases, job reductions would arise because wages cannot adjust downward for workers near the minimum wage. In addition, we would expect 1.6 million workers (2.8 million workers, with the individual mandate) to shift from full-time to part-time work and hours worked would thereby decrease by 2.1% or 3.6%.

The employer mandate would require no new public funds (and therefore would entail no deadweight loss) but would increase private health benefit spending by almost $36.1 billion without, and $63.1 billion with the individual mandate. Per newly insured worker the additional private expenditure would be $7,697, translating into $2,769 per newly covered individual because each worker, on average, insures 1.78 additional individuals (Table 8).

Tax Credit

Over 54.5 million individuals would be eligible to receive the tax credit based on their income. Table 9 demonstrates that, of the 54.5 million eligible individuals, 41.3 million are currently uninsured while 13.2 million have some other form of insurance coverage. Because take-up rates for the previously uninsured are relatively low, however, only about 1.6 million previously uninsured individuals (310,000 of whom are children) receive coverage as a result of the credit, while 11.9 million previously insured take the credit.

The Bush tax credit would increase public expenditures by $19.8 billion in the form of foregone federal income tax revenue and payouts for refundable credits (Table 10). The deadweight loss associated with these funds is nearly $5.95 billion or $3,793 per newly insured

individual. The public expenditures per newly insured would be $12,644, due to the fact that the credit would be disproportionately used by those with prior insurance coverage. For each previously uninsured person taking up the credit, over 7 previously insured individuals would be expected to use the credit.

Because those newly purchasing private insurance with the credit would also have to pay part of the premium, this program would increase private spending among individuals by $563 million, or $359 per newly insured individual. This estimate masks the considerable variation in increased private spending across each insurance policy holder. For example, those buying individual coverage with the policy qualify for a $1,000 maximum credit, but the average individual policy costs $2,076. Each of these previously uninsured individuals is expected to pay at least $1,076 in new spending on insurance, and those in the phase-out range of the credit would pay more. In contrast, because large families can qualify for $3000 of tax credit, and family coverage averages $4500, those covering many children face a per person expenditure well below $359. The value of the subsidy per individual taking up the credit (both previously and newly insured) is $1,472.

Side by Side Comparison of the Three Policies

A side by side analysis of Medicaid expansions, employer mandates and tax credits (Table 11) demonstrates wide variation in the size of the reduction in the uninsured and the implied labor market effects. Employer mandates show the greatest potential to reduce the number uninsured, covering 13 million newly insured in the case assuming no individual mandate, but coverage for dependents or 4.7 million newly insured assuming the mandate covers workers only. An employer mandate that covers workers only would cost about 30% less than the mandate shown here, and thus the accompanying labor market impact would be 30% smaller in magnitude. If the goal is to reduce the number of uninsured drastically, the employer mandate with dependents dominates both Medicaid expansions and tax credits, but at a high cost to workers. It should be noted that individual mandates, by design, also carry the potential to decrease the number of uninsured individuals substantially, as seen in the comparisons between employer mandates with and without individual mandates. Medicaid expansions yield moderate reductions in the number of uninsured, almost 5 million, while tax credits as envisioned by the Bush administration yield far fewer newly insured, 1.6 million, or even under the most favorable assumptions regarding the availability and demand for low-cost health plans, at most 2.6 million individuals would gain insurance coverage.

Labor Market Effects

In the labor market, employer mandates induce the most onerous effects, reducing the number of employed workers by over 347,000 per 10% reduction in the number uninsured, reducing hours worked in a week among private workers by 423,000, and reducing annual earnings by $24.9 billion across all private workers, per 10% reduction in the number uninsured. Tax credits have virtually no short-run labor market effects, though we have not modeled the potential (positive or negative) labor market effects of the combination of raising public funds to pay the cost of the tax credits, the lump sum transfer of income to workers previously purchasing private coverage on the non-group market, since this income transfer would be expected to reduce labor supply, nor the potential effect of changes in the relative price of insurance faced by workers on employers' decisions to offer coverage.

At the other end of the labor market continuum, the Medicaid expansion is expected to have net positive labor market effects, employing 209,000 additional workers, increasing hours worked by 155,000, and increasing worker earnings by almost $15 billion for each 10% reduction in the number uninsured. For the expansion, however, we have not modeled the

potential labor market response to the change in the relative benefits of working versus not working implied by the Medicaid expansion, nor have we modeled the potential labor market effects of raising public funds to pay the cost of the added Medicaid coverage. For both the Medicaid expansion, and the tax credits, relative to the overall wage bill or tax receipts, the public funds required to pay for the expansion is small, and thus the labor market impact of raising those funds is expected to be small in magnitude compared with the other effects shown here.

When considering the employment effects of Medicaid expansions and employer mandates that arise from reductions or increases in health care costs, we have used estimates from Baicker and Chandra (2006). However, to consider how the results differ under alternative assumptions about the size of employment effects, we use recent estimates of the employment effects in response to increases in the minimum wage (Neumark and Wascher, 2000). The minimum wage literature implies an employment elasticity of about -0.22, while the Baicker and Chandra estimates imply an employment elasticity that is 2 to 3 times larger in response to rises in total compensation (since health care is only a fraction of compensation costs). Under more conservative assumptions about the employment effects, suppose that we cut the employment effects in the Medicaid expansion and employer mandates by two thirds. The job losses and gains reported in Table 11 would be one third as large. About 330,000 jobs would be lost under the employer mandate, and about 100,000 new jobs would exist under the Medicaid expansion. Our qualitative findings would still stand, though.

Finally, given a lack of consensus on employers' decisions to offer insurance coverage as the relative price of insurance for workers changes, we have not modeled the potential for employers to stop offering employer-sponsored coverage to workers in response to the tax credits and Medicaid expansions. We believe setting this effect to zero best fits any immediate expected labor market impact of these two policies in the first two years of implementation. Some authors estimate the potential to drop employer coverage over a longer period (3-5 years) as substantial (Gruber, 2004; Gruber and Lettau, 2004) while others note the controversy and choose not to model this effect (Glied and Gould, 2005). Modeling the effect of these policies on employer offer would make the insurance effects even less favorable for tax credits, since it would imply newly uninsured individuals as employers drop coverage. Given that a smaller subset of workers would be eligible for the Medicaid expansion, one might expect these employer offer effects to be modest, since for most of the labor force, the relative price of employer-sponsored insurance would remain unchanged.

Public and Private Costs

Along the dimensions of cost, the employer mandates carry no deadweight loss cost of public funds, since none are spent on this policy. Tax credits, in contrast, imply a deadweight loss cost of $17.3 billion for a 10% reduction in the number of uninsured and the Medicaid expansions fall between these, implying deadweight loss costs of $4.5 billion for a 10% reduction in the number of uninsured. When considering the costs of these programs, it is important to consider the difference in the value of the insurance subsidy across these three approaches. The value of the tax credit, on average, to individuals who use it, is less than $1,472, significantly lower than the insurance benefit conferred on individuals in the employer mandate or Medicaid expansion, which exceeds $2100 per person using these policies. The less generous nature of the tax credit hinges on the limits on the price of the policy individuals can purchase, which is about half the current price of the average policy bought on the individual market. In effect, the 90% premium subsidy is a 45% premium subsidy if one is buying the average policy on the non-group market. A more generous tax credit would confer bigger benefits per person covered, and lead to a greater reduction in the number of uninsured individuals since more would re-

spond to the added price reduction. All of this would imply a greater increase in public spending and any associated deadweight loss cost of raising public funds. In contrast, mandates and expansions provide insurance coverage commensurate with the cost of individual coverage on the non-group market or average spending on a non-disabled Medicaid recipient.

Conclusions

As policy makers weigh alternative approaches to expanding health insurance coverage, they should weigh several tradeoffs: the desire to reduce the number of uninsured, the willingness to distort the labor market towards potentially negative outcomes, the willingness to tolerate deadweight loss, the cost of raising public funds to cover government programs, and the feasibility of funding alternative strategies. During a period of fiscal constraint, such as that experienced by most states since 2001, and given the rising U.S. deficit, the feasibility of raising public funds in any way must be considered. States have been cutting public insurance benefits by limiting eligibility and reducing the generosity of Medicaid in recent years, so a state-initiated Medicaid expansion may be particularly difficult at this moment. Finally, one should consider whether a dollar of Medicaid coverage confers the same benefit as one dollar of private, employer-sponsored coverage, or coverage bought on the individual market.

States can, as Massachusetts' health reform legislation does, combine different approaches to expanding insurance coverage. Massachusetts' law combines an individual mandate with a modest employer mandate to help subsidize the cost of insurance for low- and moderate-income individuals and families. Aside from the difficult questions of how and whether the individuals targeted by the legislation will afford health insurance, the individual mandate changes both the employer and worker labor market decisions. On the worker's side, the mandate changes the relative benefits of working. For individuals who are not currently working and who qualify for Medicaid's relatively comprehensive coverage with no premiums and very little cost-sharing, there is less incentive to forgo Medicaid coverage and start working in a low-wage job now that doing so is coupled with the premiums and cost-sharing required by the individual mandate. Employers' decisions of whether to continue to offer health insurance or drop coverage so that employees instead purchase coverage through the state-run pool will also affect the outcomes under the mandate. Among employers currently offering health insurance to workers, the new law opens the possibility for firms to stop offering health insurance coverage and instead pay the $295 fee per employee. However, firms could have dropped coverage or offered cheaper high-deductible plans (which workers could buy with pre-tax income) before the Massachusetts legislation as well. On balance, we do not know the importance of these unintended labor market consequences of the individual plus employer mandate, and many details of the legislation are yet to be determined.

The tradeoffs of these policies, though complicated to model, can be summarized simply. For those concerned most about reducing the number uninsured, mandates, either to employers or individuals, will look attractive. Because the employer mandate carries high costs in the labor market, Medicaid expansions will be much more attractive, and still reduce the number uninsured by about 10%. The Bush-style tax credit's relatively neutral labor market impact is favorable from the standpoint of workers, but it requires substantial public funding, creates a much larger deadweight loss cost, insures relatively few who were uninsured before, and offers a relatively stingy benefit even to those who use it, so it offers little redistribution to individuals and families who struggle to buy health insurance coverage. If public debate can prioritize these tradeoffs, policy makers can use a simulation like that presented here to tailor benefits by making them more or less generous, instating an individual mandate or no individual mandate, and experimenting in other ways that more appropriately target the uninsured to achieve a desirable reduction in the number uninsured at a cost that is feasible and tolerable.

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Endnotes

1. To demonstrate the concept of deadweight loss, consider an example involving a worker and a firm. Suppose that a factory worker is willing to do his job for any wage greater than $9 an hour, and suppose that he produces $11 per hour of additional goods for the factory. In a case where the worker is paid $10 an hour, working is mutually beneficial to the firm (that is reaping benefits from the worker that exceed the $10 an hour wage) and the worker (who receives a wage that is higher than the $9 wage he requires in order to be willing to work). Now suppose that a 30% tax is levied on the worker's wage. For a wage of $10, the worker would keep only $7, and thus would not work. Even if the firm paid $11 an hour, the worker would not choose to work, since he would keep only $7.70 an hour. Because the worker is unwilling to work for less than $9 per hour and the firm is unwilling to pay more than $11 an hour, in the presence of a 30% tax, that worker will not work. For each hour that the worker does not work, the tax imposes a deadweight loss of $2, which reflects the unrealized total gains from the transaction between the worker and the firm.

2. One should note that our simulations consider the most direct, or "partial equilibrium" effects of changing the cost of health insurance for individuals and employers. Changes in health care costs need not affect just wages and employment. There could be changes in prices of goods and services sold by firms, changes in profitability (as firm costs rise), and/or changes in the way firms produce goods as firms shift towards using more technology and fewer workers to produce goods, in cases like an employer mandate when labor costs rise. These less direct effects of insurance expansions are expected to be smaller in magnitude than the other estimates presented here, and they are beyond the scope of this report.

3. To assess how this choice affects the results, one can increase or decrease the crowd-out estimate and related employment effects by 50% and the estimate of public expenditures and deadweight loss by about 15%. The analysis by Judith Feder and colleagues can be found in Sheils J., R. Haught, and The Lewin Group. (2004) "Covering America: Cost and Coverage Analysis of Ten Proposals to Expand Health Insurance Coverage," Available online at: http://www.esresearch.org/publications/SheilsLewinall/Sheils%20Report%20Final.pdf#xml=http://www.esresearch.org/cgi-bin/texis/webinator/esrisearch/xml.txt?query=Covering+America%3A+Cost+and+Coverage+Analysis+of+Ten+Proposals+to+Expand+Health+Insurance+Coverage&pr=esri&order=r&cq=&id=4194a5c86.

4. We do not address the possibility of covering family members living in another household.

5. We base this assumption on the fact that due to information failures and transaction costs, even though it makes sense for all those currently purchasing health insurance to claim the tax credit, not everyone will do so, in the same sense the many individuals eligible for public programs or other tax credits do not take up the credit. This failure to take-up is evident in other tax credit programs such as the Earned Income Tax Credit, where an estimated 80 to 87 percent of eligible families take up the credit. See Currie, J. "The Take-up of Social Benefits," In Alan Auerbach, David Card, and John Quigley (Eds.) Poverty, the Distribution of Income, and Public Policy 2006 (New York, Russell Sage).

Table 1

Description of 3 Policies Simulated

	Employer Mandates	Expansions	Bush-style Tax Credits*
Eligibility based on current insurance status & demographic group	Uninsured full-time workers & dependents at firms with 25 or more workers	No requirements	Individuals without employer-sponsored or public insurance coverage.
Income eligibility	No income cutoff	Income under 300% of poverty level	Adjusted gross income: Single tax filer up to $30,000 Individuals up to $40,000 Families up to $60,000
Maximum benefit	Family coverage through employer	Medicaid coverage	$1000 per adult $500 per child $3000 max per family
Individual mandate?	Simulated with & without	None	None

* Details of tax credit are shown in Appendix Table A3

Table 2

Demographic and Employment Characteristics of Non-elderly Individuals by Insurance Status

	All	Uninsured	Insured
Household income < 300% poverty level	55%	79%	50%
Racial minority	21%	24%	20%
Children	29%	18%	31%
Among adults:			
Employed	73%	66%	74%
Working full-time	55%	59%	54%
Less than high school education	14%	27%	10%
Under age 35	37%	51%	33%
Unmarried	44%	61%	39%
Single parent	11%	15%	10%
Number of observations	190,087	30,931	159,156
Population represented (millions)	255.8	45.5	210.3

Source: 2005 Current Population Survey

Table 3			
Medicaid Expansion: Health Insurance Effects Medicaid Eligible up to 300% of Federal Poverty Level			
	Total number of people	Adults	Kids
Newly eligible	59,144,666	54,599,904	4,544,762
Take up	7,688,807	7,097,988	590,819
Crowd out	2,691,082	2,484,296	206,787
Newly insured	4,997,724	4,613,692	384,032

Table 4	
Medicaid Expansion: Labor Market Effects	
	Medicaid eligible up to 300% of federal poverty level
Labor Market Effect	Percent Change
Change in health costs for civilian employers	-1.99%
Rise in aggregate employment	0.24%
Shift from part-time to full-time work	0.38%
Increase in hours worked	0.48%
Change in wages	0.46%

Table 5	
Medicaid Expansion: Public & Private Costs	
	Medicaid eligible up to 300% of federal poverty level
New public $	$16,438,749,066
New private $ (employer share)	-$8,335,202,258
Net increase in health insurance spending	$8,103,546,807
Deadweight loss cost of raising public funds	$4,931,624,720
Costs per newly insured	
Public fund cost per newly insured (deadweight loss)	$987
Public expenditures per newly insured	$3,289
Private expenditures per newly insured	-$1,668
Value of insurance coverage per person taking up Medicaid expansion	$2,138

Table 6

Employer Mandate: Insurance Effects for Full-time Private Workers at Firms with 25+ Employees

	No Individual Mandate*	Individual Mandate
Eligible workers	8,204,216	8,204,216
Eligible individuals		
Adults (workers & dependents)	17,310,896	17,310,896
Children (dependents of workers)	5,496,824	5,496,824
Total eligible individuals	22,807,720	22,807,720
Workers who take up benefit	4,687,247	8,204,216
Individuals who take up benefit		
Adults (workers & dependents)	9,890,092	17,310,896
Children (dependents of workers)	3,140,456	5,496,824
Total taking up benefit	13,030,547	22,807,720
Newly insured workers	4,687,247	8,204,216
Newly insured individuals		
Adults	9,890,092	17,310,896
Children	3,140,456	5,496,824
Total newly insured	13,030,547	22,807,720

*In the case without an individual mandate, we assume individuals who were offered employer-sponsored coverage but refused it in the absence of the employer mandate will continue to refuse coverage. This simulation assumes that dependents are covered under the employer mandate.

Table 7		
Employer Mandate: Labor Market Effects for Full-time Private Workers at Firms with 25+ Employees		
Employer Mandate Labor Market Effects	No Mandate on Worker	Mandate on Worker
Change in health costs for civilian employers	8.62%	15.08%
Change in aggregate employment	-1.03%	-1.81%
Moved from full-time to part-time work	1.64%	2.87%
Change in hours worked	-2.07%	-3.62%
Change in wages	-1.98%	-3.47%

Source: Authors' calculations using the Current Population Survey

Table 8		
Employer Mandate: Public & Private Spending, Full-time Private Workers at Firms with 25+ Employees		
Employer Mandate Costs	No Mandate on Worker	Mandate on Worker
New public spending	$0	$0
New private spending	$36,077,741,529	$63,147,850,552
Net increase in public + private employer spending	$36,077,741,529	$63,147,850,552
Dead weight cost of raising public funds	$0	$0
Private expenditures/newly insured worker	$7,697	$7,697
Value of insurance coverage per person insured under mandate	$2,769	$2,769

Table 9

Bush Tax Credit: Insurance Effects for Individuals up to $40,000 and Families up to $60,000 of Adjusted Gross Income

	Total	Previously Uninsured	Previously Insured
Eligible for tax credit	54,508,243	41,279,677	13,228,566
Children	12,803,952	8,163,542	4,640,410
Adults	41,704,291	33,116,135	8,588,156
Total take up	13,474,337	1,568,628	11,905,709
Newly insured	1,568,628		
Children	310,215		
Adults	1,258,413		

Table 10

Bush Tax Credit: Public & Private Costs, Individuals up to $40,000 and Families up to $60,000 of Adjusted Gross Income

Tax Credit Costs	Total
New public spending from program	$19,834,224,249
Deadweight loss cost of raising public funds	$5,950,267,275
Costs per newly insured individual	
Deadweight loss cost of raising funds	$3,793
Public expenditures	$12,644
Average value of tax credit for those using it	$1,472

Table 11

Comparison of 3 Expansion Approaches

Labor Market Effects Overall

Change In:	Mandates*	Expansions	Tax Credits**
Employed workers (% change)	-995,163 (-1.03)	229,924(0.24%)	0
Workers shifting from full- to part-time (% change)	1,575,675 (1.64)	-57,192 (-0.38%)	0
Hours worked per week (% change)	-1,210,782 (-2.07)	279,741 (0.48%)	0
Aggregate annual wages, $millions (% change)	-$71,318 (-1.98)	$16,477 (0.46%)	0
Deadweight loss cost of raising public funds	$0.0	$4,931,624,720	$5,950,267,275
Number newly insured	13,030,547	4,997,724	1,568,628
Percent reduction in uninsured	28.64%	10.98%	3.45%
Average value of benefit for those who take it up	$2,769	$2,138	$1,472

Labor Market Effects per 10% Reduction in Uninsured

Change In:	Mandates*	Expansions	Tax Credits**
Employed workers (% change)	-347,491 (-.36)	209,326 (0.22)	0 (0)
Workers shifting from full- to part-time (% change)	550,193 (.57)	-52,068 (-0.34)	0 (0)
Hours worked per week (% change)	-422,780 (-.72)	254,680 (0.43)	0 (0)
Aggregate annual wages, $ millions (% change)	-$24,903 (-.69)	$15,001 (0.42)	0 (0)
Deadweight loss cost of raising public funds	0	$4,489,822,013	$17,259,490,988

* Employer mandate assumes no accompanying individual mandate.
** Given the ambiguous sign of labor market effects accompanying tax credits, and the expectation that these are modest in magnitude, these are set to equal zero.

Table A1

Distribution of All Full-time Uninsured Private Sector Workers by Salary vs. Hourly Wage and Wage Relative to Minimum

Share of Uninsured Workers

			Hourly, by proximity to minimum wage:					
	Salaried	**Hourly**	**$1**	**$1.01–$2**	**$2.01–$3**	**$3.01–$4**	**$4.01–$5**	**$5+**
Total	.275	.725	.118	.093	.084	.099	.068	.263
Age								
22–24	.231	.769	.129	.112	.121	.142	.055	.210
25–34	.259	.741	.114	.068	.087	.099	.093	.281
35–44	.287	.713	.074	.094	.073	.066	.071	.335
45–54	.386	.614	.055	.081	.072	.113	.044	.248
55–64	.358	.642	.165	.072	.044	.084	.032	.245
Family structure								
Single male, no kids	.248	.752	.148	.093	.078	.100	.066	.268
Married male, no kids	.346	.654	.066	.050	.046	.118	.062	.312
Single male, kids	.243	.757	.103	.136	.089	.100	.103	.225
Married male, kids	.312	.688	.059	.071	.069	.068	.082	.340
Single female, no kids	.293	.707	.136	.112	.087	.112	.044	.216
Married female, no kids	.307	.693	.109	.073	.092	.103	.089	.227
Single female, kids	.199	.801	.155	.123	.101	.112	.056	.254
Married female, kids	.275	.725	.112	.115	.168	.078	.072	.179
Education								
Less than 9 years	.146	.854	.212	.153	.101	.106	.079	.205
9–11 years	.241	.759	.117	.085	.122	.134	.110	.191
High school graduate	.211	.789	.105	.108	.097	.120	.065	.294
Some college	.323	.677	.115	060	.071	.078	.060	.293

Table A1, Ctd.

Distribution of All Full-time Uninsured Private Sector Workers by Salary vs. Hourly Wage and Wage Relative to Minimum

Share of Uninsured Workers

			Hourly, by proximity to minimum wage:					
Education	**Salaried**	**Hourly**	**$1**	**$1.01–$2**	**$2.01–$3**	**$3.01–$4**	**$4.01–$5**	**$5+**
College graduate	.559	.441	.052	.029	.009	.025	.052	.273
Post-college	.688	.312	.015	.058	.013	.043	.013	.170
Race								
White non-Hispanic	.299	.701	.093	.067	.079	.092	.067	.304
Black	.287	.713	.113	.101	.079	.108	.067	.245
Hispanic white	.191	.809	.161	.122	.106	.110	.076	.233
Other	.381	.619	.128	.137	.050	.089	.051	.165
Establishment size								
1–9	.318	.682	.093	.084	.067	.098	.069	.270
10–24	.231	.769	.155	.073	.095	.090	.096	.262
25–99	.281	.719	.090	.091	.090	.110	.069	.270
100–499	.246	.754	.139	.083	.102	.070	.064	.296
500–999	.326	.674	.081	.137	.061	.098	.044	.253
1,000+	.254	.756	.132	.101	.081	.126	.048	.257

Table A2

Distribution of Full-time Uninsured Private Sector Workers in Firms with 25 or More Employees by Salary vs. Hourly Wage and Wage Relative to Minimum

Share of Uninsured Workers

				Hourly, by proximity to minimum wage:				
	Salaried	**Hourly**	**$1**	**$1.01-$2**	**$2.01-$3**	**$3.01-$4**	**$4.01-$5**	**$5+**
Total	.265	.735	.117	.096	.087	.107	.058	.270
Age								
22–24	.235	.765	.130	.115	.120	.168	.042	.190
25–34	.248	.752	.116	.067	.095	.098	.080	.296
35–44	.296	.704	.067	.102	.078	.078	.045	.334
45–54	.400	.600	.039	.067	.070	.091	.060	.272
55–64	.276	.724	.224	.074	.048	.091	.015	.273
Family structure								
Single male, no kids	.229	.771	.135	.113	.083	.105	.059	.277
Married male, no kids	.338	.662	.105	.040	.040	.154	.043	.280
Single male, kids	.260	.740	.103	.103	.046	.109	.090	.290
Married male, kids	.306	.694	.068	.072	.083	.059	.033	.378
Single female, no kids	.255	.745	.125	.126	.071	.128	.059	.235
Married female, no kids	.340	.660	.110	.078	.100	.092	.055	.224
Single female, kids	.198	.802	.154	.084	.130	.120	.056	.257
Married female, kids	.288	.712	.094	.106	.180	.079	.097	.155
Education								
Less than 9 years	.142	.858	.141	.172	.098	.156	.070	.220
				Hourly, by proximity to minimum wage:				
	Salaried	**Hourly**	**$1**	**$1.01–$2**	**$2.01–$3**	**$3.01–$4**	**$4.01–$5**	**$5+**
9–11 years	.286	.714		.123	.133	.094	.080	.076
High school graduate	.192	.808		.096	.106	.134	.058	.284
Some college	.302	.698		.070	.066	.078	.051	.313
College graduate	.526	.474		.055	.008	.031	.051	.289
Post-college	.746	.254		0	.027	0	0	.197
Race								
White non-Hispanic	.295	.705		.068	.082	.088	.045	.310
Black	.289	.711		.075	.064	.129	.066	.259
Hispanic white	.186	.814		.138	.114	.136	.073	.223
Other	.290	.710		.182	.089	.074	.067	.202

Table A3			
Tax Credit Schedule			
	Single filer	Other filer covering 1 adult	Other filer covering multiple individuals
Adjusted gross income that is eligible for 90% of premium up to cap	0–$15,000	0–$25,000	0–$25,000
Range over which credit phases out from 90% to 50%	$15,000–$20,000	n/a	n/a
Other filer covering multiple individuals	$20,000–$30,000	$25,000–$40,000	$25,00–$60,000
Maximum value of credit	$1,000	$1,000	$3,000
Maximum cost of eligible insurance policy	$1,111	$1,111	$3,334
Maximum # of adults covered	1	1	2
Maximum # of children eligible for credit	0	0	2

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

Table A4		
Parameter Estimates		
	Estimate	Source
Employer Mandate		
Average cost of single employer-sponsored health insurance coverage, 2005	$4,024	Kaiser/HRET survey, 2005
Average cost of family employer-sponsored health insurance coverage, 2005	$10,880	Kaiser/HRET survey, 2005
Average cost of coverage per private worker with ESI	$5,882	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:		Baicker and Chandra, 2006
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%	
Medicaid Expansion		
Fraction of eligible adults and children who will take up Medicaid coverage	13%	LoSasso and Buchmueller, 2004
Fraction of newly insured who drop prior health insurance coverage (crowd out)	.35	Midpoint of range of estimates in the literature, in Cutler and Gruber (1996), Blumberg et al (2000), Dubay and Kennedy (1996), LoSasso and Buchmueller (2004), Yazici and Kaestner (2000)
Cost of Medicaid per non-disabled child in 2000 ($2005)	$1,343a	Green Book, 2004
Cost of Medicaid per non-disabled adult in 2000 ($2005)	$2,204a	Green Book, 2004
Average cost of single employ-er-sponsored health insurance coverage, 2005	$4,024	Kaiser/HRET survey, 2005
Average cost of family employer-sponsored health insurance coverage, 2005	$10,880	Kaiser/HRET survey, 2005
Average cost of coverage per private worker with ESI	$5,882	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, 1994

Table A4, Ctd.		
Parameter Estimates		
	Estimate	Source
Change in labor force participation of low-income mothers per 25% increase in Medicaid income eligibility	.033	Yelowitz, 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 Chernew et al (1997), Blumberg et al (2001), Cutler (2002), and Gruber and Washington (2003) whose 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, 1994

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

Table A5			
Bush Tax Credit: Insurance effects for individuals up to $40,000 and families up to $60,000 of adjusted gross income			
	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

Appendix A-5: Sensitivity of Tax Credit Simulation Results to Premium of Eligible Plan

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 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-5 above, 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).

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Employment Policies

INSTITUTE

1090 Vermont Avenue NW, Suite 800
Washington, DC 20006
202.463.7650
www.EPIonline.org