

**Changes in the Composition of the Workforce and  
Their Effects on the Future of  
Employer-Sponsored Health Insurance**

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## **Abstract**

### **Changes in the Composition of the Workforce and Their Effects on the Future of Employer-Sponsored Health Insurance**

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In this paper, we examine how projected changes in the US economy and workforce may affect employer-sponsored health insurance (ESI) for workers. We develop a multivariate model of ESI coverage and use it to forecast coverage rates in 2008 under various assumptions about the future composition of the workforce. Our forecasts indicate that changes in the workforce are likely to lead to modest declines in ESI coverage rates between 1997 and 2008. However, the model does not take into account potential changes in the health insurance market, such as escalating premiums, which may drive down insurance coverage even more.

# Changes in the Composition of the Workforce and Their Effects on the Future of Employer-Sponsored Health Insurance

## Executive Summary

Changes in the US workforce have potentially large consequences for workers' health insurance coverage under employer-sponsored plans and health insurance coverage in general. In this paper, we examine how projected changes in the US economy and workforce may affect employer-sponsored health insurance (ESI) for workers. While research shows that changes in the workforce cannot explain all the changes in ESI (Acs 1995), we can anticipate how certain changes in the distribution of workers across jobs and in the demographic composition of the workforce may affect ESI coverage in the future.

Initially, we examine recent trends in coverage rates across population sub-groups and explore how coverage rates may change (1) if sub-group specific coverage trends continue and (2) if sub-group composition changes (shift-share analysis). Then we develop a multivariate model of ESI coverage and use that model to forecast ESI coverage rates in 2008 under a variety of assumptions about the future composition of the workforce.

We use two supplements to the Census Bureau's Current Population Survey (CPS) — the April 1993 Survey of Employee Benefits and the February 1997 Contingent Worker Supplement (CWS) — in addition to the March CPS files for each of those years. While the supplements are the core of our analysis, we link individual respondents with additional information about them obtained from the March survey. Our sample, therefore, consists of those workers who are included in both the supplement and the March survey for their respective years.

Shift-Share Forecasts of ESI Coverage. Shift-share forecasts involve dividing the entire sample population of workers into mutually exclusive groups based on a small set of characteristics. For example, workers can be divided along gender lines, age brackets, wage rates, or job characteristics. We use eleven different sets of sub-groups which we discuss in two broad categories: demographically-based groupings and economically-based groupings. Each of the eleven sets divides the population into two to eleven mutually exclusive and exhaustive sub-groups. Our first set of forecasts holds the *composition of the population* at 1997 levels and asks what would happen to ESI coverage if the trend in *sub-group specific coverage probabilities* between 1993 and 1997 continues to 2008. When we use the 1993 to 1997 trend in group-specific coverage probabilities to predict coverage in 2008, all eleven groupings yield forecasts of a modest decline in ESI coverage.

Second, we provide an alternative set of forecasts in which we examine how ESI coverage may change if trends in the composition of the workforce between 1993 and 1997 continue to 2008 while group-specific coverage probabilities remain at their 1997

levels. Predicted changes in demographic group composition yield forecasts of changes in ESI coverage ranging from a decline of 1.8 percentage points (when workers are divided into race/ethnic sub-groups) to an increase of 1.0 percentage point (when the population is divided by age/sex sub-groups). Predicted changes in the composition of economically defined groups yield forecast changes in ESI coverage ranging from a decline of 6.2 percentage points (dividing workers by full-time/part-time work status) to an increase of 0.5 percentage points (when workers are divided into groups according to their family incomes relative to the poverty line).

Taken together, these shift-share forecasts suggest that changes in the composition of the workforce will have mixed effects on net on ESI coverage while a secular decline in the probability of having ESI coverage for most population subgroups will drive overall ESI coverage rates down.

Multivariate Approach to Forecasts of ESI Coverage. We use a multivariate regression framework to estimate the probability of insurance coverage for all adult workers, and use the regression framework as a basis for forecasting levels of coverage under assumptions about future changes in the composition of the workforce. Such an approach has the advantage over shift-share analysis of controlling for changes in multiple characteristics simultaneously. Further, under this approach we take into account both the probability of offer and take-up of coverage from one's own employer as well as the probability of offer and take-up of coverage through a spouse's employer (if any).

We present four different forecasts for ESI coverage rates, each using a slightly different method for predicting the characteristics of the workforce in 2008. Our predictions of workforce characteristics are based on data from the CPS, the Bureau of Labor Statistics, and the Survey of Income and Program Participation.

Each of the four forecasts indicates a decline in ESI coverage between 1997 and 2008. In the absence of any changes in the health insurance market, anticipated changes in the composition of the workforce, on net, are predicted to drive down ESI coverage by anywhere from 1.2 to 6.1 percentage points. These percentage point declines translate into coverage declines of 1.3 million and 6.9 million workers, respectively.

While our forecast declines over an eleven-year period are not alarming in and of themselves, it is important to keep in mind that they assume the probability of coverage for any given sub-group remains at its 1997 level. However, if health insurance premiums begin to rise dramatically as they did during the early 1990s, the probabilities that a specific worker will be offered coverage and take-up benefits are both likely to decline. Similarly, if unemployment rises, firms may not feel a need to offer health insurance to attract workers. And if ESI coverage among workers falls substantially, ESI coverage of dependents is also likely to fall, and current public health insurance programs will be unable to fully compensate.

## **Changes in the Composition of the Workforce and Their Effects on the Future of Employer-Sponsored Health Insurance**

### **I. Introduction**

During most of the 1990s, the US enjoyed a thriving economy marked by low unemployment and rising incomes. However, despite strong economic growth, the share of Americans with health insurance coverage has not grown: in 1994, 82.7 percent of non-elderly persons had health insurance, compared with 81.6 percent in 1998 (Holahan and Kim 2000). Nearly two out of every three non-elderly individuals have health insurance coverage through an employer-sponsored plan (Fronstin 1998), and 53 percent of all workers receive health benefits from their own employers (US Census Bureau 1998). Thus, changes in the US workforce have potentially large consequences for workers' health insurance coverage under employer-sponsored plans and health insurance coverage in general.

Many factors affect the probability that a worker has employer sponsored insurance (ESI). For example, workers in small firms, workers in service industries, young workers, and lower-paid workers are all less likely to have ESI than older, higher-paid workers in larger firms (Nichols, Blumberg, Acs, Marsteller, and Uccello 1997). While research shows that changes in the workforce cannot explain all the changes in ESI (Acs 1995), we can anticipate how certain changes in the distribution of workers across jobs and in the demographic composition of the workforce may affect ESI coverage in the future. For example, if more workers become part-time or temporary workers, we would expect ESI to decline because these workers are historically less likely to have such coverage.

In this paper, we examine how projected changes in the US economy and workforce may affect employer-sponsored health insurance (ESI). Initially, we examine recent trends in coverage rates across population sub-groups and explore how coverage rates may change if sub-group specific coverage trends continue and if sub-group composition changes. Then we develop a multivariate model of ESI coverage and use that model to forecast ESI coverage rates in 2008 under a variety of assumptions about the future composition of the workforce.

We find that the aging of the workforce, increasing family incomes, and continued increases in educational attainment are all likely to increase ESI coverage while changes in the racial/ethnic make-up of the workforce, increases in the share of part-time, and the increasing proportion of workers employed in smaller firms are likely to depress ESI coverage. On net, our model-based forecasts all indicate that changes in the composition of the workforce are likely to lead to lower ESI coverage rates between 1997 and 2008. We anticipate that the overall decline in ESI coverage due to changes in the composition of the workforce will be relatively small.

Other factors besides the composition of the workforce, most notably changes in the level of health insurance premiums relative to income and the share of premiums paid directly by workers, will also affect the probability of ESI offer, take-up, and thus coverage. While we do not have direct measures of either premiums or workers' share of premiums, we do include variables for firm size and industry in our models, and firm size and industry are highly correlated with variations in workers' premium shares (see Nichols and Blumberg, forthcoming). No analyst can accurately predict the path of overall premium levels in the future, and we do not attempt to do so here. However, if, as

many analysts expect, health insurance premiums rise relative to income, the ESI coverage rates forecast here would be too high, given that they are based solely on projected changes in the composition of the workforce.

## **II. Background**

The declining rate of employer sponsored health insurance coverage over the past two decades has been well documented (Acs 1995, Fronstein 1997, Kronick 1991, O'Brien and Feder 1999). More recent studies, however, attempt to decompose the decline in ESI into its components. Cooper and Schone (1997) focus on changes in employer offer rates and worker take-up rates, Farber and Levy (2000) include eligibility rates as well as offer and take-up rates, and Holahan and Kim (2000) focus on changes in population composition as well as changes in coverage rates within particular sub-populations. We review the findings of each of these studies here.

Cooper and Schone compare worker offer and take-up rates from the 1987 National Medical Expenditure Survey (NMES) and the 1996 Medical Expenditure Panel Survey (MEPS). They find that between 1987 and 1996 the offer rate to workers increased from 72.4 to 75.4 percent. The offer questions in both these data sets are structured to ascertain whether the particular worker is offered health insurance coverage through their employer; consequently, the connotation is that each worker offered coverage is also eligible for that coverage. Of those workers offered coverage, the share taking up their own employer's offer fell from 88.3 to 80.1 percent over this time period .

Cooper and Schone also look at the offer and take-up rates of workers when coverage through a spouse or parent is taken into account. They find that access to an employer offer of coverage (through own employer or an employer of a family member)

stayed largely constant over this time period, going from 81.8 percent of workers with access in 1987 to 82.2 percent of workers with access in 1996. Family level take-up rates fell modestly over this time period, from 93.2 to 89.1 percent.<sup>1</sup>

However, within particular sub-populations of workers, this analysis shows that changes in offer and take-up rates varied substantially. For example, offer rates actually fell during this time for workers younger than 25, and take-up rates fell much more substantially among these young workers than among older workers. Also, low wage workers saw their take-up rates fall faster than did higher wage workers.

Using supplements from the CPS, Farber and Levy are able to differentiate between offer rates (defined as employers offering coverage to at least some workers in the employee's firm), eligibility rates (defined as the particular worker being eligible for his/her employer's offer of coverage), and take-up rates over time. They find that between 1988 and 1997 offer rates increased, while eligibility and take-up rates declined.

The Farber and Levy analysis differentiates between core workers (defined as those having full-time jobs that they have held for at least one year) and peripheral workers (defined as those having part-time jobs or full-time jobs that they have held for less than a year). They find that falling take-up rates account for most of the decline in coverage for core workers between 1988 and 1997, while declines in eligibility were responsible for lower coverage rates among peripheral workers. They also find that the decrease in coverage among core workers was greatest among the least educated, whereas peripheral workers at all education levels saw declines in coverage.

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<sup>1</sup> Note that family level offer rates are not affected by the number of offers in a particular family, given that there is at least one. That is, if one worker in a family has an offer of health insurance, then all workers in the family are considered to have one and only one offer.

Holahan and Kim show that the number of uninsured has increased in the recent period (1994 to 1998) for different reasons than in the prior time period (1989 to 1993). They find that employer-sponsored coverage dropped sharply in the early time period, while an increase in the rate of Medicaid coverage partially offset this decline. Between 1994 and 1998, however, the authors report an increase in employer sponsored insurance; declines in Medicaid and private nongroup coverage in this more recent period more than offset the increases in ESI, leading to continuing increases in the rate of uninsurance. Their analysis, which uses multiple years of the March CPS, also shows that ESI coverage rates fell between 1994 and 1998 for certain population sub-groups. In particular, ESI coverage declined for persons living in families with incomes above twice the poverty line. Overall ESI rates increased, however, because the improving economy moved more people out of the lowest income group (less than 200% of poverty) which has the lowest rate of ESI coverage. Consequently, rising incomes helped blunt the increase in the uninsurance rate.

These studies delineate the ways in which rates of employer sponsored coverage have changed in the recent past. Understanding these recent trends informs us of the ways in which privately insured populations have changed and form a basis for looking to anticipated changes in the future. We now turn to explaining how we use the CPS data and the trends in ESI that they exhibit to forecast ESI rates to 2008.

### **III. Data and Definitions**

We use two supplements to the Census Bureau's Current Population Survey (CPS) — the April 1993 Survey of Employee Benefits and the February 1997 Contingent Worker Supplement (CWS) — in addition to the March CPS files for each of those years.

While the supplements are the core of our analysis, we link individual respondents with additional information about them obtained from the March survey. Our sample, therefore, consists of those workers who are included in both the supplement and the March survey for their respective years.<sup>2</sup>

The April 1993 supplement and the February 1997 supplement contain data on a nationally representative sample of workers (when weighted) and report information on their employers (industry, occupation, number of employees) as well as on their own characteristics (age, race, sex, etc.). Unlike the traditional March CPS files which report only whether or not respondents have health insurance coverage, these supplements also ask whether the respondent's employer offers health insurance and whether the worker is eligible for offered coverage. Thus, the supplements can be used to estimate a model of employer offers of ESI, employee take-up rates, and overall ESI coverage rates. The supplements (April 1993 and February 1997) are the sources for the variables used in these analyses to identify each worker's health insurance coverage.<sup>3</sup>

The CPS Contingent Worker Supplements (CWS) began in 1995 and are repeated every two years. The CWS uses the regular CPS sample frame -- 59,000 households containing 134,000 individuals; its questions were asked of each household member 15 years of age or older. The CWS is an excellent source of data on a worker's eligibility for health insurance that may be offered by the firm and that worker's decision to take it. The eligibility focus permits analysis of those who are temporarily ineligible because of pre-

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<sup>2</sup> Not all the respondents in the February 1997 CPS appear in the March 1997 CPS. When we compare the characteristics of workers in the matched file with all workers in the February file, we find little difference in worker characteristics between the two samples. Similarly not all workers in the April 1993 CPS appear in the March 1993 CPS. Again, we find little difference between the matched and the April samples in terms of the composition of the workforce.

<sup>3</sup> The insurance coverage questions from the 1993 and 1997 supplements differ slightly. See appendix A for a description of how our coverage variables are constructed.

existing condition restrictions or probationary status or precluded from receiving benefits because of their job status (part-time and temporary workers). Another strength of the CWS is its natural link to the March CPS which permits the use of March variables not included in the February survey.

The weakness of the CPS/CWS is that it does not distinguish among types of benefits covered, so that limited policies are indistinguishable from major medical policies. The February questions related to health insurance coverage of workers refer specifically to current coverage. This is in contrast to the measure of insurance coverage in the March CPS which has raised some concerns as to the time frame that respondents have in mind when answering questions. While the wording of the questions relates to coverage in the last year, March CPS estimates seem more consistent with point-in-time coverage estimates from other surveys (such as the Survey of Income and Program Participation (SIPP)).<sup>4</sup>

From these CPS data files, we draw a sample of workers between the ages of 21 and 64 and examine their access to employer-sponsored health insurance and whether they take up benefits when offered. Note that our analysis excludes all non-working dependents and younger workers who may have ESI coverage through their parents' policies.

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<sup>4</sup> More information about the CWS can be found at <http://www.bls.census.gov/cps/contwkr/contwkr.htm>.

#### **IV. Forecasting ESI Rates**

The most straightforward way to forecast ESI is to examine how coverage changed recently and assume the observed trend continues. Table 1 shows the share of workers ages 21 to 64 who were covered by ESI through their own employers or through their spouses' employers in 1993 and 1997. In 1993, 68.6 percent of workers had ESI in their own name; by 1997 coverage fell by 0.8 percentage points to 67.8 percent. The share of workers covered through their spouses fell by 1.0 percentage point from 12.0 to 11.0. Thus, on net, coverage fell by 1.9 percentage points (after rounding), from 80.6 to 78.7 percent over the four year period.<sup>5</sup> If this downward trend continues between 1997 and 2008, we anticipate that ESI coverage of workers would fall by another 5.3 percentage points to 73.4 percent.<sup>6</sup>

This simplistic forecast relies on only two years of data and assumes the observed trend continues into the future unabated. It is important to note that between 1993 and 1997, the US economy expanded considerably while growth in health insurance premiums slowed. In recent years, premiums have begun to rise more rapidly (Ginsburg and Gabel 1998). It is highly likely that the economic growth will not sustain its robust pace throughout the 1997 to 2008 period. Consequently, basing our 2008 predictions for coverage probabilities on trends between 1993 and 1997 may result in optimistic forecasts of ESI coverage for all workers.

In addition, this simplistic forecast fails to distinguish the impact of changes in the composition of the workforce and changes in the probability of coverage for some or all

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<sup>5</sup> In 1997, another 1.4 percent of workers are covered as dependents under employer-sponsored plans by someone other than a spouse.

<sup>6</sup> We describe our method for calculating average annual changes and projecting them to 2008 in appendix B.

subgroups of workers on overall ESI coverage rates. Here, we use progressively more sophisticated techniques for forecasting ESI coverage rates.

Our first approach is based on “shift-share” analysis and allows us to use trends in a single population characteristic (e.g., industry, region of residence, race, income) to predict future coverage rates. Shift-share analyses allow us to see the potential effects of changes in coverage rates (or offer rates and take-up rates independently) across subsets of a single population characteristic (e.g., in the case of industry, a simple set of subsets might be manufacturing and non-manufacturing) as well as the potential effects of changes in the distribution of workers across those subsets, assuming that recent trends persist. The second approach is a multivariate technique for forecasting ESI changes. This approach allows us to take the potential coverage effects of changes in multiple factors into account simultaneously.

Below, we describe our forecasting methods in more detail and present a range of forecasts for ESI coverage in 2008. These forecasts are generated using different techniques and underlying assumptions. While no single forecast may be particularly accurate, they generally predict a modest decline in coverage. Further, seeing how these predictions vary helps us understand the factors affecting ESI coverage and become sensitive to how ESI may change in the coming decade.

## A. Shift-Share Approach

The following equation shows how the shift-share approach can be used to forecast coverage rates. In this simple example, we divide workers into two different industries, manufacturing and non-manufacturing.

The coverage rate,  $C_{IND}$ , is equal to the share of the population in each industry times the industry-specific coverage rate summed across both industries. Given predictions for industry-specific coverage rates, we can compute a hypothetical or forecast coverage rate by using actual population shares. Alternatively, we can create a forecast by holding industry-specific coverage probabilities constant and using predicted populations shares. Finally, we can also generate forecast coverage rates using both predicted population shares and group-specific coverage probabilities.

For the most part, we obtain predictions for group-specific coverage rates and population shares by assuming that trends we observe between 1993 and 1997 persist through 2008. For example, if the probability of coverage for workers in manufacturing decreased by 1 percent per year between 1993 and 1997, we assume it continues to decline at the same rate between 1997 and 2008. A detailed exposition of these types of extrapolations appear in appendix B.

Shift-Share Forecasts of ESI Coverage. Shift-share forecasts involve dividing the entire sample population of workers into mutually exclusive groups based on a single or small set of characteristics. For example, workers can be divided along gender lines (male and female), age (any number of possible age brackets), wage rates (again, any number of possible wage brackets), or job characteristics (e.g. industry of employment

defined by a limited number of categories). In shift-share analyses, there is a tradeoff between having a richer basis for projection (more sub-groups) and clarity in interpreting the results (logically defined, broad sub-groups).<sup>7</sup> We use eleven different sets of sub-groups which we discuss in two broad categories: demographically-based groupings and economically-based groupings. The demographic groupings include splitting the population by (1) age and sex, (2) marital status, (3) race/ethnic composition, (4) education, and (5) region of residence. The economic groupings include (1) family income levels, (2) income percentiles, (3) wage intervals, (4) work status (full- v. part-time), (5) firm size, and (6) industry of employment. Each of the eleven sets divides the population into two to eleven mutually exclusive and exhaustive sub-groups. Details of the exact composition of each set and their respective population shares appear in appendix table 1. Appendix table 2 shows ESI offer, take-up and coverage rates for each sub-group.

Our first set of forecasts holds the *composition of the population* at 1997 levels and asks what would happen to ESI coverage if the trend in *sub-group specific coverage probabilities* between 1993 and 1997 continues to 2008. Figure 1 shows the range of forecasts we obtain when we use predicted group-specific coverage probabilities; actual forecasts for each of the eleven groupings appear in appendix table 3. It is important to remember that we have no basis for preferring any one of these forecasts or assuming that the likely outcome lies in the middle of the reported range. Rather, we report the direction

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<sup>7</sup> In the extreme, one can have as many sub-groups as there are people in the sample but the findings from the analysis provide little insight. For example, knowing that probability of coverage will drop for a 37-year-old married women with 3 children, living in rural North Carolina, and making \$10 an hour in masonry does not help us understand worrisome major trends in ESI coverage. Alternatively, learning that coverage is going down for working mothers in the South is more useful information to policymakers.

of the forecasts (ESI will rise or fall) as well as their range to illustrate the general direction of the trend in coverage.

We find that predicted changes in demographic group-specific coverage probabilities yield forecasts of declines in ESI coverage between 1997 and 2008 ranging from 3.9 percentage points (when workers are divided along race/ethnic lines) to 6.0 percentage points (when workers are divided according to their educational attainment). When we use predicted changes in economic group-specific coverage probabilities, our forecasts of ESI coverage range from a decline of 7.8 percentage points (when workers are divided according to the size of their employers) to a decline of 0.1 percentage points (when they are divided by work status). Thus, when we use the 1993 to 1997 trend in group-specific coverage probabilities to predict coverage in 2008, all eleven groupings yield forecasts of a modest decline in ESI coverage.

These forecasts based on linear extrapolations of trends in group-specific coverage probabilities all assume that the underlying characteristics of the workforce will be the same in 2008 as they were in 1997. Next, we provide an alternative set of forecasts in which we examine how ESI coverage may change if trends in the composition of the workforce between 1993 and 1997 continue to 2008 while group-specific coverage probabilities remain at their 1997 levels.

An important limitation of this application of the shift-share approach is that it assumes that group-specific coverage probabilities remain constant even as the composition of the group is changing. For example, as the share of workers in non-manufacturing jobs increases, the average worker in the industry might be more educated, and consequently, the chance of coverage in the non-manufacturing sector should

increase. This problem is greatly reduced in the context of a multivariate model in which we can isolate the impact of a shift along one population dimension while holding other population characteristics constant.<sup>8</sup>

Figure 2 shows that predicted changes in demographic group composition yield forecasts of changes in ESI coverage ranging from a decline of 1.8 percentage points (when workers are divided into race/ethnic sub-groups) to an increase of 1.0 percentage point (when the population is divided by age/sex sub-groups). Predicted changes in the composition of economically defined groups yield forecast changes in ESI coverage ranging from a decline of 6.2 percentage points (dividing workers by work status) to an increase of 0.5 percentage points (when workers are divided into groups according to their family incomes relative to the poverty line).

Unlike predicted changes in group-specific coverage probabilities which basically forecast modest declines in ESI coverage, predicted shifts in the composition of the workforce yield mixed forecasts. Some trends are likely to be beneficial. For example, older workers are more likely to have ESI than younger workers; since we predict the workforce in 2008 will be older than it is 1997, we forecast a small rise in ESI coverage (+1.0 percentage point) if there are no changes in group-specific coverage probabilities. Other predicted trends in the composition of the workforce, such as the increasing share of the workforce employed part-time, have unfavorable effects on ESI coverage.

Taken together, these shift-share forecasts suggest that changes in the composition of the workforce will have mixed effects on net on ESI coverage while a secular decline in the probability of having ESI coverage for most population subgroups

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<sup>8</sup> Further, the multivariate model can incorporate offsetting population trends such as increasing coverage due to educational upgrading and decreasing coverage due to changes in industrial structure to yield net

will drive overall ESI coverage rates down. Again, it is important to remember that all these forecasts are based on linear extrapolations of trends observed between 1993 and 1997; actual coverage probabilities and the composition of the workforce in 2008 are likely to deviate from this trend. However, the range of shift-share forecasts provide a sense of the direction and magnitude of the changes we may well see.

Expanded Shift-Share Analysis—Offer and Take-up Rates for ESI through a Worker’s Own Employer. Changes in ESI-coverage can be broken out into changes in the likelihood that a worker is offered health insurance coverage from his/her employer and/or in the likelihood that he/she takes-up offered benefits. Note that the coverage rate is the product of the offer and take-up rates (coverage rate = offer rate \* take-up rate). Again, using simplified industry breaks as an example, we calculate:

$O_{IND}$  is the offer rate. For purposes of this analysis, an individual worker was identified as having an offer of coverage if, according to the CPS, their employer both offered coverage to at least some workers and the specific worker was eligible to enroll in that coverage. The offer rate is, therefore, the percentage of all workers eligible to purchase health insurance which is offered to them through their own employers. Likewise,  $T_{IND}$  is the predicted take-up rate.

Here, we focus solely on whether a worker has ESI coverage from his/her own employer (ESI-OWN) rather than overall ESI coverage because accounting for spousal offer and take-up rates adds another layer of complexity to the analysis; we address this issue in our multivariate models. By decomposing ESI-OWN coverage rates into offer and take-up rates, we can assess whether forecast changes in coverage are driven by

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forecasts of coverage.

changes in access to health insurance and/or changes in workers' decisions to take-up available benefits.

Our method for forecasting ESI-OWN in 2008 uses the shift-share model in which we examine the change in group-specific coverage probabilities between 1993 and 1997 and assume the trend we observe continues between 1997 and 2008. We hold the population characteristics at their 1997 levels. First we forecast ESI-OWN offer rates, then ESI-OWN take-up rates, and finally compute ESI-OWN coverage.

Between 1993 and 1997, ESI-OWN offer rates increased from 76.6 to 78.7 percent while take-up rates dropped from 89.6 to 86.1 percent. On net, this resulted in a decline in ESI-OWN coverage from 68.6 to 67.8 percent. Our shift-share forecasts of ESI-OWN coverage generally show the same pattern: between 1997 and 2008, if recent trends continue, offer rates will rise while take-up rates will fall, leaving a smaller share of workers with health insurance coverage through their own employers.

Figure 3 shows the range of forecasts we obtain when using demographically-based groupings. When we divide the population into age/sex groups, we predict that offer rates will rise by 5.3 percentage points but take-up rates will fall by 7.7 percentage points, resulting in a net decline in ESI-OWN coverage of 3.1 percentage points. We find similar results when we divide the population across geographic regions. Changes in race/ethnic group-specific offer rates lead us to project a larger increase in offer rates (5.9 percentage points); consequently, the overall forecast decline in ESI-OWN coverage is only 2.4 percentage points when we divide workers along race/ethnic lines. Details on each of the eleven shift-share forecasts appear in appendix table 4.

We find a similar pattern of results when we divide the population based on their economic characteristics, with one notable exception: As figure 4 illustrates, when we examine changes in offer rates by work status, we forecast a dramatic rise in offer rates which is not offset by a modest decline in take-up rates. On net, this results in a forecast 9.5 percentage point rise in ESI-OWN coverage. This unique finding is driven by the rapid rise in the probability that part-time workers are offered benefits between 1993 and 1997 as measured by the CPS. Indeed, the offer rate for part-time workers increased from 29.5 to 40.9 percent over the period according to CPS data. If this trend were to continue between 1997 and 2008, virtually all part-time workers would be offered benefits—and this is very unlikely. This sort of extreme finding provides an important cautionary note about the reliability and stability of simple shift-share forecasts.

Thus, on net, if present trends in the probability of being offered health insurance through one's employer and in the probability of taking up offered benefits continue, expanding offer rates will be offset by declining take-up rates, resulting in a modest decline in ESI-OWN coverage. However, these forecasts do not examine trends in coverage under a spouse's policy; if some workers are declining coverage through their own employers but taking up benefits as a spouse, then the forecast decline in ESI-OWN coverage does not necessarily imply a decline in overall ESI coverage. Further, these simulations assume there is no change in the composition of the workforce between 1997 and 2008. In the next set of simulations, we examine forecasts based on a more sophisticated model of ESI-coverage. This model takes into account the potential effects of multiple changes in the composition of the workforce on ESI offer and take-up rates both in a worker's own name as well as under a spouse's policy.

## **B. Multivariate Approach**

In this approach, we use a multivariate regression framework to estimate the probability of insurance coverage for all adult workers and use the regression framework as a basis for forecasting levels of coverage under assumptions about future changes in the composition of the workforce. Such an approach has the advantage over shift-share analysis of controlling for changes in multiple characteristics simultaneously. Further, under this approach we take into account both the probability of offer and take-up of coverage from one's own employer as well as the probability of offer and take-up of coverage through a spouse's employer (if any).

This section describes the multivariate approach taken here and presents the results of the forecast models. We first describe the estimation of coverage through one's own employer. We next explain how we estimate coverage for workers who do not have ESI through their own employer but who have a working spouse. These first two pieces are then combined into a single ESI coverage estimate for all workers. We describe how the ESI coverage equation for all workers is used to forecast ESI in the year 2008, and then we present the results. Note that these forecasts are based on the assumption that the underlying health insurance market—especially the cost of health insurance premiums relative to incomes—remains unchanged and focuses solely on the impact of changes in the composition of the workforce.

Estimating the Multivariate Model. We use a regression-based model that simultaneously takes into account the industry and occupation in which a worker is employed, their tenure on the job, their race, sex, age, marital status, education, and region of residence, their wage rate, family income, and work status. Specifically, we

estimate linear probability models of both the offer rate and the take-up rate. A linear probability model involves estimating an ordinary least squares (ols) regression using an outcome variable that can only take on the values 0 or 1.<sup>9</sup> Linear probability models have an extremely useful property: the predicted probability of the outcome evaluated at the mean values of the explanatory variables equals the actual probability of the outcome variable.

We estimate offer and take-up models separately for workers who are married to other workers (workers in dual earner families or “dual earners”) and for workers who are single or who have non-working spouses (workers in single earner families). We take this approach because the decision to take a job in an offering firm is thought to be strongly related to the offer status of the spouse. For example, families in rural areas may have one spouse who is an agricultural worker, an industry which has traditionally low offer rates, and the other spouse may choose a job in a nearby town for the primary purpose of obtaining health insurance. Likewise, the propensity to take-up insurance may be affected by the options available to the worker through the spouse’s employer. Consequently, while own coverage rates may be low on average in this group (through lower offer or take-up rates or both), spousal coverage may compensate for at least some of the difference.

*ESI-Own Models.* Because the offer decision is driven both by characteristics of the firm and characteristics of the workers which affect their decision to seek jobs in offering firms, our model includes both firm type and worker specific variables. These

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<sup>9</sup>Logits or probits are generally used to estimate models with 0/1 dependent variables. Linear probability models, however, yield unbiased and consistent estimates of the impact of various factors on the outcome variable and are easier to interpret and use for forecasting. For examples of an analysis of health insurance

include occupation, industry, the size of the employer, length of time in the job, the worker's gender, race, age, marital status, education and full-time/part-time status.

To model take-up rates given that ESI is offered, we include all the factors affecting offer rates with the exception of length of time in the job which is presumed not to affect take-up, and we add information on a worker's family income relative to poverty. We divide workers' families into three groups based on their income-relative-to-poverty (below 150 percent, 150-300 percent, and above 300 percent). Thus, our take-up rate equation is:

$$[T_i/O_i = 1] = \mathbf{b}_0 + \mathbf{b}_1 OCC_i + \mathbf{b}_2 IND_i + \mathbf{b}_3 SIZE_i + \mathbf{b}_4 SEX_i + \mathbf{b}_5 RACE_i + \mathbf{b}_6 AGE_i + \mathbf{b}_7 MARSTAT_i + \mathbf{b}_8 EDUC_i + \mathbf{b}_9 FAMINC_i + \mathbf{b}_{10} PTTIME_i + \mathbf{e}_i$$

Overall coverage under ESI from a worker's own employer can be calculated by multiplying the offer rate by the take-up rate. For those workers who are either not offered ESI through their own employer or do not take-up an offer of coverage and who are married to another worker, we must also consider the possibility that they obtain coverage through their spouse's employer. If we fail to do so, our forecasts would predict lower rates of employer-sponsored coverage than is likely to be the case.

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coverage using linear probability models, see Acs (1995), Blumberg, Dubay, and Norton (2000), and Cutler and Gruber (1996).

ESI Spouse Models. In order to take spousal coverage into account, we estimate two additional equations. The first equation estimates the probability of spousal-offer for those workers who do not have ESI-OWN. This equation is specified in the same way as was the offer equation described previously, the only difference being that the sample is restricted to this smaller population of interest, and the explanatory variables reflect the characteristics of the working spouse. The second additional equation estimates the probability that a worker without ESI own coverage will take-up coverage from a spouse's employer, conditional on the spouse's employer offering such coverage. This equation is specified as follows.

In this equation TS is equal to 1 if the individual takes-up spousal coverage, O is equal to 0 if the worker is not offered ESI through his/her own employer, T is equal to 0 if the individual does not take-up coverage offered through his/her own employer, and OS is equal to 1 if the spouse is offered coverage. The occupation, industry, size, and part-time variables refer to the spouse's employment characteristics.

Our estimates of all six of these linear probability models appear in the appendix table 5 (means for the explanatory variables appear in appendix table 6). While we do not discuss our results in detail, they are broadly consistent with those obtained by other researchers: higher paid workers, workers who have been with their current employers longer, and workers in larger firms are more likely to be offered ESI coverage and to take-up benefits.

Combining Own and Spouse Offer and Take-up Rates to Compute ESI Coverage.

To compute an overall ESI coverage rate, we combine these six models as follows:

$$\begin{aligned}\hat{C}_{se} &= \hat{O}_{se} * \hat{T}_{se} \\ \hat{C}_{de} &= \hat{O}_{de} * \hat{T}_{de} + [(1 - \hat{O}_{de} * \hat{T}_{de}) * \hat{O}_{spown=0} J * \hat{TS}] \\ \hat{C}_{total} &= S_{se} * \hat{C}_{se} + S_{de} * \hat{C}_{de}\end{aligned}$$

In the equations above, *se* refers to workers in single earner households and *de* refers to workers in dual worker households. As before, *C* refers to the rate of coverage, *O* refers to the offer rate, and *T* refers to the take-up rate. The first equation above is the coverage rate for workers in single earner households.

In the second equation,  $O_{spown=0}$  is the offer rate of the working spouses of workers who do not have ESI through their own employer. *TS* is the take-up rate of coverage through the spouse given that the worker does not have their own ESI but their spouse is offered coverage. Thus, the second equation above is the coverage rate for workers in dual earner households, with the first term being the dual earner's ESI own coverage rate and the second term being the dual earner's ESI coverage rate through spousal ESI.

In the third equation, *S* is the share of the working population that is attributable to a particular group (e.g., workers in single earner households or workers in dual earner households). The third equation provides the total ESI coverage rate, a weighted average between the rate for single earners and dual earners.

Method for Forecasting ESI Rates using the Multivariate Model. Once we estimate the models of offer and take-up rates, we forecast future offer and take-up rates by multiplying the estimated coefficients in the models by projected values for each of the explanatory variables in the model. A simple illustrative example may be useful. In

this example, the offer rate equation is based solely on industry and occupation, and we use only two industries (manufacturing and non-manufacturing, with 50 percent of the population in each) and only two occupations (manager and non-manager, with only 20 percent being managers). We also assume for the sake of illustration that there is only one worker per household. Hypothetically, assuming that the offer rate is 60 percent, we may find that:

$$\begin{aligned} \bar{O} &= 0.50 + 0.1 * MANUF + 0.25 * MNGR = \\ &0.50 + 0.1 * 0.5 + 0.25 * 0.2 = 0.6 \end{aligned}$$

where MANUF is the share of workers in manufacturing and MNGR is the share of workers who are managers. Here, 0.50 is the intercept term estimated by the linear probability model with dependent variable offer (yes/no); 0.1 is the estimated coefficient on the binary variable for whether the worker was employed in the manufacturing industry, and 0.25 is the estimated coefficient on the binary variable for whether the worker is in a management occupation.<sup>10</sup>

Now if we believe that in the future the share of workers in manufacturing will fall to 40 percent (and manufacturing firms continue to behave like they do today in terms of the packages of benefits and premiums they offer) and the share of workers who are managers will fall to 15 percent, we can generate a predicted offer rate by substituting our projected distribution of workers across industries and occupations into the model:

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<sup>10</sup> The regression coefficients capture the marginal or incremental effect of the variable on health insurance coverage. For example, working in manufacturing rather than non-manufacturing increases the probability of ESI coverage by 10 percentage points, on average.

$$\hat{O} = 0.50 + 0.1 * MANUF + 0.25 * MNGR = \\ 0.50 + 0.1 * 0.4 + 0.25 * 0.15 = 0.5775$$

Here, the model predicts that offer rates will fall from 60 percent to 57.75 percent due to the projected shifts in the workforce. We generate similar predicted offer and take-up rates using the same procedure on our models, and calculate predicted coverage rates from the offer and take-up results.

As shown previously, the actual models have a more extensive set of explanatory variables than shown in this simple example. In addition, we have separate offer and take-up results for single worker and dual worker households, and changes in the composition of the workforce will also affect the spousal take-up equation for two worker households. The separate results for the two types of households are integrated in the manner illustrated above.

The quality of our forecasts depends crucially on the quality of the predictions of the future values of the explanatory variables in the models. We use several approaches to predicting the values of these variables. One approach uses Bureau of Labor Statistics (BLS) forecasts. Every two years, the BLS issues its employment outlook for the coming decade providing forecasts of the occupational, industrial, and demographic structure of the US workforce. The most recent BLS projections are for the year 2008. We used BLS projections for the distribution of workers across occupation, industry, age, sex, and race groups as the basis for predicting future ESI offer, take-up, and coverage rates.

In addition, to complete our forecasts, we need projections of employment across firm size groups, part-time status, worker marital status, the proportion of dual earning households, and family incomes. Because there are no “official” projections across these categories, we use extensions of the 1993 to 1997 trends for these variables. Other assumptions are also used where deemed appropriate.

Using these projections, we are able to identify countervailing trends in the economy. We are also able to discuss the extent to which projected changes in ESI coverage rates reflect anticipated changes in the share of workers offered ESI based on changes in employment patterns and changes in worker take-up rates.

Full Scale Model-Based Forecasts of ESI Coverage. We present four different forecasts for ESI coverage rates, each using a slightly different method for predicting the characteristics of the workforce in 2008.<sup>11</sup>

*Forecast 1:* We take our CPS data on workers in 1993 and 1997 and compute the average annual rate of change in population shares for each of the workforce characteristics we include in our linear probability models. Assuming that the trend between 1993 and 1997 continues to 2008, we compute a total change between 1997 and 2008. We then uniformly apply these rates of change to each of the six models.<sup>12</sup> Predicted workforce characteristics for 2008 appear in appendix table 7A.

*Forecast 2:* We use projections from the Bureau of Labor Statistics to compute changes in the occupation, industry, sex, race/ethnic and age composition of the workforce between 1997 and 2008 (BLS 1999). For all other workforce characteristics (e.g. tenure, family income, etc.), we use the observed trends in CPS data between 1993 and 1997 to compute rates of change in population shares following the method described in Forecast 1. Again, we uniformly apply these rates of change to each of the six models. Predicted workforce characteristics for 2008 appear in appendix table 7B.

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<sup>11</sup> The characteristics of the workforce we consider are all the explanatory variables we include in our regressions (e.g. occupation, industry, race, earnings, tenure, full-time/part-time status, etc.).

<sup>12</sup> For example, if we expect the share of workers employed in the manufacturing industry to rise by 2 percent between 1997 and 2008, we increase the share of workers in single earner families in manufacturing by 2 percent; we increase the share of workers in single earner families who have ESI offers in manufacturing by 2 percent; we increase the share of workers in dual earner families in manufacturing by 2 percent; and so on.

*Forecast 3:* We use the same method as described above in forecast 2, with one exception—instead of using the 1993 to 1997 trend in the share of workers working part-time v. full-time to generate predictions for 2008, we use projections based on the trend in part-time work observed in the Survey of Income and Program Participation between 1990 and 1996. Again, we uniformly apply these rates of change to each of the six models. As discussed above, the CPS trend in part-time work is very large; the SIPP trend may be more reasonable. Predicted workforce characteristics for 2008 appear in appendix table 7C.

*Forecast 4:* We take our CPS data on workers in 1993 and 1997 and compute the average annual rate of change in population shares separately for each of the six components and assume the component-specific trends continue through 2008. That is, in forecast 4, we project changes in the composition of single workers, single workers with offers, dual workers, dual workers with offers, dual workers without ESI-OWN, and dual workers without ESI-OWN but with an offer of spousal coverage separately. In the previous three forecasts, we assumed the change in the characteristics of each of the six groups parallels the change in the composition of the entire workforce and uniformly apply these rates of change to the workers in each of the six models. For forecast 4, predicted workforce characteristics for 2008 appear in appendix table 7D.

The bases for projecting workforce characteristics for our four forecasts are summarized in table 2.

Each of the four forecasts indicates a decline in ESI coverage between 1997 and 2008. In the absence of any changes in the health insurance market, anticipated changes in the composition of the workforce, on net, are predicted to drive down ESI coverage by anywhere from 1.2 to 6.1 percentage points. These percentage point declines translate into coverage declines of 1.3 million and 6.9 million workers, respectively. Table 3 shows that all four methods find that (1) take-up rates for both single and dual workers are likely to fall, (2) workers will be less likely to have offers of health insurance from their own employers, and (3) working spouses without ESI through their own employers will be somewhat less likely take-up benefits from their spouses' employers if they are offered.

While we have no compelling reasons to prefer one method over another, a close inspection of our findings leads us to believe that changes in the composition of the workforce will depress ESI coverage rates only slightly—that is to say, the decline will be closer to 1.2 percentage points than 6.1 percentage points in the absence of changes in the health insurance market. We reach this conclusion for the following reason. The single most significant negative population trend in terms of ESI coverage is the increasing share of part-time workers. While the probability that part-time workers will have ESI coverage is increasing over time, the probability that a part-time worker will have ESI is still significantly lower than that of a full-time worker. If we assume the share of workers working part-time continues to increase at the rate it did between 1993 and 1997 in the CPS, by 2008 almost half of all workers will be working part-time. In forecast 3, when we use an alternative, less extreme projection for work status, we find that the projected decline in ESI-OWN coverage rates for workers in both single and dual earner families are far smaller than the projected declines in forecasts 1, 2, and 4. For example, the chance that a worker in a dual earner family has ESI coverage from his/her own employer is projected to fall by only 1.5 percentage points in forecast 3, as compared with projected declines of 6.6 to 8.4 percentage points in the other three forecasts.

Table 4 allows us to see which socio-demographic and workforce characteristics contribute the most to the predicted changes in coverage under forecasts 3 and 4. For forecast 3, the largest absolute effects come from work status and wages, both tending to decrease coverage over time. Work status (share of part-time workers) is predicted to increase between 1997 and 2008. Changes in the wage distribution are predicted to lead

to more higher and lower wage earners (below \$7.50 and above \$12 per hour in 1997 dollars), with a smaller share of the workforce falling in the middle of the wage distribution. The change with the largest positive effect is an increase in education. Also, a positive coverage effect comes from the predicted increase in dual earning couples.

For forecast 4, we can see that the single largest effect by far is the negative impact of the predicted increase in the share of the workforce which is part-time. As noted previously, the implied CPS trend is so large that we replaced it with the SIPP trend in forecast 3. In the absence of this part-time effect, forecast 4 would have yielded a predicted coverage rate of roughly the same size as forecast 3.

Each of our four forecasts indicates that likely changes in the composition of the workforce will depress overall ESI coverage rates between 1997 and 2008, but the total percentage point decline is likely to be quite small.<sup>13</sup> It is important to note that these forecasts assume that there will be no change in the health insurance market. If, for example, health insurance premiums rise faster than the rate of inflation, the chance that any particular worker will have coverage will likely fall, and this would further depress ESI coverage rates in the future. Such a change could, in fact, be much larger than any changes attributable to changes in the composition of the workforce.

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<sup>13</sup> We assume that there are 113.6 million workers age 21-64, so each .1 percent represents 113,600 workers. While a modest share of these workers will be able to buy private coverage or turn to public programs, most of them, and many of their dependents, are likely to be uninsured.

## **V. Conclusions and Policy Implications**

We find that the aging of the workforce, increases in the marriage rate, changes in the occupational distribution, and continued increases in educational attainment are all likely to increase ESI coverage. Changes in the racial/ethnic make-up of the workforce, increases in the share of part-time, changes in the wage distribution, and the increasing proportion of workers employed in smaller firms are likely to depress ESI coverage. On net, our forecasts suggest that changes in the composition of the workforce are likely to lead to lower ESI coverage rates between 1997 and 2008. We anticipate that the overall decline in ESI coverage due to changes in the composition of the workforce will be relatively small.

Our models indicate that both offer and take-up of ESI will tend to decline in the coming years, with the percentage point declines in offer rates tending to be the larger factor. The single most important detrimental trend affecting offer and take-up is the rising share of part-time workers in the labor force. Part-time workers are far less likely to be offered ESI coverage than full-time workers, and their often modest incomes make the employee share of any offered coverage less affordable.

Taking these conclusions into account, a number of public policy approaches may be considered. Financial incentives could be provided to encourage more employers to offer ESI. However, the effects of such an approach are likely to be uneven, leaving many without a viable source of coverage. Tightening ERISA regulations regarding which workers must be offered benefits may well bolster the situation of part-time workers in the ESI system.

States and the federal government might also consider developing alternative stable and comprehensive sources of coverage for workers and their dependents. Permitting buy-ins to the Medicaid and/or State Children's Health Insurance Plan is one option. Another possibility is the development of organized purchasing entities for those in the non-group private insurance market, coupled with reform of the insurance regulations in this market. Such efforts would be directed towards making the non-group market easier to navigate, better able to serve those with higher than average health risk, and providing individuals with the benefits of administrative economies of scale and purchasing power.

Public policies focusing on the affordability of the employee share of ESI premiums may have the ability to counteract the predicted decline in take-up. Subsidies to low and moderate income workers for this purpose may be indicated. The political difficulty with such an approach is the tradeoff between policies which provide subsidy dollars to those who likely would have taken-up coverage without the subsidy and the inequities of policies which exclude those with prior coverage while subsidizing others with the same incomes. Public costs will be lower under policies which attempt to exclude the previously insured, while the new coverage effect will, in all likelihood, be significantly larger under the more inclusive approach.

A much more limited and low cost approach to expanding ESI involves public information campaigns. These campaigns could target growing sub-populations who tend to have lower take-up rates.

While our forecast declines over an eleven year period are not alarming in and of themselves, it is important to keep in mind that they assume the probability of coverage

for any given sub-group remains at its 1997 level. However, if health insurance premiums begin to rise dramatically as they did during the early 1990s, the probabilities that a specific worker will be offered coverage and take-up benefits are both likely to decline. Similarly, if unemployment rises, firms may not feel a need to offer health insurance to attract workers. And if ESI coverage among workers falls substantially, ESI coverage of dependents is also likely to fall, and current public health insurance programs will be unable to fully compensate.

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Figure 1: Shift-Share Based Forecast of Change in ESI Coverage Between 1997 and 2008: Due to Change in Group Specific Coverage Possibilities

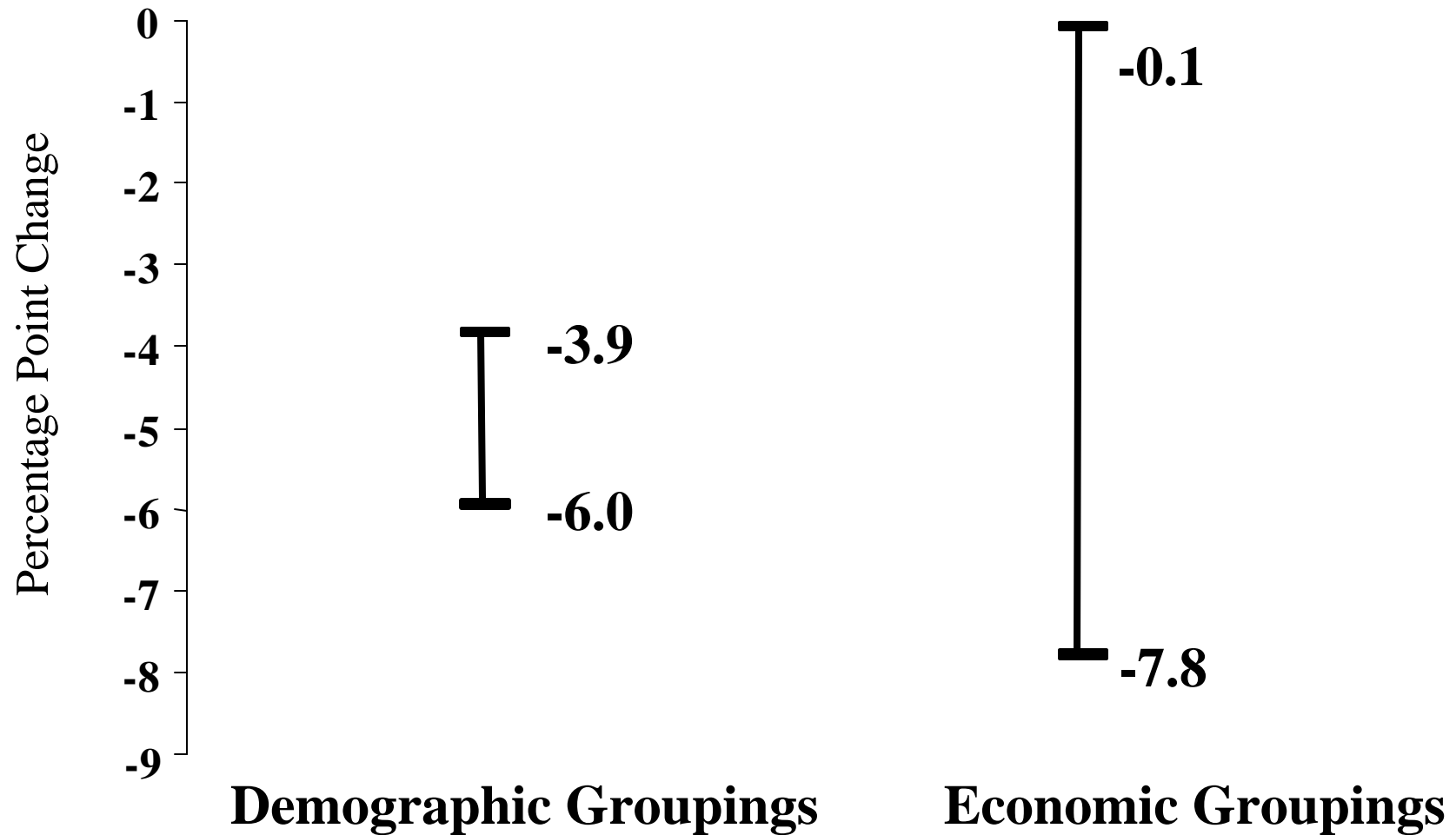


Figure 2: Shift-Share Based Forecast of Change in ESI Coverage Between 1997 and 2008: Due to Change in Subgroup Composition

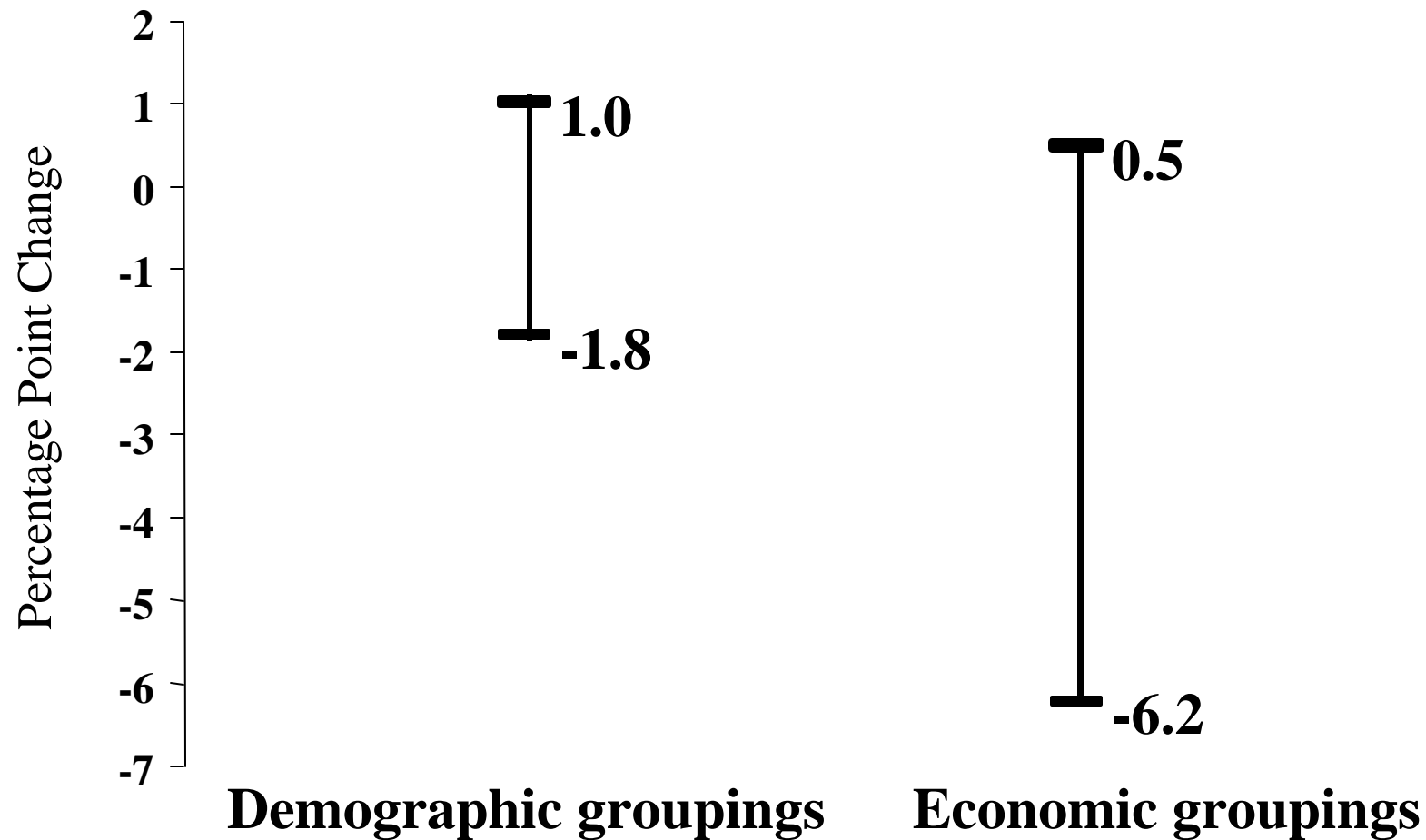


Figure 3: Shift-Share Based Forecast Change in ESI-Own Offer, Take-Up, and Coverage Rates Due to Changes in Group-Specific Probabilities: Selected Demographic Groupings

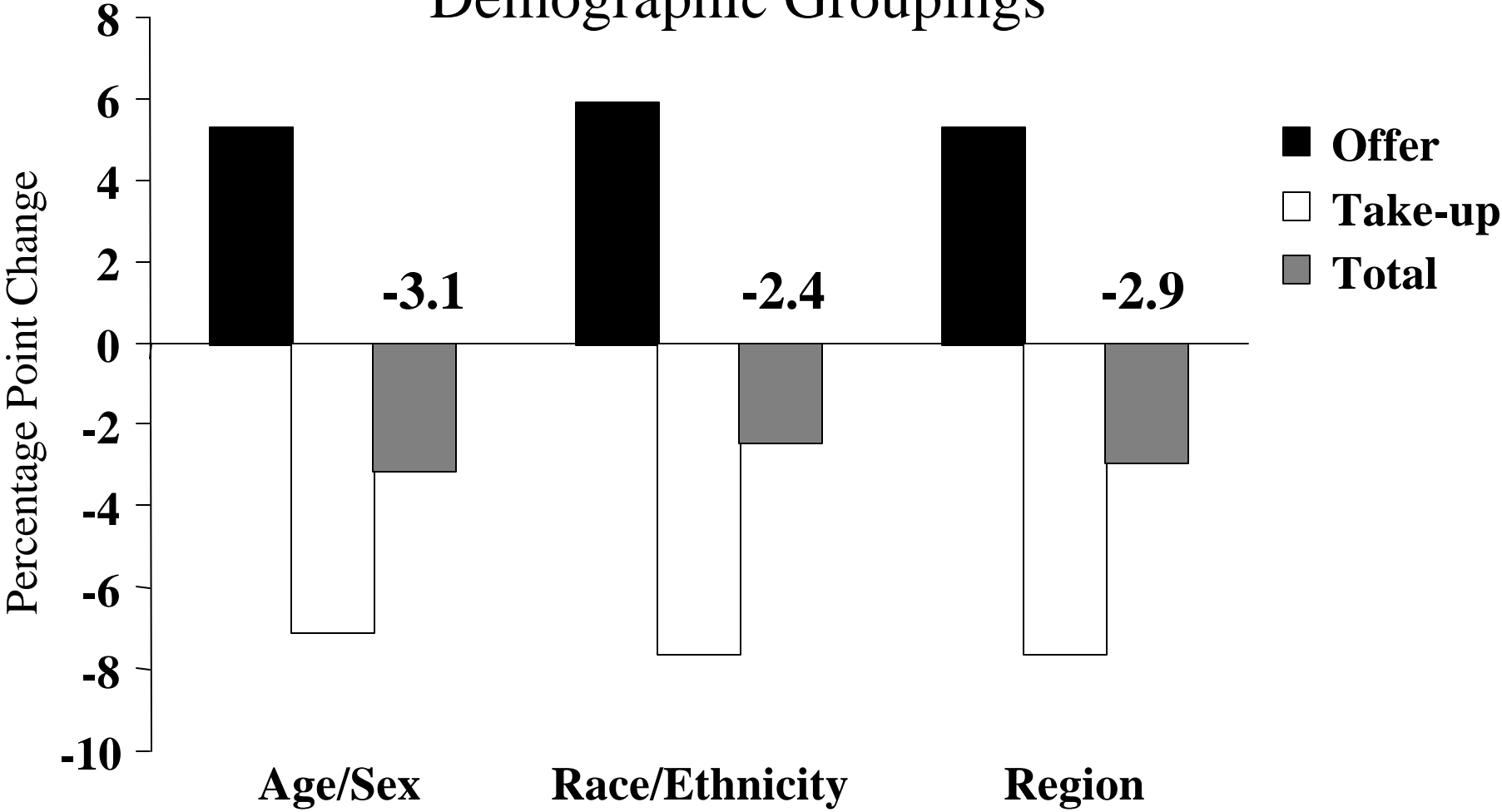


Figure 4: Shift-Share Based Forecast Change in ESI-Own Offer, Take-Up, and Coverage Rates Due to Changes in Group Specific Probabilities: Selected Economic Groupings

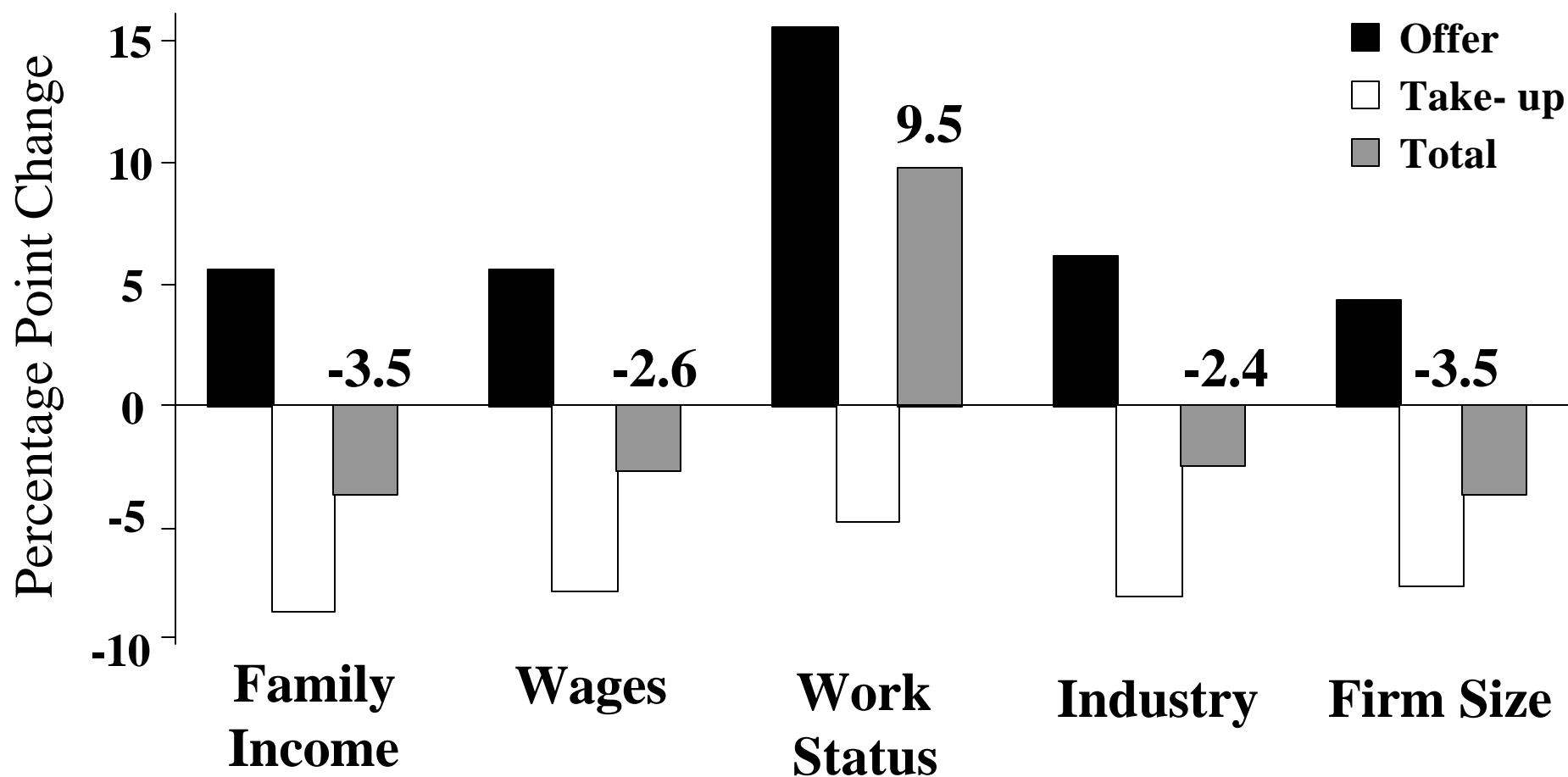


Table 1: ESI Coverage Rates for Workers 21 - 64, 1993 and 1997

	1993 (%)	1997 (%)	Percentage Point Change
ESI - Own	68.6	67.8	-0.8
ESI - Spouse	12.0	11.0	-1.0
Total ESI	80.6	78.7	-1.8

Source: Urban Institute tabulations from the 1993 March and April and 1997 February and March CPS files. Coverage information is drawn from the April 1993 and February 1997 supplements.

Note: Numbers may not sum correctly due to rounding.

Table 2: Basis for Projections of Workforce Characteristics for Forecasts of ESI Coverage

Workforce Characteristics	<u>Basis for Projection 1997-2008</u>			
	Forecast 1	Forecast 2	Forecast 3	Forecast 4
Industry	A	B	B	D
Occupation	A	B	B	D
Age/ Sex	A	B	B	D
Race/ Ethnic	A	B	B	D
Work Status	A	A	C	D
Family Income	A	A	A	D
Marital Status	A	A	A	D
Income Percentiles	A	A	A	D
Wage Rates	A	A	A	D
Firm Size	A	A	A	D
Tenure	A	A	A	D
Industry	A	A	A	D
Education	A	A	A	D
Region	A	A	A	D

A: Linear extrapolation of 1993-1997 trend in CPS data for all workers 21-64.

B: BLS forecast of 1998-2008 trend adjusted for 1997-2008 period.

C: Linear extrapolation of 1990-1996 trend in SIPP data for all workers 21-64.

D: Linear extrapolation of 1993-1997 trend in CPS data separately by dual/ non-dual earner status and insurance offer status for all workers 21-64.

Table 3: Forecast Change in ESI Based on Multivariate Model

	1997 (%)	Change from 1997 <sup>1</sup>			
		Forecast 1	Forecast 2	Forecast 3	Forecast 4
ESI-Own — Single Earners					
Offer	76.7	-6.1	-6.5	-1.9	-6.8
Take-Up	91.5	-1.4	-1.9	-0.3	-3.2
Coverage	70.2	-6.6	-7.2	-1.9	-8.4
ESI-Own — Dual Earner Couples					
Offer	81.3	-6.4	-6.5	-1.6	-6.9
Take-Up	79.6	-2.0	-2.2	-0.2	-3.9
Coverage	64.7	-6.6	-6.8	-1.5	-8.4
ESI-Spouse — Dual Earner Couples					
Offer	85.9	-4.0	-3.9	-1.1	-0.9
Take-Up	81.8	-0.7	-0.5	0.0	-2.6
Coverage	70.3	-3.9	-3.6	-0.9	-2.9
2008 (%)	78.7 <sup>2</sup>	73.7	73.4	77.6	72.6
Percentage Point Change	—	-5.0	-5.3	-1.2	-6.1

Source: Urban Institute tabulations from the 1993 March and April and 1997 February and March CPS files and BLS workforce projections.

Notes: Forecast 1: Uses straightline forecast population shares for all workers based on 1993-1997 trend.

Forecast 2: Uses BLS forecasts for population shares in 2008 where applicable and straightline forecast population shares for all workers based on 1993-1997 trend elsewhere.

Forecast 3: Uses BLS forecasts for population shares in 2008 where applicable and straightline forecast population shares for all workers based on 1993-1997 trend elsewhere. Uses the SIPP to estimate changes in the work status characteristics of the population.

Forecast 4: Uses straightline forecast population shares based on 1993-1997 trends calculated separately by dual and offer status.

<sup>1</sup>Percentage point change between 1997 and 2008.

<sup>2</sup>Actual 1997.

44.2 percent of respondents were in dual earner couples in 1997.

Numbers may not sum correctly due to rounding.

Table 4: Impact of Specific Population Trends on 2008 Forecasts of ESI, in Percentage Points of Change

Change Due to:	Forecast 3	Forecast 4
Occupation	0.1	0.2
Industry	-0.2	0.2
Family Income Relative to Needs	0.0	-0.6
Sex	0.0	0.2
Race/ Ethnicity	-0.2	-0.6
Age	0.0	0.1
Married	0.0	0.0
Education Level	0.3	0.2
Part-time Status	-0.7	-5.0
Wage	-0.5	-0.4
Firm Size	-0.2	-0.7
Region	0.0	0.0
Dual Earner Families	0.2	0.2
<i>Total Simulated Change</i>	<i>-1.2</i>	<i>-6.1</i>

Source: Urban Institute tabulations from the 1993 March and April and 1997 February and March CPS files, the BLS, and the 1990 and 1996 Surveys of Program Participation.

Notes: Numbers may not sum precisely due to rounding.

Forecast 3: Uses BLS forecasts for population shares in 2008 where applicable and straightline forecast population shares for all workers based on 1993-1997 trend elsewhere. Uses the SIPP to estimate changes in the work status characteristics of the population.

Forecast 4: Uses straightline forecast population shares based on 1993-1997 trends calculated separately by dual and offer status.

## Appendix A:

### Construction of Health Insurance Coverage Variables from the April 1993 and February 1997 CPS Files

#### April 1993

ESI-OWN. The worker is considered to have ESI in his/her own name if one of the following conditions are met:

- If the worker says that he/she is covered by a health insurance plan offered by his/her employer to its employees (S62 = 1 or 2);
- If the worker says he/she is covered by a group plan offered by his/her former employer (S68B = 1);
- If the worker says that he/she is covered by some other private group plan (S68C = 1);

ESISPO (used in constructing overall ESI coverage). The worker is considered to have ESI in his/her spouse's name *if* he/she does not have ESI in his/her own name (ESI-OWN=0) *and one* of the following conditions is met:

- If the worker says that he/she is covered by a spouse's group/employer plan (S68A = 1);
- If the worker's spouse says that his/her spouse is covered by his/her group health insurance plan (HIELS1 = 1 for the spouse);

ESI. A worker is considered to have some form of ESI if either ESI-OWN=1 **OR** ESISPO=1.

OFFOWN. The worker is considered to have an offer of health insurance coverage from his/her own employer if ESI-OWN=1 **OR**

- If the worker reports that they chose not to participate in their employer's health insurance plan (S64=2).

OFFSPO. A worker is considered to have an offer of health insurance from a spouse if:

- he/she has no coverage in his/her own name (ESI-OWN=0) **AND** his/her spouse's has an offer of ESI (spouse's OFFOWN=1).

## February 1997

ESI-OWN. The worker is considered to have ESI in his/her own name if one of the following conditions are met:

- The worker affirms that they received health insurance through employment (PES50=1)
- The worker says he/she obtained health insurance through company/work, through another job, through a previous job, or through a labor union (PES52A=1,4,5, or 9).

ESISPO (used in constructing overall ESI coverage). The worker is considered to have ESI in his/her spouse's name *if* he/she does not have ESI in his/her own name (ESI-OWN=0) **AND** he/she reports having coverage through his/her spouse (PES52A=2).

ESI. A worker is considered to have some form of ESI if either ESI-OWN=1 **OR** ESISPO=1.

OFFOWN. The worker is considered to have an offer of health insurance coverage from his/her own employer if ESI-OWN=1 **OR**

- The worker's employer offers health insurance (PES53=1) **AND** the worker is eligible to participate in the plan (PES554=1).

OFFSPO. A worker is considered to have an offer of health insurance from a spouse if:

- he/she has no coverage in his/her own name (ESI-OWN=0) **AND** his/her spouse's has an offer of ESI (spouse's OFFOWN=1).

## Appendix B:

### Method for Projecting Population Shares and Coverage Probabilities

#### A. Projecting the Future Composition of the Workforce.

For each subgroup in a set, we calculate the annual rate of change in the share of the population in that set based on the change between 1993 and 1997. Then we project that rate of change out 11 years (to 2008). After predicting population shares for 2008, we re-norm them, summing the shares and dividing each share by the total so they will sum to 100%.

Example: Assume that in 1993, 48 percent of workers were men and 52 percent were women. In 1997, men's share fell to 44 percent and women's share grew to 56 percent. The total change in men's share was  $-8.33$  percent; for women,  $+7.69$  percent.

The average annual change is the 4<sup>th</sup> root of these total percent changes. The 4<sup>th</sup> root of 1.0833 is 1.0202 so the average annual change in men's share is  $-2.02$  percent. The 4<sup>th</sup> root of 1.0769 is 1.0187 so the average annual change in women's share is  $+1.87$  percent.

At the given growth and decline rates, 11 years in the future men's share would fall to 33.18 percent (1.0202 raised to the 11<sup>th</sup> power is 1.246 implying that men's share would fall by 24.6 percent, from 44 down to 33.18). Women's share would rise to 68.66 percent. Note that 33.18 plus 68.66 is 101.84. Consequently, we have to re-norm the shares. Men's share in 2008 is  $33.18/101.84$  or 32.58 percent; women's share is  $68.66/101.84$  or 67.42 percent.

## **B. Projecting Future Coverage Probabilities**

For each subgroup's coverage probability, calculate the annual rate of change in the probability based on the change between 1993 and 1997. Then project that rate of change out 11 years (to 2008).

Example (coverage by gender): The probability of ESI coverage for men was 82 percent in 1993 and 80 percent in 1997. Thus, over the four-year period, ESI coverage for men fell by 2 percentage points or by 2.44 percent. To obtain the average annual decline, one would take the 4<sup>th</sup> root of 1.0244 and then subtract 1. Thus, the average annual percentage change is -0.604 percent. To extrapolate this out 11 years, we simply raise 1.006 to the 11<sup>th</sup> power and subtract 1. Thus, over the 11-year period we would project that coverage would decline by another 6.85 percent. This implies that the group-specific coverage rate for men would fall from 80 percent to 74.5 percent.

Appendix Table 7A: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 1: All CPS

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Occupation</b>						
Executive and Professional Services	0.3645	0.4106	0.4175	0.4450	0.3951	0.4220
Sales Blue Collar	0.2575	0.2348	0.2363	0.2182	0.2080	0.1966
	0.1050	0.0951	0.1049	0.0925	0.0998	0.0938
	0.2730	0.2595	0.2413	0.2442	0.2971	0.2875
<b>Industry</b>						
Agriculture	0.0125	0.0073	0.0061	0.0032	0.0070	0.0024
Mining and Construction	0.0677	0.0588	0.0599	0.0538	0.0656	0.0580
Manufacturing	0.2145	0.2458	0.2216	0.2524	0.2617	0.2833
Transportation, Communications, and Utilities	0.0657	0.0743	0.0689	0.0763	0.0836	0.0888
Wholesale Trade	0.0332	0.0361	0.0351	0.0369	0.0350	0.0357
Retail Trade	0.1324	0.1000	0.1046	0.0881	0.1005	0.0862
Finance, Insurance, and Real Estate Services	0.0622	0.0672	0.0729	0.0755	0.0676	0.0720
	0.3764	0.3666	0.3900	0.3673	0.3746	0.3681
Public Administration	0.0355	0.0438	0.0407	0.0466	0.0046	0.0054
<b>Tenure</b>						
< 1 Year	0.1961		0.1399		0.3223	
1-7 Years	0.4824		0.4555		0.4628	
> 7 Years	0.3215		0.4046		0.2149	

(Continues)

Appendix Table 7A: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 1: All CPS (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Income to Needs Ratio</b>						
< 150%		0.0904		0.0193		0.0301
150% - 300 %		0.2879		0.1676		0.2102
> 300%		0.6217		0.8131		0.7597
<b>Sex</b>						
Male	0.5301	0.5396	0.5145	0.5553	0.6560	0.6865
Female	0.4699	0.4604	0.4855	0.4447	0.3440	0.3135
<b>Race</b>						
White and Other	0.6810	0.7110	0.7613	0.7759	0.7495	0.7970
Black/Non-Hispanic	0.1389	0.1435	0.0841	0.0853	0.0776	0.0702
Hispanic	0.1801	0.1455	0.1546	0.1388	0.1730	0.1329
<b>Age</b>						
< 25	0.0949	0.0690	0.0218	0.0186	0.0236	0.0186
25 - 54	0.7902	0.8111	0.8895	0.8924	0.8898	0.8944
55 +	0.1196	0.1998	0.0886	0.0890	0.0866	0.0870
<b>Married</b>						
Married Spouse Present	0.3132	0.3132	1	1	1	1

(Continues)

Appendix Table 7A: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 1: All CPS (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
Education						
< HS	0.0886	0.0668	0.0637	0.0539	0.0828	0.0584
HS	0.2811	0.2692	0.2797	0.2681	0.2998	0.2981
Some College	0.3189	0.3111	0.3106	0.3092	0.2670	0.2668
College +	0.3115	0.3530	0.3460	0.3689	0.3503	0.3768
Work Status						
Full-time	0.5173	0.6296	0.5152	0.6191	0.6066	0.6765
Part-time	0.4827	0.3704	0.4848	0.3809	0.3934	0.3235
Wage						
< \$7.50	0.3257	0.2222	0.2223	0.1512	0.1972	0.1282
\$7.50 - \$12	0.1603	0.1634	0.1516	0.1482	0.1294	0.1277
> \$12	0.5140	0.6144	0.6260	0.7006	0.6734	0.7440
Firm Size						
< 25	0.2162	0.1423	0.1867	0.1243	0.1642	0.1136
25 - 99	0.1561	0.1525	0.1497	0.1464	0.1475	0.1397
> 99	0.6277	0.7052	0.6636	0.7293	0.6883	0.7467
Region						
Northeast	0.1992	0.2013	0.1971	0.1988	0.1999	0.2110
Midwest	0.2501	0.2597	0.2828	0.2892	0.2790	0.2964
South	0.3190	0.3173	0.3199	0.3218	0.3090	0.3026
West	0.2317	0.2217	0.2003	0.1903	0.2127	0.1900

Source: Urban Institute projections based on data from the 1997 February and March CPS files and the 1993 March and April CPS files.

Appendix Table 7B: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 2: CPS & BLS

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Occupation</b>						
Executive and Professional Services	0.3126	0.3562	0.3623	0.3894	0.3450	0.3708
Sales	0.3237	0.2985	0.3006	0.2799	0.2661	0.2532
Blue Collar	0.1006	0.0922	0.1018	0.0905	0.0974	0.0921
	0.2631	0.2531	0.2353	0.2402	0.2915	0.2839
<b>Industry</b>						
Agriculture	0.0123	0.0072	0.0060	0.0031	0.0070	0.0024
Mining and Construction	0.0566	0.0495	0.0502	0.0454	0.0561	0.0499
Manufacturing	0.1624	0.1872	0.1678	0.1923	0.2024	0.2203
Transportation, Communications, and Utilities	0.0751	0.0855	0.0789	0.0878	0.0977	0.1043
Wholesale Trade	0.0356	0.0388	0.0376	0.0397	0.0382	0.0393
Retail Trade	0.1456	0.1107	0.1151	0.0975	0.1129	0.0974
Finance, Insurance, and Real Estate Services	0.0614	0.0667	0.0719	0.0750	0.0681	0.0730
Public Administration	0.4043	0.3963	0.4190	0.3973	0.4112	0.4062
	0.0467	0.0579	0.0536	0.0617	0.0062	0.0073
<b>Tenure</b>						
< 1 Year	0.1961		0.1399		0.3223	
1-7 Years	0.4824		0.4555		0.4628	
> 7 Years	0.3215		0.4046		0.2149	

(Continues)

Appendix Table 7B: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 2: CPS & BLS (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Income to Needs Ratio</b>						
< 150%		0.0904		0.0193		0.0301
150% - 300 %		0.0288		0.1676		0.2102
> 300%		0.6217		0.8131		0.7597
<b>Sex</b>						
Male	0.5157	0.5253	0.5001	0.5410	0.6429	0.6740
Female	0.4843	0.4747	0.4999	0.4590	0.3571	0.3260
<b>Race</b>						
White and Other	0.7420	0.7646	0.8155	0.8261	0.8080	0.8450
Black/Non-Hispanic	0.1337	0.1363	0.0796	0.0803	0.0739	0.0657
Hispanic	0.1243	0.0991	0.1049	0.0936	0.1181	0.0892
<b>Age</b>						
< 25	0.1326	0.0975	0.0320	0.0273	0.0345	0.0274
25 - 54	0.7176	0.7446	0.8469	0.8509	0.8472	0.8535
55 +	0.1498	0.1578	0.1211	0.1218	0.1183	0.1191
<b>Married</b>						
Married Spouse Present	0.3132	0.3132	1	1	1	1

(Continues)

Appendix Table 7B: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 2: CPS & BLS (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
Education						
< HS	0.0886	0.0668	0.0637	0.0539	0.0828	0.0584
HS	0.2811	0.2692	0.2797	0.2681	0.2998	0.2981
Some College	0.3189	0.3111	0.3106	0.3092	0.2670	0.2668
College +	0.3115	0.3530	0.3460	0.3689	0.3503	0.3768
Work Status						
Full-time	0.5173	0.6296	0.5152	0.6191	0.6066	0.6765
Part-time	0.4827	0.3704	0.4848	0.3809	0.3934	0.3235
Wage						
< \$7.50	0.3257	0.2222	0.2223	0.1512	0.1972	0.1282
\$7.50 - \$12	0.1603	0.1634	0.1516	0.1482	0.1294	0.1277
> \$12	0.5140	0.6144	0.6260	0.7006	0.6734	0.7440
Firm Size						
< 25	0.2162	0.1423	0.1867	0.1243	0.1642	0.1136
25 - 99	0.1561	0.1525	0.1497	0.1464	0.1475	0.1397
> 99	0.6277	0.7052	0.6636	0.7293	0.6883	0.7467
Region						
Northeast	0.1992	0.2013	0.1971	0.1988	0.1999	0.2110
Midwest	0.2501	0.2597	0.2828	0.2892	0.2790	0.2964
South	0.3190	0.3173	0.3199	0.3218	0.3090	0.3026
West	0.2317	0.2217	0.2003	0.1903	0.2127	0.1900

Source: Urban Institute projections based on data from the 1997 February and March CPS files, the 1993 March and April CPS files, and data from the BLS.

Appendix Table 7C: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 3: CPS, BLS, & SIPP

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Occupation</b>						
Executive and Professional Services	0.3126	0.3562	0.3623	0.3894	0.3450	0.3708
Sales Blue Collar	0.1006	0.0922	0.1018	0.0905	0.0974	0.0921
	0.2631	0.2531	0.2353	0.2402	0.2915	0.2839
<b>Industry</b>						
Agriculture	0.0123	0.0072	0.0060	0.0031	0.0070	0.0024
Mining and Construction	0.0566	0.0495	0.0502	0.0454	0.0561	0.0499
Manufacturing	0.1624	0.1872	0.1678	0.1923	0.2024	0.2203
Transportation, Communications, and Utilities	0.0751	0.0855	0.0789	0.0878	0.0977	0.1043
Wholesale Trade	0.0356	0.0388	0.0376	0.0397	0.0382	0.0393
Retail Trade	0.1456	0.1107	0.1151	0.0975	0.1129	0.0974
Finance, Insurance, and Real Estate Services	0.0614	0.0667	0.0719	0.0750	0.0681	0.0730
	0.4043	0.3963	0.4190	0.3973	0.4112	0.4062
Public Administration	0.0467	0.0579	0.0536	0.0617	0.0062	0.0073
<b>Tenure</b>						
< 1 Year	0.1961		0.1399		0.3223	
1-7 Years	0.4824		0.4555		0.4628	
> 7 Years	0.3215		0.4046		0.2149	

(Continues)

Appendix Table 7C: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 3: CPS, BLS, &amp; SIPP (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Income to Needs Ratio</b>						
< 150%		0.0904		0.0193		0.0301
150% - 300 %		0.0288		0.1676		0.2102
> 300%		0.6217		0.8131		0.7597
<b>Sex</b>						
Male	0.5157	0.5253	0.5001	0.5410	0.6429	0.6740
Female	0.4843	0.4747	0.4999	0.4590	0.3571	0.3260
<b>Race</b>						
White and Other	0.7420	0.7646	0.8155	0.8261	0.8080	0.8450
Black/Non-Hispanic	0.1337	0.1363	0.0796	0.0803	0.0739	0.0657
Hispanic	0.1243	0.0991	0.1049	0.0936	0.1181	0.0892
<b>Age</b>						
< 25	0.1326	0.0975	0.0320	0.0273	0.0345	0.0274
25 - 54	0.7176	0.7446	0.8469	0.8509	0.8472	0.8535
55 +	0.1498	0.1578	0.1211	0.1218	0.1183	0.1191
<b>Married</b>						
Married Spouse Present	0.3132	0.3132	1	1	1	1

(Continues)

Appendix Table 7C: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 3: CPS, BLS, & SIPP (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Education</b>						
< HS	0.0886	0.0668	0.0637	0.0539	0.0828	0.0584
HS	0.2811	0.2692	0.2797	0.2681	0.2998	0.2981
Some College	0.3189	0.3111	0.3106	0.3092	0.2670	0.2668
College +	0.3115	0.3530	0.3460	0.3689	0.3503	0.3768
<b>Work Status</b>						
Full-time	0.7514	0.8274	0.7498	0.8209	0.8130	0.8550
Part-time	0.2486	0.1726	0.2502	0.1791	0.1870	0.1450
<b>Wage</b>						
< \$7.50	0.3257	0.2222	0.2223	0.1512	0.1972	0.1282
\$7.50 - \$12	0.1603	0.1634	0.1516	0.1482	0.1294	0.1277
> \$12	0.5140	0.6144	0.6260	0.7006	0.6734	0.7440
<b>Firm Size</b>						
< 25	0.2162	0.1423	0.1867	0.1243	0.1642	0.1136
25 - 99	0.1561	0.1525	0.1497	0.1464	0.1475	0.1397
> 99	0.6277	0.7052	0.6636	0.7293	0.6883	0.7467
<b>Region</b>						
Northeast	0.1992	0.2013	0.1971	0.1988	0.1999	0.2110
Midwest	0.2501	0.2597	0.2828	0.2892	0.2790	0.2964
South	0.3190	0.3173	0.3199	0.3218	0.3090	0.3026
West	0.2317	0.2217	0.2003	0.1903	0.2127	0.1900

Source: Urban Institute projections based on data from the 1997 February and March CPS files, the 1993 March and April CPS files, data from the BLS, and data from the 1990 and 1996 SIPP files.

Appendix Table 7D: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 4: CPS- Unique

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Occupation</b>						
Executive and Professional Services	0.3698	0.4097	0.4098	0.4298	0.4024	0.3199
Sales	0.2452	0.1979	0.2520	0.2237	0.2309	0.1019
Blue Collar	0.1048	0.0913	0.1057	0.0837	0.1009	0.0934
	0.2802	0.3012	0.2325	0.2629	0.2658	0.4848
<b>Industry</b>						
Agriculture	0.0203	0.0151	0.0002	0.0006	0.0000	0.0000
Mining and Construction	0.0704	0.0739	0.0576	0.0563	0.0263	0.0729
Manufacturing	0.2201	0.2398	0.2172	0.2523	0.2175	0.3499
Transportation, Communications, and Utilities	0.0629	0.0739	0.0698	0.0693	0.0656	0.1129
Wholesale Trade	0.0329	0.0347	0.0361	0.0356	0.0270	0.0291
Retail Trade	0.1432	0.0958	0.0886	0.0683	0.0702	0.0558
Finance, Insurance, and Real Estate Services	0.0594	0.0571	0.0763	0.0781	0.0506	0.0583
	0.3571	0.3677	0.4093	0.3935	0.5428	0.3212
Public Administration	0.0336	0.0420	0.0450	0.0460	0.0000	0.0000
<b>Tenure</b>						
< 1 Year	0.1908		0.1376		0.3138	
1-7 Years	0.4691		0.4475		0.4510	
> 7 Years	0.3126		0.3974		0.2093	

(Continues)

Appendix Table 7D: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 4: CPS- Unique (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
<b>Income to Needs Ratio</b>						
< 150%		0.1087		0.0283		0.1465
150% - 300 %		0.3072		0.1772		0.3640
> 300%		0.5841		0.7946		0.4895
<b>Sex</b>						
Male	0.5272	0.5466	0.5184	0.5613	0.6478	1.0000
Female	0.4728	0.4534	0.4816	0.4387	0.3522	0.0000
<b>Race</b>						
White and Other	0.6873	0.6879	0.7573	0.7432	0.7062	0.8020
Black/Non-Hispanic	0.1428	0.1717	0.0797	0.0831	0.0599	0.0370
Hispanic	0.1699	0.1404	0.1631	0.1737	0.2339	0.1610
<b>Age</b>						
< 25	0.1217	0.0827	0.0000	0.0004	0.0038	0.0000
25 - 54	0.7847	0.8130	0.8734	0.8825	0.8794	0.8809
55 +	0.0936	0.1042	0.1266	0.1171	0.1168	0.1191
<b>Married</b>						
Married Spouse Present	0.2509	0.2791	1	1	1	1

(Continues)

Appendix Table 7D: Predicted Means for Forecasting Model Estimations: Workers in 2008- Method 4: CPS- Unique (Continued)

	<u>Single Earners</u>			<u>Dual Earners</u>		
	Offer	Take-Up	Own Offer	Own Take-Up	Offer from Spouse	Take-Up as Spouse
Education						
< HS	0.0878	0.0925	0.0652	0.0635	0.1716	0.0848
HS	0.2976	0.2850	0.2581	0.2495	0.3262	0.3802
Some College	0.3280	0.3016	0.3025	0.3071	0.1219	0.1318
College +	0.2865	0.3209	0.3742	0.3799	0.3803	0.4031
Work Status						
Full-time	0.5314	0.4852	0.4940	0.4324	0.8037	0.6674
Part-time	0.4686	0.5148	0.5060	0.5676	0.1963	0.3326
Wage						
< \$7.50	0.3351	0.2672	0.2138	0.1600	0.1346	0.0851
\$7.50 - \$12	0.1766	0.1924	0.1323	0.1321	0.0129	0.0203
> \$12	0.4883	0.5404	0.6539	0.7079	0.8525	0.8945
Firm Size						
< 25	0.2310	0.2204	0.1716	0.1793	0.1563	0.1466
25 - 99	0.1546	0.1453	0.1490	0.1364	0.1499	0.1144
> 99	0.6144	0.6342	0.6794	0.6844	0.6939	0.7390
Region						
Northeast	0.1961	0.1788	0.1994	0.1961	0.2104	0.2418
Midwest	0.2286	0.2302	0.3113	0.3160	0.2934	0.3432
South	0.3397	0.3731	0.2941	0.3241	0.2516	0.2466
West	0.2356	0.2179	0.1952	0.1637	0.2446	0.1684

Source: Urban Institute projections based on data from the 1997 February and March CPS files and the 1993 March and April CPS files.