

# The dynamics of health insurance coverage: identifying trigger events for insurance loss and gain

Robert W. Fairlie · Rebecca A. London

Received: 1 October 2007 / Revised: 1 April 2008 / Accepted: 18 April 2008  
© Springer Science+Business Media, LLC 2008

**Abstract** By linking consecutive years of the 1996–2004 Current Population Survey (CPS), we create new estimates of annual transitions into and out of health insurance coverage. Using the matched CPS panel data, we explore the dynamic factors—including job loss, changes in hours or weeks worked, and movement between firm sizes—associated with health insurance loss and gain. Job loss is strongly associated with losing insurance, whereas becoming reemployed is only weakly associated with gaining insurance. Movement down (up) in employment size is associated with insurance loss (gain), but movement to employers with fewer than 10 employees is associated with especially high rates of loss. Changes in hours or weeks worked and employment type are also strongly associated with insurance transitions.

**Keywords** Health insurance · Insurance dynamics · Insurance loss

## 1 Introduction

In 2005, 46.6 million people, or 16% of the U.S. population, lacked health insurance. Trends indicate that both the number and rate of uninsurance have increased since the late 1980s (DeNavas-Walt et al. 2006). Low-income individuals are especially vulnerable, with 24% lacking health insurance. Working, however, does not guarantee coverage; 19% of the workforce lacked health insurance in 2005. Still, employer-provided insurance accounts for the largest source—60% of individuals are covered by an employment-based plan, compared to 27% who are covered by government plans. Yet, there is evidence that among workers, the

---

R. W. Fairlie (✉)  
University of California, Santa Cruz, CA, USA  
e-mail: rfairlie@ucsc.edu

R. W. Fairlie  
RAND, Santa Monica, CA, USA

R. A. London  
Stanford University, Stanford, CA, USA  
e-mail: rlondon@stanford.edu

rate of employer-sponsored health coverage declined in the 1980s and 1990s (Farber and Levy 2000), and this decline was most pronounced among low-income individuals (Holahan 2003).

Previous studies of health insurance coverage have focused on point-in-time coverage, which may greatly understate the problem of uninsurance in the United States because a cross-sectional examination masks movements into and out of insurance. This is especially important because estimates from longitudinal data indicate that health insurance coverage over time is volatile. For example, data from the Survey of Income and Program Participation (SIPP) indicate that among full-time workers in 1999, 16% experienced at least 1 month without health insurance (Bhandari and Mills 2003). Nearly 25% of individuals without a high school diploma were uninsured for at least 1 month in the same year. Data from the National Survey of America's Families show that among the 20% of the non-elderly population that is uninsured in a 1-year period, 53% have uninsurance spells that last for 12 or more months (Zuckerman and Haley 2004). New estimates from the Current Population Survey (CPS) presented below indicate that 7.5% of working-age adults who report having health insurance in 1 year have no health insurance in the following year. Furthermore, less than one half of adults who were not covered in 1 year gain health insurance coverage in the following year.

The emerging portrait of uninsurance is one of intermittent coverage, which appears to be much less beneficial than continuous coverage and results in outcomes that more closely resemble the outcomes of the continuously uninsured (Baker et al. 2001). Intermittent coverage has been shown to result in use of fewer preventive health services (Sudano and Baker 2003) and increased problems in accessing medical care and following up on this care (Schoen and DesRoches 2000). Previously uninsured or intermittently insured adults who gain access to health insurance tend to show improvements in their use of medical services, although it may take several years for this to occur (Sudano and Baker 2003).

In this study, we examine annual transitions into and out of health insurance coverage using matched data from the 1996 to 2004 CPS. Although the CPS has primarily been used as cross-sectional samples, we create a 2-year panel by linking consecutive surveys. The large sample sizes and longitudinally matched CPS data allow us to explore the relationship between changes in detailed employment characteristics and health insurance transitions over a 2-year period. To our knowledge, the matched CPS data have not been used to explore the dynamics of health insurance coverage.

Using the 2-year CPS panel, we examine whether dynamic factors, such as job loss, movement from full-time to part-time work, movement from a large employer to a small employer and other changes in job characteristics are associated with health insurance loss. We also explore whether changes in employment and job characteristics are associated with gaining health insurance. Although it is difficult to identify causal factors of health insurance transitions, the analysis of the relationship between changes in health insurance coverage and changes in potentially correlated factors using the large 2-year panel data in the CPS improves on cross-sectional analyses and offers some of the first estimates of the relationship between changes in very detailed employment and job characteristics and changes in health insurance coverage.

## 2 Previous literature

The literature on health insurance dynamics emphasizes that a dynamic approach to studying health insurance coverage represents an improvement over point-in-time

analyses. If spells of uninsurance are short and end with regained insurance coverage, we might be less concerned about the problem of insurance. If, however, those who are uninsured remain uninsured for long periods, or repeatedly gain and lose insurance, we might be more concerned about the well-being of the uninsured.

Studies of health insurance dynamics have mostly focused on the duration of uninsurance spells, and the characteristics of individuals with longer spells.<sup>1</sup> One of the pioneering studies in this area found that half of uninsurance spells end within 4 months, and 15% last more than 2 years (Swartz and McBride 1990). More recent data published by the Congressional Budget Office indicate an increase in the share with longer spells—41% of uninsurance spells lasted less than 4 months and 18% lasted more than 2 years (CBO 2003). Poor, less educated, and Latino families are more likely than others to have longer uninsurance spells (CBO 2003; Zuckerman and Haley 2004). Certain factors lead to higher probabilities of exit from spells of uninsurance, including higher educational attainment, non-poverty family income, and prior employment in various industries (e.g. manufacturing, trade, utilities, finance/insurance/real estate, and business and professional services) (Swartz et al. 1993). Focusing specifically on poverty and uninsurance, McBride (1997) finds that one-quarter of the uninsured are poor individuals who have been uninsured for more than a year. Forty-two percent of the uninsured have incomes less than 150% of the federal poverty line and have been uninsured for more than a year.

Taking a slightly longer time perspective than other studies, Short and Graefe (2003) identify that the majority of individuals who were uninsured lacked insurance for more than 12 months over a 4-year period. During this 4-year period, one out of three working-age adults had a lapse in coverage of some duration. They identify several patterns of insurance coverage associated with these lapses, including one-time coverage gaps as well as repeated gaps in coverage.

Although much of the literature on health insurance transitions relies on monthly data, Monheit et al. (2001) provide estimates of annual transitions in health insurance from using the 1996 MEPS. They find that 30% of individuals who were uninsured in January 1996 gained insurance in the subsequent year. Conversely, among those with private insurance in January 1996, 8% lost coverage during the subsequent year (19% for those with public insurance).

Research has strongly linked job loss with health insurance loss using longitudinal data. Even after controlling for preferences for insurance coverage, Gruber and Madrian (1997) find that job leaving is associated with a large reduction in insurance coverage and that as non-employment spells continue, rates of uninsurance also continue to rise. Focusing specifically on displaced workers, Simon and Schroeder (2006) find that health insurance losses can begin even before job loss occurs, with displaced workers already 13% less likely to be insured in the month prior to their displacement.

Several labor market and personal characteristics have been associated with insurance coverage, largely in cross-sectional studies. The losses in coverage among the employed, for instance, appear to have occurred mostly among those who are less closely attached to their employer—those who have been employed for shorter periods or in part-time positions (Farber and Levy 2000). Being self-employed has similarly been associated with lower rates of coverage, though differences in rates of coverage may not necessarily imply

---

<sup>1</sup> An extensive literature also examines the “job lock” phenomenon—that employees will stay longer in jobs that provide them with health insurance than jobs that do not. The magnitude of this effect has been estimated to vary substantially depending on the data, econometric specification, or subgroups examined (Madrian 1994; Kapur 1998; Gruber and Madrian 2001; Gilleskie and Lutz 2002).

differences in utilization of services (Perry and Rosen 2001). There is evidence that health insurance and employment decisions are made at the family level, as husbands' health insurance status is an important predictor of wives' work hours, especially in families with children (Buchmueller and Valletta 1999).

Another important predictor of coverage is ethnic background. Africans Americans and Hispanics have lower rates of coverage (DeNavas-Walt et al. 2006) either because these groups are more likely to have not been offered employer-sponsored insurance, or because they have been offered but have declined the coverage (Haas and Swartz 2007). Hispanics who are primarily Spanish-speaking are at highest risk of uninsurance, in part due to less labor market experience (Reschovsky et al. 2007).

Few studies combine a multitude of factors to understand health insurance transitions in a dynamic context. A recent exception is Czajka and Olsen (2000), who study "trigger events" for children's health insurance transitions using the SIPP. They examine several potential "triggers" of changes in health insurance coverage among children, such as changes in the family economic situation or family composition. They find that when a parent loses a job, experiences an hours worked reduction, or changes jobs children are more likely to lose employer-sponsored health insurance and become uninsured. Decreases in family income and family size are also found to be associated with insurance loss. The findings are less clear for factors associated with children gaining health insurance, but increases in parental hours worked, family income and parents in the family appear to be associated with becoming insured. Of course, these factors may be endogenous and the authors do not argue that they should be viewed as exogenous factors affecting health insurance transitions.

The findings from the literature point to the importance of studying health insurance dynamics, however, previous studies have not examined in detail the employment and job characteristics associated with individuals who gain and lose health insurance. The CBO report includes statistics on spell duration for those in different firm sizes, but is purely descriptive. Czajka and Olsen (2000) examine the relationship between a few parental job characteristics and children's health insurance transitions, but do not examine changes in more detailed employment and job characteristics. Our study contributes to the literature by identifying numerous potential trigger events associated with health insurance gain and loss, such as changes in employment, employer size, employer type, hours and weeks worked, spousal employment, marital status, presence of children, and receipt of public assistance. This research also adds to the literature in that we model both sides of the transition: gain and loss of health insurance.<sup>2</sup> The large sample sizes available in the CPS are especially important for identifying factors associated with gaining health insurance because the analysis relies on the uninsured sample in the first survey year.

### 3 Data

We use data from the 1996 to 2004 Annual Demographic and Income Surveys (March) of the CPS. Each annual survey, conducted by the U.S. Census Bureau and the Bureau of Labor Statistics, is representative of the entire U.S. population and interviews approximately

---

<sup>2</sup> We estimate separate regressions for health insurance transitions allowing the effects to differ for insurance gain and loss, which is more flexible than a fixed effects regression for health insurance coverage. For comparison, however, we also estimate cross-sectional and fixed effects regressions for the probability of health insurance coverage and note the results below.

50,000 households and more than 130,000 people. We limit the sample to working age adults ages 25–55 to avoid problems associated with the weaker labor force attachment of young adults who may be enrolled in school and older adults who may be retired.

Although the CPS is primarily used as a cross-sectional dataset offering a point-in-time snapshot, it is becoming increasingly common to follow individuals for two consecutive years by linking surveys. Households in the CPS are interviewed each month over a 4-month period. Eight months later they are re-interviewed in each month of a second 4-month period. The rotation pattern of the CPS makes it possible to match information on individuals in March of 1 year who are in their first 4-month rotation period to information from March of the following year, which represents their second 4-month rotation period. This creates a 1-year panel for up to half of all respondents in the first survey. To match these data, we use the same criteria as Madrian and Lefgren (2000) for matching the CPS March files from 1996 to 2000, but use modified criteria for the 2001–2004 data.<sup>3</sup>

Across, the 1996–2004 CPS surveys, we find that roughly 75% of CPS respondents in one survey can be identified in the subsequent year's survey. The main reason that match rates are less than 100% is because of the movement of individuals or households out of sampled dwelling units.<sup>4</sup> The CPS does not follow individuals who move out of CPS sampled dwelling units in future months. Another problem is due to false positive matches. Although unique household and person identifiers are available in the CPS to match non-moving individuals over time, false matches occur because of miscoding. We use a procedure that compares the sex, race and age of the person in each March file to remove false matches. Any changes in coding are identified as false matches.<sup>5</sup> False match rates, however, are very low (roughly 3%). False match rates and total match rates also do not vary substantially across years (see Appendix 1).

The loss of observations due to household movement suggests that attrition bias may result when using the matched CPS sample. We investigate this issue further by conducting a comparison of mean values from the original cross-sectional CPS sample to means values from the matched CPS sample (see Appendix 2). The comparison provides evidence on how representative the matched sample is to the original sample. As expected, we find that the matched sample has higher insurance, employment and marriage rates, and is more educated and older. The matched sample is also less likely to be a minority, live in the central city and receive public assistance. But, in all of these cases the differences are very small. For example, health insurance coverage rates are only 3% different and the matched sample is only 1 year older than the original sample. Overall, our matched sample is likely to represent a slightly more advantaged and stable population than the original sample, which likely leads to a slight understatement of rates of health insurance transitions.<sup>6</sup>

Two previous studies on attrition bias using the matched CPS provide useful findings. Steward (2007) explores the question by comparing matched CPS data to retrospective and

<sup>3</sup> Prior to matching years we remove the supplemental samples to the 2001–2004 ADFs, which are generally not re-interviewed in the following March.

<sup>4</sup> One drawback to the matched CPS data is that when households dissolve due to marital breakup, the CPS does not re-interview both marital partners. Thus, we cannot examine the relationship between insurance transitions and changes in marital status. We can, however, examine the relationship between spousal job changes and health insurance transitions for adults whose marriages remain intact.

<sup>5</sup> Age in the second survey year is allowed to be in the range from  $-1$  to  $+3$  from the first survey year.

<sup>6</sup> On the other hand, measurement error in reporting health insurance coverage across surveys is likely to overstate transition rates.

current information from the March CPS (i.e. previous year and survey week information) on labor market transitions. He finds that estimates of job separation rates are comparable using the matched CPS approach and retrospective data for the same time period from one CPS sample. In another recent study, Neumark and Kawaguchi (2004) explores attrition bias in the matched CPS by comparing estimates from it to estimates from panel data in the Survey of Income and Program Participation (SIPP). The SIPP makes an effort to follow movers. By comparing the moving to non-moving sample in the SIPP, attrition bias in the matched CPS data can be inferred. They do not find evidence of large attrition biases when examining union wage effects and the male marriage premium. They also make the important point that they did not find large attrition bias even in the case where the attrition was strongly related to the identifying information (changes in marital status). The comparison of means from the two sample and the findings from the literature on attrition bias in the matched CPS indicate that attrition bias is not likely to be a serious problem for our analysis of health insurance transitions.

### 3.1 CPS health insurance measure

The CPS health insurance questions ask about coverage during the entire year prior to survey month. However, comparisons of CPS estimates of health insurance coverage to other surveys that ask about insurance at the time of the survey reveal similar numbers. Estimates from the SIPP, MEPS and National Health Interview Survey (NHIS) indicate that roughly 40 million individuals were uninsured at the time of the survey in 1998 (CBO 2003). CPS estimates for the number of individuals with no insurance for the entire year were also roughly 40 million in that year, suggesting that the CPS overstates the number of individuals who are uninsured for an entire year. Bhandari (2004) finds similar estimates of insurance coverage rates in the CPS and point-in-time estimates from the SIPP even within several demographic groups. Estimates from the SIPP and MEPS indicate the number of people who are uninsured for an entire year is between 21 and 31 million. Thus, CPS respondents may be underreporting health insurance coverage over the previous calendar year because of recall bias or because they simply report their current coverage (see Bennefield 1996; Swartz 1986; CBO 2003; Bhandari 2004 for further discussion). Even if the CPS estimates capture a point-in-time measure of health insurance coverage, the measure of health insurance status does not change from year to year and thus allows for an analysis of transitions in status. However, this would alter the interpretation of our results. In this article, we interpret results assuming that respondents correctly respond to the question asking about insurance over the entire previous year.

## 4 Health insurance transitions

Table 1 reports health insurance coverage and transition rates using the matched CPS sample. In total, 85.6% of adults ages 25–55 in the CPS sample have health insurance in the reference year, which we refer to as the first survey year or year  $t$ . The percent of the population that has health insurance coverage depends directly on the annual transition rates into and out of coverage.<sup>7</sup> Among the 14.4% of individuals without insurance in the

<sup>7</sup> The steady-state health insurance coverage rate is simply equal to  $G/(G+L)$ , where  $G$  is the rate of gaining health insurance and  $L$  is the rate of losing health insurance.

**Table 1** Health insurance transitions (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

First survey year (t)	Second survey year (t + 1)		
	No insurance (%)	Insurance (%)	Share of year t total (%)
No insurance	53.8	46.2	14.4
Insurance	7.5	92.5	85.6

*Notes:* (1) The sample consists of individuals (ages 25–55) in the first year surveyed. (2) Health insurance coverage is defined as coverage at any time during the calendar year prior to the survey date (survey year). Health insurance coverage transitions are measured from the first to second survey years. (3) All estimates are calculated using sample weights provided by the CPS

first survey year, row 1 shows that 46.2% gain insurance in the subsequent year. For those who are insured in year t, row 2 reports that 7.5% lose coverage in the subsequent year.<sup>8</sup>

What are the causes of health insurance loss and gain? Although it is well known that identifying causal relationships in the health insurance literature represents a difficult task (see Czajka and Olsen 2000 for example), an analysis of correlated dynamic factors may be informative. For example, job loss or gain, moving between full-time and part-time employment, and employment size changes represent dynamic factors that could potentially trigger a change in health insurance coverage.<sup>9</sup> The fundamental problem is that preferences for health insurance coverage are likely to inform employment decisions, and thus changes in employment characteristics may be caused by changes in health care insurance needs.

Before turning to estimates from multivariate regressions, we first examine the relationship between changes in job characteristics and loss of health insurance. Tables 2–4 present tabulations of health insurance loss and gain by employment status and characteristics at both year t and year t + 1. To place some structure on the presentation of these results we focus on a limited set of changes instead of the multitude of possible combinations of changes in job characteristics.

Table 2 reports matrices of health insurance loss and gain by employment status in year t and year t + 1. The loss transition matrix shows, for example, that not having a job in both survey years is associated with a 9.3% loss in health insurance. Continued employment over the 2-year period (though perhaps not at the same job) is associated with a 6.6% loss in insurance. Mobility between the two states is associated with health insurance loss at much higher rates. For instance, movement from a job in year t to no job in year t + 1 is associated with a 19.9% decline in health insurance. These results suggest that job loss is a key contributor to health insurance loss. Movement from no job in year t to a job in year t + 1, however, is also associated with a large loss of health insurance at 16.0%. This may be the result of waiting periods associated with gaining health insurance, loss of government-provided insurance, or other characteristics of the jobs into which individuals are moving.

<sup>8</sup> The CPS also provides information on types of health insurance coverage. We find that 93.1% of individuals with health insurance have private health insurance. Examining transitions between types of coverage, we also find that most movement from uninsurance to insurance appears to be largely to and from private insurance coverage.

<sup>9</sup> Similar to Czajka and Olsen (2000) we view these dynamic factors as “trigger events” instead of as truly exogenous determinants of health insurance transitions.

**Table 2** Health insurance transitions by changes in job status (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

	No Job in t + 1 (%)	Job in t + 1 (%)
<i>Health insurance loss</i>		
No Job in t	9.3	16.0
Job in t	19.9	6.6
<i>Health insurance gain</i>		
No Job in t	41.0	45.0
Job in t	42.3	47.7

*Notes:* (1) The sample consists of individuals (ages 25–55) in the first year surveyed. (2) Health insurance coverage is defined as coverage at any time during the calendar year prior to the survey date (survey year). Health insurance coverage transitions are measured from the first to second survey years. (3) All estimates are calculated using sample weights provided by the CPS

**Table 3** Health insurance transitions by changes in employer size (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

	1–9 employees in t + 1 (%)	10–24 employees in t + 1 (%)	25–99 employees in t + 1 (%)	100–499 employees in t + 1 (%)	500+ employees in t + 1 (%)
<i>Health insurance loss</i>					
1–9 employees in t	10.3	12.0	10.7	10.9	9.3
10–24 employees in t	13.6	6.9	7.4	11.0	8.3
25–99 employees in t	21.0	12.4	5.3	5.7	6.8
100–499 employees in t	19.7	14.3	7.5	3.4	4.6
500+ employees in t	19.9	16.7	10.1	6.2	3.0
<i>Health insurance gain</i>					
1–9 employees in t	31.6	38.9	52.6	58.9	67.7
10–24 employees in t	38.3	36.9	43.8	60.3	61.5
25–99 employees in t	34.2	44.6	43.8	52.9	62.8
100–499 employees in t	42.2	49.6	52.2	57.2	63.8
500+ employees in t	40.9	45.1	59.7	63.4	63.0

*Notes:* (1) The sample consists of individuals (ages 25–55) in the first year surveyed. (2) Health insurance coverage is defined as coverage at any time during the calendar year prior to the survey date (survey year). Health insurance coverage transitions are measured from the first to second survey years. (3) All estimates are calculated using sample weights provided by the CPS

There is far less contrast in the health insurance gain model across the four cells. Movement from either employment state in year t to no job in year t + 1 is associated with a 41–42% gain in insurance. Movement from either state into a job in year t + 1 is associated with slightly higher rates of insurance gain, particularly if one is employed in both periods.

To explore this further, we present comparable transition matrices by employment characteristics among those who were employed in both years t and t + 1. Table 3 shows the transition matrix by employer size. Employer size appears to be strongly associated with both gaining and losing health insurance. Movement from any employer size into the smallest size (1–9 employees) is associated with the highest rates of insurance loss and the lowest rates of insurance gain. Insurance loss rates decrease and gain rates increase as



**Table 4** Health insurance transitions by changes in employment characteristics (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

	Part year, no unemp in $t + 1$ (%)	Part year, unemp in $t + 1$ (%)	Full year, part time in $t + 1$ (%)	Full year, full time in $t + 1$ (%)
<i>Health insurance loss</i>				
Part year, no unemp in $t$	7.1	11.5	8.4	8.4
Part year, unemp in $t$	14.3	15.3	16.3	10.9
Full year, part time in $t$	6.9	16.6	6.9	9.2
Full year, full time in $t$	10.1	15.5	13.9	5.0
<i>Health insurance gain</i>				
Part year, no unemp in $t$	35.7	33.0	42.7	51.2
Part year, unemp in $t$	38.2	32.7	38.0	52.6
Full year, part time in $t$	45.5	34.4	39.9	49.6
Full year, full time in $t$	46.3	39.4	42.1	51.9

*Notes:* (1) The sample consists of individuals (ages 25–55) in the first year surveyed. (2) Health insurance coverage is defined as coverage at any time during the calendar year prior to the survey date (survey year). Health insurance coverage transitions are measured from the first to second survey years. (3) All estimates are calculated using sample weights provided by the CPS

employer size increases. These results are consistent with employer size being an important determinant of health insurance transitions.

Table 4 reports estimates of health insurance transition rates by changes in work commitment. Moving from part-year employment and part-year unemployment into any state and moving from any state into part-year employment and part-year unemployment are associated with high rates of insurance loss. In contrast, movement into full-time, full-year work is associated with the lowest rates of loss. Movement into full-time full-year employment is associated with the highest rates of gain.

## 5 Identifying dynamic factors correlated with health insurance loss

The estimates reported in Tables 2–4 point to the importance of examining changes in employment characteristics in understanding the reasons that individuals lose or gain health insurance coverage. It is likely, however, that many of the dynamic employment characteristics are correlated and there may be additional factors that lead to health insurance transitions, such as movements between private employers, government employment and self-employment. To identify independent relationships, we estimate probit regressions for annual health insurance transitions. We are reluctant to identify these as causal factors because employment choices may be made to facilitate preferred health insurance status. We instead view them as “trigger events” or dynamic factors that are associated with health insurance loss, though they are theoretically likely to have strong causal effects on health insurance loss. The dynamic factors that we include are changes in employment, full-time, full-year status, employment size, type of employer, presence of children, marital status, spousal employment, welfare receipt and Supplemental Security Income (SSI) receipt. We include year fixed effects to control for unobservable or difficult to measure policies and other factors that may change over time.

Specification 1 of Table 5 reports estimates for our base probit regression for the probability of losing health insurance. Changes in one’s own employment and job

**Table 5** Probit regressions for probability of health insurance loss—marginal effects (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
No job in both years	0.0527** (0.0024)	0.0597** (0.0024)	0.0594** (0.0024)	0.0513** (0.0026)
Job loss	0.1212** (0.0031)			
No job to job	0.0956** (0.0037)	0.1023** (0.0037)	0.1017** (0.0037)	0.0896** (0.0036)
Employer size loss	0.0429** (0.0019)	0.0419** (0.0019)		
Employer size gain	0.0098** (0.0021)	0.0088** (0.0021)		
Private employer to self-employment	0.0424** (0.0039)	0.0410** (0.0039)	0.0187** (0.0042)	0.0310** (0.0039)
Government employer to private employer	0.0067 (0.0041)	0.0051 (0.0041)	0.0094* (0.0041)	0.0128** (0.0039)
Government employer to self-employment	0.0528** (0.0116)	0.0466** (0.0116)	0.0146 (0.0118)	0.0308** (0.0110)
Other employer type change	0.0083* (0.0033)	0.0066** (0.0033)	0.0039 (0.0033)	0.0143** (0.0031)
Employer change	0.0361** (0.0018)	0.0329** (0.0018)	0.0302** (0.0018)	0.0255** (0.0017)
Welfare loss	0.0964** (0.0052)	0.0938** (0.0052)	0.0933** (0.0052)	0.0561** (0.0049)
SSI loss	0.0643** (0.0058)	0.0638** (0.0057)	0.0632** (0.0057)	0.0439** (0.0054)
Children to no children	-0.0089* (0.0044)	-0.0090* (0.0044)	-0.0086* (0.0044)	0.0016 (0.0042)
Married to not married	0.0478** (0.0058)	0.0467** (0.0058)	0.0457** (0.0058)	0.0534** (0.0054)
Spousal job loss	0.0470** (0.0037)	0.0474** (0.0037)	0.0464** (0.0037)	0.0538** (0.0035)
Full-time, full-year to no job		0.1644** (0.0049)	0.1633** (0.0049)	0.1396** (0.0046)
Full-time, full-year to part year		0.0506** (0.0026)	0.0495** (0.0026)	0.0424** (0.0025)
Full-time, full-year to part-time, full-year		0.0605** (0.0048)	0.0569** (0.0048)	0.0541** (0.0046)
Part-time, full-year to no job		0.0972** (0.0103)	0.0966** (0.0102)	0.0916** (0.0096)
Part-time, full-year to part-year		0.0261** (0.0062)	0.0248** (0.0062)	0.0358** (0.0059)
Part-year to no job		0.1107** (0.0040)	0.1099** (0.0039)	0.1010** (0.0038)
Other work commitment change		0.0295** (0.0023)	0.0281** (0.0023)	0.0276** (0.0022)
Large employer firm to medium employer firm			0.0304** (0.0033)	0.0213** (0.0031)
Large employer firm to small employer firm			0.0664** (0.0043)	0.0536** (0.0040)

**Table 5** continued

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
Large employer firm to very small employer firm			0.0804** (0.0036)	0.0700** (0.0034)
Medium employer firm to small employer firm			0.0666** (0.0053)	0.0534** (0.0050)
Medium employer firm to very small employer firm			0.0969** (0.0056)	0.0851** (0.0052)
Small employer firm to very small employer firm			0.0684** (0.0052)	0.0591** (0.0049)
Other employer size change			0.0248** (0.0023)	0.0161** (0.0021)
Demographic controls	No	No	No	Yes
Mean of dependent variable	0.0720	0.0720	0.0720	0.0720
Log Likelihood value	-36147	-35818	-35523	-33295
Sample size	143,030	143,030	143,030	143,030

*Notes:* (1) The sample consists of individuals (ages 25–55) who have health insurance in the first survey year. (2) Marginal effects and their standard errors are reported. Statistical significance at the 0.05 and 0.01 levels are denoted by \* and \*\*, respectively. (3) All specifications include year effects. Specification 4 also includes controls for sex, race/ethnicity, immigrant status, marital status, number of children, education, age, disability, veteran status, Census divisions, and central city status measured at the first survey date. (4) All estimates are calculated using sample weights provided by the CPS. (5) Employer changes are imputed from changes in industry, employer size and class of worker, and having multiple jobs in the second survey year

characteristics are strongly associated with health insurance loss. We first discuss the results for the four possible transitions between employment and non-employment status. The reference category is having a job in both years. Non-employment in both years is associated with a 5.3 percentage point higher probability of losing health insurance relative to having a job in both years. This may be due to length of time without a job and the 18-month period of COBRA binding.

Job loss has a strong relationship with health insurance loss; workers who lose their jobs have a 12.1 percentage point higher likelihood of losing health insurance coverage than workers who remain employed. The estimated relationship is even larger than the mean rate of health insurance loss in the sample (7.2%). Although we cannot determine causality, the strength of the relationship suggests that job loss triggers many people to lose coverage.

We also find that individuals who are not employed in the first year but become employed in the second year are more likely to lose health insurance than are individuals who are employed in both years. The relationship may be due to a higher rate of job instability among this group, the types of jobs performed by people with unstable jobs, or waiting periods to start new employer coverage.

The strong relationship between employer size and health insurance coverage that was demonstrated in Table 3 is borne out in the multivariate analysis as well. Workers who move down in our broad employment size categories are 4.3 percentage points more likely to lose health insurance than are workers who do not change employer size. Workers who move up a category in employment size also have a higher likelihood of losing health insurance than workers who do not change employer size, but the coefficient is small. Some of these movements in employment size may represent job changes that are not captured by our imputed measure of employer changes, which we describe below.

Movement from a private employer to self-employment is also associated with health insurance loss, net of other trigger events. Workers who move from private firms to self-employment are 4.2 percentage points more likely to lose health insurance than are workers who do not change employer types. Movement from government employment to self-employment is associated with an even larger loss of health insurance of 5.3%. Finally, movement from government employment to private employment is not associated with a statistically significant higher probability of losing health insurance. The relationship between employment type and health insurance loss holds even after controlling for changes in employer size. Employer change itself is also associated with the loss of health insurance; workers moving to a new employer from the first survey year to the following survey year are 3.6 percentage points more likely to lose health insurance than workers who do not change employers.<sup>10</sup>

We include dummy variables indicating whether the individual loses welfare or SSI, both of which confer almost universal Medicaid eligibility, from the first year to the following year. Welfare loss is associated with a 9.6 percentage point higher probability of losing health insurance, and SSI loss is associated with a 6.4 percentage point higher probability of losing health insurance.

Focusing on dynamic demographic factors, we do not find evidence that individuals lose health insurance when children leave the household. Instead, movement of children out of the

---

<sup>10</sup> The included measure of employer change is imputed from changes in employer type, employer size (at least 2 size categories) and major industry category, and from having multiple jobs in the second survey year because the CPS does not include a direct measure of employer changes. We find that 38.9% of the sample has an employer change using our imputed measure, which likely to overstate employer changes (see Fairlie and London 2005 for more discussion).

household is associated with a lower rate of health insurance loss. As one might expect, divorce appears to be correlated with losing health insurance. As noted above, however, the matched CPS are not ideal for studying the effects of changes in marital status on health insurance because individuals who move from the original household are not followed in the CPS.

Conditioning on being married in both years, we find evidence that the loss of a spouse's job is associated with health insurance loss. Individuals who have a spouse who lost his or her job are 4.7 percentage points more likely to lose health insurance. This loss is most likely due to losing coverage under the spouse, but also could be due to the resulting loss of income.

Specifications 2–4 of Table 5 report estimates for more detailed sets of employment characteristics. Specification 2 adds dummy variables measuring several changes between full-time and part-time, and full-year and part-year status. Specification 3 adds these and also more detailed employer firm size changes. Specification 4 also adds demographic controls measured in year  $t$ . Although these demographic characteristics cannot directly cause health insurance loss, they may be correlated with our dynamic factors. We include controls for sex, race/ethnicity, immigrant status, marital status, number of children, education, age, disability, veteran status, region, urbanicity and year effects. The results across specifications are very similar. For brevity, we focus on Specification 3 findings.

Focusing first on the more detailed employment commitment variables, we find that any movement that reduces hours per week (full-time to part-time) or weeks per year (full-year to part-year) is associated with a higher probability of health insurance loss. The reference category is workers who do not change hours and weeks worked across our categories, which represents 68.1% of insured adults. Workers who lose full-time, full-year jobs have the highest probability of losing health insurance. They are 16.3 percentage points more likely to lose health insurance than are workers who remain employed and do not change statuses. Movement from full-time, full-year work to either part-year work or to part-time work is also associated with a high level of health insurance loss. Full-time, full-year workers who become employed only part year are 5.0 percentage points more likely to lose health insurance, and full-time, full-year workers who become employed only part time are 5.7 percentage points more likely to lose health insurance. Evidently, movement to part-time or part-year status is related to losing health insurance even after controlling for other changes in job characteristics. These estimates suggest that the effects of this movement are likely to be large.

Using the large sample sizes of the CPS, we can also examine movement between additional hours and weeks worked and its effect on health insurance loss. We find that movement from part-time, full-year work to non-employment is associated with a very large probability of losing health insurance of 9.7 percentage points, relative to workers who do not change statuses. Part-year workers who lose their jobs also have a high rate of insurance loss; they are 11.0 percentage points more likely to lose coverage. Part-time, full-year workers who switch to part-year work experience a relatively high level of health insurance loss, although not as large as the previous two groups.

Our findings point to a strong relationship between time commitment on a job and health insurance loss. We cannot identify the exact magnitude of the causal effect, but these results are clearly consistent with the idea that reducing work commitment can result in loss of health insurance. The estimates also emphasize the importance of job loss in determining health insurance loss, especially for full-time, full-year workers.

Returning to employer size, we are particularly interested in examining whether there are differential relationships when moving one category in employment size or moving more than one category in employment size. The reference category for this set of variables is workers who do not change employer size. We define large firms as those with 100 or

more employees, medium firms as those with 25–99 employees, small firms as those with 10–24 employees, and very small firms at those with 1–9 employees.

Movement from large firms to any other size employer is associated with health insurance loss and the magnitude of the loss is larger as the resulting employer size decreases. Workers at large firms who switch to medium size firms are 3.0 percentage points more likely to lose health insurance than workers who do not change employer size. Workers at large firms who switch to small firms are 6.6 percentage points more likely to lose health insurance and workers at large firms who switch to very small firms are 8.0 percentage points more likely to lose health insurance. We also find that movement from medium size firms to smaller firms is associated with a high probability of losing health insurance and the size of the loss is larger when the movement is to a firm with 1–9 employees instead of 10–24 employees. Finally, we find that movement from a small employer to a very small employer is associated with a higher probability of losing health insurance. Overall, these estimates clearly indicate that downward movement in employer size is associated with health insurance loss and the magnitude of this loss is related to size of the change in employer size. It is also useful to note that these findings hold even after controlling for changes in type of employer (e.g. government employment to private employment or self-employment).

Although not reported, in Specification 4 we find that men, minorities, immigrants, and the less educated are more likely to lose health insurance. The estimates reported in Specification 4 indicate that the coefficient estimates on the dynamic factors are not sensitive to the inclusion of these controls. We continue to find a strong relationship between health insurance loss and employment changes, employer size changes, and type of employment changes.

It is possible that the trigger events associated with insurance loss are different with different types of insurance. For instance, it is possible that the dynamic factors associated with losing private coverage differ from the dynamic factors associated with losing health insurance coverage. Private health insurance is the more prevalent than public insurance, covering 93.1% of insured adults in our sample. Consequently, most cases of health insurance loss are from private health insurance. We therefore focus solely on the dynamic factors associated with private insurance loss in Table 6. We find very similar results to those for transitions out of any health insurance coverage. Job loss, spousal job loss, employer size loss, movement from government employment, movement to self-employment, movement to less work commitment, and divorce are associated with higher probabilities of losing private health insurance. As expected, the main difference in results is that the association between loss of welfare or SSI is weaker for private health insurance loss than it is for any health insurance loss. Therefore, the results reported in Table 5 appear to be driven primarily by changes between private insurance and no insurance.

## 6 Identifying dynamic factors correlated with health insurance gain

We next examine the factors that are associated with health insurance gain in Table 7.<sup>11</sup> Specification 1 of Table 7 reports estimates for our base model. Changes in employment

---

<sup>11</sup> We also estimate cross-sectional and fixed effects regressions for the probability of health insurance coverage (see Appendix 3). The estimates provide similar findings as those expected based on the results from the health insurance transition regressions. In particular, the signs of the coefficients generally align with the health insurance gain coefficients and are opposite in sign from the health insurance loss coefficients.

**Table 6** Probit regressions for probability of private health insurance loss—marginal effects (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
No job in both years	0.0549** (0.0027)	0.0611** (0.0027)	0.0605** (0.0026)	0.0610** (0.0027)
Job loss	0.1218** (0.0031)			
No job to job	0.0838** (0.0042)	0.0898** (0.0041)	0.0890** (0.0041)	0.0838** (0.0039)
Employer size loss	0.0421** (0.0019)	0.0410** (0.0019)		
Employer size gain	0.0092** (0.0021)	0.0085** (0.0021)		
Private employer to self-employment	0.0411** (0.0038)	0.0400** (0.0038)	0.0178** (0.0040)	0.0297** (0.0038)
Government employer to private employer	0.0071 (0.0040)	0.0056 (0.0040)	0.0096** (0.0040)	0.0127** (0.0038)
Government employer to self-employment	0.0516** (0.0111)	0.0460** (0.0111)	0.0146 (0.0113)	0.0301** (0.0106)
Other employer type change	0.0092** (0.0032)	0.0078** (0.0032)	0.0052 (0.0032)	0.0149** (0.0030)
Employer change	0.0344** (0.0018)	0.0315** (0.0018)	0.0291** (0.0017)	0.0249** (0.0016)
Welfare loss	0.0689** (0.0115)	0.0657** (0.0114)	0.0644** (0.0114)	0.0340** (0.0106)
SSI loss	0.0321* (0.0134)	0.0301* (0.0133)	0.0305* (0.0132)	0.0190 (0.0123)
Children to no children	-0.0085 (0.0044)	-0.0086* (0.0044)	-0.0080 (0.0044)	0.0030 (0.0042)
Married to not married	0.0481** (0.0057)	0.0471** (0.0057)	0.0459** (0.0057)	0.0537** (0.0053)
Spousal job loss	0.0451** (0.0036)	0.0454** (0.0036)	0.0445** (0.0036)	0.0513** (0.0034)
Full-time, full-year to no job		0.1595** (0.0047)	0.1581** (0.0047)	0.1342** (0.0044)
Full-time, full-year to part year		0.0489** (0.0025)	0.0480** (0.0025)	0.0406** (0.0024)
Full-time, full-year to part-time, full-year		0.0560** (0.0047)	0.0523** (0.0047)	0.0509** (0.0044)
Part-time, full-year to no job		0.0942** (0.0104)	0.0933** (0.0103)	0.0912** (0.0097)
Part-time, full-year to part-year		0.0224** (0.0063)	0.0211** (0.0062)	0.0346** (0.0059)
Part-year to no job		0.1110** (0.0041)	0.1099** (0.0040)	0.1027** (0.0039)
Other work commitment change		0.0259** (0.0023)	0.0246** (0.0023)	0.0247** (0.0022)
Large employer firm to medium employer firm		0.0288** (0.0032)	0.0288** (0.0032)	0.0198** (0.0030)
Large employer firm to small employer firm		0.0650** (0.0041)	0.0650** (0.0041)	0.0525** (0.0039)

**Table 6** continued

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
Large employer firm to very small employer firm			0.0775** (0.0035)	0.0674** (0.0033)
Medium employer firm to small employer firm			0.0636** (0.0051)	0.0507** (0.0049)
Medium employer firm to very small employer firm			0.0953** (0.0053)	0.0841** (0.0050)
Small employer firm to very small employer firm			0.0659** (0.0051)	0.0583** (0.0048)
Other employer size change			0.0229** (0.0022)	0.0150** (0.0021)
Demographic controls	No	No	No	Yes
Mean of dependent variable	0.0661	0.0661	0.0661	0.0661
Log Likelihood value	-31785	-31478	-31189	-29030
Sample size	133,294	133,294	133,294	133,294

*Notes:* (1) The sample consists of individuals (ages 25–55) who have private health insurance in the first year surveyed. (2) Marginal effects and their standard errors are reported. Statistical significance at the 0.05 and 0.01 levels are denoted by \* and \*\*, respectively. (3) All specifications include year effects. Specification 4 also includes controls for sex, race/ethnicity, immigrant status, marital status, number of children, education, age, disability, veteran status, Census divisions, and central city status measured at the first survey date. (4) All estimates are calculated using sample weights provided by the CPS. (5) Employer changes are imputed from changes in industry, employer size and class of worker, and having multiple jobs in the second survey year



**Table 7** Probit regressions for probability of health insurance gain—marginal effects (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
No job in both years	-0.0162 (0.0106)	-0.0237* (0.0108)	-0.0482** (0.0107)	-0.0532** (0.0110)
Job loss	-0.0186 (0.0146)	-0.0262 (0.0147)	-0.0507** (0.0146)	-0.0478** (0.0143)
No job to job	0.0440** (0.0138)			
Employer size loss	0.0451** (0.0100)	0.0443** (0.0100)		
Employer size gain	0.1088** (0.0095)	0.1071** (0.0095)		
Self-employment to private employer	-0.0115 (0.0168)	-0.0093 (0.0168)	-0.0241 (0.0172)	-0.0535** (0.0168)
Private employer to government employer	0.1952** (0.0233)	0.1972** (0.0232)	0.1841** (0.0233)	0.1301** (0.0225)
Self-employment to government employer	0.0831 (0.0631)	0.0855 (0.0630)	0.0267 (0.0638)	-0.0485 (0.0620)
Other employer type change	-0.0333* (0.0159)	-0.0311* (0.0159)	-0.0272 (0.0159)	-0.0429** (0.0154)
Employer change	0.0552** (0.0088)	0.0565** (0.0088)	0.0666** (0.0088)	0.0617** (0.0085)
Welfare gain	0.6358** (0.0435)	0.6408** (0.0435)	0.6419** (0.0434)	0.6563** (0.0420)
SSI gain	0.7123** (0.0468)	0.7132** (0.0466)	0.7133** (0.0465)	0.7180** (0.0447)
No children to children	0.0941** (0.0262)	0.0918** (0.0261)	0.0888** (0.0262)	0.0848** (0.0257)
Not married to married	0.1658** (0.0276)	0.1643** (0.0275)	0.1664** (0.0275)	0.2256** (0.0268)
Spousal job gain	0.0419* (0.0191)	0.0376* (0.0191)	0.0376* (0.0191)	0.0146 (0.0188)
No job to full-time, full-year		0.1376** (0.0214)	0.1130** (0.0213)	0.1224** (0.0208)
Part-year to full-time, full-year		0.0233* (0.0116)	0.0243* (0.0116)	0.0291** (0.0112)
Part-time, full-year to full-time, full-year		0.0016 (0.0200)	0.0006 (0.0200)	-0.0116 (0.0195)
No job to part-time, full-year		0.0170 (0.0362)	-0.0076 (0.0362)	-0.0221 (0.0350)
Part-year to part-time, full-year		-0.0767** (0.0239)	-0.0753** (0.0239)	-0.0933** (0.0232)
No job to part-year		-0.0332 (0.0187)	-0.0577** (0.0186)	-0.0530** (0.0182)
Other work commitment change		-0.0656** (0.0111)	-0.0661** (0.0111)	-0.0631** (0.0107)
Medium employer firm to large employer firm		0.0885** (0.0175)	0.0885** (0.0175)	0.1119** (0.0170)
Small employer firm to large employer firm		0.0998** (0.0207)	0.0998** (0.0207)	0.1058** (0.0201)

Table 7 continued

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
Very small employer firm to large employer firm			0.1437** (0.0169)	0.1536** (0.0164)
Small employer firm to medium employer firm			-0.0131 (0.0252)	0.0313 (0.0245)
Very small employer firm to medium employer firm			0.0599* (0.0233)	0.0869** (0.0226)
Very small employer firm to small employer firm			-0.0635** (0.0199)	-0.0295 (0.0194)
Other employer size change			-0.0235* (0.0103)	-0.0065 (0.0100)
Demographic controls	No	No	No	Yes
Mean of dependent variable	0.4614	0.4614	0.4614	0.4614
Log Likelihood value	-15302	-15254	-15245	-14408
Sample size	23,093	23,093	23,093	23,093

*Notes:* (1) The sample consists of individuals (ages 25–55) who do not have health insurance in the first year surveyed. (2) Marginal effects and their standard errors are reported. Statistical significance at the 0.05 and 0.01 levels are denoted by \* and \*\*, respectively. (3) All specifications include year effects. Specification 4 also includes controls for sex, race/ethnicity, immigrant status, marital status, number of children, education, age, disability, veteran status, Census divisions, and central city status measured at the first survey date. (4) All estimates are calculated using sample weights provided by the CPS. (5) Employer changes are imputed from changes in industry, employer size and class of worker, and having multiple jobs in the second survey year

and job characteristics are strongly associated with health insurance gain. As expected, we find that moving from non-employment to employment is associated with an increased probability of gaining health insurance of 4.4 percentage points, relative to individuals who are employed in both years. Note that this is substantially lower than the association between job loss and health insurance loss (12.1 percentage points).

The relationship between finding a job and gaining health insurance appears to be primarily driven by movement into full-time, full-year jobs. Focusing on Specification 3 of Table 7, we find that workers who transit from non-employment to full-time, full-year jobs are the only ones who experience a large, positive and statistically significant increase in the probability of gaining health insurance. These individuals experience an 11.3 percentage point increase relative to workers who have no change in work commitment. In contrast, the uninsured who do not have jobs in the first survey year and move into part-year employment or part-time, full-year employment are no more likely to gain health insurance. In fact, we find a negative relationship between movement into part-year employment relative to remaining at the same level of work commitment, which is statistically significant in Specifications 3 and 4. These findings are consistent with the hypothesis that only movement into full-time, full-year work enables the uninsured who are not employed to gain insurance. Movement into part-year or part-time employment appears to be less beneficial.

Estimates from the CPS generally indicate that individuals who are not employed in both years and individuals who experience job loss are less likely to gain health insurance than individuals who have the same work commitment over the 2 years. Lengthy spells of non-employment and job loss appear to limit the ability of uninsured individuals to acquire health insurance.

The relationship between employer size and health insurance gain is also strong. Workers who move up in employer size are much more likely to gain health insurance. These workers are 10.9 percentage points more likely to gain health insurance than workers who do not change employer size categories (Specification 1). This positive relationship combined with the strong positive relationship between employer size loss and health insurance loss is the underlying reasons for why health insurance coverage increases with employer size. Workers moving down in the employer size distribution also have a higher likelihood of gaining health insurance, which as noted above, may partly reflect movement to new employers not captured in our employer change measure.

Looking at the more detailed employer size changes shown in Specification 3, we find evidence that movement from smaller employers to larger employers results in a higher probability of gaining health insurance, and that the increase in probability is larger when the movement in employer size is larger. (The reference category is workers who do not change employer size categories between survey years.) As evidence of the latter, we find that movement from a very small employer to a large employer is associated with 5.5 percentage point larger increase in the probability of gaining health insurance than movement from a medium employer to a large employer.

One of the strongest factors associated with health insurance gain is movement from a private employer to a government employer. Workers who move from private to government work are 13.0–19.5 percentage points more likely to gain health insurance than are workers remaining in private work. Government employment appears to be a powerful route to becoming insured. The estimates for movement from self-employment to government employment are also positive and large in magnitude in most specifications, but are not statistically significant. Movement from self-employment to private employment is generally not associated with gaining health insurance.

Another important factor is whether the worker experienced an employer change. Employer changes are associated with a 5.5–6.7 percentage point higher probability of gaining health insurance. We would expect this if individuals change jobs in order to acquire more comprehensive health insurance, better choices in insurance, or lower costs.

As expected, acquiring welfare or SSI is associated with very high rates of gaining health insurance. Mirroring the findings for health insurance loss, we find that the addition of children to the household is associated with a higher probability of gaining health insurance. We also find that marriage is associated with a higher likelihood of gaining insurance, and spousal job gain is associated with health insurance gain.

We also estimate probit regressions for the probability of gaining private health insurance (see Table 8). We find similar results for most variables. The main exceptions are that we find effects of initiating welfare or SSI on gaining private health insurance, as one would expect.

## 7 Conclusions

We use the 1996–2004 CPS to create a large, 2-year panel dataset for examining annual transitions into and out of health insurance coverage. Although the CPS has been used previously to study static measures of health insurance coverage, the matched data have not been used to study the dynamics of health insurance coverage. Our analysis of these data identifies many “trigger events” that are associated with a higher propensity to lose or gain health insurance. Although we cannot estimate the precise magnitude of causal effects, the factors we examine are theoretically likely to have large effects on health insurance coverage transitions. We focus on changes in several detailed employment and job characteristics that lead to major disruptions in health insurance coverage because of the prominence of employer-sponsored insurance in the United States.

Estimates from the matched CPS indicate that job loss is one of the most important factors associated with health insurance loss. Netting out the effects of other trigger events, movement from employment in the first survey year to non-employment in the second survey year is associated with a 12.1 percentage point loss in health insurance, which is partly due to low COBRA take-up rates among qualified unemployed workers (Madrian 1998). An important corollary, that job gain is strongly associated with increases in insurance coverage, does not hold in our analysis. Movement from no employment-to-employment is associated with a smaller 4.4 percentage point gain in insurance. The lack of symmetry in the relationship between job and health insurance transitions may be due to the differential timing of the response. Job loss may trigger an immediate response of losing health insurance, whereas the uninsured who are not employed may smooth out obtaining insurance over time resulting in a weaker relationship between re-employment and gaining health insurance. Uninsured job losers may seek coverage through spouses or public assistance or self-insure prior to becoming reemployed. Waiting periods associated with new employment may also delay entry into insurance.

Transitions between full-time and part-time employment and transitions between full-year and part-year employment also appear to be important factors in determining health insurance gain and loss. As one might expect, movement out of full-time, full-year employment into non-employment is the most damaging in terms of health insurance loss, but movement into part-time or part-year employment is also associated with high rates of insurance loss. The gains in health insurance associated with acquiring full-time, full-year

**Table 8** Probit regressions for probability of private health insurance gain—marginal effects (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
No job in both years	-0.0969** (0.0114)	-0.1061** (0.0116)	-0.1326** (0.0115)	-0.1294** (0.0117)
Job loss	-0.0998** (0.0160)	-0.1090** (0.0161)	-0.1354** (0.0160)	-0.1254** (0.0156)
No job to job	0.0338* (0.0141)			
Employer size loss	0.0477** (0.0101)	0.0467** (0.0101)		
Employer size gain	0.1133** (0.0096)	0.1112** (0.0095)		
Self-employment to government employer	-0.0056 (0.0169)	-0.0024 (0.0168)	-0.0171 (0.0173)	-0.0492** (0.0167)
Private employer to government employer	0.2018** (0.0233)	0.2044** (0.0232)	0.1905** (0.0233)	0.1337** (0.0223)
Self-employment to government employer	0.0758 (0.0639)	0.0801 (0.0636)	0.0189 (0.0644)	-0.0582 (0.0622)
Other employer type change	-0.0350* (0.0161)	-0.0321* (0.0160)	-0.0272 (0.0161)	-0.0444** (0.0154)
Employer change	0.0545** (0.0089)	0.0565** (0.0089)	0.0665** (0.0088)	0.0617** (0.0085)
Welfare gain	0.2123** (0.0666)	0.2155** (0.0664)	0.2162** (0.0664)	0.2672** (0.0638)
SSI gain	0.4400** (0.0650)	0.4432** (0.0645)	0.4405** (0.0645)	0.4476** (0.0615)
No children to children	0.0951** (0.0268)	0.0928** (0.0267)	0.0894** (0.0267)	0.0712** (0.0260)
Not married to married	0.1712** (0.0281)	0.1688** (0.0280)	0.1711** (0.0280)	0.2383** (0.0270)
Spousal job gain	0.0457* (0.0195)	0.0405* (0.0194)	0.0412* (0.0194)	0.0126 (0.0190)
No job to full-time, full-year		0.1427** (0.0214)	0.1160** (0.0213)	0.1276** (0.0206)
Part-year to full-time, full-year		0.0249* (0.0116)	0.0261* (0.0116)	0.0343** (0.0112)
Part-time, full-year to full-time, full-year		0.0045 (0.0200)	0.0031 (0.0200)	-0.0069 (0.0193)
No job to part-time, full-year		0.0025 (0.0371)	-0.0242 (0.0371)	-0.0391 (0.0355)
Part-year to part-time, full-year		-0.0894** (0.0244)	-0.0884** (0.0244)	-0.1035** (0.0235)
No job to part-year		-0.0651** (0.0195)	-0.0916** (0.0194)	-0.0771** (0.0188)
Other work commitment change		-0.0888** (0.0114)	-0.0891** (0.0114)	-0.0861** (0.0109)
Medium employer firm to large employer firm		0.0872** (0.0176)	0.0872** (0.0176)	0.1112** (0.0169)
Small employer firm to large employer firm		0.1086** (0.0207)	0.1086** (0.0207)	0.1134** (0.0198)

Table 8 continued

Correlated factor	Specification			
	(1)	(2)	(3)	(4)
Very small employer firm to large employer firm			0.1511** (0.0169)	0.1581** (0.0163)
Small employer firm to medium employer firm			-0.0167 (0.0255)	0.0302 (0.0246)
Very small employer firm to medium employer firm			0.0437 (0.0238)	0.0707** (0.0228)
Very small employer firm to small employer firm			-0.0679** (0.0202)	-0.0336 (0.0195)
Other employer size change			-0.0261* (0.0104)	-0.0058 (0.0101)
Demographic controls	No	No	No	Yes
Mean of dependent variable	0.4206	0.4206	0.4206	0.4206
Log Likelihood value	-14116	-14044	-14033	-13058
Sample size	21,465	21,465	21,465	21,465

*Notes:* (1) The sample consists of individuals (ages 25–55) who do not have health insurance in the first year surveyed. (2) Marginal effects and their standard errors are reported. Statistical significance at the 0.05 and 0.01 levels are denoted by \* and \*\*, respectively. (3) All specifications include year effects. Specification 4 also includes controls for sex, race/ethnicity, immigrant status, marital status, number of children, education, age, disability, veteran status, Census divisions, and central city status measured at the first survey date. (4) All estimates are calculated using sample weights provided by the CPS. (5) Employer changes are imputed from changes in industry, employer size and class of worker, and having multiple jobs in the second survey year

employment from non-employment are also large, but the gains from movement from part-year or part-time jobs into full-time, full-year employment are much smaller.

Changes in employer size are also important triggers for insurance loss and gain. Movement to smaller employers is associated with a 4.3 percentage point loss in insurance even after controlling for changes in employer types, movement to part-time or part-year status and employer changes. Increasing employer size also has a strong association with health insurance gain of 10.9 percentage points. Examining changes between specific employer sizes, we find that movements to and from very small employers (fewer than 10 employees) are especially related to health insurance transitions even after controlling for the self-employed, which represent nearly half of all small firms. For instance, movement from a large employer (100 or more employees) to a very small employer is associated with an 8.0 percentage point loss in health insurance, and movement into large firms from very small firms to large ones is associated with a 14.4 percentage point gain in insurance coverage. Although employees at small firms are at a high risk of losing and low risk of gaining health insurance, recent employer-mandated health insurance plans proposed in several states (e.g. California, Massachusetts, and Oregon) do not focus on these businesses.

Finally, employment type change is also an important trigger event related to health insurance loss and gain. Movement into self-employment from both government and private employment is associated with between 4 and 6 percentage point losses in insurance coverage. In contrast, movement from self-employment to government or private employment is not associated with gaining health insurance. On the other hand, movement from private to government employment is strongly associated with gaining health insurance. The finding for self-employment is important: creating small businesses appears to be associated with loss of health insurance for owners and the high costs of self-insuring for self-employed business owners may be limiting business creation in the United States. Although mandated health insurance proposals do not target the self-employed, recent federal proposals to provide refundable health insurance tax credits and create large purchasing pools or association health plans that allow small businesses to collectively purchase health insurance may help lower insurance costs.

**Acknowledgments** The U.S. Department of Labor provided funds for this research. The views expressed here are solely the responsibility of the authors and should not be interpreted as reflecting the views of the funder. We would like to thank Carlos Dobkin, John Holahan, Matt Rutledge, Donald Wittman and participants at the 2005 Annual Meetings of the Association for Public Policy Analysis and Management and the ERIU Conference at the University of Michigan for useful comments and suggestions. Oded Gurantz provided excellent research assistance.

## Appendices

**Appendix 1** Match rates and false match rates (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Match years	Total observations	False matches		Final matches	
		Number	Percent	Number	Percent
1996–1997	46,406	1,060	2.3	34,937	75.3
1997–1998	47,066	1,074	2.3	35,220	74.8
1998–1999	46,745	1,104	2.4	35,142	75.2

**Appendix 1** continued

Match years	Total observations	False matches		Final matches	
		Number	Percent	Number	Percent
1999–2000	47,012	1,124	2.4	35,645	75.8
2000–2001	46,361	1,098	2.4	34,950	75.4
2001–2002	45,051	1,510	3.4	33,667	74.7
2002–2003	54,503	2,637	4.8	40,167	73.7
2003–2004	55,735	1,889	3.4	41,489	74.4
Total	388,879	11,496	3.0	291,217	74.9

*Notes:* (1) The sample includes all observations in the first rotation in the first survey year. (2) Household and person identifiers are used for matching across survey years. (3) False matches are identified by comparing sex, race and age codes

**Appendix 2** Comparison of analysis variables for original and matched samples (Current Population Survey, Annual Demographic Surveys (1996–2004))

	Original cross-sectional		Matched sample	
	Mean	Std. dev.	Mean	Std. dev.
Health insurance coverage	82.7%	56.0%	85.6%	51.7%
Female	50.9%	74.0%	51.5%	73.6%
Black	12.3%	48.7%	11.1%	46.3%
Latino	10.8%	46.0%	9.8%	43.9%
Asian	4.3%	29.9%	3.9%	28.7%
Immigrant	13.9%	51.2%	12.7%	49.0%
High school dropout	12.2%	48.4%	11.1%	46.2%
High school graduate	32.4%	69.3%	32.5%	69.0%
Some college	27.1%	65.8%	27.4%	65.7%
Age	39.6	12.6	40.5	12.3
Previously married	16.1%	54.4%	14.3%	51.6%
Never married	18.7%	57.8%	15.8%	53.8%
Number of children	0.9	1.7	1.0	1.7
Disabled	6.9%	37.7%	6.7%	36.8%
Veteran	9.1%	42.6%	9.3%	42.8%
Middle Atlantic	14.1%	51.6%	14.6%	52.0%
East North Central	16.3%	54.7%	17.0%	55.4%
West North Central	6.7%	37.1%	7.0%	37.7%
South Atlantic	18.0%	56.9%	17.9%	56.4%
East South Central	6.0%	35.3%	6.2%	35.5%
West South Central	10.9%	46.2%	10.4%	45.0%
Mountain	6.2%	35.6%	5.9%	34.7%
Pacific	16.6%	55.1%	15.7%	53.7%
Suburb	44.0%	73.5%	45.0%	73.3%
Rural	17.8%	56.6%	18.7%	57.5%



## Appendix 2 continued

	Original cross-sectional		Matched sample	
	Mean	Std. dev.	Mean	Std. dev.
Central city status not identified	13.6%	50.7%	13.7%	50.7%
Welfare	1.7%	19.3%	1.4%	17.4%
SSI	1.9%	20.5%	1.8%	19.5%
Not in the labor force—full year	13.4%	50.4%	12.8%	49.3%
Unemployed—full year	0.9%	14.3%	0.8%	13.2%
Employed—part year	9.6%	43.7%	9.3%	42.8%
Employed—part year and unemployed	6.8%	37.2%	6.1%	35.2%
Employed—full year, part-time	5.8%	34.5%	6.1%	35.2%
Government job	13.0%	49.8%	13.9%	51.0%
Self-Employed	8.7%	41.7%	9.3%	42.9%
Employer size: 1–9	16.5%	55.0%	16.8%	55.0%
Employer size: 10–24	7.6%	39.2%	7.3%	38.4%
Employer size: 25–99	10.9%	46.1%	10.7%	45.6%
Employer size: 100–499	12.1%	48.3%	12.3%	48.4%
Sample size	221,814		166,123	

Notes: (1) The sample consists of individuals (ages 25–55). (2) All estimates are calculated using sample weights provided by the CPS

**Appendix 3** Probit and linear regressions for probability of health insurance coverage—marginal effects (Current Population Survey, Matched Annual Demographic Surveys (1996–2004))

Correlated factor	Specification	
	(1)	(2)
Not in the labor force—full year	–0.1592** (0.0019)	–0.1167** (0.0042)
Unemployed—full year	–0.2171** (0.0049)	–0.1368** (0.0080)
Employed—part year	–0.0704** (0.0019)	–0.0350** (0.0028)
Employed—part year and unemployed	–0.1023** (0.0020)	–0.0483** (0.0032)
Employed—full year, part-time	–0.0687** (0.0022)	–0.0350** (0.0037)
Employer size: 1–9	–0.1372** (0.0018)	–0.0907** (0.0032)
Employer size: 10–24	–0.0977** (0.0021)	–0.0696** (0.0033)
Employer size: 25–99	–0.0554** (0.0019)	–0.0312** (0.0028)
Employer size: 100–499	–0.0219** (0.0020)	–0.0160** (0.0026)
Government job	0.0243** (0.0021)	0.0112** (0.0038)
Self-Employed	–0.0183** (0.0020)	–0.0267** (0.0040)
Welfare	0.3027** (0.0072)	0.2789** (0.0077)
SSI	0.3112** (0.0075)	0.2088** (0.0072)
Children	0.0074** (0.0005)	0.0061* (0.0024)
Married	0.0459** (0.0019)	0.0180** (0.0069)
Spouse with job	0.0673** (0.0017)	0.0350** (0.0040)
Demographic controls	Yes	No

## Appendix 3 continued

Correlated factor	Specification	
	(1)	(2)
Individual fixed effects	No	Yes
Mean of dependent variable	0.8606	0.8606
Sample size	330,708	330,708

*Notes:* (1) The sample consists of individuals (ages 25–55). (2) Marginal effects and their standard errors are reported. Statistical significance at the 0.05 and 0.01 levels are denoted by \* and \*\*, respectively. (3) All specifications include year effects. Specification 1 also includes controls for sex, race/ethnicity, immigrant status, education, age, disability, veteran status, Census divisions, and central city status, and Specification 2 includes individual fixed effects. (4) All estimates are calculated using sample weights provided by the CPS

## References

- Baker, D.W., Sudano, J.J., Albert, J.M., Borawski, E.A., Dor, A.: Lack of health insurance and decline in overall health in late middle age. *N. Engl. J. Med.* **345**(15), 1106–1112 (2001)
- Bennefield, R.L.: A comparative analysis of health insurance coverage estimates: data from CPS and SIPP. Paper presented at the joint statistical meetings, American Statistical Association, 1996
- Bhandari, S.: People with health insurance: a comparison of estimates from two surveys. The Survey of Income and Program Participation, U.S. Census Bureau Working Paper No. 243, 2004
- Bhandari, S., Mills, R.: Dynamics of Economic Well-being: Health Insurance 1996–1999. U.S. Bureau of the Census Current Population Reports P70–92. Government Printing Office, Washington, DC (2003)
- Buchmueller, T.C., Valletta, R.G.: The effect of health insurance on married female labor supply. *J. Hum. Resour.* **34**(1), 42–70 (1999)
- Congressional Budget Office: How Many People Lack Health Insurance and For How Long? Congressional Budget Office, Washington, DC (2003)
- Czajka, J.L., Olsen, C.: The Effects of Trigger Events on Changes in Children’s Health Insurance Coverage. Mathematica Policy Research, Inc., Princeton, NJ (2000)
- DeNavas-Walt, C., Proctor, B.D., Lee, C.H.: Income, Poverty, and Health Insurance Coverage in the United States: 2005. U.S. Bureau of the Census Current Population Reports P60–231. Government Printing Office, Washington, DC (2006)
- Fairlie, R.W., London, R.A.: The Dynamics of Health Insurance Coverage: Factors Correlated with Insurance Gain and Loss among Adults, Final Report, U.S. Department of Labor (2005)
- Farber, H.S., Levy, H.: Recent trends in employer-sponsored health insurance coverage: are bad jobs getting worse? *J. Health Econ.* **19**(1), 93–119 (2000)
- Gilleskie, D., Lutz, B.: The impact of employer-provided health insurance on dynamic employment transitions. *J. Hum. Resour.* **37**(1), 129–155 (2002)
- Gruber, J., Madrian, B.: Employment separation and health insurance coverage. *J. Public Econ.* **66**, 349–382 (1997)
- Gruber, J., Madrian, B.: Health Insurance, Labor Supply, and Job Mobility: A Critical Review of the Literature. Economic Research Initiative on the Uninsured (ERIU) Working Paper 4 (2001)
- Haas, J., Swartz, K.: The relative importance of worker, firm, and market characteristics for racial/ethnic disparities in employer-sponsored health insurance. *Inquiry* **44**(3), 280–302 (2007)
- Holahan, J.: Changes in Employer-Sponsored Health Insurance Coverage. Snapshots of America’s Families #9. The Urban Institute, Washington, DC (2003)
- Kapur, K.: The impact of health on job mobility: a measure of job lock. *Ind. Labor Relat. Rev.* **51**(2), 282–298 (1998)
- Madrian, B.C.: Employment-based health insurance and job mobility: is there evidence of job-lock? *Q. J. Econ.* **109**(1), 27–54 (1994)
- Madrian, B.C.: Health insurance portability: consequences of COBRA. *Regul.: Cato Rev. Bus. Gov.* **21**(1), 27–31 (1998)
- Madrian, B.C., Lefgren, L.J.: An approach to longitudinally matching current population survey (CPS) respondents. *J. Econ. Soc. Meas.* **26**, 31–62 (2000)
- McBride, T.D.: Uninsured spells of the poor: prevalence and duration. *Health Care Finance. Rev.* **19**(1), 145–161 (1997)

- Monheit, A.C., Vistnes, J.P., Zuvekas, S.H.: Stability and change in health insurance: new estimates from the 1996 MEPS. MEPS Research Findings No.18. AHRQ Pub. No. 02-0006. Agency for Healthcare Research and Quality, Rockville, MD (2001)
- Neumark, D., Kawaguchi, D.: Attrition bias in labor economics research using matched CPS files. *J. Econ. Soc. Meas.* **29**, 445–472 (2004)
- Perry, C.W., Rosen, H.S.: Insurance and the Utilization of Medical Services Among the Self-Employed. CESifo Working Paper No. 580 (2001)
- Reschovsky, J.D., Hadley, J., Nichols, L.: Why do hispanics have so little employer-sponsored health insurance? *Inquiry* **44**(3), 257–79 (2007)
- Schoen, C., DesRoches, C.: Uninsured and unstably insured: the importance of continuous insurance coverage. *Health Serv. Res.* **35**(1), 187–206 (2000)
- Short, P.F., Gaefe, D.R.: Battery-powered health insurance? Stability in coverage of the uninsured. *Health Aff.* **22**(6), 244–255 (2003)
- Simon, K., Schroeder, M.: The Effect of Involuntary Job Displacement on Health Insurance. Unpublished manuscript, Cornell University (2006)
- Steward, J.: Using March CPS data to analyze labor market transitions. *J. Econ. Soc. Meas.* **32**, 177–197 (2007)
- Sudano, J.J., Baker, D.W.: Intermittent lack of health insurance coverage and use of preventive services. *Am. J. Public Health* **93**(1), 130–138 (2003)
- Swartz, K.: Interpreting the estimates from four national surveys of the number of people without health insurance. *J. Econ. Soc. Meas.* **14**, 233–242 (1986)
- Swartz, K., McBride, T.D.: Spells without health insurance: distributions of durations and their link to point-in-time estimates of the uninsured. *Inquiry* **27**(Fall), 281–288 (1990)
- Swartz, K., Marcotte, J., McBride, T.D.: Personal characteristics and spells without health insurance. *Inquiry* **30**(Spring), 64–76 (1993)
- Zuckerman, S., Haley, J.: Variation and Trends in the Duration of Uninsurance, Urban Institute Discussion Paper 04–10. The Urban Institute, Washington, DC (2004)