WHERE DO THE SICK GO?
HEALTH INSURANCE AND EMPLOYMENT IN SMALL AND
LARGE FIRMS

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ABSTRACT

Small firms that offer health insurance to their employees may face variable premiums if the firm hires an employee with high-expected health costs. To avoid expensive premium variability, a small firm may attempt to maintain a workforce with low expected health costs. In addition, workers with high-expected health costs may prefer employment in larger firms with health insurance rather than in smaller firms. This results in employment distortions. We examine the magnitude of these employment distortions using the Medical Expenditure Panel Survey from 1996 to 2001. We estimate the magnitude of distortions in hiring, employment, and separations. Furthermore, we examine the effect of state small group health insurance reforms that restrict insurers' ability to deny coverage and restrict premium variability on employment distortions in small firms relative to large firms. We find that workers with high-expected health cost are less likely to be new hires in small firms that offer health insurance, and are less likely to be employed in insured small firms. However, we find no evidence that state small group health insurance reforms have reduced the extent of these distortions. Estimating the magnitude of employment distortions in insured small firms, and understanding the effect of small group regulation on these distortions is essential in refining reforms to the small group health insurance market.

The difficulties that small firms face in obtaining and maintaining health insurance for their employees have been widely documented (Brown, Hamilton and Medoff, 1990; McLaughlin,1992; Fronstin and Helman, 2000). Only 45% of firms with fewer than 50 employees offer health insurance compared to 97% of firms with 50 or more employees (AHRQ, 2002). This low proportion has been attributed, in part, to the high administrative cost of health insurance for small firms, the low demand for insurance among workers in these firms, and the unwillingness of insurers to take on small firm risks (McLaughlin, 1992, Fronstin and Helman, 2000, Monheit and Vistnes, 1999).

In recent decades, small firms that provide health insurance to their employees were in a precarious position. Their premiums were calculated yearly, based on the expected value of their health care utilization. Hence, a single high cost employee could lead to a substantial surcharge on the premiums for the firm (Zellers, McLaughlin, and Frick, 1992). In a survey of small employers that did not offer health insurance, 75 percent claimed that an important reason for not offering insurance was high premium variability (Morrisey, Jensen and Morlock, 1994). Concerns about these problems with the small group health insurance market fueled the passage of numerous state small group health insurance reforms in the 1990s that implemented premium rating reforms and restrictions on pre-existing condition exclusions. While a few states have implemented premium rating reform that has severely restricted small group insurers' ability to use health status to set premiums, in most states, these reforms have been more moderate.

Assuming that firms are unable to perfectly tailor individual wages to health insurance costs, unexpectedly high premiums may impose large costs on small firms. Paying high premiums, possibly financed by borrowing at high interest rates, may increase the risk of bankruptcy. If small firms choose not to pay high premiums, and instead drop insurance coverage, they renege on the implicit compensation contract with workers. Faced with this predicament, small firms may choose to prevent expensive premium variability by maintaining a work force that has a low expected utilization of health care services. Thus, the link between employment and health insurance in small firms may result in a welfare loss if it prevents individuals with high-expected health

costs from being employed in small firm jobs in which they may have high match specific productivity.

Employers may obtain information about employees' medical conditions in several ways. Before the passage of the 1990 Americans with Disabilities Act (ADA), half of all employers conducted pre-employment medical examinations (OTA, 1988). Most small group employers required the completion of a family health questionnaire for insurance coverage (Zellers et al., 1992, Cutler 1994). While ADA now restricts employer inquiries on employee health, ADA does not apply to firms with under 15 employees. In addition, employer compliance with the ADA may be hindered because its stipulations about pre-employment health inquiries are vague. Medical inquires are allowed if they pertain to the applicant's ability to perform the job. In addition, medical information is explicitly allowed in the use of medical underwriting for insurance (Epstein, 1996). The media continues to report cases where employers easily obtain employee medical records (Rubin, 1998), or employees have been laid-off because of high health costs (O'Connor, 1996), or employee premiums have been adjusted to reflect the employee's claims experience (Kolata, 1992).

The Health Insurance Portability and Accountability Act of 1997 (HIPAA) includes a nondiscrimination provision that bars a group health plan or issuer from discriminating in eligibility or contributions on the basis of a health status-related factor. However, HIPAA allows medical underwriting and allows insurers to rate groups of employees based on health status as long as the premium rate for all employees is blended. This stipulation prevents employers from requiring higher cost employees to contribute a higher premium share, but does not shield employers from bearing the costs for a sick worker.

Economists have typically believed that health insurance is an attribute of "good jobs" and workers do not choose jobs based on whether or not the job provides health insurance. In fact, this precept is behind the notion that employment is a mechanism for minimizing adverse selection in the market for health insurance (see, for example, Gruber 2000). However, a number of recent studies have suggested that worker demand for health insurance may play an important role in employment decisions. Workers with high-expected family costs may prefer jobs that offer health insurance, and conversely,

workers with low preferences for health insurance may sort into jobs that lack health insurance. (Monheit and Vistnes, 1999, Monheit and Vistnes, 2004, Royalty and Abraham, 2005, Bundorf and Pauly, 2004).

In this paper, we use the Medical Expenditure Panel Survey (MEPS) from 1996 to 2001 to examine the magnitude of employment distortions for workers with high-expected health costs. Since health insurance and employment are linked, health insurance may be an important determinant of employment outcomes. High-expected health costs may reduce the probability that workers are employed in firms where they have the highest match specific productivity. We estimate the magnitude of distortions in hiring, employment, and separations. Furthermore, we examine the effect of state small group health insurance reforms that restrict insurers' ability to deny coverage and restrict premium variability on employment distortions in small firms relative to large firms. Estimating the magnitude of employment distortions in insured small firms, and understanding the effect of small group regulation on these distortions is essential in refining reforms to the small group health insurance market.

Literature Review

The first literature that is relevant to this paper examines several issues that relate to small firms and health insurance. Cutler (1994) finds evidence that small firms are subject to a higher degree of premium variability than large firms. Moreover, small firms with young workers, high turnover or low wages tend to have the highest premium variability. The possibility of employment screening as a result of the incentives created by the small group health insurance market has been previously noted in the literature (Aaron and Bosworth, 1994; Madrian, 1994). Monheit and Vistnes (1994) find that the risk selection practices of insurers segment the small-group market so that only persons who are favorable health risks obtain employment related insurance. They find that the employees and dependents with coverage from small firm policies are in better health than those with non-group polices (when firm coverage was not available) or those who had no coverage. While these results may indicate the presence of employment distortions due to health insurance, it is also possible that we may see these results if individuals in good jobs that offer health insurance are in better health than those who are

not offered health insurance. Olson (1993) finds that individuals who say that they are in bad health are far less likely to have health insurance in industries that have a high proportion of small firms than in industries that have a high proportion of large firms. Using the 1987 NMES data, Kapur (2004) finds evidence of employment distortions in small firms that is consistent with underwriting rules in the small group health insurance market. Extension of this analysis to the 1996 MEPS is limited by the relatively small sample sizes of insured workers with adverse health conditions. Although not focused on small firms, Buchmueller (1995) finds that men in worse health are less likely to be insured.

Another relevant literature examines the impact of health insurance costs on wages and employment. There is evidence to suggest that rising health insurance costs have led to firms increasing hours worked by employees rather than employing more workers (Cutler and Madrian, 1998). Other work shows that the wages and the hiring probability of certain groups are sensitive to health insurance costs (Gruber, 1995; Sheiner, 1995; Scott, Berger and Garen, 1995). However, several recent papers fail to find robust estimates of the expected relationship between wages and health insurance (Jensen and Morrisey, 2001; Levy and Feldman, 2001; Simon, 2001).

Using the 1987 NMES data and the 2000 MEPS data, Monheit and Vistnes (1999, 2004) provide evidence that worker preferences play a role in employer provided health insurance, showing that workers with low preferences for health insurance sort into firms that do not offer health insurance. Royalty and Abraham (2005) demonstrate that workers with access to spouse health insurance sort into jobs that do not offer health insurance, again suggesting that worker demand for health insurance may play an important role in job choice. Bundorf and Pauly (2004) also find evidence that individuals who have high-expected health costs are more likely to obtain health insurance in the group market and in the individual health insurance market.

Research on the impact of state small group health insurance reform generally has shown a small effect or no effect on small firms' propensity to offer health insurance or on employees' insurance coverage (Sloan and Conover, 1998; Jensen and Morrissey, 1996; Zuckerman and Rajan, 1999; Monheit and Schone, 1998; Buchmueller and DiNardo, 1999; Hall, 1999; Marquis and Long, 2002). However, a few studies do find

modest effects of the reforms on insurance (Uccello, 1996; Hing and Jensen, 1999; Simon, 1999; Buchmueller and Jensen, 1997). Two existing studies examine the labor market effects of small group health insurance reform and find small or no effects; however, neither of these studies has access to detailed family health data (Simon and Kaestner, 2002; Kapur, 2003).

Theoretical Motivation

Employment Distortions

There are several reasons that the health insurance market may distort employment decisions in small firms. If providing health insurance for workers with high-expected health costs is more expensive for small firms, small firms may screen out high cost workers. On the other hand, workers with high-expected health costs may prefer jobs that offer health insurance. We consider several theoretical reasons why small firms may choose to screen out workers with high-expected health costs. We also consider the rationale behind sorting based on worker demand.

First, the health insurance market may lead to employment distortions in small firms by creating premium variability. Due to their size, if small firms hire randomly from an available pool of workers, small firms will face a more variable health insurance premium bill than larger firms that are more able to diversify health insurance premium costs internally. Assuming that firms are unable to fully pass on the premium bill to workers, unexpectedly high premiums may be expensive for firms since they may have to borrow to finance the high premiums. To avoid the cost of high health insurance premiums, small firms may choose to screen out workers that are likely to have high health insurance premiums.

Second, small firms may have a lower cost of screening out sick employees. In small firms, decision-making is more likely to be centralized, possibly with a single individual, the entrepreneur, making all employment decisions. In contrast, in large firms, employment decisions are more likely to be decentralized. Hence, in small firms it is relatively easy for the entrepreneur to screen out an individual with high-expected health costs. Moreover, most small firms are required to provide data on the family health status

of potential employees to their health insurance companies (U.S. Congress, 1988). This implies that the information required for employment screening is readily available to small firms. Therefore, the centralized decision making in small firms and the availability of health data to small firm entrepreneurs may lower the cost of screening in small firms. As a result, individuals with high-expected health costs are more likely to be screened out of small firms than large firms.

Third, it is possible that the administrative cost of charging each employee his or her health insurance cost may be large. As a result, firms may elect to charge each employee the average health insurance cost of the employee pool. If the search costs of finding a new job are higher than the extra share of health insurance costs, healthy workers will not quit. This pooling strategy implies that large firms can spread the high health insurance costs of one worker over their entire employee pool. However, small firms are unlikely to be able to successfully employ this strategy, since the high health insurance costs are spread over a much smaller number of workers. As a result, small firms may be compelled to charge each employee his or her own health insurance costs, or to screen out high cost employees.

Fourth, small firms are likely to have higher health insurance costs than large firms. Specifically, administrative costs decrease dramatically with firm size. Administrative costs are about 40 percent of claims paid in very small firms (under 5 employees), while they are only 5.5 percent of claims paid in the largest (10,000 or more employees) firms (Helms, Gauthier, and Campion, 1992). A worker with high health costs may be more expensive to insure in a small firm due to the fact that the administrative costs of processing claims is relatively larger for small firms than for large firms.

Worker demand for health insurance may also affect employment outcomes. Workers with high-expected health costs value jobs that provide health insurance more than other workers. Bhattacharya and Vogt (2004) have developed a model for worker sorting due to health insurance demand. In their model, firms set wages and health insurance offerings. Workers realize their health status and choose jobs based on this information. In the next period, workers can change their jobs based on their updated health status. In this model workers with poor health prefer jobs that offer health

insurance, however job switching costs may prevent some from moving to insured jobs. While it seems reasonable that workers with high-expected health costs sort into jobs that offer health insurance, it is less clear that these workers would prefer small or large firm jobs per se. Even though the propensity to offer health insurance differs substantially by firm size, health insurance policy quality is similar across small and large firms.[1] However, it is possible that other factors, such as the greater stability of large firm jobs and the increased plan choice in large firms may play a role in worker sorting.

State Small Group Health Insurance Reform

During the 1990s, most states implemented small group health insurance reform. These reforms tended to include the following components: guaranteed issue/renewal laws that mandated that insurance companies issue/renew some or all health insurance policies for small firms; portability and pre-existing condition limitation reforms that limited the time that insurers could exclude coverage for certain medical conditions; and premium rating reforms that restricted the factors that could be used to set health insurance premiums and restricted premium variability. Detailed descriptions of these reforms are in Appendix A. In 1997, the federal Health Insurance Portability and Accountability Act (HIPAA) mandated that guaranteed issue of health insurance for small firms. For many states, the existing state small group reform was equivalent to HIPAA's provisions; however, for others HIPAA's mandates changed the guarantee issue requirements.

Theoretically, the effect of state small group health insurance reforms and HIPAA on employment outcomes for workers with high-expected health costs is ambiguous. Pre-existing condition limitations may increase insured small firms' screening of individuals with adverse family health conditions since these health conditions must be covered by health insurance. The extent to which pre-existing condition limitations lead to higher health insurance premiums depends on the stringency of the rating reform. Since pre-existing condition limitation reforms lead to more extensive small firm health insurance coverage, these reforms may increase worker demand for small firm health insurance. However, ultimately, the worker response depends on workers' valuation of the

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[1] Author calculations using the KFF-HRET employer survey data.

additional health benefit relative to the cost in terms of reduced wages and/or higher health insurance premiums. Rating reforms that regulate premium variability and use of health factors in setting premiums can be expected to reduce the higher premiums associated with adverse health. Therefore, these reforms should increase insured small firm employment of workers with high-expected health costs. Guaranteed issue reforms are important in their interaction with rating reforms, since they mandate that insurers must continue to offer health insurance to small firms even at the newly regulated premiums. Without guarantee issue reform, rating reforms are toothless since insurers can cherry-pick low cost firms. Reforms were passed in packages in all states -- the theoretical effect of these reform packages on the employment distortions for individuals with adverse health is ambiguous.

Data

We use the Household Component of the 1996 – 2001 Medical Expenditure Panel Survey (MEPS) conducted by the Agency for Health Care Research and Quality. The MEPS has an overlapping panel design, in which the sample selected in any given year is followed for two calendar years (Cohen, 1997, 2000). Each family in the Household Component participated in five rounds of data collection over a two-year period. During each round, information on all family members' employment (including size of employer) and health insurance coverage (including whether employer-provided health insurance was offered) was collected.[2] In addition, a detailed set of variables on health, demographics, and health utilization were collected.

We also use a state small group reform database constructed using the information in Simon (1999), Kapur (2003), and Marquis and Long (2002). Our primary reform measure is a three category variable: no/weak reform, moderate reform or full reform.

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[2] The health insurance offer question asks if the person was offered health insurance through the employer. The employment size question asks the number of employees at the person's establishment of employment. Since health insurance decisions are likely to be made on the basis of firm size rather than establishment size, we also used a question that asked if the firm had multiple locations to restrict the sample to single location firms as a specification check.

States with guaranteed issue reform and rating reform that restricted premium variable using rate bands were classified as having moderate reform. States with guaranteed issue and rating reform that included community rating or modified community rating were coded has having full reform. All other states were classified as having no reform or weak reform. We experimented with a host of other specifications for the reforms. We coded individual components of the reforms such as guaranteed issue reform, rating and portability/pre-existing condition exclusion reforms (Kapur, 2003, Marquis and Long 2002). We also used a measure of premium variability allowed by the rating reforms. We developed several alternative measures of the package of reforms based on the extent of allowable premium variability and guaranteed issue and renewal reforms. After the implementation of HIPAA, all states were coded as having guaranteed issue reforms. The distribution of our analytic database by reform type and year is in Appendix Table 1.

The public use MEPS data do not include an identifier for state of residence; therefore, we conducted the state reform analysis at the AHRQ Data Center in Rockville, MD., where we had access to a database that merged our reform variables to the MEPS-HC analysis files.

Econometric Framework: Employment Distortions

We estimate the magnitude of three types of employment distortions: (a) Hiring Distortions: Are small firms that offer health insurance more or less likely to hire workers with sick families?, (b) Employment Stock Distortions: Are small firms that offer health insurance more or less likely to employ workers with sick families?, (c) Separation Distortions: Are small firm more likely to layoff insured workers with sick families?

The estimate for employment distortions is most likely to be consistent if employees in small firms with health insurance are compared to a group that has similar observable job and demographic characteristics. The means presented in table 1 show the characteristics of employees in four groups -- those employed in small firm that offer health insurance, large firms that offer health insurance, small firms that do not offer health insurance and large firms that do not offer health insurance. For most demographic and job characteristics, such as age, sex, marital status, education, and wage, employees in small firms with health insurance are more similar to employees in large firms with

health insurance than to employees without health insurance. However, there are several statistically significant differences in job and demographic attributes between insured small firm workers and insured large firm workers. The model estimation controls for these differences.

Hiring Distortions

We estimate a multinomial logit model with a four-level dependent variable, Y_i, with different values for each of the following employment outcomes: small firm worker and offered health insurance, large firm worker and offered health insurance, small firm worker and not offered health insurance, and large firm worker and not offered health insurance.

$$\Pr(Y_i = j) = f(\alpha_j + \beta_j * HC_i + Z_i'\gamma_j)$$

HC denotes the expected health costs. We construct three measures of expected health costs. These include a count of medical conditions in the family, an indicator for the presence of any family medical conditions, and an index of expected health costs (log transformed) based on family medical conditions.[3] The matrix Z consists of control variables. Demographic controls include schooling, sex, age, age squared, marital status, race, family size, and spouse work status. We also included job controls – industry indicators, occupation indicators, wage and union status, and region, MSA and year dummies. Since job controls are possibly endogenous to the employment outcome, we also ran these models excluding the job controls and found very similar results.[4]

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[3] We used the following adult medical conditions: angina, MI, cancer, diabetes, arthritis, stroke, chronic obstructive pulmonary disease, asthma, obesity, liver disease, depression, HIV, renal disease, CHF, hypertension, hyperlipidemia, anxiety, psychological disorder, irritable bowel disease, epilepsy, thyroid disease, ulcers, migraine. We used the following child conditions: asthma, diabetes, sinusitis, upper respiratory infections, seizures, cerebral palsy, mental retardation, cancer, appendicitis, hemanemia, congenital heart disease, renal disease, UTI, depression, ADHD, otitis media, and acne.

[4] One concern is that health may be important due to the physical demands of the job. As a check, we included interactions of the occupation and industry indicators with worker health, and found that the results on family health were robust.

We constructed the index of expected health costs by estimating separate models for adult and child medical expenditures on the sub-sample of individuals with private healthinsurance using a one-part generalized least squares model with a gamma distribution and a square root link. This model provided the best fit for health costs (Manning and Mullahy, 2001). The health cost models included a full set of medical condition indicators and controls for demographic variables. Coefficients on medical conditions from these models provided the weights used to construct the predicted cost index.[5]

The multinomial logit model treats both small firm employment and health insurance as endogenous variables that are jointly incorporated into the four-level dependent variable. A Hausman test shows that assumption of the Independence of Irrelevant Alternatives cannot be rejected in this application. We correct the standard errors for clustering within family.

We use the estimates from the multinomial logit model to compare the effect of HC on insured small firm new hires to insured large firm new hires by reporting relative risk ratios (RRR) for insured small firm employment with insured large firm employment as the base category. As discussed earlier, this strategy enables us to compare groups that are comparable in demographic and job characteristics. The RRR based on β, the coefficient of interest, is the effect of the expected health cost of a worker on the probability that he or she is employed in an insured small firm relative to an insured large firm. We would expect this RRR to be less than 1 and significant if individuals with high-expected health costs are less likely to be employed at small firms with health insurance.

Even if employees in small firms with health insurance are found to have lower expected health costs than those in large firms with health insurance, this result could be attributed to all small firms being less likely to employ sick workers. For example, if small firms have only a single worker experienced in a certain task, absenteeism due to sickness could be a bigger problem for a small firm. Hence, small firms may prefer to employ healthier workers. Therefore, there is a concern that the health status of a worker

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5 To reduce the possible endogeneity of medical conditions with respect to policy quality and job change, we re-specify the health measures to include only those conditions that are discovered before the survey year. We find no qualitative change in the results.

may have an effect on the probability of being employed in a small firm, irrespective of health insurance. Alternatively, a worker demand story may suggest that worker with high-expected health costs prefer insured large firm jobs to insured small firm jobs because they are more stable and have greater health plan choice. Therefore, we compare the effect of health on the probability of being in a small firm with health insurance with the effect of health on the probability of being in a small firm without health insurance using estimates from the multinomial logit model.

We also use the estimates from the multinomial logit model to demonstrate the effect of health on the probability of being employed in a large firm that offers health insurance compared to the probability of being hired in a large firm that does not offer health insurance. These results can be compared to those that contrast small firms with health insurance to small firms without health insurance to show that the insured small firm distortions measured using the first two comparisons are not generalizable to large firms.

Table 2 presents the results from the multinomial logit models. Each row of the table represents results from a different multinomial logit model. The models vary in their definition of firm size (less than 25 employees vs. less than 50 employees), and in their family health measures (number of family conditions, whether there are any family conditions, and predicted medical expenditures). The first column two columns contain the results for insured small firm workers relative to the base category of insured large firm workers. The third and fourth column contain results for insured small firm workers relative to uninsured small firm workers, and the last two columns contain results for insured large firm workers relative to uninsured large firm workers. Significance tests for RRRs test the difference of the RRR from 1.[6]

The results in columns 1 and 2 show that workers with adverse family health are significantly less likely to be employed in insured small firms relative to insured large firms. This result is statistically significant for five of the six reported models. For the indicator for "any conditions" in the model where small firms are defined as those that

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6 The relative risk ratio for insured small firm employment relative to insured large firm employment for the number of conditions measures the effect of a one-unit increase in conditions on Prob(Insured Small Firm Worker)/Prob(Insured Large Firm Worker).

employ less than 25, the relative risk of being an insured small firm worker relative to an insured large firm worker is 86% as a result of a having a family medical condition. The RRRs in the column 3 and 4 show that workers with sick families are less likely to be new hires in small firms that offer health insurance relative to small firms that do not offer health insurance. This comparison shows that hiring workers with healthy families is not simply a characteristic of all small firms. Columns 5 and 6 show that there is no effect of family health on whether workers are new hires in large firms that offer health. The full results from the multinomial logit model are in appendix table 2.

The results from table 2 show that workers with adverse family health are less likely to be hired into small firms that offer health insurance compared to any other type of firm.

Stock Distortions

We estimate multinomial logit models for the stock of all employees, following the same structure as the models for new hires. The results in table 3 show that workers with families with adverse health are less likely to be employed in small firms that offer health insurance compared to large firms that offer health insurance. This result is statistically significant for five of the six models presented in table 3. Even though the point estimates suggest that workers with sick families are less likely to be employed in small firms that offer health insurance compared to small firms that do not, these estimates are not statistically significant. The results that compare workers in large firms that offer health insurance to workers in large firms that do not offer health insurance show no consistent pattern on the employment of workers with sick families. The full results from the multinomial logit model are in appendix table 3. We expect that the largest effect of health would occur at the time of hiring, therefore, it is not surprising that the effects for all employees are slightly weaker than those for new hires.

Separation Distortion

Ex ante, we do not expect separation distortions to be large since separations are costly in terms of lost on-the-job training and unemployment insurance taxes. Firms should prefer to screen at the time of the hiring decision, and workers should prefer to

make decisions on their preferred jobs at the time of hiring. However, given that expected health costs at the time of hiring could be lower than the expected costs at a later date due to imperfect information about future health costs, separation distortions could be present.

To test the importance of layoff and quit distortions, we determine if workers with high family health costs employed in small firms with health insurance are more likely to be laid-off or more likely to quit than workers in small firms without health insurance and workers in large firms. Unlike the hiring distortion estimation, here the desired insurance variable is whether or not a worker holds employer provided health insurance, not whether or not a worker was offered health insurance, since only individuals who hold health insurance contribute to employers' health insurance costs.

We estimate a multinomial logit model where Y, the job transition, can take any of three values denoted by j – stay, layoff, or quit.[7] The sample consists of individuals employed at any time during the sample period.

$$\Pr(Y = j) = f(\alpha_j + \beta_{1j} * HC + \beta_{2j} * SmallFirm + \beta_{3j} * HI + \gamma_{1j} * HC * SmallFirm$$
$$+ \gamma_{2j} * HC * HI + \gamma_{3j} * HI * SmallFirm + \delta_j * HC * HI * SmallFirm + Z'\eta_j)$$

where Z is the vector of controls. HC is a vector of expected health costs, and HI denotes employer provided health insurance. If small firms screen high cost workers, the coefficient on the interaction of expected health cost, small firm and health insurance, δ_j, would be positive when j denotes a layoff, assuming that wages are relatively inflexible. Alternatively, if wages are flexible, we expect that β_{3j}, would depend on worker valuation of health insurance relative to wages when j denotes a quit.

Since insured small firm workers are the most similar to insured large firm workers, we determine the sensitivity of our results to this specification by reestimating this model on only insured workers, and estimating the effect of interest with an interaction term between small firm and adverse health. We also reestimate the model only on small firm workers, and estimate the interaction between adverse health and

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7 Using a Hausman test, we determined that this model did not violate the Independence of Irrelevant Alternatives assumption of the multinomial logit model.

health insurance to determine if sickness has a differential effect on insured small firm workers compared to uninsured small firm workers.

Table 4 presents the results from the multinomial logit models for separations. Our results for the full sample, which includes workers in firms that offer health insurance and workers in firms that do not offer health insurance, show that workers with families with adverse health who are employed in small firms with health insurance are less likely to quit their jobs and are also less likely to be laid off. For the insured sub-sample, these results are only statistically significant whether small firms are defined as employing less than 50 workers. However, results from the small firm sample show no statistically different effects of sickness for insured small firm workers compared to uninsured small firm workers. Results from the full multinomial logit model are in appendix table 4.

The results are somewhat mixed across the samples. The results from the small firm sample that show no effect of health on separations appear to be more plausible that the results that show that insured small firm workers are less likely to separate than workers in insured large firms. If small firms were screening out workers with high health costs, we would expect these workers to be more likely to be laid off. If, on the other hand, the separation distortions were due to worker demand for health insurance, we would not expect workers in small firms with health insurance to be less likely to separate from their jobs than workers in large firms with health insurance. One possible explanation is that workers who have high health costs who are hired into insured small firms have high match specific productivity with their jobs, and the fact that they are particularly valuable to their firms more than compensates for their high health costs; therefore, they are less likely to separate.

Supply Side versus Demand Side

An intriguing question is whether employment distortions are driven by firms screening out sick workers (a demand side effect), or by sick workers choosing not to work in small firm (a supply side effect). In a market-clearing model with fully adjusting wages, it is impossible to distinguish between a demand and a supply side effect. However, if we assume that wages are somewhat rigid, then the distinction between demand and supply side effects becomes meaningful.

Our results have not provided any definitive evidence of either a firm side or worker side story; however there is some suggestive evidence of firm screening. We have found that workers with adverse family health are less likely to be hired into small firms that offer health insurance compared to any other type of firm. This result is consistent with small firms screening out high cost workers. If worker demand were responsible for our results, we would expect to see workers with high-expected costs flock to jobs that offer health insurance in large and small firms. However, we find that workers with adverse family health are no more likely to be in large firm jobs that offer health insurance than in large firm jobs with no health insurance, and they are less likely to be small firm insured jobs than in small firm uninsured jobs. Furthermore, health insurance policies in large firms are no more generous than those in small firms, so policy quality cannot explain the fact that workers with adverse family health are more likely to work in insured large firm jobs than in insured small firm jobs.[8] However, the results from the separation models did not shed any light on the role of firm versus worker side effects.

We also empirically check if wages for insured sick small firm employees are lower than wages for insured sick large firm employees. If we assume that sick workers employed in insured small firms are no more productive that sick workers employed in insured large firms, then similar wages by firm size would again suggest that small firms would have an incentive not to employ workers with high-expected health costs. We find no difference in the wages between insured workers with high-expected health costs in large and small firms.

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8 Authors calculations based on the KFF-HRET data.

Effect of State Reform on Employment Distortions

We reestimated the multinomial logit models for new hires, the stock of workers, and for separations, after including measures of state small group health insurance reform and interactions of the reforms with the family health measures. The model for new hires and the stock is as follows:

$$\Pr(Y_i = j) = f(\alpha_j + \beta_j * HC_i + R_i{}'\partial_j + HC_i * R_i{}'*\lambda_j + Z_i{}'\gamma_j)$$

where R_i is a vector of state reform measures and the parameter of interest is the interaction between R and HC (health conditions). The vector Z contains all demographic and job controls used in the multinomial models described earlier in this paper, and also includes a full set of state dummies.

Table 5A contains selected coefficients from a multinomial logit model where a small firm is defined as under 25 and the health measure is the number of conditions. Moderate Reform is defined as state small group reform that includes guaranteed issue of some or all products and rate bands. Strong reform is defined as reform that includes guaranteed issue and modified community rating or community rating. The omitted category is no/weak reform. We find no evidence that reforms changed employment patterns. The results on the interaction between reform and health are statistically insignificant for all models. Results for alternative multinomial logit models with different measures of health and firm size are similar, and are available on request.

Table 5B presents the results from a multinomial logit model of separations. We modified the multinomial logit model, estimated on the insured sample, by entering measures of state reforms and by interacting these measures with employment in a small firm and with health. This model also included a full set of state dummies. As with the hiring and stock models, the interaction of small firm, number of family conditions, and reform is statistically insignificant, suggesting that there is no evidence that the reforms have had an impact on separations. Results for alternative multinomial logit models with different measures of health and firm size are similar, and are available on request.

We also found small and statistically significant effects for state reforms on each type of employment distortion using alternative measures of state reforms, such as individual indicators for portability, type of rating reform, guaranteed issue reforms; for

alternative definitions of the package of reforms; and for measures of the allowable premium variability. These results are available on request.

Conclusion

This paper determines if the link between employment and health insurance leads to distortions in small firm employment. The estimation results show that workers with high-expected health costs are less likely to join small firms that offer health insurance than any other type of firm. These workers are also less likely to be employed in small firms that offer health insurance. These results are consistent with the notion that small firms that offer health insurance screen out high cost workers to control their health insurance costs. However, this evidence is suggestive, not conclusive.

Workers with high-expected health costs are likely to prefer jobs with good health insurance policies. However, our results can be only partially explained by worker sorting. We find that workers with high-expected health costs are less likely to be new hires in small firms that offer health insurance than in small firms that do not offer health insurance, contrary to the predications of worker sorting framework. We also find no evidence that workers with high-expected health costs are more likely to be in large firms that offer health insurance compared to large firms that do not offer health insurance, as would have been predicted from a worker sorting model. However, these results do not imply that worker sorting has no role in explaining the employment patterns for workers with high-expected health costs. Most likely, a combination of firm screening and worker sorting factors are responsible for the employment outcomes that we observe.

A pertinent question in evaluating our results is whether firms can legally screen workers with high-expected health costs from employment. ADA prohibits employment screening for workers with qualifying disabilities; however, ADA does not apply to firms with fewer than 15 employees, leaving these firms open to employment screening. Furthermore, we observe the strongest evidence for firm screening during the hiring process, when screening may be hard to detect or prove.

State small group health insurance reforms coupled with federal HIPAA regulation appears to have had little effect on the pattern of employment distortions for workers with high-expected health costs. Employment distortions appear to have

persisted in small firms, despite the wide implementation of these small group health insurance reforms. Premium rating regulations, an important component of the state small group reforms, were quite weak in most states. It is possible that the lack of strong price regulation muted any potential effect of these reforms on small firm employment patterns.

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Appendix A: Description of Small Group Health Insurance and Other Reforms

Virtually all states have passed some small group health insurance reform. Although the extent and approach of the reforms vary from state to state, they contain broadly similar elements. These elements include:

Portability and Pre-existing Condition Limitation Reforms

Health plans often impose waiting periods for coverage. These waiting periods may pertain to all coverage or coverage for pre-existing health conditions. In some instances, health plans permanently exclude coverage for specific health conditions. State reforms limit the length of time for which pre-existing health conditions can be excluded from coverage. Most states limit the waiting period for coverage for pre-existing conditions to a maximum of 12 months, and allow only conditions present in the past 6 months to be defined as pre-existing.

Portability reforms ensure that an individual who is covered by health insurance on a previous job does not face any new pre-existing condition exclusions or waiting periods as a result of changing jobs. Note that portability reforms do not place any restrictions on either premiums charged by insurance companies to small firms or premium contributions that firms charge workers. Portability and pre-existing condition limitation laws have been enacted at the same time in most states.

Pre-existing condition exclusion limitations are reinforced by the Health Insurance Portability and Accountability Act (HIPAA). In essence, these laws virtually remove small group insurers' ability to exclude coverage for certain conditions or to deny coverage in small firm policies. Therefore, today, charging higher premiums, subject to the state's premium rating reforms, may be small group insurers' only available underwriting option.

Rating Reforms

State reforms have placed restrictions on the factors that can be used to set health insurance premiums, and/or limited the rate variations to specified ranges. Most states' premium rating reform follows the rate-banding approach that limits insurers to a set number of classes for which they can charge separate rates. The reform restricts the variation in premiums that the insurer can charge to firms within each of these classes

and restricts the variation allowed between business classes. Most states allow nine business classes, about 15-30 percent premium variation within and between classes, although these numbers vary somewhat from state to state. About 10 states have implemented adjusted community rating where the use of claims experience and health factors in setting premiums has been restricted. The use of factors such as group size, family type, age and other demographic variables to set premiums is generally allowable.

It is plausible that these restrictions on premiums may have limited premium variability in small firms. In addition, these reforms may succeed in reducing premiums for the sick. However, since claims experience can be used to define classes in the rate-banding approach, in practice, in most states, premiums still do vary substantially due to claims experience and the health characteristics of the insured (GAO, 1995; Hall, 1999).

Guaranteed Issue and Guaranteed Renewal Reforms

Every state that has passed small group insurance reform, except Georgia, has included guaranteed renewal reform in its package. This reform requires insurers to renew coverage for all groups, except in cases of non-payment of premium or fraud. Guaranteed issue legislation, on the other hand, is excluded from the reform packages of eight states that have passed guaranteed renewal laws. Some guaranteed access legislation requires a guarantee only with respect to one or two specific benefits plans, while others require all insurance products to comply with the legislation. Guaranteed access ensures that insurers are unable to circumvent rating reform by insuring only low cost firms.

The effect of the small group health insurance reforms on small firm employment may be muted by the fact that most small employers are unaware of small group health insurance reform. In particular, only 20% of small employers realized that the new rating reforms spread the costs of insuring sick workers across a large pool of workers, and only 35% understood that there were limits on what insurers could charge employers with sick workers (Fronstin and Helman, 2000).

TABLE 1: MEANS IN THE MEDICAL EXPENDITURE PANEL SURVEY (1996-2001)

	Small Firms		Large Firms	
	Offer HI	Don't Offer HI	Offer HI	Don't Offer HI
Demographics				
Age	38.93	34.57	40.11	32.97
Female	0.49	0.53	0.47	0.57
Married	0.48	0.38	0.51	0.33
White	0.80	0.71	0.76	0.66
Black	0.09	0.09	0.12	0.15
Hispanic	0.09	0.16	0.08	0.15
Other race	0.03	0.04	0.04	0.05
Family size	2.83	3.09	2.82	3.13
Less than high school	0.07	0.22	0.07	0.19
High School	0.57	0.60	0.50	0.58
College	0.19	0.09	0.23	0.13
More than College	0.07	0.03	0.11	0.04
Other degree	0.10	0.06	0.08	0.06
Health				
Number of Medical Conditions	1.96	2.04	2.02	2.00
Any Medical Conditions	0.55	0.55	0.57	0.55
Predicted Medical Expenses	1437.85	1559.82	1460.56	1501.52
Job Characteristics				
Wage	14.42	8.90	16.95	9.47
Union	0.09	0.01	0.21	0.06
Dual worker family	0.66	0.68	0.67	0.68
Other Characteristics				
Region: Northeast	0.17	0.16	0.19	0.19
Region: Midwest	0.25	0.22	0.25	0.23
Region: South	0.36	0.37	0.35	0.33
Region: West	0.22	0.25	0.21	0.25
MSA	0.80	0.78	0.84	0.83
Number of Observations	9010	9018	28989	6446

TABLE 2: MULTINOMIAL LOGIT MODELS OF NEW HIRES (1996-2001)

Categories: Small firm HI, Large firm HI, Small firm no HI, Large firm no HI
Alternative definitions of health and firm size

	Small Firm HI vs. Large Firm HI		Small Firm HI vs. Small Firm no HI		Large Firm HI vs. Large Firm no HI	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Small Firm: Less than 25						
Number of conditions	0.942	0.026 **	0.946	0.026 **	1.012	0.022
Any conditions	0.860	0.062 **	0.861	0.065 **	1.073	0.067
Predicted expenditures	0.981	0.010 *	0.978	0.010 **	1.006	0.008
Small Firm: Less than 50						
Number of conditions	0.952	0.023 **	0.957	0.022 *	1.024	0.025
Any conditions	0.901	0.061	0.891	0.058 *	1.120	0.078
Predicted expenditures	0.985	0.009 *	0.982	0.009 **	1.012	0.010
Number of observations	12059					

Note: All models include worker education, sex, age, marital status, race, family size, wage,
  union, industry, occupation, spouse work status, MSA, region and year dummies.
** denotes significance at the 5% level. * denotes significance at the 10% level.

TABLE 3: MULTINOMIAL LOGIT MODELS OF STOCK (1996-2001)

Categories: Small firm HI, Large firm HI, Small firm no HI, Large firm no HI
Alternative definitions of health and firm size

	Small Firm HI vs. Large Firm HI		Small Firm HI vs. Small Firm no HI		Large Firm HI vs. Large Firm no HI	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Small Firm: Less than 25						
Number of conditions	0.985	0.012	0.989	0.014	0.983	0.015
Any conditions	0.909	0.030 **	0.966	0.039	1.027	0.040
Predicted expenditures	0.988	0.004 **	0.993	0.005	1.001	0.005
Small Firm: Less than 50						
Number of conditions	0.983	0.010 *	0.986	0.013	0.989	0.016
Any conditions	0.923	0.028 **	0.963	0.035	1.075	0.047 *
Predicted expenditures	0.989	0.004 **	0.992	0.005	1.007	0.006
Number of observations	52437					

Note: All models include worker education, sex, age, marital status, race, family size, wage,
   union, industry, occupation, spouse work status, MSA, region and year dummies.
** denotes significance at the 5% level. * denotes significance at the 10% level.

TABLE 4: MULTINOMIAL LOGIT MODELS OF SEPARATIONS (1996-2001)

Categories: Quit, Layoff, Stay. Alternative definitions of health and firm size

	Full Sample				Insured Sample				Small Firm Sample			
	Quit/Stay		Layoff/Stay		Quit/Stay		Layoff/Stay		Quit/Stay		Layoff/Stay	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Small Firm: Less than 25												
Number of conditions*HI*Small Firm	0.938	0.030 **	0.928	0.038 *	0.963	0.025	0.956	0.032	1.001	0.026	1.009	0.034
Any conditions*HI*Small Firm	0.859	0.084	0.786	0.114 *	0.956	0.085	0.818	0.115	1.006	0.113	1.187	0.296
Predicted expenditures*HI*Small Firm	0.975	0.015 *	0.948	0.021 **	0.991	0.012	0.972	0.018	0.998	0.015	1.022	0.022
Small Firm: Less than 50												
Number of conditions*HI*Small Firm	0.931	0.025 **	0.928	0.031 **	0.947	0.019 **	0.959	0.024 *	0.998	0.023	1.017	0.028
Any conditions*HI*Small Firm	0.811	0.068 **	0.830	0.102	0.863	0.069 *	0.834	0.105	0.984	0.093	1.212	0.163
Predicted expenditures*HI*Small Firm	0.961	0.014 **	0.945	0.020 **	0.978	0.011 **	0.975	0.016	0.997	0.013	1.024	0.018

Note: All models include the reported health measure, firm size, health insurance, and all two-way interactions between these three variables.
  Models also include worker education, sex, age, marital status, race, family size, wage, tenure union, industry, occupation,
  spouse work status, MSA, region and year dummies.
  For the insured sample, the HI control and interactions are redundant and not included in the model
  For the small firm sample, the small firm control and interactions are redundant and not included in the model
** denotes significance at the 5% level. * denotes significance at the 10% level.

TABLE 5A: EFFECT OF STATE LAWS ON NEW HIRE AND STOCK DISTORTIONS

Multinomial logit model. Categories: Small firm HI, Large firm HI, Small firm no HI, Large firm no HI
Small firm: employs less than 25

	Small Firm HI vs. Large Firm HI		Small Firm HI vs. Small Firm no HI		Large Firm HI vs. Large Firm no HI	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
New Hire Model						
Number of conditions	0.984	0.057	0.943	0.053	0.969	0.045
Moderate Reform	1.082	0.192	1.148	0.217	0.832	0.181
Strong Reform	0.819	0.360	0.870	0.441	1.104	0.336
Moderate Reform*Conditions	0.936	0.062	1.009	0.065	1.053	0.046
Strong Reform*Conditions	0.975	0.079	1.020	0.079	1.079	0.059
Stock Model						
Number of conditions	0.988	0.026	0.940	0.030	0.946	0.036
Moderate Reform	0.984	0.077	0.865	0.087	0.921	0.121
Strong Reform	1.054	0.193	1.166	0.286	0.835	0.315
Moderate Reform*Conditions	0.993	0.029	1.079	0.037	1.062	0.034
Strong Reform*Conditions	1.002	0.035	1.021	0.042	1.088	0.041

Note: All models include worker education, sex, age, marital status, race, family size, wage,
  union, industry, occupation, spouse work status, MSA, state and year dummies.
** denotes significance at the 5% level. * denotes significance at the 10% level.

TABLE 5B: EFFECT OF STATE LAWS ON SEPARATIONS

Multinomial logit model: Categories: Quit, Layoff, Stay
Small firm: employs less than 25

	Insured Sample			
	Quit/Stay		Layoff/Stay	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Conditions	0.995	0.061	1.055	0.083
Small Firm	1.287	0.177 *	1.430	0.302 *
Moderate Reform	0.788	0.110 *	1.017	0.205
Strong Reform	1.378	0.390	1.346	0.527
Small Firm*Conditions	0.875	0.113	0.871	0.141
Small Firm*Moderate Reform	0.958	0.147	0.965	0.229
Small Firm*Strong Reform	0.973	0.171	0.709	0.196
Conditions*Moderate Reform	1.059	0.070	1.098	0.093
Conditions*Strong Reform	1.015	0.080	1.096	0.111
Conditions*Moderate Reform*Small Firm	1.074	0.151	0.938	0.169
Conditions*Strong Reform*Small Firm	1.128	0.174	1.206	0.245

Note: The model also includes worker education, sex, age, marital status, race, family size, wage,
  union, industry, occupation, spouse work status, MSA, state and year dummies.
  These estimates are not reported here.
** denotes significance at the 5% level. * denotes significance at the 10% level.

APPENDIX TABLE 1: DISTRIBUTION OF STOCK OF EMPLOYEES BY LAW AND YEAR

	1996	1997	1998	1999	2000	2001	All Years
No/weak reform	5,280	1,063	646	687	718	794	9,188
Moderate Reform	371	6,905	4,785	5,344	5,517	7,491	30,413
Strong Reform	1,583	2,632	1,923	2,070	1,958	2,670	12,836
Total	7,234	10,600	7,354	8,101	8,193	10,955	52,437

APPENDIX TABLE 2: MULTINOMIAL LOGIT MODEL OF NEW HIRES (1996-2001)

Categories: Small firm HI, Large firm HI, Small firm no HI, Large firm no HI
Small firm: Employs less than 25

	Small Firm HI vs. Large Firm HI		Small Firm HI vs. Small Firm no HI		Large Firm HI vs. Large Firm no HI	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Number of family conditions	0.942	0.026 **	0.946	0.026 **	1.012	0.022
Less than HS	0.785	0.103 *	0.520	0.065 **	0.744	0.068 **
College	0.597	0.066 **	1.071	0.136	1.262	0.131 **
More than College	0.588	0.100 **	1.234	0.282	1.673	0.299 **
Other degree	0.934	0.123	1.144	0.164	1.243	0.155 *
Female	0.926	0.078	0.837	0.073 **	0.786	0.059 **
Married	0.964	0.077	1.260	0.104 **	1.281	0.088 **
Age	1.024	0.025	1.160	0.028 **	1.128	0.021 **
Age squared	1.000	0.000	0.998	0.000 **	0.998	0.000 **
Black	0.810	0.093 *	1.235	0.147 *	0.946	0.085
Hispanic	0.838	0.090 *	0.848	0.094	0.938	0.080
Other race	0.576	0.122 **	0.465	0.106 **	0.867	0.152
Family size	0.983	0.030	0.911	0.028 **	0.928	0.022 **
Wage	0.803	0.089 **	2.079	0.234 **	2.345	0.275 **
Union	0.442	0.066 **	4.790	1.146 **	2.453	0.321 **
Dual worker family	1.053	0.094	1.008	0.093	1.028	0.075
Region: Northeast	0.985	0.116	1.286	0.162 **	1.141	0.115
Region: Midwest	1.085	0.114	1.430	0.156 **	1.284	0.119 **
Region: South	0.968	0.093	1.241	0.123 **	1.467	0.122 **
MSA	0.776	0.074 **	0.924	0.087	1.095	0.088
Number of observations	12059					

Note: Year dummies and industry and occupation dummies are included in the model but not reported here
** denotes significance at the 5% level. * denotes significance at the 10% level.

APPENDIX TABLE 3: MULTINOMIAL LOGIT MODEL OF STOCK OF WORKERS (1996-2001)

Categories: Small firm HI, Large firm HI, Small firm no HI, Large firm no HI
Small firm: Employs less than 25

	Small Firm HI vs. Large Firm HI		Small Firm HI vs. Small Firm no HI		Large Firm HI vs. Large Firm no HI	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Number of family conditions	0.985	0.012	0.989	0.014	0.983	0.015
Less than HS	0.913	0.054	0.571	0.035 **	0.610	0.040 **
College	0.775	0.040 **	1.119	0.082	0.779	0.058 **
More than College	0.675	0.051 **	0.975	0.122	0.641	0.077 **
Other degree	1.123	0.064 **	1.258	0.099 **	1.355	0.118 **
Female	0.921	0.035 **	0.755	0.036 **	0.706	0.036 **
Married	0.945	0.033	1.143	0.050 **	1.157	0.054 **
Age	0.987	0.011	1.163	0.014 **	1.202	0.016 **
Age squared	1.000	0.000	0.998	0.000 **	0.998	0.000 **
Black	0.646	0.036 **	1.008	0.071	0.596	0.042 **
Hispanic	0.926	0.048	0.886	0.052 **	0.771	0.049 **
Other race	0.828	0.084 *	0.756	0.092 **	0.807	0.104 *
Family size	1.031	0.014 **	0.927	0.015 **	0.909	0.016 **
Wage	0.652	0.031 **	2.204	0.128 **	1.979	0.117 **
Union	0.450	0.025 **	9.506	1.501 **	1.559	0.145 **
Dual worker family	0.935	0.038	1.002	0.049	0.970	0.051
Region: Northeast	0.965	0.054	0.967	0.066	0.951	0.070
Region: Midwest	0.979	0.051	1.208	0.079 **	1.216	0.084 **
Region: South	0.941	0.044	1.148	0.064 **	1.384	0.085 **
MSA	0.808	0.035 **	1.015	0.052	0.783	0.045 **

| Number of observations | 52437 | | | | | |

Note: Year dummies and industry and occupation dummies are included in the model but not reported here
** denotes significance at the 5% level. * denotes significance at the 10% level.

APPENDIX TABLE 4: MULTINOMIAL LOGIT MODEL OF SEPARATIONS (1996-2001)

Categories: Quit, Layoff, Stay. Small firm: Employs less than 25

	Full Sample				Insured Sample			
	Quit/Stay		Layoff/Stay		Quit/Stay		Layoff/Stay	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Conditions	0.996	0.015	1.025	0.019	1.038	0.015 **	1.078	0.019 **
Small Firm	1.061	0.058	1.113	0.083	1.279	0.087 **	1.275	0.130 **
HI	0.542	0.030 **	0.443	0.034 **				
HI*Small Firm	1.197	0.102 **	1.145	0.140				
Conditions*Small Firm	1.025	0.021	1.026	0.025	0.963	0.025	0.956	0.032
Conditions*HI	1.061	0.021 **	1.075	0.026 **				
Conditions*Small Firm*HI	0.938	0.030 **	0.928	0.038 *				
Less than HS	1.027	0.052	1.276	0.081 **	1.007	0.098	1.031	0.125
College	1.029	0.053	0.983	0.074	1.017	0.072	1.033	0.113
More than College	1.153	0.089 *	1.008	0.135	1.068	0.106	0.909	0.152
Other degree	0.959	0.061	0.868	0.082	0.906	0.081	0.738	0.107 **
Female	1.007	0.037	1.184	0.061 **	0.926	0.049	1.228	0.101 **
Married	0.871	0.035 **	0.847	0.047 **	0.868	0.051 **	0.917	0.081
Age	0.909	0.009 **	0.834	0.011 **	0.913	0.015 **	0.842	0.019 **
Age squared	1.001	0.000 **	1.002	0.000 **	1.001	0.000 **	1.002	0.000 **
Black	1.072	0.056	1.290	0.090 **	1.082	0.082	1.234	0.136 *
Hispanic	0.876	0.043 **	0.926	0.061	0.959	0.075	1.110	0.120
Other race	0.803	0.070 **	0.855	0.107	0.877	0.115	0.615	0.128 **
Family size	0.958	0.013 **	1.035	0.018 **	1.002	0.022	1.025	0.030
Wage	0.860	0.022 **	0.845	0.028 **	0.878	0.033 **	0.825	0.039 **
Union	0.669	0.044 **	0.949	0.079	0.640	0.050 **	0.966	0.097
Dual worker family	0.892	0.038 **	0.919	0.054	0.911	0.056	0.895	0.080
Tenure	0.930	0.004 **	0.945	0.006 **	0.946	0.005 **	0.964	0.006 **
Region: Northeast	0.832	0.046 **	0.809	0.060 **	0.805	0.066 **	0.823	0.094 *
Region: Midwest	0.958	0.048	0.760	0.053 **	0.928	0.069	0.672	0.072 **
Region: South	0.943	0.043	0.765	0.048 **	0.921	0.063	0.701	0.068 **
MSA	0.970	0.040	1.022	0.059	0.992	0.064	1.048	0.097

Year, industry,and occupation dummies included but not reported

| Number of Observations | 53104 | | | | 30707 | | | |