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## **Employer Choices of Family Premium Sharing**

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April 7, 2004

This study was funded by the Employee Benefits Security Administration of the U.S. Department of Labor and was prepared for the conference “Employee Benefits and Two-Earner Households,” May 8, 2004, Washington, D.C. The research in this paper was conducted while Jessica Vistnes was also a Census Bureau research associate at the Center for Economic Studies. Research results and conclusions expressed are those of the authors and do not necessarily indicate concurrence by the Bureau of the Census, the Department of Health and Human Services or the Agency for Healthcare Research and Quality. This paper has been screened to insure that no confidential information is revealed. We would like to thank Alice Zawacki for her help with the MEPS-IC data, Kosali Simon and Tom Selden for generously sharing data on Medicaid and SCHIP rules and Doug Wholey for generously sharing his data on HMO penetration.

### **Employer Choices of Family Premium Sharing**

The U.S. labor force has changed dramatically over the last several decades. Labor force participation rates among married women of all ages have risen from 20 percent in 1950 to 61 percent by 1997. This movement of women into the workforce has increased the incidence of dual-earner families. According to the Bureau of Labor Statistics (BLS), by 1997 approximately 65 percent of married couples with children under age 18 were dual-earner couples (BLS 1998). Thus, it is not surprising that offer rates for employer-sponsored health insurance have increased among married women, from approximately 58 percent in 1987 to nearly 69 percent in 2001 (Vistnes and Schone 2003). Over this same period, however, there has been a marked increase in the prevalence of households headed by individuals who are unmarried. Whereas in 1950 unmarried households accounted for only one out of every five households (22 percent), by 1997 they accounted for close to half (48 percent) (U.S. Census Bureau 2004).

The increasing labor force participation of two-earner families together with the increase in unmarried households suggests that the way in which employer-sponsored health insurance is obtained by many workers and their preferences for different types of coverage has changed. Once it was common for the family's breadwinner to seek a job with family coverage. Now dual-earners may each select single coverage. One spouse may take family coverage and the other single coverage or no coverage at all. In other instances, health status considerations in the two-earner family may lead to preferences for a mix of managed care and traditional coverage as a means of having both near-first dollar coverage in the managed care plan, and the freedom of a

wide panel of specialists in the traditional plan. Many of the increasing numbers of unmarried workers may also prefer single coverage. Of course, children in both single- and two-parent families further complicate coverage decisions.

The change in the composition of the labor force, particularly the option for many workers to obtain health insurance coverage from some other source, combined with the rising cost of insurance, suggests that employers have altered their insurance plan offerings and are paying attention to how they structure employee premium contributions (EPCs). Indeed, over the last twenty years we have seen many employers modify their health plans. Single and family coverage opportunities have often been augmented with “employee plus one” or “employee plus two” options. Instead of offering one health plan, many employers now offer several. Moreover, employers may be using employee premium contributions (EPCs) as incentives to direct workers into particular health plan choices.

The literature on employers’ decisions regarding EPCs has argued that they are a useful tool for employers to sort workers into plans that match their preferences, particularly when workers with different preferences are imperfectly sorted across firms and individual wage-benefit tradeoffs are difficult to apply (Levy 1997, Jensen and Morrissey 2002). Other strands of the literature have also argued that employers may structure their contributions to encourage workers to take alternative forms of coverage, whether that coverage is available through a spouse’s employer (Dranove, Spiers and Baker 2000) or through public programs such as Medicaid (Shore-Sheppard, Buchmueller and Jensen 2000). Both arguments are in a sense, two sides to the same coin. Individuals with alternative forms of coverage may have weaker preferences for coverage through their own employer, in which case, employers acting as agents

on their behalf have incentives to raise EPCs. Alternatively, employers concerned about rising health insurance costs that cannot be shifted to workers through lower wages, may also have incentives to encourage workers with alternative sources of coverage to elect coverage elsewhere. In either event, we would expect to observe a positive relationship between the availability of alternative sources of coverage and EPCs. Of course, in setting EPCs, employers have other considerations, such as the costs of health care, the tax treatment of employer sponsored health insurance, issues related to possible adverse selection across multiple plan offerings and encouraging competition among plans to control premium costs.

The purpose of this paper is to explore the effects of two-earner households, and firm and labor market characteristics on the nature and determinants of the marginal employee premium contribution (marginal EPC) for family coverage. As noted above, the issues associated with the determination of employee premium contributions are complex and the empirical literature in this area is small. This study extends earlier analyses and uses data from the Medical Expenditure Panel Survey – Insurance Component (MEPS-IC) List Sample of private establishments. We employ the independent cross-sections of establishments sampled in the years 1997-2001, which yields a sample of 84,511 establishments offering at least one plan with family coverage. In order to study the effect of two worker households on marginal EPCs in a more direct fashion than earlier work in this area (Dranove, et al 2000), we augment the data in the MEPS-IC with information on the percent of two worker households calculated from the Census Bureau's Public Use Microdata Sample for 2000 (PUMS). In brief, we found strong evidence that the marginal EPC for family coverage was higher when there was a larger proportion of women in the establishment's workforce, but only in markets with higher dual-

earner households. Premium contributions were also higher in establishments with a higher proportion of low wage workers and little unionization, and in larger firms. As expected, there were higher employee premium contributions for fee-for-service and point-of-service plans when a firm offered multiple plans, but unexpectedly, offering a flexible spending account was not associated with higher EPCs. Higher local medical care costs did not have a significant impact on employee contributions.

## **Background**

Employers provide health insurance because workers value it and employers can provide it at lower cost. Thus, standard economic theory argues that workers will “buy” health insurance through their employers with lower wages or reductions in other elements of the compensation bundle. In the simplest models each firm offers a single plan (if any) and workers sort themselves across firms based upon the nature of coverage and the wage tradeoff. Firms employ workers who have homogeneous preferences for insurance coverage (Goldstein and Pauly 1976). Indeed, if firms have differential costs of offering health insurance, those with higher costs will not offer coverage, or offer limited benefits and will attract those workers with weaker preferences for coverage. Monheit and Vistnes (1999) used 1987 National Medical Expenditure Survey data to show that single employees with weak preferences for insurance were more likely to work for firms that did not offer coverage. Additionally, when there is imperfect sorting, EPCs may be used to separate employees into one of several plans that best suit their tastes (Levy 1997, Jensen and Morrissey 2002).

The size of the EPC, therefore, should depend, in part, upon the extent of the

heterogeneity in worker preferences. The prices of alternative sources of health insurance, including coverage available through a spouse and coverage available through public programs will also affect EPCs. If single or family coverage were available at a lower effective price through a spouse, one would expect workers to prefer, and their employers to set, higher EPCs thereby allowing the employee to keep the wages and forego the coverage from the employer that had the more expensive insurance. The presence of public programs similarly provides an opportunity for eligible employees or members of their families to obtain subsidized insurance, and to take home higher wages. A higher EPC accomplishes this. The presence and size of employee premium contributions will also depend upon the number of insurance plan options provided by an employer. Offering more plans implies a wider range of coverage and greater gains from sorting employees into their preferred plans. Finally, the size of an EPC will depend upon the costs of health insurance. When insurance costs are low there is relatively little to be gained from sorting workers. However, as the price of insurance increases, there are greater gains from proper sorting and higher EPCs may be expected.

The issue of employee premium contributions is compounded by the exclusion of employer-sponsored health insurance from federal and state income and payroll taxes. The exclusion provides strong incentives for employers and employees to fully substitute untaxed health insurance for taxed money wages. This substitution implies that no employee premium contribution should exist. The federal tax code, however, allows for the use of flexible spending accounts (FSAs). Among other things, FSAs allow employees to pay any EPC with pre-tax dollars. Thus, in the presence of an FSA, the size of an employee premium contribution should depend only upon factors other than tax considerations.

Levy (1997) and Jensen and Morrisey (2002) examined the effects of worker heterogeneity on contribution arrangements. Levy found mixed results. Firms with a higher percentage of older workers were more likely to require a premium contribution, but firms with a higher proportion of women were not. Jensen and Morrisey showed that greater worker heterogeneity was associated with a greater probability of a single-plan firm imposing a premium contribution. However, greater worker heterogeneity in multi-plan firms had an ambiguous effect theoretically. Empirically, greater variance in pay levels was associated with a greater likelihood of level-dollar premium contributions and greater variance in age of workers was associated with a greater likelihood of using a fixed percentage EPC.

Alternative sources of health insurance include coverage through an employed spouse, other employers, and eligibility for public insurance programs. Dranove, Spiers and Baker (2000) argued that with the increase in two-earner households, firms would provide incentives for spouses to obtain insurance coverage through their own workplace rather than through family coverage. Using data from the 1993-94 Robert Wood Johnson Foundation Employer Health Insurance Survey, they found that firms with more female workers and with more part-time workers had higher employee premium contributions. They view these groups as having options for health insurance through other family members. Also consistent with their theory, they found that larger firms had lower EPCs which they argue is because they face lower costs of providing health insurance.

A typical alternative source of coverage is from other employers in the area. Competition among employers suggests that the extent of out-of-pocket premiums may be influenced by local labor market characteristics. Marquis and Long (2001) found that firms were more likely to

offer coverage and to make greater premium contributions in tight labor markets, and in markets with less concentrated labor purchasers, greater union penetration, and a greater share of workers in big businesses.

Another source of alternative coverage is public programs. Using Current Population Survey (CPS) data, Cutler and Gruber (1996) found that more generous eligibility for Medicaid coverage crowds-out private coverage. They estimate that roughly half of the increase in the Medicaid program between 1988 and 1993 was offset by reductions in private insurance. A number of other researchers have also investigated this issue, using a variety of data sources and techniques and in general have found lower estimates of crowd-out (Blumberg et al (1999), Yazici and Kaestner (1998), Card and Shore/Sheppard (2001)). While these studies focused on the effect of Medicaid expansions, two more recent studies by LoSasso and Buchmueller (forthcoming) and Cunningham and Reschovsky (2002) investigate the extent of crowd-out from SCHIP expansions. Shore-Sheppard et al. (2000) used employer level data to investigate the effect of Medicaid expansions on employer decisions. They found that the expansions did not change employer offers of coverage, but they find some evidence that employers may have reduced offers of family coverage, and that employees may have reduced their take-up of employer offers.

Gruber and McKnight (2002) used the CPS data to obtain insights into employer EPC decisions. They argued, first, that as tax rates rise, EPCs will fall to take advantage of the tax subsidy. Second, as insurance premiums increase, the EPC will rise because the value of sorting increases. Finally, as outside insurance options increase, EPCs rise to encourage employees to choose wages and obtain insurance coverage elsewhere. The CPS is not well suited to



examining employer decisions, nonetheless, the study found that falling tax rates, rising Medicaid eligibility and rising medical costs could explain more than half of the increase in EPCs over the 1982 to 1996 period.

The existing empirical literature provides evidence consistent with employer decisions to shift toward greater EPCs arising from changing worker preferences. However, none of this work has been able to directly address the issue of employer decisions and the role of two-earner households. The Gruber-McKnight (2003) data were at the individual level and do not examine employer decisions in detail. The Dranove et al. (2000) work was unable to look at effects over time and was not able to incorporate local labor market conditions with respect to two worker households. Moreover, none has examined employer decisions across the different types of plans (i.e. HMO, PPO, POS and FFS) offered by firms.

### **Analytic Approach**

Our main focus throughout the paper is on the marginal employee premium contribution (the marginal EPC) for family coverage imposed by employers. We define this as the family out-of-pocket premium minus the out-of-pocket premium required for individual coverage. Thus, it reflects the marginal cost to the worker of taking family over individual coverage. In the course of analysis, however, we also examine employees' premium contributions for family and individual coverage. We first report on typical EPC levels in U.S. establishments. We examine recent trends in EPCs over time, by plan type (conventional, HMO, PPO, or POS), and by firm size.

This descriptive analysis is followed by a series of regressions, to more carefully examine

the factors influencing an employer's choice of EPC, particularly how the local labor supply of women shapes this choice. We estimate a series of reduced form regressions in which the EPC is a function of the key elements identified above: worker heterogeneity, local labor market characteristics, the generosity of public insurance programs, tax considerations, and the cost of health insurance.

More formally, our interest is in estimating variations of the equation:

$$EPC_{ik} = b_0 + b_1D_{ik} + b_2A_{ik} + b_3M_{ik} + b_4F_{ik} + b_5T_{ik} + b_6C_{ik} + \sum_j a_j S_j + \sum_k d_k Y_k + e_{ik} \quad [1]$$

where  $i$  indexes the health plan and  $k$  the year, and  $EPC_{ik}$  is the annual employee premium contribution set by the firm (in some specifications it represents contributions for individual coverage, for family coverage, and for the difference between family and individual coverage).  $D_{ik}$  is a vector of measures of worker heterogeneity in the establishment.  $A_{ik}$  is a vector of local area characteristics.  $M_{ik}$  is a vector of measures for the generosity of the state's Medicaid and SCHIP program.  $F_{ik}$  is a vector of plan and establishment characteristics.  $T_{ik}$  is a vector of measures of the tax treatment of premium contributions.  $C_{ik}$  is a vector of measures for the cost of health insurance. The  $S$ 's and  $Y$ 's are dummy variables for the state and year, respectively, and  $e_{ik}$  is a random disturbance term.

Regressions are run at both the plan level and at the establishment level. At the plan level our dependent variable is the EPC set for the plan, whereas at the establishment level, it is the enrollment-weighted aggregate EPC across all plans offered by the establishment.

## Data

Our data for the analysis are the 1997-2001 Medical Expenditure Panel Survey –

Insurance Component (MEPS-IC), a large nationally representative survey of establishments in the U.S. The MEPS-IC is an annual survey, sponsored by the Agency for Healthcare Research and Quality (AHRQ) and conducted by the U.S. Bureau of the Census. The response rate to the survey is high, averaging 78 percent over the 1997-2001 period. Each year the MEPS-IC obtains information on whether an establishment offers health insurance, the number and type of plans it offers, and the characteristics of its plans. Information collected on the plan includes the total premiums for single and family coverage, the required employee contributions toward premiums, as well as the specific benefit provisions under the plan. This detailed data is collected for up to four offered plans per establishment.

Our sample consists of 84,511 establishments that offered health insurance to their workers where at least one plan offered covered families, not just individuals. Respondents to the MEPS-IC are different from year to year, so this sample is actually a series of five independent cross-sections of establishments, rather than a panel data set. For this sample of establishments there are 131,248 plans that cover families, not just individuals, and these plans comprise our sample at the plan level. Within this sample, there are 18,200 fee-for-service (FFS) plans, 41,322 health maintenance organizations plans (HMOs), 48,060 preferred provider organizations plans (PPOs), and 23,664 point-of-service plans (POS).

All of our descriptive statistics are weighted, so our reported estimates are nationally representative for workers enrolled in single and family coverage obtained through private sector employers in the U.S. Our regression estimates are also weighted. Models estimated at the plan level use the MEPS-IC plan-level weight; whereas those estimated at the establishment level use the MEPS-IC establishment-level weight. In addition, our regression models are estimated using

Stata's survey commands for complex survey design, which in addition to correcting the standard errors for survey design also corrects for possible intra-establishment correlation among the disturbances of plans that are offered in the same establishment. Finally, all variables measured in dollars are inflation-adjusted (using the CPI, all items) to constant 2001 dollars.

To control for worker heterogeneity within the establishment we include measures of the proportion of employees who are female, the proportion over age 50, the proportion employed part-time, the proportion unionized, and the wage distribution of employees, all reported on the MEPS-IC. Regarding wages, the survey asked the respondent for the percentage of workers in each of three wage brackets. The same brackets were used in 1997, 1998, and 1999, but in 2000 and 2001 different brackets were implemented. We control for each set separately in our models.

Since establishment level data rarely contain information on the employment status of workers' spouses since that information is not easily provided by respondents to an employer survey, we augment the data in the MEPS-IC with information on the proportion of two worker households calculated from the Census Bureau's Public Use Microdata Sample for 2000 (PUMS). The PUMS sample of 14 million workers, drawn from data collected in the Census Long Form in 2000, allows us to calculate state by detailed industry level means of worker characteristics (using the 3 digit NAICS code level). In addition to calculating means of the proportion of workers with working spouses (where each spouse is working at least 20 hours a week), we also calculate means of the proportion of workers with children and the proportion that have children and are also under 200% of the federal poverty level since that information is also not easily obtained from employers. We merge these measures onto the MEPS-IC

establishments in each year by the 3 digit NAICS code and by state. Of all these, the first is the most critical for our key hypothesis: in areas with more two-earner households, we expect marginal EPCs to be higher, *ceteris paribus*. We also interact this variable with the proportion of women employees within the establishment.

Other local area characteristics are obtained from the County Business Patterns (CBP) data and the Area Resource File (ARF). Characteristics obtained from the ARF include: the local unemployment rate, population in the county and square mileage to control for density of the population. We include the following variables calculated from the CBP: the proportion of establishments that are in manufacturing, the proportion of establishments with fewer than 10 employees, the proportion of establishments with 1000 or more workers, and a Herfindahl Index calculated over all establishments in the county. This last measure is intended to measure the concentration of employment in a county, for example, whether it is dominated by a single or a few employer(s).

Employee access to public health insurance programs is measured by three variables. The first is the state's threshold as a percent of the federal poverty level for pregnant women to be eligible for Medicaid. The second is the state's threshold as a percent of the federal poverty level for infants to be eligible for coverage under the State Children's Health Insurance Plans (SCHIP). The third is the proportion of workers in the establishment's state and industry who have children and a household income less than 200 percent of the poverty level (as described above from the PUMS). Our models allow for direct effects of all three variables as well as potential interaction effects of the first and second with the third.

Establishment characteristics in the model include establishment size, firm size, the

establishment's industry and age, whether it is part of a multi-unit firm, and its corporate status, i.e., whether it is a sole proprietorship, a partnership, an s-corporation, incorporated, or a unit of government. For plan characteristics we include whether the plan is a fee-for-service (FFS) plan, an HMO, a PPO, or a POS plan, and whether it is self-insured. We also include the interaction of these plan type dummies with whether the establishment offers multiple plans in order to allow for the possibility that premiums vary depending on the firm's menu of offerings.

Our models account for the tax treatment of health insurance among employees in the establishment in two ways. First, we include an indicator for whether the establishment offers workers a flexible spending account (FSA). Since a FSA makes the tax treatment irrelevant, we expect EPCs to be larger when an FSA is present. In as much as marginal tax rates are unknown in the MEPS-IC data, we include instead average per capita income in the county, as this is available from the ARF.

The models also control for the cost of health insurance. These costs can vary because of differences in medical care prices across areas, differences in health care utilization patterns, or because of differences in the generosity of coverage across plans. To control for variation in medical care prices and utilization, we include the weighted Medicare AAPCC rate (in real dollars) at the county level (from the ARF), the number of active duty doctors in the county (from the ARF), and the HMO penetration rate, also measured at the county level (from data provided by Doug Wholey). We also include the proportion of enrollees in the establishment covered under self-insured plans, as some of our earlier work (Morrisey et al. 2003) has found a relationship between self-insurance and premiums. To control for differences in benefits across plans as well as differences in health care costs across the country, we include the plan's total

premium for single coverage. In our establishment-level models, this variable is replaced with the enrollment-weighted average (establishment-wide) premium for single coverage. Finally, all models are estimated with fixed effects for the year and state. Since the MEPS-IC data set is not a panel of repeating establishments, it is not possible to include establishment-level fixed effects.

## **Findings**

### *A. Descriptive Results*

Data from the MEPS-IC, reported in Table 1, indicate that premiums for single and family coverage enrollees rose 41 percent in nominal dollars between 1997 and 2001, from \$2051 in 1997 to \$2889 in 2001 for single coverage and from \$5223 to \$7509 for family coverage. While premiums increased in every year, the rate of increase accelerated in 2000 and 2001. Employee contributions for single coverage increased by 56% over this time period (by \$178 in nominal dollars), while employee contributions for family coverage increased by \$436 (or 33%). The percentage of premiums paid by enrollees for single coverage increased from 1997 to 1998 (from 15.6% to 17.6%) and held relatively steady in 1999 at 18.1%. After that it declined to around 17 percent in 2000 and 2001. The 2001 rate exceeded the 1997 level, consistent with the higher rate of growth in employee contributions than premiums for single coverage over the entire time period. In contrast, the percentage of premiums paid by enrollees for family coverage held steady at roughly 24.5 percent from 1997 to 1998, declined in 1999 and remained fairly constant for another year before declining to 23.2% in 2001 (consistent with the lower rate of growth in family contributions compared to premiums). Note that since these figures represent averages over enrollees in plans rather than in plans offered to employees, the decrease in the percentage

paid by family enrollees could reflect employee choices of less expensive plans, when a choice of plans was offered, given the increases in levels of contributions required over the latter part of this time period. In the multivariate analysis that follows, we examine the contributions required for plans that are offered to employees rather than those that are elected to examine the impact of labor market and employer characteristics on employer, rather than a combination of employer and employee decisions.

The MEPS-IC data also exhibit interesting differences in premiums and contributions by plan type (Table 2). The data available to investigate time trends by plan type categorize plans according to the following types of providers available to enrollees: any providers (typically fee-for-service plans), exclusive providers (typically HMO plans) and a mixture of any provider and exclusive providers (typically PPO or POS plans). As expected, total premiums for single coverage are ranked from lowest to highest in almost all years in this time period in the following order: exclusive provider plans, mixed provider plans and any provider plans.<sup>1</sup> For family coverage, premiums for plans with a mixture of providers exceeded those for exclusive providers in every year. However, any provider plans were higher than mixture provider plans only in 1999. Contributions also varied by plan type, but perhaps not in the expected direction. The percent of family premiums paid by enrollees was lowest for plans with the fewest restrictions on providers (any provider plans) in all years and the mixture of provider plans had lower percentage contribution rates than exclusive plans in 2000 and 2001 (the difference in 1999 was significant at the 10% level). The corresponding dollar figures in 2001 for the three different plan types for family coverage were: \$1829 for exclusive provider plans, \$1742 for

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<sup>1</sup> The difference between mixture and any provider plans was significant at the 10% level in



mixture of provider plans, and \$1468 for any provider plans.

Tables 3 and 4 present descriptive statistics on single and family premiums and contributions by firm size. These tables reveal an interesting difference in the patterns of employee contributions by firm size. While the percent of premiums paid by single coverage enrollees increases with firm size (in most years), the percent of premiums paid by family coverage enrollees follows a somewhat inverted u-shaped pattern with the lowest percentages in the smallest and largest firm size categories. For example, in 2001 the percent of family premiums paid by enrollees rose from 21.6% in firms with less than 10 employees, to 30.9% in firms with 25-99 employees and then declined to 20.3% in firms with 1000 plus employees. Translated into dollars, enrollees in firms with 25-99 employees paid \$2341 for their coverage in 2001, \$827 more than those in the largest firms.

#### *B. Plan-Level Regressions*

*The tables of regressions described in this and the subsequent sections only contain the coefficients and standard errors associated with the continuous variables. The Bureau of the Census has not yet cleared the coefficients relating to the dichotomous variables for release. However, we are allowed to describe these findings in approximate terms.*

The plan-level regressions are shown in Table 5. The first column reports the “marginal EPC,” the out-of-pocket premium for family coverage minus the out-of-pocket premium for single coverage. The next columns report the single and family EPCs, and the final column shows the regression for family EPC as a percent of the total family premium.

Worker heterogeneity is thought to be a key determinant of employee premium

contributions. Greater heterogeneity suggests different preferences for coverage. EPCs provide a vehicle to sort workers by these preferences. Of particular interest is the effect of more women employees in an establishment. If women are disproportionately second-earners in the family they may not value family health insurance as highly as the primary earner. If so, they would presumably prefer wages to insurance coverage; a higher EPC accomplishes this. However, we found no statistically significant effects of the percent of women employed by the establishment on the marginal EPC. The effect of a greater share of women in the establishment depends upon the proportion of two-earner households in the market. Note that the independent effect of two worker households is also insignificant in the marginal EPC equation.

Evaluated at the mean level of two worker households, a 10-percentage point increase in the percentage of women in the establishment was estimated to result in approximately a \$30 increase in the marginal family EPC, with most of this effect coming from the interaction term of two-worker households and the percent of women in the establishment. Evaluating the effect of two-worker households at the approximate mean level of women in the establishment, we find that the marginal EPC would be \$95 higher if the percentage of two-earner households in its local labor market increased from its mean level of 30 percent to 40 percent.

The effect of two-earner households appears to operate through both the single and the family EPC. In the single EPC column of Table 5, a ten-percentage point increase in two-earner households was estimated to increase the single out-of-pocket premium by approximately \$38. This is consistent with a lower demand for employer sponsored health insurance when it may be available through a spouse. In the family EPC column, a larger percentage of two-earner households raised the out-of-pocket premium across the range of establishments, but particularly

in those establishments with disproportionately more female employees. The pattern of results holds in the family EPC equation in the final column. These results suggest that employers have tailored their family EPCs to reflect the local coverage opportunities available to their workers. This is particularly true for firms with more female workers who appear to be viewed as secondary earners.

We did not find statistically significant effects of the proportion of older workers (those over age 50) in the establishment or the proportion of part-time workers on the alternative measures of EPC. Similarly, there was no statistically significant effect of the proportion of workers with children at home on the marginal EPC, although the point estimate was negative and significant in the single EPC and the family EPC expressed as a percent of total premium. However, establishments with larger proportions of their workers in low or middle wage jobs did have higher out-of-pocket premium contributions. A 10-percentage point increase in the percentage of low and middle wage workers increased the marginal EPC by approximately \$27 and \$35, respectively. If lower wage workers spend more of their income on housing and food, they may not be willing to trade wages for health insurance. The higher EPCs allow these workers to forgo coverage for higher wages.

Local labor market conditions had some impact on the size of the marginal EPC. A 10-percentage point increase in the percentage of manufacturing establishments in the market lowered the marginal EPC by \$135. This effect is consistent with industry effects, discussed below, in which manufacturing establishments were associated with lower EPCs. A 10-percentage point increase in the percentage of very small establishments was associated with approximately a \$60 lower marginal family EPC. The latter effect is consistent with descriptive

data in which small firms tend to offer only one plan and to pay a larger share of the premium. A higher unemployment rate was associated with a lower marginal EPC. This is a somewhat unexpected finding, however, it may be related to workers in two-earner households having greater difficulty finding alternative sources of insurance in times of higher unemployment. However, local medical market conditions had little effects. Greater HMO penetration and greater numbers of physicians per 1,000 population had no effect on out-of-pocket premiums. However, higher Medicare AAPCC rates, our proxy for medical care costs was associated with lower single and family EPCs (at the 10% significant level in the single and family equations and at the 1% level in the family premium equation in the final column).

Even after controlling for other characteristics, the effect of firm size on employee contributions for coverage follows a pattern similar to that observed in the descriptive statistics. As described earlier, the marginal EPC of coverage rises with firm size until firms reach just under 1000 employees, with establishments in firms of 10-24 employees and those with 25-999 employees charging roughly \$600 and \$900 more than those in the smallest firms, respectively. In firms with greater than 1000 employees, the marginal EPC still exceeded that in the smallest firms, but only by approximately \$300. This pattern for marginal employee contributions reflected the experience of family contributions rather than single contributions, as exhibited in both the regression for the dollar amount of family contributions and the percentage of premiums paid by employees. The differences by firm size were large, with establishments in firms with 25-999 employees charging family contributions that were approximately \$1000 higher than in the smallest firms. Family contributions in the largest firms exceeded those in the smallest firms by approximately \$500. In contrast, single contributions increased monotonically with firm size.

Differences in single contributions between establishments in the smallest firms and larger firms ranged from approximately \$100 for firms of 10-24 employees to roughly \$200 in larger firms.

Industry effects were fairly consistent across the different equations. In general, most industries charged higher marginal EPCs for family coverage than manufacturing and mining (the omitted category), with the differences ranging from \$100 to \$200. Religious, civic and other non-profit organizations had lower marginal EPCs (roughly \$400) than manufacturing establishments, reflecting lower family contributions and similar single contributions. In addition, agriculture, forestry, fishing and hunting had a lower marginal EPC than manufacturing establishments, while employers in wholesale trade did not exhibit any difference from those in manufacturing. Most of the positive differences in marginal out-of-pocket contributions for other industries were reflected in their higher costs of family coverage. In general, these industries also had higher single employee contributions, with the exception of professional services (which exhibited no difference) and wholesale trade (which had slightly lower contributions).

Establishments with a larger share of unionized workers had much lower EPCs. A 10-percentage point increase in unionization was associated with a \$97 lower marginal family EPC. This finding is consistent with the view that unions may disproportionately represent older workers with more traditional households that value family coverage more highly.

The marginal EPC of HMO, PPO and POS plans is roughly \$200-\$300 higher than that of fee-for-service plans when the establishment offered only one plan. The difference remains positive, but was smaller for HMO and PPO plans, when multiple plans are offered, reflecting the fact that the marginal EPC for fee-for-service plans increased when multiple plan were

offered. Point-of-service plans also had higher marginal EPCs when multiple plans were offered, at a rate similar to that for fee-for-service plans.

Surprisingly, establishments that offered a flexible spending account had approximately \$100 lower EPCs. Individual income tax considerations should lead firms and their employees to minimize the EPC because such payments are made with after tax dollars. In the presence of a flexible spending account, the EPC is paid with pre-tax dollars. This should encourage firms to use EPCs more aggressively to sort workers. The counterintuitive finding may instead proxy for innovation on the part of the firm. Finally, establishments with a greater proportion of employees in self-insured plans had modestly lower EPCs and plans that were self-insured also had lower EPCs. This is consistent with work by Morrissey and Jensen (2003) who argued that firms with self-insured plans appear to encourage enrollment in their self-insured plans for fear of adverse selection when other plans, particularly HMOs are offered.

Employer sponsored family insurance coverage should be responsive to the availability of subsidized public coverage. If so, the marginal family EPC should be larger in areas where the Medicaid and state children's health insurance plan (SCHIP) are more generous. We included several measures related to eligibility for these programs. While most were not statistically significant the results do suggest that in establishments where the state income threshold for infant eligibility is high and there is a larger share of children at or below 200 percent of the federal poverty level, the marginal EPC is higher, thereby encouraging working parents to enroll their children in the subsidized programs. However, the size of the effect is small and the lack of effects for other measures suggests that better measures for the generosity of coverage may be needed.

Holding other factors constant, the marginal EPC for family coverage increased in real terms between 1999-2001 relative to levels observed in 1997, with the largest increase occurring in 2001 (a roughly \$200 increase compared to 1997 levels). While family contributions in real dollars increased from 1999-2001 relative to 1997, the percentage of family premiums paid by employees declined in 2000 and 2001 (the difference in 2000 is significant at the 10% level). These two results are consistent in that the increase in the levels of family contributions were statistically equivalent for the 1999-2001 period (relative to levels observed in 1997), while total premiums continued to rise. This result is also generally consistent with the descriptive statistics presented earlier. Levels of single contributions increased in real terms in 1998 and 1999, but were unchanged from 1997 levels in 2000 and 2001. Again, the lack of an increase in single premium contributions, combined with an increase in family contributions, is consistent with the increases observed in the marginal cost equation for 2000 and 2001 relative to 1997.

### *C. Plan Type Regressions*

Table 6 shows regressions for the marginal EPC for specific health plan types: fee- for- service (FFS), health maintenance organization (HMO), preferred provider organization (PPO), and point-of-service plan (POS). The plan type regressions allow greater insight into EPC policies that may differ across plans. EPCs may be used, for example, to encourage workers to avoid typically more costly FFS plans and to enroll in less costly managed care alternatives.

The pattern of results is largely consistent with the preceding plan level regressions. Several points are worth noting, however. First, the interaction between the proportion of two-earner households and the percent of women employed by the establishment continues to hold.

It appears to be driven by the policies for PPO and POS plans. Second, the proportion of workers over 50 years old was associated with a lower marginal EPC for FFS coverage. A 10-percentage point increase was associated with a \$29 reduction. In as much as older workers tend to disproportionately enroll in FFS plans, this finding may suggest that establishments with more older workers offer a wage-benefit tradeoff that reflects the preferences of older workers. Third, HMO penetration has an effect on the marginal EPC for HMO coverage, but not for other types of plans. A 10-percentage point increase in penetration was associated with a nearly \$28 reduction in the marginal family out-of-pocket HMO premium. This may suggest that employers were more likely to use a premium contribution strategy to encourage workers into HMOs when there is competition in the local HMO market. Finally, while the percent of the establishment's workers who were unionized continues to yield large negative effects on premium sharing, it is interesting that the effects were approximately 50 percent larger for managed care plans than for FFS plans. A 10-percentage point increase in unionization yielded a \$69 reduction in the FFS EPC, but \$97 to \$105 reductions in the EPCs of alternative forms of managed care.

There was little evidence of a strong time trend in the marginal EPC equations at the plan level. Fee-for-service plans did not exhibit any time trend in real marginal costs, controlling for other factors, and other plan types exhibited increases in the following years relative to 1997: HMOs (1999), PPOs (2001) and POS plans (2000 and 2001).

#### *D. Establishment-Level Regressions*

The Appendix table reports regression results in which the marginal, single and family EPCs were estimated at the establishment level using plan enrollment to weight the plan level



marginal costs. For comparison, a regression with unweighted marginal EPC (using a simple average across plans) was also run. These runs serve as robustness checks on the plan level and plan type regressions discussed above. The key findings with respect to two-earner households, establishment and market characteristics continue to hold.

## **Discussion**

This study has explored the nature of employer decisions with respect to the employee premium contributions used for family health insurance coverage. Over the last 15 to 20 years the labor force has changed significantly. There are more two-earner spouses and there are more unmarried workers. These changes are likely to have changed the marginal worker's preferences for employer sponsored health insurance. It is certainly the case that employers are much more likely to offer more health plan options and to expand the coverage options beyond single and family to include such arrangements as "employee plus one" than they were previously. It is also the case that employers impose much larger employee premium contributions today than they did in the past. Indeed, some researchers have argued that employers have used employee premium sharing to encourage workers to obtain spousal or family coverage elsewhere.

We have used the 1997-2001 MEPS-IC to describe the extent of premium sharing for family coverage and to estimate the effects of worker heterogeneity, firm and plan characteristics, and local labor market forces on the size of the employee contribution. Our focus has been on the "marginal family EPC," that is, on the additional premium contribution for family coverage, over and above that for single coverage. Six results have emerged from our exploratory investigation.

First, employers appear to be responsive to the range of insurance options that modern families have available. When there is a larger proportion of two-earner spouses in the local labor market single and family premium contributions were higher. This is consistent with families comparing alternative insurance options across the offerings of the husband's and wife's employers. If coverage is less expensive through, say, the husband's plan, the wife can decline coverage through her employer and retain the wages that otherwise would have gone for unwanted insurance coverage. In addition, however, we found that the marginal family premium contribution was higher when there were a larger percentage of women employed by an establishment *in markets with more two-earner spouses*. These circumstances are precisely the ones in which a wife is unlikely to value family coverage if she is the secondary earner in the household. This sort of premium sharing arrangement allows her to take more compensation in money wages. In contrast, in markets with fewer two-earner spouses, establishments with a larger share of women do not impose as large a marginal family premium. These are the markets where women and men alike are less likely to have alternative sources of insurance coverage.

Second, we found that worker characteristics matter in the determination of employee premium contributions. Firms with higher proportions of low and middle wage employees had higher premium contributions. Establishments with many lower wage workers may find it difficult to offset the rising cost of health insurance by lowering wages. However, larger proportions of older workers and part-time workers had no effect on premium contributions. In future work we intend to interact these with the market level two-earner spouse variable to see if employers are making similarly nuanced decisions in these dimensions.

Third, firm characteristics matter. Larger firms typically have larger marginal family

employee premium contributions. The relationship is a somewhat inverted u-shape with the smallest and largest employers requiring the smallest premium contributions. The result for larger firms is a bit of a conundrum. However, smaller firms typically do not offer coverage or offer a single plan, often with no premium contribution. This pattern is consistent with hiring a very homogeneous work force. It is also consistent with low EPCs to ensure high take-up rates which may be sometimes necessary to obtain coverage in smaller firms. Heavily unionized firms have substantially smaller premium contributions. If union negotiating positions reflect the preferences of long serving (or median) members, then this finding appears to be consistent with union preferences for large coverage-wage tradeoffs. Industry and ownership characteristics matter as well. Manufacturing and agricultural establishments had smaller premium contributions than did those in other industries. Religious and other nonprofit organizations required smaller premium contributions for family coverage, on average.

Fourth, plan characteristics matter. Establishments that offer more than one plan have higher premium contributions for fee-for-service and point-of-service plans. Establishments also require smaller employee premium contributions on their self-insured plans. This appears to be consistent with speculation by Morrissey and Jensen (2003) that such firms seek to encourage enrollment in their “in-house” self-insured plan out of fear that they will experience adverse claims experience when other plans are offered. Smaller premium contributions would reduce incentives for employees to shift plans.

Fifth, flexible spending accounts (FSA) don't appear to function as expected. When an employer establishes an FSA typically two things happen. The employee may contribute pre-tax wages into a sheltered account to spend on out of pocket medical expenses such as prescription

drugs and copays for physician visits. In addition, the employee premium contribution passes through the FSA and is paid with pre-tax dollars. This has the effect of eliminating the tax considerations of premium contributions. Thus, in the presence of an FSA premium contributions should be larger because there is no distorting tax wedge. Instead, we found that premium contributions were approximately \$100 lower when the establishment provided a FSA. The effects of FSA are virtually unstudied. Clearly more work is in order.

Finally, generous Medicaid and SCHIP programs provide an opportunity for low-income workers to obtain subsidized health insurance for their children. If workers in eligible families have access to subsidized public programs they should value health insurance less and the employee premium contribution on family coverage should increase. We find limited evidence supporting this, but our measures are relatively crude. Again, more research would be appropriate.

The MEPS data have provided a wealth of information to begin to study employee premium contribution policies. Our explorations have offered some insights. However, the models never explain more than ten percent of the variation in premium contributions and there are conundrums with respect to several of the findings. One does not expect employers to set these policies haphazardly, thus there is much we do not understand about employer decisions with respect to health benefits. Little research has been devoted to understanding even basic employer decisions with respect to health insurance coverage. Given the return of double digit premium increases and newly available rich data bases on large numbers of firms, it is time for much more concerted effort to understand employer decisions.

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**Table 1**  
**Single Premiums and Employee Contributions: by type of plan**

	1997	1998	1999	2000	2001
<b>Total Premium:</b>					
<b>All Plan Types</b>	2051 (20.1)	2174 (17.0)	2325 (6.0)	2655 (9.6)	2889 (14.3)
<b>Exclusive Provider</b>	1916 (20.5)	2008 (15.1)	2171 (14.2)	2428 (21.5)	2673 (33.6)
<b>Mixture of Providers</b>	2091 (28.8)	2224 (15.9)	2359 (13.9)	2728 (18.4)	2984 (16.5)
<b>Any Provider</b>	2224 (44.7)	2368 (74.2)	2581 (37.3)	3042 (51.9)	3058 (57.3)
<b>Single Contribution:</b>					
<b>All Plan Types</b>	320 (9.9)	383 (6.9)	420 (7.4)	450 (6.6)	498 (8.3)
<b>Exclusive Provider</b>	315 (12.5)	359 (13.8)	414 (13.8)	429 (16.7)	488 (14.5)
<b>Mixture of Providers</b>	320 (11.3)	398 (5.0)	422 (7.3)	466 (6.7)	505 (9.8)
<b>Any Provider</b>	335 (23.5)	381 (20.2)	430 (19.3)	414 (17.1)	489 (25.4)
<b>Single Employee Contribution/Premium :</b>					
<b>All Plan Types</b>	15.6 (.5)	17.6 (.3)	18.1 (.3)	16.9 (.3)	17.3 (.3)
<b>Exclusive Provider</b>	16.4 (.7)	17.9 (.7)	19.1 (.6)	17.7 (.8)	18.3 (.6)
<b>Mixture of Providers</b>	15.3 (.6)	17.9 (.3)	17.9 (.4)	17.1 (.2)	16.9 (.3)
<b>Any Provider</b>	15.1 (1.1)	16.1 (.8)	16.6 (.7)	13.6 (.6)	16.0 (.7)

Source: AHRQ. Medical Expenditure Panel Survey – Insurance Component, List Sample. Data obtained using the MEPS-IC Net retrieval software on the following web site: [www.meps.ahrq.gov](http://www.meps.ahrq.gov).

**Table 2**  
**Family Premiums and Employee Contributions: by type of plan**

	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
<b>Total Family Premium:</b>					
<b>All Plan Types</b>	5332 (40.9)	5590 (49.3)	6058 (32.2)	6772 (19.6)	7509 (32.6)
<b>Exclusive Provider</b>	5152 (33.1)	5302 (55.8)	5749 (61.3)	6404 (48.7)	7109 (56.3)
<b>Mixture of Providers</b>	5401 (75.9)	5701 (39.7)	6128 (41.1)	6929 (40.7)	7700 (50.5)
<b>Any Provider</b>	5450 (67.6)	5754 (168.2)	6466 (70.6)	6931 (93.6)	7523 (97.5)
<b>Family Employee Contribution:</b>					
<b>All Plan Types</b>	1305 (22.6)	1382 (19.3)	1438 (31.3)	1614 (16.4)	1741 (18.4)
<b>Exclusive Provider</b>	1308 (46.7)	1382 (45.7)	1460 (33.9)	1603 (26.3)	1829 (39.9)
<b>Mixture of Providers</b>	1340 (39.5)	1431 (24.2)	1462 (45.6)	1664 (32.5)	1742 (25.2)
<b>Any Provider</b>	1167 (62.3)	1190 (47.5)	1254 (73.5)	1286 (41.6)	1468 (85.5)
<b>Family Employee Contribution/Premium :</b>					
<b>All Plan Types</b>	24.5 (.5)	24.7 (.3)	23.7 (.5)	23.8 (.2)	23.2 (.2)
<b>Exclusive Provider</b>	25.4 (.8)	26.1 (.8)	25.4 (.5)	25.0 (.3)	25.7 (.5)
<b>Mixture of Providers</b>	24.8 (.7)	25.1 (.5)	23.9 (.7)	24.0 (.4)	22.6 (.3)
<b>Any Provider</b>	21.4 (1.2)	20.7 (.8)	19.4 (1.0)	18.6 (.4)	19.5 (1.0)

Source: AHRQ. Medical Expenditure Panel Survey – Insurance Component, List Sample. Data obtained using the MEPS-IC Net retrieval software on the following web site: [www.meps.ahrq.gov](http://www.meps.ahrq.gov).



**Table 3**  
**Single Premiums and Employee Contributions: by Firm Size**

	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
<b>Total Premium:</b>					
<b>Total</b>	2051 (20.1)	2174 (17.0)	2325 (6.0)	2655 (9.6)	2889 (14.3)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	2209 (41.5)	2334 (58.8)	2553 (39.7)	3003 (41.4)	3209 (60.8)
<b>10-24</b>	2072 (22.8)	2271 (26.6)	2440 (29.7)	2780 (42.5)	3024 (31.9)
<b>25-99</b>	1982 (27.3)	2077 (24.6)	2345 (36.3)	2612 (40.4)	2787 (20.8)
<b>100-999</b>	2009 (36.7)	2114 (33.3)	2253 (30.3)	2561 (16.6)	2900 (35.2)
<b>1000+</b>	2056 (32.5)	2180 (22.8)	2276 (12.7)	2613 (23.3)	2837 (33.6)
<b>Single Contribution:</b>					
<b>Total</b>	320 (9.9)	383 (6.9)	420 (7.4)	450 (6.6)	498 (8.3)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	262 (17.7)	272 (21.9)	339 (28.3)	396 (24.2)	371 (15.7)
<b>10-24</b>	285 (23.3)	342 (15.5)	424 (25.5)	382 (16.7)	467 (23.3)
<b>25-99</b>	305 (13.1)	345 (11.0)	382 (6.5)	451 (21.7)	526 (17.2)
<b>100-999</b>	333 (18.7)	362 (25.1)	386 (15.8)	441 (24.8)	505 (24.8)
<b>1000+</b>	340 (15.7)	439 (9.1)	467 (16.0)	477 (13.0)	515 (12.6)
<b>Single Employee Contribution/Premium:</b>					
<b>Total</b>	15.6 (.5)	17.6 (.3)	18.1 (.3)	16.9 (.3)	17.3 (.3)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	11.8 (.6)	11.6 (.8)	13.3 (.9)	13.2 (.9)	11.6 (.4)
<b>10-24</b>	13.7 (1.2)	15.1 (.7)	17.4 (.9)	13.7 (.7)	15.4 (.8)
<b>25-99</b>	15.4 (.5)	16.6 (.6)	16.3 (.4)	17.3 (.7)	18.9 (.6)
<b>100-999</b>	16.6 (1.1)	17.1 (1.3)	17.1 (.7)	17.2 (1.1)	17.4 (.8)
<b>1000+</b>	16.6 (.8)	20.1 (.5)	20.5 (.7)	18.2 (.6)	18.1 (.5)

Source: AHRQ. Medical Expenditure Panel Survey – Insurance Component, List Sample. Data obtained using the MEPS-IC Net retrieval software on the following web site: [www.meps.ahrq.gov](http://www.meps.ahrq.gov).

**Table 4**  
**Family Premiums and Employee Contributions: by Firm Size**

	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
<b>Total Family Premium:</b>					
<b>Total</b>	5332 (40.9)	5590 (49.3)	6058 (32.2)	6772 (19.6)	7509 (32.6)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	5103 (79.3)	5265 (112.6)	5888 (118.3)	6994 (149.0)	7816 (100.2)
<b>10-24</b>	5264 (88.5)	5606 (100.6)	6321 (68.5)	6860 (142.9)	7766 (101.9)
<b>25-99</b>	5120 (85.2)	5378 (63.2)	5933 (65.9)	6628 (78.5)	7568 (157.2)
<b>100-999</b>	5122 (89.7)	5380 (57.7)	6069 (36.5)	6606 (52.3)	7446 (85.9)
<b>1000+</b>	5490 (43.2)	5732 (82.9)	6072 (49.8)	6817 (37.7)	7467 (70.0)
<b>Family Employee Contribution:</b>					
<b>Total</b>	1305 (22.6)	1382 (19.3)	1438 (31.3)	1614 (16.4)	1741 (18.4)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	1194 (67.9)	1242 (91.8)	1357 (72.1)	1674 (98.2)	1691 (60.9)
<b>10-24</b>	1443 (80.1)	1752 (89.0)	1889 (77.7)	1884 (124.5)	2054 (85.3)
<b>25-99</b>	1611 (103.5)	1777 (68.9)	1819 (54.8)	2184 (54.9)	2341 (80.1)
<b>100-999</b>	1469 (54.8)	1521 (55.0)	1608 (41.6)	1880 (54.6)	2108 (74.4)
<b>1000+</b>	1174 (33.9)	1249 (26.4)	1272 (44.8)	1395 (25.9)	1514 (27.8)
<b>Family Employee Contribution/Premium:</b>					
<b>Total</b>	24.5 (.5)	24.7 (.3)	23.7 (.5)	23.8 (.2)	23.2 (.2)
<b>Firm Size (# employees):</b>					
<b>&lt; 10</b>	23.4 (1.4)	23.6 (1.8)	23.0 (1.3)	23.9 (1.1)	21.6 (.9)
<b>10-24</b>	27.4 (1.7)	31.3 (1.9)	29.9 (1.3)	27.5 (1.6)	26.4 (1.2)
<b>25-99</b>	31.5 (1.6)	33.0 (1.3)	30.7 (1.0)	32.9 (.7)	30.9 (1.21)
<b>100-999</b>	28.7 (.9)	28.3 (1.0)	26.5 (.7)	28.5 (.9)	28.3 (.9)
<b>1000+</b>	21.4 (.7)	21.8 (.4)	21.0 (.6)	20.5 (.4)	20.3 (.3)

Source: AHRQ. Medical Expenditure Panel Survey – Insurance Component, List Sample. Data obtained using the MEPS-IC Net retrieval software on the following web site: [www.meps.ahrq.gov](http://www.meps.ahrq.gov).

**Table 5**  
**Plan-Level Weighted Regression Models**  
**for the Employee Premium Contribution (EPC)**

Variable	Marginal EPC	Single EPC	Family EPC	Family EPC % of Total
Infants (state threshold)	-.646 (.683)	-.270 (.275)	-.916 (.765)	.00004 (.0001)
Pregnant (state threshold)	1.048 (.728)	-.105 (.251)	.944 (.778)	.0001 (.0001)
Proportion w/kids 200% FPL	310.125 (881.874)	-135.595 (325.173)	174.530 (955.658)	.362*** (.138)
Infants * prop. w/kids 200% FPL	13.314** (6.674)	4.085 (2.666)	17.399** (7.297)	.002* (.001)
Pregnant * prop. w/kids 200% FPL	-10.239 (6.866)	-.129 (2.387)	-10.367 (7.360)	-.002* (.001)
Proportion two-workers	497.271 (333.176)	385.053*** (125.780)	882.324** (363.272)	.117** (.055)
Proportion women	29.218 (98.500)	22.267 (39.228)	51.486 (105.725)	.011 (.015)
Prop. two-workers * prop. women	917.969*** (261.833)	-93.639 (102.115)	824.330*** (282.811)	.121*** (.041)
Prop. w/kids at home	-122.518 (287.728)	-236.649** (111.672)	-359.167 (309.237)	-.078* (.046)
Prop. under self-insurance	-97.018*** (34.478)	34.002** (15.231)	-63.016 (41.784)	.003 (.005)
Medicare AAPCC	-.267 (.170)	-.113* (.065)	-.380* (.182)	-.00009*** (.00003)
Prop. low wage workers	267.353*** (66.560)	199.610*** (27.766)	466.964*** (71.496)	.0808*** (.011)
Prop. middle wage workers	346.766*** (45.160)	147.274*** (17.352)	494.040*** (48.421)	.087*** (.007)
Prop. low wage (new definition)	79.866 (72.826)	29.587 (29.307)	109.450 (79.452)	.010 (.012)
Prop. middle wage (new definition)	40.845 (55.320)	-1.621 (22.048)	39.224 (59.526)	-.006 (.008)
Prop. part-time workers	-61.218 (43.953)	47.515*** (16.871)	-13.702 (48.022)	-.006 (.007)
Prop. unionized workers	-967.529*** (47.440)	-320.648*** (20.827)	-1288.177*** (55.078)	-.179*** (.008)
Prop. workers age 50+	13.753 (61.410)	-7.625 (23.155)	6.128 (62.590)	-.006 (.009)
Unemployment rate	-16.138*** (4.936)	.053 (2.012)	-16.084*** (5.266)	-.002*** (.0008)
Real per capita income	.003 (.002)	-.0003 (.0007)	.002 (.002)	.000 (.000)
HMO penetration rate	-86.383 (88.982)	-20.955 (34.688)	-107.338 (94.817)	-.017 (.014)
County population/10,000	.442* (.245)	.145 (.009)	.587** (.268)	.000006 (.000004)
Square mile	-.008	-.001	-.009	-.000

	(.005)	(.002)	(.007)	(.000)
Active physicians	-.008	-.005	-.014	-.000
	(.008)	(.003)	(.009)	(.000)
Herfindahl index	466.098	-624.856*	-158.757	-.142
	(1071.101)	(375.381)	(1120.836)	(.160)
Prop. very small establishments	-605.449*	-61.894	-667.343*	-.128**
	(364.616)	(138.639)	(392.641)	(.058)
Prop. very large establishments	-228.641	7840.131	7611.491	.338
	(16376.3)	(6488.628)	(17989.450)	(2.632)
Prop. manufacturing establish.	-1351.148**	-104.850	-1455.998**	-.122
	(522.917)	(200.593)	(574.114)	(.087)
Single premium for plan	.055***	.140***	.195***	-.00002***
	(.012)	(.007)	(0.12)	(.000)
Constant	1303.009***	148.749	1451.759***	.430***
	(362.149)	(136.634)	(394.906)	(.058)
<hr/>				
No. Observations	131248	131248	131248	131248
Overall F-Statistic	37.16***	30.46***	41.93***	54.45***
R-Squared	.095	.113	.119	.136

Notes: Standard errors are in parentheses. Models are estimated as weighed regressions, using the MEPS-IC establishment weights, and account for possible intra-establishment correlation of the disturbances of different plans that are offered by the same establishment.

All regression models include the following as additional variables: establishment size (4 dummy variables), firm size (4 dummy variables), industry (11 dummy variables), age of business (6 dummy variables), ownership type (6 dummy variables), whether establishment offers a flexible spending account (FSA) (3 dummy variables), whether any other non-FSA special benefits are offered, whether establishment is part of a multi-establishment firm, whether it is in an MSA, type of insurance plan (three dummy variables), whether multiple types of health plans are offered, interactions of the type of plan with whether the firm offers multiple plan types, and state and year dummy variables.

\*\*\* Statistically significant at the .01 level, \*\* Statistically significant at the .05 level, \* Statistically significant at the .1 level.

**Table 6**  
**Weighted Regression Models for the Marginal Employee Premium**  
**Contribution (EPC) Among Specific Types of Plans**

Variable	FFS Plans	HMO Plans	PPO Plans	POS Plans
Infants (state poverty level threshold )	-3.021* (1.549)	-1.443 (.957)	1.035 (1.189)	-.392 (1.531)
Pregnant (state poverty level thresh.)	3.157* (1.905)	1.394 (.969)	.035 (1.185)	.371 (1.991)
Prop. w/kids 200% FPL	212.241 (2131.576)	1485.818 (1371.810)	1279.770 (1362.388)	-1987.056 (2061.640)
Infants * prop. w/kids 200% FPL	44.088*** (16.063)	6.641 (9.637)	-2.896 (10.858)	31.033* (16.579)
Pregnant * prop. w/kids 200% FPL	-38.802** (17.045)	-8.830 (9.055)	.654 (11.559)	-16.345 (17.976)
Prop. two-workers	334.745 (772.957)	755.361 (578.247)	196.282 (486.509)	833.226 (736.811)
Prop. women	-77.943 (212.613)	234.591 (156.562)	-99.269 (152.134)	-56.799 (205.928)
Prop. two-workers * prop. women	815.493 (553.257)	338.690 (420.730)	1276.197*** (393.399)	1401.748** (560.035)
Prop. w/kids at home	-1272.549** (625.849)	-249.774 (492.561)	356.477 (439.008)	202.775 (641.514)
Prop. under self-insurance	85.005 (79.878)	-142.011*** (50.326)	-77.685 (57.147)	-88.300 (78.909)
Medicare AAPCC	-.632 (.392)	-.303 (.263)	-.096 (.271)	-.081 (.362)
Prop. low wage workers	188.727 (134.202)	185.826 (119.174)	481.180*** (106.239)	186.354 (149.081)
Prop. middle wage workers	476.176*** (112.504)	363.754*** (73.975)	378.204*** (71.163)	165.354* (100.203)
Prop. low wage (new definition)	168.445 (167.236)	240.215* (128.988)	-45.659 (111.356)	-72.473 (166.612)
Prop. middle wage (new definition)	-301.329** (144.421)	271.810*** (91.244)	83.903 (84.121)	-212.709* (120.704)
Prop. part-time workers	-219.497** (91.616)	74.885 (74.369)	-114.469* (65.087)	-27.857 (94.507)
Prop. unionized workers	-685.450*** (132.844)	-975.053*** (75.828)	-974.983*** (67.315)	-1047.808*** (107.343)
Prop. workers age 50+	-291.636** (125.969)	135.865 (111.954)	92.581 (103.361)	-58.495 (128.492)
Unemployment rate	-10.404 (11.480)	-17.894** (8.471)	-16.987** (6.793)	-19.285 (12.632)
Real per capita income	-.002 (.005)	.0003 (.003)	.005* (.003)	.005 (.004)
HMO penetration rate	-228.702 (215.988)	-278.095* (144.846)	37.999 (136.582)	100.217 (181.530)
County population/10,000	.342 (.595)	.0006 (.383)	.788 (.429)	.698 (.520)
Square mile	-.026**	-.010	.003	-.002

	(.013)	(.008)	(.009)	(.012)
Active physicians	-.007	.003	-.018	-.017
	(.020)	(.013)	(.014)	(.017)
Herfindahl index	-3015.78	444.188	2991.332*	-853.051
	(1936.378)	(2220.694)	(1719.934)	(2402.392)
Prop. very small establishments	738.503	-450.764	-838.249	-1628.747**
	(799.135)	(654.001)	(529.087)	(789.062)
Prop. very large establishments	-735.241	25938.76	-9138.346	-33664.010
	(36563.390)	(30350.740)	(23185.560)	(37809.850)
Prop. manufacturing establishments	-240.041	-1513.533	-867.644	-2352.734**
	(1247.054)	(930.589)	(750.764)	(1086.844)
Single premium for plan	.0486*	.043**	.090***	.020
	(.026)	(.020)	(.018)	(.032)
Constant	445.882	1296.506**	1407.821***	3148.568***
	(810.469)	(609.169)	(528.021)	(818.099)
<hr/>				
Subpopulation Observations	18200	41322	48060	23664
Overall F-Statistic	7.43***	16.80***	18.40***	11.64***
R-Squared	.081	.102	.111	.095

Notes: Standard errors are in parentheses. Models are estimated as weighed regressions, using the MEPS-IC establishment weights, and account for possible intra-establishment correlation of the disturbances of different plans that are offered by the same establishment.

All regression models include the following as additional variables: establishment size (4 dummy variables), firm size (4 dummy variables), industry (11 dummy variables), age of business (6 dummy variables), ownership type (6 dummy variables), whether establishment offers a flexible spending account (FSA) (3 dummy variables), whether any other non-FSA special benefits are offered, whether establishment is part of a multi-establishment firm, whether it is in an MSA, whether multiple types of health plans are offered, and state and year dummy variables.

\*\*\* Statistically significant at the .01 level, \*\* Statistically significant at the .05 level, \* Statistically significant at the .1 level.

**Appendix**  
**Establishment-Level Weighted Regression Models**  
**for the Employee Premium Contribution (EPC)**

Variable	Weighted Marginal EPC	Unweighted Marginal EPC	Weighted Single EPC	Weighted Family EPC
Infants (state poverty level threshold)	-.779 (.764)	-.806 (.755)	-.271 (.298)	-1.050 (.809)
Pregnant (state poverty level thresh.)	1.953** (.831)	1.888** (.827)	-.088 (.277)	1.865** (.858)
Prop. w/kids 200% FPL	752.256 (980.784)	678.432 (972.613)	-182.004 (339.161)	570.252 (1028.441)
Infants * prop. w/kids 200% FPL	20.233*** (7.459)	19.825*** (7.381)	4.858* (2.797)	25.091*** (7.763)
Pregnant * prop. w/kids 200% FPL	-19.386** (7.692)	-18.134** (7.649)	-.980 (2.617)	-20.265*** (7.963)
Prop. two-workers	364.856 (378.521)	303.573 (375.853)	126.471 (141.353)	491.327 (397.446)
Prop. women	-19.877 (106.699)	-45.459 (107.111)	-7.312 (40.857)	-27.189 (112.722)
Prop. two-workers * prop. women	1223.975*** (285.860)	1274.219*** (286.529)	-38.382 (106.932)	1185.592*** (303.362)
Prop. w/kids at home	45.070 (327.280)	5.022 (324.486)	-174.411 (127.574)	-129.341 (338.661)
Prop. under self-insurance	-248.351*** (21.773)	-247.767*** (21.416)	-23.757*** (8.378)	-272.107*** (23.601)
Medicare AAPCC	-.259 (.189)	-.252 (.188)	-.0343 (.073)	-.294 (.196)
Prop. low wage workers	192.358*** (70.708)	188.031*** (70.868)	195.062*** (29.822)	387.421*** (74.111)
Prop. middle wage workers	48.337 302.140	312.820*** (78.196)	138.238*** (18.655)	440.378*** (50.307)
Prop. low wage (new definition)	176.735*** (78.757)	205.953*** (78.196)	46.640 (31.407)	223.375*** (82.803)
Prop. middle wage (new definition)	91.910 (61.378)	103.097* (60.702)	15.978 (24.489)	107.889*** (63.790)
Prop. part-time workers	-189.644*** (46.018)	-169.486*** (45.866)	25.732 (18.014)	-163.911*** (48.593)
Prop. unionized workers	-882.156*** (55.997)	-879.812*** (54.284)	-251.663*** (25.659)	-1133.817*** (62.451)
Prop. workers age 50+	-47.370 (64.972)	-43.712 (64.662)	-10.649 (24.840)	-58.019 (65.052)
Unemployment rate	-13.482** (5.818)	-12.994** (5.732)	.0001 (2.210)	-13.482** (5.998)
Real per capita income	.004** (.002)	.005** (.002)	-.0003 (.0008)	.004* (.002)
HMO penetration rate	-79.390 (96.169)	-73.627 (95.333)	21.083 (36.936)	-58.307 (98.543)
County population/10,000	.364 (.287)	.431 (.284)	.153 (.108)	.516* (.300)

Square mile	-.007 (.006)	-.007 (.006)	-.002 (.002)	-.008 (.007)
Active physicians	-.007 (.010)	-.009 (.010)	-.007* (.004)	-.014 (.010)
Herfindahl index	384.379 (1183.180)	605.356 (1160.007)	-339.013 (386.282)	45.366 (1180.462)
Prop. very small establishments	-500.177 (388.764)	-539.568 (386.343)	-77.607 (150.831)	-577.784 (403.479)
Prop. very large establishments	-3609.100 (17645.710)	-9136.628 (17359.440)	6303.799 (6908.289)	2694.700 (18363.960)
Prop. manufacturing establishments	-1323.485** (554.672)	-1366.481** (546.965)	-252.771 (213.514)	-1576.256*** (584.106)
Weighted single premium	.026* (.015)	.019 (.015)	.125*** (.009)	.150*** (.014)
Constant	1190.944*** (388.260)	1240.835*** (385.691)	215.613 (148.876)	1406.557*** (407.190)
No. Observations	84511	84511	84511	84511
Overall F-Statistic	37.09***	38.58***	27.76***	41.29***
R-Squared	.088	.091	.093	.108

Notes: Standard errors are in parentheses. Models are estimated as weighed regressions, using the MEPS-IC establishment weights, and account for possible intra-establishment correlation of the disturbances of different plans that are offered by the same establishment.

All regression models include the following as additional variables: establishment size (4 dummy variables), firm size (4 dummy variables), industry (11 dummy variables), age of business (6 dummy variables), ownership type (6 dummy variables), whether establishment offers a flexible spending account (FSA) (3 dummy variables), whether any other non-FSA special benefits are offered, whether establishment is part of a multi-establishment firm, whether it is in an MSA, whether multiple types of health plans are offered, and state and year dummy variables.

\*\*\* Statistically significant at the .01 level, \*\* Statistically significant at the .05 level, \* Statistically significant at the .1 level.