

Self-Insured Health Plans: Analysis of Employers' Premium Contributions and Price Elasticity of Demand

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Employment-based health insurance plans constitute the primary source of private health insurance coverage in the United States, provided to about 160 million people (Claxton, et al., 2005; Kaiser Commission on Medicaid and the Uninsured, 2007). Continually rising health care costs and the preferential tax treatment of fringe benefits (e.g., the premiums paid by employers are excluded from an employee's taxable income) have largely contributed to their increasing popularity.

As a result of this tax subsidy, the relative price of health coverage obtained through the workplace is estimated to be 27% lower (Gruber and Poterba 1996). Because employment-based plans are the dominant form of health insurance in the US, there exists continued policy interest in understanding factors affecting employers' decisions on health insurance plans they offer to employees. Similarly, the degree of responsiveness to changes in price (e.g., the price elasticity of demand) for employment provided health insurance is of policy interest with respect to analyzing the effectiveness and relevance of various health insurance policies.

Currently, health coverage provided by companies to their employees is administered either through an insurance company (traditional insurance) or by the company itself (self-insurance). Specifically, a self-insured health plan is a plan in which



the employer does not contract with an insurance company, so the employer assumes all or part of the risk to pay the medical claims of its employees.¹ In practical terms, self-insuring firms act as their own health insurance firms, meaning that they pay for their employees' medical claims out of their own pockets.

Previous economic analyses of health insurance have largely focused on traditional health plans—those plans in which an employer contracts with a health insurance company (Buchmueller et al. 2002; Dranove et al. 2000; Long and Marquis 1999; Marquis and Long 2001). In contrast, little research has been done regarding employers' contributions towards health insurance premiums and the price elasticity of demand in self-insured health plans. At the same

¹ A large number of self-insured employers limit their financial risk through reinsurance (e.g., stop-loss insurance).

time, during the last several years self-insured health plans have become a prevalent way of providing health benefits by the sponsoring employers (Employee Benefit Research Institute (EBRI) 2008; Henderson 1999; Park 2000) as shown in Figure 1.

Currently, over one-half of all private insurance is offered in the form of self-funded health coverage through the workplace (Henderson 1999). In fact, 89 percent of workers were covered by self-insured arrangements in 2008 in companies with 5,000 or more employees, which represents an increase from 62 percent in 1999 (EBRI 2008; EBRI 2009). In terms of the overall market share, this implies that 55 percent of all employees with health insurance were covered by employer's self-insured health plans (EBRI 2009)². Specifically, the dominant role of self-insurance can be explained by its cost advantage, which is mostly due to exemptions from various health insurance laws and regulations with which traditional insurance plans need to comply (Acs et al. 1996; Claxton et al. 2005; Henderson 1999; Pierron and Fronstin 2008; Self-

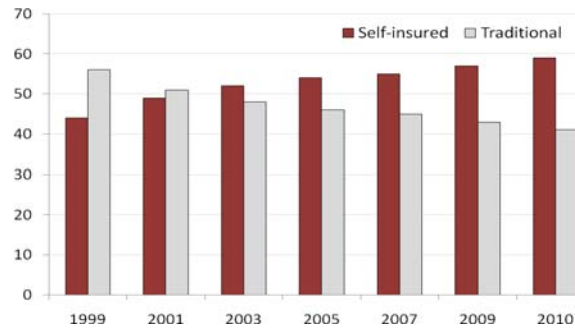


Figure 1: Percentage of covered workers in self-insured vs. traditional health plans from 1999 to 2010.

Insurance Institute of America; Thompson 1993).³

In this research, we addressed the preference for self-insurance by analyzing two phenomena: the determination of employers' contributions towards health insurance premiums and the price elasticity of demand in self-insured health plans. We compared our findings to similar studies conducted on traditional insurance plans. We used the 1987 National Medical Expenditure Survey (NMES) data series, specifically the Employment-Related Coverage and Household Survey data sets, and applied regression models.

² Even though self-insurance has become a standard practice mostly for larger firms (Employee Benefit Research Institute (EBRI) 2008; Henderson 1999; Park 2000), there are also smaller firms which self-insure (Henderson 1999). According to Thompson (1993), over 20,000 small companies with 100 or fewer employees were self-insured in 1992. However, only 13 percent of employees in companies with fewer than 200 participants obtained self-insured health plans in 2006 (Pierron and Fronstin 2008). Thus, the trend to self-insure is not that prevalent for small firms as it is for large firms.

³ In particular, self-insured plans are exempt from paying state insurance premiums (ERISA). They also don't have to comply with varying state mandates (Acs et al. 1996; Claxton et al. 2005; Henderson 1999; Pierron and Fronstin 2008; Self-Insurance Institute of America; Thompson 1993). Self-insuring employers are not required to hold reserve requirements, offer mandated benefits, or meet consumer protection requirements (Acs et al. 1996; Claxton et al. 2005). They also have greater flexibility in the plan design (Claxton et al. 2005; Pierron and Fronstin 2008; Self-Insurance Institute of America; Thompson 1993).

Table 1: Estimates of self-insured vs. not self-insured health plans with their corresponding statistical significance levels obtained across all model specifications.

Model 1	Model 2	Model 3	Model 4	Model 5
0.2483*** (0.0270)	0.2502*** (0.0272)	0.1813*** (0.0372)	0.1975*** (0.0377)	0.1987*** (0.0426)
Notes: Heteroskedasticity robust standard errors in parentheses; *** p<0.01 (2 tail test);				

In the case of the determining the employer’s contribution, the dependent variable was the natural log of the dollar amount of the employer’s contribution (or of the expected funding for self-insured coverage) to its employee’s *i* total annual premium of health coverage. Our model controlled for firm size, employees’ income, poverty level, sex, race, and place of residence. When studying the price elasticity of demand, the dependent variable was the natural log of the expected value of total funding of self-insured medical and hospital plans per policyholder.

The price of insurance is defined as “the loading fee” that mostly relates to the administrative costs of insurance (following the methodology used by Phelps (2002)), and it is expressed as a fraction of total benefits claims per enrollee. This model also accounted for demographic (e.g., age, sex, and race), geographic, socioeconomic status (e.g., family income and education), and employer characteristics (e.g., union, firm size, and employer’s organization type). Several specifications of the regression models were used to test the robustness of obtained results (which included various subsets of control variables).⁴

⁴ In particular, in the determination of the employer’s contribution, in addition to the main variable studied (self-insured vs. not self-insured type of plan), Model 1 accounted for the union

Our analyses showed (Table 1) that self-insurance predicts higher employer contributions to health insurance premiums, which is also consistent with the earlier empirical findings (Buchmueller et al. 2002; Marquis and Long 2001). Higher premium contributions offered by self-insuring employers may imply the cost advantage of self-insured health plans relative to conventional health insurance, as firms that self-insure do not have to obey various health insurance laws and regulations.

and single vs. family/two person/other coverage. Four other models were subsequent extensions with respect to explanatory variables included. As such, Model 2 extended Model 1 by controlling for demographic characteristics and Model 3 extended Model 2 by considering socioeconomic status information. Finally, Model 4 augmented Model 3 by including geographic control variables and Model 5 added employer specific characteristics. Similarly, when studied the price elasticity of demand, the key price variable was considered in each model specification. Thus, Model 1 starts with the price variable only and other specifications are then augmented by subsets of explanatory variables. Specifically, Model 2 extends Model 1 by accounting for demographic and geographic characteristics. Model 3 builds on Model 2 and adds information on socioeconomic status. Finally, Model 4 accounts for employer characteristics (that were not included in Model 3) and Model 5 considers the interaction term between the price elasticity and the low income (vs. high income).

Table 2: Ranges of estimates (95% confidence interval of the natural logarithm of the price) for the price elasticity of demand in self-insured health plans across all model specifications

Model 1	Model 2	Model 3	Model 4	Model 5
[-0.079,-0.037]	[-0.075,-0.037]	[-0.073,-0.018]	[-0.046, 0.014]	[-0.041,0.018]

Moreover, the magnitude of the effect for the health insurance type (e.g., self-insured vs. not self-insured) is estimated to be 18–25% (depending on the model specification as shown in Table 1) implying that self-insuring employers spend 18–25% more per policy holder on their health benefits (thus, on their medical treatments in general). Hence, for advocates of medical treatments, this effect may be a strong argument for a public policy that reduces regulations on health insurance. Similarly, for those not favoring medical treatments, it may be an argument for increasing regulation on health coverage.

Our study found that the price elasticity of demand for self-insured health plans is within an inelastic range—from -0.08 to 0.01 (depending on the model specification as demonstrated in Table 2). This implies that policy holders are insensitive to changes in price of their health coverage.

The obtained estimates of the price elasticity of demand for self-insured health plans in all the models specified are in accordance with most of the previous literature, which also found the demand for traditional health insurance to be price inelastic.

The similarity of these results provide a re-confirmation of those earlier measures, and also demonstrates that the demand responsiveness to changes in price for self-insured health plans does not differ from estimates of other types of

health insurance. Moreover, the magnitude of the price elasticity obtained in this study suggests that there is no place for price competition in the health insurance market.

Both of these issues, the determination of employers' contributions and the price elasticity of demand in self-insured health plans, represent key economic metrics of the healthcare system in the US. As such, they should be highly relevant not only to policy makers, but also to other stakeholders, such as employers, policy holders, uninsured individuals, and insurance companies.

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