

### **Does Offering Health Insurance to Employees Reduce a Firm's Competitive Advantage?**

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#### **Abstract**

The decision to offer health insurance to employees and their families is a difficult one for many small and mid-sized businesses. Factors such as the aging U.S. population and rising medical costs have dramatically increased health insurance premiums, the majority of which is paid for by employers. Many firms contend that increasing health insurance costs have significantly reduced their profit margins and their ability to compete against firms that do not offer health insurance as a non-wage benefit. This paper conducts an initial empirical analysis to determine whether firms offering health insurance to their employees are placed at a competitive disadvantage relative to those firms not offering health insurance. Using business outlook survey data from a mid-sized, Midwestern economy, there is little evidence to suggest that providing health insurance, or identifying health insurance as a significant competitive issue, hurts the financial viability of a firm any more or less than it harms any other firm in the economy. As a result, while the cost of health insurance may be a significant problem for a firm's bottom line, it does not appear to affect a firm's ability to compete in its market.

#### **Introduction**

Health insurance for workers and their families is one of the most common non-wage benefits provided by employers. Over two-thirds of the non-elderly U.S. population receives health insurance coverage through an employer-sponsored plan (Cutler, 2003). However, during the 1990's, the rapid increase in the cost of providing medical care, along with the aging baby-boomer population, led to dramatic increases in health insurance premiums - most of which was paid for by employers. Consequently, firms' labor-related operating expenses during this time increased dramatically (Webber, Symonds, Lee & Forest, 2004; Treasury & Risk Management, 2005; Gonzalez, 2005; Larkin, 2005).

In order to partially offset the negative effects of increased premiums, employers have implemented a variety of initiatives. Some firms have offered wellness and prevention initiatives. Others have modified health insurance benefits or changed the type of insurance plan offered to employees; for example, moving from a traditional fee-for-service plan to managed care or managed competition plans (Pellet, 2005). Most have implemented cost sharing initiatives, raising deductibles and premium contributions for employees (Gonzales, 2005; Larkin, 2005). A small number of firms have even changed their hiring practices by refusing to hire new employees who smoke (McNutt, 1996; Wysocki Jr., 2004).

Unfortunately, for small firms or firms in industries such as wholesale trade, retail trade and manufacturing, these cost saving initiatives may either insufficiently or inappropriately alleviate the problem (Webber, Symonds, Lee & Forest, 2004; Larkin, 2005). The difficulty for these firms is that they face intense competition from other businesses that do not offer health insurance, or offer these benefits at such high costs that workers do not enroll in the plan(s).<sup>1</sup> Firms that reduce or eliminate health insurance expenses have lower operating costs and higher profit margins (or equivalent profit margins

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<sup>1</sup> This strategy is called reducing "employ take-up", and refers to any action on the part of employers that attempts to reduce the number of employees who voluntarily elect health care coverage, usually by making it unaffordable or by offering plans with such limited coverage (for a given employee contribution) that employees choose not to enroll.

with lower selling prices) than their competitors. In such cases, firms that do not offer health insurance, or significantly reduce employee take-up, gain a competitive advantage over their rivals (MacDonald, 2004; Heller & McTaggart, 2004; Featherstone, 2005).

In response to this trend, a number of special interest groups have lobbied state governments (including Massachusetts, Oregon, Maryland, California and Washington) to enact “pay or play” laws. These laws force employers to either offer affordable health insurance to all of their employees or pay the government the amount of money necessary to enroll their employees in a state-sponsored insurance plan (Atkins, 2003; McDonough, 2004/2005; Bradford & Greenwald, 2004; DSN Retailing Today, 2004; Health Business Week, 2005; Galloway, 2005). By forcing employers to offer a similar set of health insurance benefits and pass along a similar proportion of those costs to employees, proponents argue that firms can no longer reduce costs and increase profit by providing employees with inadequate health care coverage. Moreover, comprehensive, affordable health insurance is available for all employees and their families.

One potential problem with pay or play policies is that they apply to all employers and industries in a state, regardless of whether or not health insurance decisions are used to gain a competitive advantage in those industries and/or regions. If this is a problem in most industries and/or across a state, then pay or play legislation may be an appropriate policy intervention. However, if health insurance does not lead to uneven competition, or if this problem is relegated to specific industries, then comprehensive pay or play legislation may not be an appropriate policy.<sup>2</sup> Instead, policy makers may want to target policies towards specific industries to achieve a more efficient and efficacious outcome. Unfortunately, there have been few, if any, comprehensive empirical studies examining whether this type of competition is indeed a pervasive problem, or whether it is limited to a small number of industries.

This paper presents an initial empirical analysis that examines whether employer-sponsored health insurance does, in fact, put firms in a competitive disadvantage. Its goal is not to test a causal relationship between health insurance and competition. Rather, this study is intended as an exploratory analysis that identifies patterns and associations between health insurance, competition and other market and firm-specific factors. Identification of the causal relationship is left as a suggestion for future research.

The remainder of this paper proceeds in four steps. First, a discussion of the association between health insurance and competition is presented, paying special attention to how factors such as firm size and differences across industries may affect this relationship. In doing so, it is possible to more explicitly describe the hypothesized association between health insurance and competition. The next section discusses the data used to test our hypotheses, which come from a mid-sized, Midwestern economy. The third section presents the empirical results. The paper concludes by discussing the policy implications of this work and providing some recommendations for future research.

### **Factors Affecting the Use of Health Insurance to Gain a Competitive Advantage**

In order for pay or play programs to appropriately address the uneven competition caused by firms' health insurance decisions, a number of conditions must be present in the market. First, a significant proportion of firms impacted by this legislation must consider employer-sponsored health insurance to be an important problem. While health insurance costs have undoubtedly risen dramatically over the past decade, other issues, such as increased foreign competition, increased taxes, government regulation and changes in financial markets have also occurred. Consequently, it is important to determine where the problem of increased health care expenses ranks compared to other problems facing business in today's economy. If health insurance does not rank among the top problems facing current business owners, then policy makers may achieve a better outcome by creating a different set of policies that address these

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<sup>2</sup> An additional concern is the “level” of the playing field; that is, whether most employers actually offer health insurance. If most employers do not offer health insurance, then pay or play may be justified on those grounds. However, this analysis only examines the appropriateness of pay or play legislation as it distorts a firm's competitive advantage (which, by definition, is relative to other firms' decisions to offer health insurance). As such, it is primarily concerned with differences in the level, and not the level itself.

more pressing issues. But if health insurance is an important problem for firms, then further tests are warranted to identify the scope and magnitude of the problem. It becomes necessary to determine how the health insurance problem correlates with a firm's operating decisions and, by extension, its competitive successes. In this case, pay or play legislation may be a viable policy option.

Firms that identify health insurance as a major problem can be broken down into two general categories. First, firms may offer health insurance and consider health care costs a problem. That is, firms may offer health insurance to their employees, but either suffer from high health insurance costs or (by at least partially passing along these costs to employees through higher premium shares, higher deductibles or reduced coverage) low employee take-up (Cutler, 2003). On the other hand, firms may not offer health insurance yet still consider health care costs an important problem facing their business. Depending on the outcome, employers may want to offer health insurance to their employees, but cannot afford to do so because of competitive pressures or the impact that health insurance premiums would have on the firm's operating costs (Webber, Symonds, Lee & Forest, 2004). The importance of this distinction is that it identifies the magnitude of the problem (assuming that no employee-sponsored insurance is worse than poor or partial coverage) and thus the nature of the pay or play policy response that is required.

Concomitantly, disaggregating the distribution of firms that do not identify health insurance expenses as a major problem based on the decision to offer health insurance may also provide some insight into the means by which firms gain an unfair competitive advantage. For example, suppose that a disproportionate number of firms offer health insurance, but do not identify health insurance as an important problem. This suggests (but does not prove) that a portion of these firms may gain an unfair advantage by reducing employee take-up (Cutler, 2003). Alternatively, a disproportionate number of firms neither offering health insurance nor identifying it as a problem may suggest (but again does not prove) that some of these firms gain an unfair advantage by not offering insurance.

A third issue is whether certain markets are more affected by this problem than others. The previous discussion argues that small firms, or companies in the wholesale, retail, manufacturing and construction industries are disproportionately affected by health insurance expenses (Webber, Symonds, Lee & Forest, 2004; Larkin, 2005). If this is the case, then a government policy may be more effective if it is directed towards these industries, instead of economy-wide. Firms may also face different challenges obtaining health insurance based on the size of the company. For example, smaller firms have fewer employees, and thus may not have the luxury of creating a self-funded plan. As a result, these firms may be forced to pay higher premiums, which drives up health care costs. On the other hand, firms with a larger number of employees may be able to create a self-funded plan, but may face other challenges which limit their ability to keep health care costs down. For example, large unionized firms are more likely to find employee resistance to changes in health insurance coverage and employee contributions to health insurance premiums.

A final issue is whether reducing or eliminating employee health insurance coverage actually gives firms a significant competitive advantage. Competitive advantage is typically defined by differences in profitability across firms in a market or industry (Besanko, Dranove, Shanley & Schaefer, 2004). Because competitive advantage is measured in a relative (or a differential) context, it is possible that providing insurance to employees may be a significant problem, but not lead to a competitive disadvantage. This is especially true if all firms are equally affected by health care expenses, or if other, more important factors influence firms' costs and revenues.

As stated in the Introduction, the central issue explored in this paper is whether the decision to provide health insurance to its employees harms a firm's competitive advantage. However, the current discussion implies that a number of extenuating factors play a role in this decision. As such, it is necessary to frame the basic research question within the context of five major hypotheses, which attempt to characterize both the central research question as well as these extenuating conditions. Stated in null form, they are as follows:

- H<sub>1</sub>: Health care expenses for employees are not a significant concern for the average employer.*
- H<sub>2</sub>: There is no significant association between identifying health care expenses for employees as a concern and a firm's decision to offer health insurance.*
- H<sub>3</sub>: There is no significant association between health insurance and a firm's size.*
- H<sub>4</sub>: There is no significant association between health insurance and the level (or outcome) of competition in the market.*
- H<sub>5</sub>: There is no significant association between health insurance and a firm's competitive success.*

## **Data and Empirical Methodology**

The data used in this analysis come from a mail-based, quarterly business outlook survey conducted by a public university's business school in a Midwestern economy. This regional economy has approximately 350,000 residents and covers a geographic area approximately 30 miles in diameter. Similar to other Midwestern economies of comparable size, this economy has a strong manufacturing base and a strong union presence within this industry. Other major components of the economy include retail and wholesale trade, agricultural services, financial services and health care.

The content and structure of the questions in this survey are similar to other business sentiment surveys, including the National Federation of Independent Business (NFIB) *Small-Business Conditions Survey* (<http://www.nfib.com/page/sbc>). Like the NFIB's survey, this survey is administered on a regular basis, and its results are used to track economic conditions in the economy over time. This analysis uses the September 2004 edition of the survey. This edition was chosen for two related reasons. Data from 2004 is used because it represents a time when the local economy was growing at a relatively stable rate. Sufficient time had elapsed from the September 11th crisis to minimize the possibility of skewed responses due to excess optimism or pessimism arising from this shock. Shortly after the September 2004 edition, the survey was temporarily suspended in order to redesign the survey to address different economic issues facing the community, and also to enable the University to administer the survey over the Internet.

All survey forms are endorsed by the local chamber of commerce and target firms' upper-management (usually an owner, financial officer or chief executive) in order to obtain accurate responses. The surveys contain approximately 35 questions covering past, present and expected future trends in capital expenditures, employment patterns, employee compensation, selling prices, sales and after-tax profit. In addition, respondents are asked to identify five of the most important factors currently facing their business. Health care expenses for employees, foreign competition, and domestic competition are included among the 15 possible responses. Because firms are usually unwilling to provide detailed, numerical information about their activities, all questions in the survey ask for nominal answers in order to maintain a viable response rate.

Table I contains a list of the questions from the survey that are utilized in this study. The questions are listed in the order in which they are utilized in this paper, instead of the order in which they appear in the survey. The spacing, font size and general layout of the questions also differ slightly from those utilized in the survey. Approximately 1,000 surveys were originally mailed, of which 118 were returned, implying a response rate of approximately 11%. Given the fact the survey is administered on a regular basis, and asks for information on sales, after tax profit and employment patterns (which many firms are loathe to disclose, even in a nominal format), this response rate is not unusual for a survey of its kind (Sims, Breen & Ali, 2002; Morrison, Breen & Ali, 2003). Moreover, as Dennis (2003) notes, response rates of less than 25% are an increasingly common occurrence in all types of mail-based business surveys. Of the 118 returned questionnaires, 12 contained missing or miscoded information, leaving a working sample of 106 observations.

The questions presented in Table I allow for the creation of two variables that measure a firm's ability or willingness to provide health insurance to its employees. From question (1) a dummy variable is constructed that takes a value of one if health care expenses for employees are identified as one of the top five problems currently facing a firm and a value of zero otherwise. Additionally, from question (2)

another binary variable is created that takes a value of one if an employer offers health insurance to its full-time employees and takes a value of zero otherwise.

Table I. Questions Used from the Business Survey

(1) Rank the **five** most important problems facing your firm today (in order of importance: 1,2,3,4 and 5):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Taxes                                      | <input type="checkbox"/> Inflation                          | <input type="checkbox"/> Poor Sales                        |
| <input type="checkbox"/> Foreign Competition                        | <input type="checkbox"/> Financing and Interest Rates       | <input type="checkbox"/> Cost of Labor                     |
| <input type="checkbox"/> Government Regulations                     | <input type="checkbox"/> High Energy Cost                   | <input type="checkbox"/> Competition from other Businesses |
| <input type="checkbox"/> Quality of Labor                           | <input type="checkbox"/> Availability of Employees          | <input type="checkbox"/> Cost or Availability of Insurance |
| <input type="checkbox"/> Uncertainty of Future Economic Performance | <input type="checkbox"/> Health Care Expenses for Employees | <input type="checkbox"/> Other                             |

(2) Do you provide health benefits for full-time workers?

- Yes                       No

(3) What is your form of business organization?

- Proprietorship       Partnership (LLC; LLP)       Sub-S Corporation       Corporation

(4) Indicate the total number of employees in your firm (full-time, part-time and yourself):

- |                                   |                                    |                                   |
|-----------------------------------|------------------------------------|-----------------------------------|
| <input type="checkbox"/> 1 – 10   | <input type="checkbox"/> 11 – 20   | <input type="checkbox"/> 21 – 50  |
| <input type="checkbox"/> 51 – 150 | <input type="checkbox"/> 151 – 500 | <input type="checkbox"/> Over 500 |

(5) Please classify your major business activity using one of the categories below. If more than one applies, mark the one which contributes most towards your gross sales or total revenue.

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Agriculture/Forestry            | <input type="checkbox"/> Construction                         | <input type="checkbox"/> Finance and Insurance                                 |
| <input type="checkbox"/> Health Care and Social Services | <input type="checkbox"/> Wholesale Trade                      | <input type="checkbox"/> Manufacturing   |
| <input type="checkbox"/> Utilities                       | <input type="checkbox"/> Arts and Entertainment               | <input type="checkbox"/> Retail Trade  |
| <input type="checkbox"/> Real Estate and Rental          | <input type="checkbox"/> Professional and Scientific Services | <input type="checkbox"/> Mining  |
| <input type="checkbox"/> Communications and Information  | <input type="checkbox"/> Transportation and Warehousing       | <input type="checkbox"/> Other Services Including Personal Care and Automotive |
| <input type="checkbox"/> Other Goods                     |   |  |

(6) What are your approximate annual sales?

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> \$1,000 - \$99K | <input type="checkbox"/> \$100K - \$249K | <input type="checkbox"/> \$250K - \$499K |
| <input type="checkbox"/> \$1M - \$4.9M   | <input type="checkbox"/> \$5M - \$9.9M   | <input type="checkbox"/> \$10M - 19.9M   |
| <input type="checkbox"/> \$20M - 49.9M   | <input type="checkbox"/> \$50M - 99.9M   | <input type="checkbox"/> \$100M - \$500M |
| <input type="checkbox"/> Over \$500M     |  |  |

(7) Was **after tax** income from your business during the last six months (year, if appropriate) higher, lower, or about the same as they were for the previous six months (year)?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Much Higher    | <input type="checkbox"/> Somewhat Higher | <input type="checkbox"/> About the Same |
| <input type="checkbox"/> Somewhat Lower | <input type="checkbox"/> Much Lower      | <input type="checkbox"/> Don't Know     |

(8) In the next six months, do you plan to change the average selling price of your goods or services?

Yes, Raise Prices       Yes, Lower Prices       No Change  
 Don't Know       Does Not Apply

(9) In the next six months, do you expect to increase or decrease the total number of people working for you?

Increase Significantly       Increase       About the Same  
 Decrease Significantly       Decrease       Don't Know

(10) Do you think that in the next six months your firm is likely to expand, contract or maintain its existing level of activity?

Expand       Contract       Remain the Same  
 Don't Know

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Questions (3) through (5) provide various measures of firm size and scope. Question (3) asks firms to classify themselves based on their organizational form. Since corporations tend to be much larger than proprietorships and partnerships, this measure characterizes the size of the organization. Question (4) asks firms to classify themselves based on the number of employees. Question (5) asks firms to classify the primary market or industry in which they operate.<sup>3</sup>

Several nominal variables are also constructed to measure the actual and perceived affects of competition. Among the possible responses to question (1) in Table I (identifying major problems facing firms today) are the impacts of foreign and domestic competition. This information is used to create a dummy variable that gives a value of one if foreign or domestic competition is one of the top five problems facing firms and a value of zero otherwise. This measure identifies firms' perceptions about the impact of competition on their operating decisions. Questions (6) and (7) describe the average outcome of competition. The total volume of sales is used as an absolute measure of current, competitive success, while a comparison of after-tax profit over the past six months (or year) to that in the previous six months (or year) serves as relative measure of current, competitive success. Questions (8) through (10) provide measures of expected future competitive success, particularly with regard to expected price changes, expected employment changes, and expected firm expansion or contraction.

As evidenced in Table I, all of the data are nominal in nature. Given the null hypotheses (with the exception of Hypothesis 1, which requires a simple z-test of population proportions), an appropriate, yet parsimonious method of analysis is to create cross-tabulations and test for significance using a chi-square test of homogeneity. Consistent with the previous discussion, this test operates under the null hypothesis of no significant association between any of the variables being analyzed versus an alternative hypothesis of a significant association (Kvanli, Pavur & Guynes, 2000).

When using this methodology, low expected values (or expected responses) may lead to inflated test statistic values and increase the potential for Type I error. To address this issue, several related categories are combined to ensure that all expected values are at acceptable levels (Kvanli, Pavur & Guynes, 2000). For example, in question (1), foreign and domestic competition are combined into a single response. In question (2), a single category is created comprising both proprietorships and partnerships. For question (4), the final three categories are combined to create a single response identifying firms with 50 or more employees. When conducting tests on the type of market, wholesale

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<sup>3</sup> The distribution of survey responses is consistent with the makeup of this community's economy. The seven most common responses are "other non-service-related industries" (15 responses), wholesale/retail industries (14 responses), other service industries (13 responses), finance and insurance (12 responses), professional and scientific industries (12 responses), construction and manufacturing (11 responses) and mining, agricultural and forestry industries (11 responses).

and retail businesses are collapsed into a single category. Construction and manufacturing responses are also combined into a single category. Annual sales responses are combined into three categories. In all cases, categories are only combined in ways that increased expected counts while retaining the same general trends inherent in the full cross-tabulation.<sup>4</sup>

## Empirical Results

Table II contains the information necessary to test the first hypothesis; that health care is not a significant problem for firms. Sixty-eight firms in the sample (approximately 64 percent) rank health care expenses for employees as one of their top five problems. Assuming the sample is representative of the underlying population, this implies that significantly more than half of all firms in this economy (z-statistic = 2.91, p-value < 1 percent) rate health care expenses as a significant concern. Additionally, 84 firms (approximately 79 percent) offer health insurance to full-time employees. Again, assuming a representative sample, this implies that more than two-thirds of firms in this economy (z-statistic = 2.86, p-value < 1 percent) offer full-time employees health benefits.

Table II. Number of Respondents who Identified Health Care Expenses for Employees among the Five Most Important Problems Facing their Firm

<u>Rank</u>	<u>Number of Respondents</u>	<u>Percentage</u>
1	16	15.09
2	14	13.21
3	16	15.09
4	15	14.15
5	7	6.60

Number of Respondents who Offer/Do Not Offer Health Benefits to Full-Time Employees

<u>Response</u>	<u>Number of Respondents</u>	<u>Percentage</u>
Offer	84	79.24
Do Not Offer	22	20.76

The implications of these results are twofold. First, the null hypothesis that employee-sponsored health insurance is not a significant concern for the average employer is rejected. Second, the results suggest that the “level” of competition is reasonably high, since nearly 80 percent of all full-time employees receive the opportunity to obtain employer-sponsored health insurance. The primary focus of this analysis is on the affect of health insurance on (relative) competitive success rather than the “level” of competition. That is, it does not specifically address whether the average employer does or does not offer health insurance to its employees. As such, pay or play legislation may still be justifiable even if health insurance cannot be used to gain a competitive advantage.

Table III tests the second hypothesis of no association between the decision to offer health insurance and the firm’s belief that health care is a significant problem. This null hypothesis is rejected at better than a 95 percent level of confidence (p-value < 5 percent). An examination of Table III yields several interesting trends. First, a disproportionate number of firms (62 out of 106) identify health insurance as a significant problem, yet offer health insurance to full-time employees. At the same time, very few firms (6 out of 106) not offering health insurance view health insurance expenses as a major problem. This implies that only a few firms want to offer health insurance, but are discouraged from doing so due to prohibitive costs.

<sup>4</sup> The need to combine categories is primarily driven by the low response rate. Had a response rate of more than 20 percent been achieved (an admittedly overly-optimistic expectation) there would be no need to combine categories. Further details are available from the authors upon request.

About one-fifth of firms (22 out of 106) offer health insurance and do not consider it a problem, while approximately 15 percent (16 out of 106) of firms neither offer health insurance nor consider it a major problem. The latter two groups are particularly concerning to policy makers, since a subset of these respondents may be using health insurance to gain a competitive advantage. Firms that offer health insurance and do not consider it to be a problem may be using low take-up to gain a competitive advantage, while those that do not offer health insurance and do not consider it a problem may gain an advantage by not offering insurance.

Table III. Cross-Tabulation of the Number of Respondents Identifying Health Care Expenses as a Significant Problem versus the Decision to Offer Health Insurance to Full-Time Employees

		Offer Health Insurance?		
		No	Yes	Total
One of Top 5 Problems?	No	16	22	38
	Yes	6	62	68
	Total	22	84	106
Chi-Square Statistic		16.418		
Degrees of Freedom		1		
Probability Value		0.000		

Tables IV and V provide cross-tabulations of health insurance versus firm ownership and size characteristics. In Table IV, there is no significant association between viewing health insurance expenses as a major problem and the type of firm ownership. However, there is a significant association between the decision to offer health insurance and firm ownership. Sub-S and non-Sub-S corporations are more likely to offer health insurance than proprietorships and partnerships. Given that corporations tend to be larger than non-incorporated firms, this result is not surprising. However, taking both cross-tabulations in tandem, this also implies that corporations are more likely to offer health insurance, but not consider it a major problem. Thus, incorporated firms may be more likely to use low take-up as a means of controlling health insurance costs. On the other hand, about half of non-incorporated firms consider health care expenses as a problem, but only one-third of these firms actually offer health insurance. This suggests that smaller firms are more likely to reduce health care costs by not offering health insurance as an employee benefit, as opposed to reducing take-up.

The results in Table V define firm size based on the number of employees instead of ownership. Again, there is no significant association between firm size and identifying health care as a problem, but there is a highly significant association between firm size and the decision to offer health insurance to full-time employees. Considering these cross-tabulations in tandem, the trends are very similar to those in Table IV. Firms with more employees are much more likely to offer health insurance to workers. At the same time, many large firms that offer health insurance do not consider it to be a major problem, suggesting that at least a portion of these firms may be controlling expenses through lower take-up. For smaller firms (those with 20 or fewer employees), the numbers of responses in each category are consistent across both tables. Again, this implies (but does not prove) that smaller firms may control costs by not offering health insurance.

Table IV. Health Insurance versus Ownership

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		Form of Organization			
		Single	Sub-S	Corp.	Total
		Proprietorship/ Partnership	Corp.	Corp.	
One of	No	14	13	11	38
Top 5	Yes	13	33	22	68
Problems?	Total	27	46	33	106
Chi-Square Statistic		4.249			
Degrees of Freedom		2			
Probability Value		0.119			

		Form of Organization			
		Single	Sub-S	Corp.	Total
		Proprietorship/ Partnership	Corp.	Corp.	
Offer	No	9	11	2	22
Health	Yes	18	35	31	84
Insurance?	Total	27	46	33	106
Chi-Square Statistic		7.209			
Degrees of Freedom		2			
Probability Value		0.027			

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Taken together, Tables IV and V provide very mixed evidence about Hypothesis 3. If health insurance is perceived as a problem facing firms, then it is not possible to reject our null hypothesis. On the other hand, if one considers the decision to offer or not offer health insurance, then the null hypothesis is rejected, as a significant association exists. One possible explanation for this discrepancy may be attributed to the fact that different types of firms have different resources at their disposal, and thus respond differently to the problem. Firms of all sizes are equally likely to view rising health insurance premiums as a problem. However, because larger firms have more resources at their disposal, they respond differently to rising premiums; namely, by offering insurance but reducing employee take-up. Concomitantly, smaller firms can't afford premiums, and elect not to offer insurance.

Table V. Health Insurance versus Firm Size

		Number of Employees				
		1-10	11-20	21-50	Over 50	Total
One of Top 5 Problems?	No	14	7	11	6	38
	Yes	23	19	8	18	68
	Total	37	26	19	24	106
Chi-Square Statistic		6.208				
Degrees of Freedom		3				
Probability Value		0.102				
		Number of Employees				
		1-10	11-20	21-50	Over 50	Total
Offer Health Insurance?	No	15	6	1	0	22
	Yes	22	20	18	24	84
	Total	37	26	19	24	106
Chi-Square Statistic		17.950				
Degrees of Freedom		3				
Probability Value		0.000				

Table VI presents information that can be used to test Hypothesis 4. Again, there is no significant association between identifying health insurance as a problem and the type of market. However, there is a significant association (at a 10 percent level) between offering health insurance to full-time employees and the type of market. The difference in significance across both cross-tabulations is primarily driven by firms operating in wholesale and retail trade. A significant portion of these firms do not think health care is a major problem yet at the same time offer health insurance to full-time employees. This implies that firms in these industries may use low employee take-up as a means of reducing labor expenses. Since much of the push for pay or play legislation has been driven by the practices of firms such as Walmart, this result is not surprising (MacDonald, 2004; Health Business Week, 2005; Galloway, 2005).

Table VI. Health Insurance versus the Firm's Market

		Construction- Manufacturing	Market Wholesale- Retail	Other	Total
One of Top 5 Problems?	No	6	5	27	38
	Yes	5	9	54	68
	Total	11	14	81	106
Chi-Square Statistic		1.895			
Degrees of Freedom		2			
Probability Value		0.388			

  

		Construction- Manufacturing	Market Wholesale- Retail	Other	Total
Offer Health Insurance?	No	5	1	16	22
	Yes	6	13	65	84
	Total	11	14	81	106
Chi-Square Statistic		5.707			
Degrees of Freedom		2			
Probability Value		0.058			

The results from Tables VII, VIII and IX test the final hypothesis that competition and health insurance are not correlated. Table VII looks at the relationship between health insurance and identifying competition as a major problem for businesses. When taken separately, no significant association exists between identifying competition as a problem and either identifying health insurance as a problem or a firm's decision to offer health insurance to full-time employees. However, when combining the perceived problems of competition and health insurance and comparing that with the decision to offer health insurance to full-time employees, there is a significant relationship. Firms that identify only health insurance, or a combination of competition and health insurance, as a major problem are much more likely to offer health insurance compared to those firms that identify only competition or neither response as a problem.

Table VIII examines the relationship between health insurance and the outcomes of competition. With the exception of the cross-tabulation comparing the decision to offer health insurance with annual sales (which is significant at a 9.7 percent level), there is no significant association between health insurance and a typical firm's current competitive success. Table IX takes this analysis one step further by comparing health insurance versus three different measures of expected future competitive success. Again no significant relationship exists between health insurance and expected price increases, expected labor force changes, or expected expansion plans.

Taken in tandem, these tables provide some interesting insights about the relationship between health insurance and competitive success. The results in Table VII provide evidence suggesting that firms perceive health insurance as a factor that reduces their competitive advantage. However, Tables VIII and IX suggest that while this perception may hold, in actuality the problem of health insurance does not correlate with current or expected future competitive success. So while firms view health insurance as a

problem, it is apparently not one of the most important factors correlating with (or potentially causing) actual or expected future success. This last finding may be due to the fact that firms are reducing employee take-up or not offering health insurance as a means of staying competitive. Consequently, there may be simultaneity bias between management's perceptions about the impact of health insurance on competitiveness and the actual outcome of health insurance on competition. This possibility is left as a suggestion for future research.

Table VII. The Relationship between Perceived Competition and Health Insurance

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		Is Competition with Foreign and Domestic Firms One of the Top 5 Problems?		
		No	Yes	Total
Is Health Insurance				
One of Top 5 Problems?	No	17	21	38
	Yes	32	36	68
	Total	49	57	106
Chi-Square Statistic		0.053		
Degrees of Freedom		1		
Probability Value		0.818		

		Is Competition with Foreign and Domestic Firms One of the Top 5 Problems?		
		No	Yes	Total
Is Health Insurance				
Offered to Full-Time Employees?	No	10	12	22
	Yes	39	45	84
	Total	49	57	106
Chi-Square Statistic		0.007		
Degrees of Freedom		1		
Probability Value		0.935		

		Does the Firm Offer Health Insurance to Full-Time Employees?		
		No	Yes	Total
Factors Identified as Top 5 Problems?	Neither	7	10	17
	Competition Only	9	12	21
	Health Ins. Only	3	29	32
	Both	3	33	36
	Total	22	84	106
Chi-Square Statistic		16.445		
Degrees of Freedom		3		
Probability Value		0.001		

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Table VIII. Health Insurance versus Performance Characteristics

		Annual Sales (in \$)			
		Less Than 1 million	1 million- 9.9 million	At Least 10 million	Total
One of Top 5 Problems?	No	10	20	8	38
	Yes	20	27	21	68
	Total	30	47	29	106
Chi-Square Statistic		1.862			
Degrees of Freedom		2			
Probability Value		0.394			
		Annual Sales (in \$)			
		Less Than 1 million	1 million- 9.9 million	At Least 10 million	Total
Offer Health Insurance?	No	8	12	2	22
	Yes	22	35	27	84
	Total	30	47	29	106
Chi-Square Statistic		4.676			
Degrees of Freedom		2			
Probability Value		0.097			
		After Tax Income			
		All Other Responses	Lower of Significantly Lower	Total	
One of Top 5 Problems?	No	21	17	38	
	Yes	40	28	68	
	Total	61	45	106	
Chi-Square Statistic		0.126			
Degrees of Freedom		1			
Probability Value		0.722			
		After Tax Income			
		All Other Responses	Lower of Significantly Lower	Total	
Offer Health Insurance?	No	12	10	22	
	Yes	49	35	84	
	Total	61	45	106	
Chi-Square Statistic		0.102			
Degrees of Freedom		1			
Probability Value		0.749			

Table IX. Health Insurance versus Future Expectations

		Expected Price Changes		
		All Other Responses	Increase or Significantly Increase	Total
One of Top 5 Problems?	No	22	16	38
	Yes	41	27	68
	Total	63	43	106
Chi-Square Statistic		0.058		
Degrees of Freedom		1		
Probability Value		0.809		
		Expected Price Changes		
		All Other Responses	Increase or Significantly Increase	Total
Offer Health Insurance?	No	16	6	22
	Yes	47	37	84
	Total	63	43	106
Chi-Square Statistic		2.035		
Degrees of Freedom		1		
Probability Value		0.154		
		Expected Labor Force Changes		
		All Other Responses	Decrease or Significantly Decrease	Total
One of Top 5 Problems?	No	18	20	38
	Yes	40	28	68
	Total	58	48	106
Chi-Square Statistic		1.291		
Degrees of Freedom		1		
Probability Value		0.256		

		Expected Labor Force Changes		
		All Other Responses	Decrease or Significantly Decrease	Total
Offer Health Insurance?	No	12	10	22
	Yes	46	38	84
	Total	58	48	106

Chi-Square Statistic  
Degrees of Freedom  
Probability Value

0.001  
1  
0.986

		Expansion Plans		
		All Other Responses	Expand	Total
One of Top 5 Problems?	No	21	17	38
	Yes	40	28	68
	Total	61	45	106

Chi-Square Statistic  
Degrees of Freedom  
Probability Value

0.126  
1  
0.722

		Expansion Plans		
		All Other Responses	Expand	Total
Offer Health Insurance?	No	12	10	22
	Yes	49	35	84
	Total	61	45	106

Chi-Square Statistic  
Degrees of Freedom  
Probability Value

0.102  
1  
0.749

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## Conclusions and Policy Implications

This paper attempts to empirically identify whether offering health insurance to full-time employees correlates with reduced competitive success. Its principal findings are threefold. First, firms do, on average, perceive health insurance as a major problem. Moreover, a majority of firms provide health insurance to their full-time employees. These findings support Cutler (2003) who argues that if firms try to offset rising health insurance costs, they are more likely to do so through reducing employee take-up. However, this was not the only response; a minority of firms did not offer health insurance. Second, the analysis presents evidence suggesting that the response to rising health care costs differs by industry. Retail and wholesale firms are more likely to identify health insurance as a problem, but respond to this problem by not offering health insurance. Third, while health insurance is perceived to be a problem, it does not correlate with current or expected future competitive success. This implies that while health insurance is a problem, it is one that affects most firms in a similar fashion.

This analysis suggests several policy implications. First, the fact that most firms identify health insurance as a problem supports the need for a policy intervention. The analysis also finds that most firms offer health insurance to full-time employees and that health insurance does not correlate with current and expected future competitive success. These results suggest that the rationale for an intervention should not be to protect firms, but instead to protect the level of benefits (and the costs paid to receive and utilize these benefits) offered to workers. Firms are less affected by rising health insurance premiums because they are able to adjust in a way that lowers operating expenses while maintaining sales and profit margins.

Additionally, if a pay or play policy is enacted it must recognize that firms are responding to rising health insurance costs in different manners. A very general pay or play policy may actually exacerbate the problem by shifting the onus of health insurance costs back to firms. If firms must bear these higher costs, and at the same time have no recourse to offset them, then they will be forced to endure a competitive disadvantage. Consequently, many firms may either reduce employment levels or exit the market altogether. Instead, policies must allow firms (and their employees) a degree of flexibility, depending on their industry or other important firm-specific factors. For example, workers may be willing to give up some flexibility in the choice of provider in order to keep out of pocket costs down (Butler, 2005). In larger corporations, tiered provider networks allow firms to satisfy multiple groups of employees; some who are willing to trade provider choice for lower costs and those who are not (Butler 2005). Policies that encourage employer-employee cooperation to solve the problem create minimal interference within an economy, while at the same time reduce costs and ensure that an equitable level of benefits is provided (Bleil, Kalamas & Mathoda, 2004). Alternatively, if policy makers are interested in a general, sweeping policy, than premium assistance, health care tax credits and pooled purchasing plans may work more effectively than pay or play plans (Chollet, 2005).

While this analysis presents some interesting, intuitive findings, it is simply intended as a first step. This study only looks at a single, mid-sized Midwestern economy with a heavy manufacturing and retail base. Other economies may or may not exhibit similar patterns. Limitations of this study include an examination of correlations, and not causal patterns. In addition, the analysis relies on non-numerical survey information. Further analyses using numerical data would provide a more informative and valuable extension of our work. Future research is necessary to determine the actual process by which skyrocketing health care costs cause firms to change health insurance and operating decisions.

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