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PAPER

Consumer-Directed Health Plans and Health Savings Accounts

Have They Worked for Small Businesses?

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PREFACE

Cost has deterred the majority of small businesses from providing health insurance to their workers. Consumer-directed health plans, which are potentially less costly than traditional health plans, may be well suited to workers in small businesses. We study the factors that are associated with CDHP offering, determine the variation in CDHP offering among large and small firms, and develop models of persistence in CDHP offering. Our analysis of the Kaiser-HRET survey shows that small firms have been no quicker in their uptake of CDHPs than larger firms, and appear to display somewhat more churning in CDHP offering than large firms. Small firms that employ between three and 49 workers are less likely to offer HRA/HSA plans than large firms. Furthermore, firms that employ 200 to 499 workers appear to be less likely to offer both HRA/HSA plans and HD plans compared to larger firms. Our results suggest a limited role for the current incarnation of consumer-directed health plans in encouraging small business to provide insurance. This work was funded through the Kauffman-RAND Institute for Entrepreneurship Public Policy.

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GLOSSARY, LIST OF SYMBOLS, ETC.

Symbol	Definition
AHIP	America's Health Insurance Plans
CDHP	Consumer-Directed Health Plan
HD	High-Deductible
HDHP	High-Deductible Health Plan
HRA	Health Reimbursement Account
HSA	Health Savings Account
KFF-HRET	Kaiser Family Foundation/Health Research and Educational Trust

1. INTRODUCTION

Small firms in the United States that seek to offer health insurance to their employees have historically reported problems with the availability and affordability of their options. The cost of health insurance has been the primary concern of small business owners for several decades. In 2004, two-thirds of small business owners listed health care costs as a critical problem - a proportion that increased by 18 percentage points between 2000 and 2004 (NFIB, 2004). Small businesses are more likely to report problems with their health care availability and cost than larger businesses (Brown, Hamilton, and Medoff, 1990; McLaughlin, 1993; Fronstin and Helman, 2000). Only 43 percent of firms with fewer than 50 employees offer health insurance, compared to 95 percent of firms with 50 or more employees (AHRQ, 2003). Extending health insurance to workers and the families of workers in small firms continues to be a pressing issue.

A solution to the health insurance crisis that has been advocated by the Bush administration and by some policy analysts is the development of consumer-directed health plans (CDHPs). These plans aim to control costs by increasing consumers' financial responsibility and involvement in their health care choices. Since CDHPs are potentially less costly than traditional health plans and may appeal to younger workers with low health care demand, these plans may be well suited to workers in small businesses (Laing, 2007).

In this paper, we study the factors that are associated with CDHP offering, and determine the variation in CDHP offering among large and small firms. We also develop models of the persistence of CDHP offering. Our analysis sheds light on the role of CDHPs in bringing health insurance to small businesses, and in particular in encouraging small businesses that did not offer health insurance to offer coverage to their workers.

We distinguish different categories of small firms employing less than 500 workers, and find that the smallest firms, those that employ between three and 49 workers, are no less likely to offer high-deductible (HD) plans, but are less likely to offer Health Reimbursement

Account (HRA) or Health Savings Account (HSA) plans compared with large firms that employ over 500 workers. Surprisingly, we find that mid-sized firms – those employing 200-499 employees — are less likely to offer HD, HRA, and HSA plans relative to large firms. This non-linear relationship between firm size and probability of offering HRA/HSA and HD plans may reflect differences between the market for large group HD plans and the market for small group HD plans. In addition, it may suggest that mid-sized firms are more likely to offer only one plan, and prefer that plan be something other than an HD plan.

2. BACKGROUND: THE BIRTH OF CONSUMER-DIRECTED HEALTH PLANS

Consumer-directed health plans are designed to encourage individual responsibility in health care choices. Advocates argue that CDHPs will fundamentally change the U.S. health care system, limiting cost escalation and improving access to health insurance. This could yield benefits for all businesses, but particularly for small businesses that are often shut out of the traditional insurance market because of high costs of coverage.

The basic logic behind this argument is that CDHPs change individual incentives by making consumers financially responsible when they choose costly health care options (Robinson, 2003). Ultimately, this change in individual incentives should reduce the costs of health insurance and possibly the cost of health care as well. Increases in consumer cost sharing, especially deductibles, are part of this new strategy (Gabel et al., 2002).

Despite the popular notion that encouraging the provision of CDHPs could improve the effectiveness of the health care market, economic theory can also support the opposite conclusion. In a market where there is a tradeoff between providing consumers with the incentive to make efficient choices through greater financial responsibility and providing consumers with complete insurance, reducing insurance in order to increase financial responsibility can reduce total social welfare (Zeckhauser, 1970). The net benefit from reducing insurance will depend on how risk averse individuals are as well as the extent to which decisions they make in the health care market are in fact influenced by cost. This possible consequence of CDHPs has received little attention in a policy debate that is focused primarily on the potential role of CDHPs in reducing overall medical expenditures but has ignored the economic value of insurance.

High-deductible health plans (HDHPs) are an important feature of CDHPs. Often, these HDHPs are combined with a personal health care spending account that provides individuals with favored tax treatment for money spent to pay for insurance deductibles and co-payments.

Federal legislation has facilitated the formation of Health Reimbursement Accounts (HRAs) and Health Savings Accounts (HSAs).

HRAs and HSAs potentially make high-deductible health insurance plans more palatable to individuals by providing them with a means to avoid taxes on money used to pay health expenses not covered by high-deductible insurance. The accounts can compensate individuals somewhat for the risk associated with high-deductible plans. Money in these accounts can be used by the employee to pay for unreimbursed qualified medical expenditures. Unused funds in the account may be carried over from year to year.[1] This carryover provision of HRAs and HSAs is intended to benefit employees who use fewer and less costly services and so encourage them to do so.

HSAs were established in 2003 under the Medicare Prescription Drug, Improvement, and Modernization Act and are the newest form of personal savings accounts. HSAs are available to all individuals and employer groups. To operate an HSA, employers and/or enrollees make deposits into a specially designated account that is then used to purchase health services. If enrollees spend all of the funds allocated to their accounts in a given year and if this amount is less than the plan deductible, enrollees must then pay for additional health services out of pocket until their plan deductibles are met. (The expenditure amount between the annual account contribution and the deductible is often referred to as a "doughnut-hole.") Above the deductible, enrollees' health plans cover most costs.

HSAs must be combined with an insurance plan with a deductible of at least $1,100 for an individual and $2,200 for a family.[2] The maximum account contribution is the lesser of 100 percent of the deductible, or $2,850 for an individual, and $5,650 for a family. While contributions can be made by the employee, the employer, or by both parties, the employee owns the account and thus the account is fully portable across jobs.

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[1] In the case of HRAs, the employer chooses whether the accounts have this carry-over provision.

[2] The amounts reflect the requirements for 2007 and are indexed to inflation.

Health Reimbursement Accounts, available since 2002, differ from HSAs in several important respects: they need not be paired with HDHPs that have federally-mandated characteristics; only the employer contributions to the account receive favorable tax treatment; portability across employers and annual carry-over is permitted but not required; accounts are funded by employers only; and third-party administration of the accounts is required.

Some observers have argued that HSAs are particularly well situated to help small firms without medical plans to offer some form of health insurance to their employees (Laing, 2007). HDHPs typically have lower premiums and are more accessible to small businesses. The Small Business and Entrepreneurship Council supported the implementation of HDHPs, and HSAs in particular, as a way to provide small business owners and their employees greater access to affordable choices in health insurance.

3. LITERATURE REVIEW

Early evidence suggests that consumer-directed plans are associated with both lower costs and lower cost increases (Buntin et al., 2006). However, CDHPs continue to be controversial as a mechanism for controlling costs and shifting responsibility to consumers (Ginsburg, 2006; Lee and Hoo, 2006). Among other things, there is some evidence that healthier individuals are more likely to opt for these plans (Buntin et al., 2006). Early evidence also raises questions as to whether CDHP really are a panacea for small business.

Insurers' interest in HRAs and HSAs is widespread and growing rapidly. According to a recent survey by America's Health Insurance Plans (AHIP), the number of individuals covered by a HDHP/HSA reached 3.2 million in January 2006 – having tripled in less than one year. Approximately 30 percent of the HSA purchasers overall previously did not have insurance, according to the AHIP survey, with 16 percent of new small business purchasers previously not offering insurance (AHIP, 2006).

This growth in coverage was due to increases in both the group and the individual markets. Today, at least 75 insurers offer account-compatible plans nationwide (Kaiser Daily, 2004; AHIP, 2005). Fifty-eight offer high-deductible, account-compatible plans to large employers, 56 to small employers, and 47 to individuals. There is some evidence that while HSA products were more popular among small business and individuals than larger groups initially, their use is growing most rapidly among large employers. Large employers are generally introducing these products in a gradual way. Few large employers have chosen the "full replacement" route of abandoning traditional plans in favor of CDHPs (Schieber, 2004).

A survey conducted by AHIP of member companies found that only 3 percent of enrollees in HSAs in 2004 were in large group plans (AHIP, 2005). However, by January 2006, that figure had grown to 33 percent. Small group plans represented 18 percent of enrollees in 2004, and 25 percent in January 2006 (AHIP, 2006).

Some smaller businesses that might not otherwise offer health insurance see HSAs as a way to provide low-cost coverage. According to the 2006 survey of AHIP member companies, 33 percent of small group HSA policies were sold to businesses that previously did not offer insurance. This suggests that HSAs have the potential at least to serve as a meaningful tool for expanding health care coverage to small business employees, a finding that is supported by a simulation study conducted by Goldman, Buchanan, and Keeler (2000) that found that similar plans could increase the proportion of small businesses offering health insurance.

A survey of employers by Kaiser/HRET (2006) provides descriptive information on the availability, enrollment, and characteristics of HDHPs that are either offered with HRAs or are HSA-compatible (Claxton et al., 2004). The survey finds that firms with three to 999 employees were half as likely to offer an HDHP/HSA compared to firms with 1,000 or more employees.

4. DATA AND METHODOLOGY

OVERVIEW

We analyze the determinants of CDHP offering, focusing in particular on small firms. Our goal in this analysis is to describe the consumer-directed health plan offerings in small businesses and to assess whether the popularity of these plans varies by firm size. While previous research has conducted a descriptive analysis of CDHP offering among small firms, our analysis goes further by disaggregating the smallest firms (less than 25 workers) from "larger" small firms (50 or more workers), and by conducting a multivariate analysis of persistence in CDHP offering. Our analysis does not test whether the advent of consumer-directed health plans has increased the propensity of small businesses to offer health insurance.[3] However, the health insurance profile developed in this paper provides a useful backdrop to understanding the role of consumer-directed health products in small business health insurance.

Following most of the literature, we use the term consumer-directed health plan to refer to any high-deductible insurance plan; typically, "high-deductible" refers to a plan with a deductible of $1,000 or more. High-deductible plans may be coupled with HSAs or HRAs (Buntin et al., 2006).

DATA

Our work on HSAs, HRAs, and CDHPs uses data from the 2003-2006 Kaiser Family Foundation/Health Research and Educational Trust (KFF-HRET) Annual Employer Health Benefits Survey. This is an annual national telephone survey of about 5,000 randomly selected public and private employers. Firms range in size from small enterprises with a minimum of three workers to corporations with more than 300,000 employees (see Claxton et al., 2006, for a detailed description of the survey).

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[3] Identification of the effect of CDHP availability on health insurance offering would require exogenous cross-sectional and/or time-series variation in the availability of CDHPs. Given that our data has only a limited time-series variation, we do not undertake to test the effect of CDHP availability on health insurance offering.

The data contain detailed information about the health benefits offered by the firm and other firm characteristics. In particular, the survey asks about the types of health plans offered (PPO, HMO, fee-for-service), enrollment in each type of plan, whether the firm offers an HSA or a high-deductible plan, and whether the firm offers both in conjunction. In addition, the survey provides details about the features of these plans such as the deductible, the premiums, and plan enrollment. Among firms that do not offer these plans, the survey asks about the likelihood of offering HSA plans combined with a high-deductible plan. Additional information on whether the firm is considering consumer-directed health products in the future and whether the firm is aware of these products is also available. The survey does not ask this full set of questions every year – for instance, information on offering and characteristics of HRA plans was only asked in 2005 and 2006. While our descriptive analysis uses data from 2003-2006, our multivariate models focus on 2005 and 2006, since only these years contain information about HRAs.

Other firm data include the composition of the workforce (such as percent low wage), the unionization of workers, and the number of workers in the firm, industry, rural/urban, employee turnover, whether the firm laid off any workers in the previous year, and percent of the workforce that is part-time. There are also measures of the cost and quality of health benefit offerings such as: whether the firm offers retiree benefits, wait periods, employer contribution to each offered plan, etc. A sub-sample of firms is interviewed for two consecutive years allowing us to construct a two-year longitudinal sample as well as a cross-sectional sample. Our analyses using these data are weighted using firm level weights.

EMPIRICAL METHODOLOGY

We estimate logit models of CDHP offering behavior in order to parse out the firm and worker characteristics that are associated with a firm's propensity to offer CDHPs. We estimate a three-equation model to develop a complete picture of the CDHP offering decision. First, we estimate a model of the propensity to offer health insurance. Second, we estimate a model of the propensity to offer HD plans conditional on

offering health insurance. Lastly, we estimate a model of HRA/HSA plan offering conditional on offering HD plans.[4]

The explanatory variables used in the models are firm composition variables, industry indicators, the location of the firm, and indicators for the year of the survey. Firm composition variables include the size of the firm (3-24, 25-49, 50-99, 100-199, 200-499 workers), and variables to capture workforce composition and worker demand for health insurance such as the percent of the workforce earning $20,000 or less, percent of the workforce working part-time, percent of covered employees, and union coverage. We also include a full set of industry indicator variables to measure variations in insurance practices, insurance availability, and worker demand at the industry level. The firm's geographical location is measured by indicators for region and an indicator for location in an urban area. Health insurance premiums and safety net availability varies by region and population density; therefore, location variables are useful proxies to capture this variation. Year indicators are included in the model to capture annual trends in CDHP availability and demand as well as annual variations in survey administration. We use firm-level data from 2005 and 2006 and apply firm-level sample weights to the models.[5]

Our data allow us to follow a sub-sample of firms for a two-year period. We use our two-year analytic database to analyze the effect of lagged health insurance status on CDHP offering in the current year. This analysis provides us with a picture of the dynamics of plan determination and the importance of persistence in health plan offerings. We estimate three logit models. (First, we model a firm's propensity to offer HD plans conditional on offering health insurance in the current year, as a function of CDHP offering in the previous year. Next, we model a firm's propensity to offer an HRA or an HSA conditional on offering an HD plan in the current year, also as a function of CDHP offering in the previous year. Lastly, we model the firm's propensity to

[4] Instead of estimating three separate logit models, we attempted to estimate a nested logit model. However, in practice, the lack of attribute specific covariates led to this model not being identified.

[5] Including data from 2004 provided very similar estimates. We decided to exclude these data from the results reported in the paper because information on HRAs was only available in 2005 and 2006.

offer health insurance in the current year, as a function of health insurance offering in the previous year. The explanatory variables in these models are, for the most part, the same as those in the logit models described earlier. However, we also include lagged health insurance variables. In particular, we include indicator variables describing whether the firm offered an HD in the previous year, whether the firm offered an HRA/HSA in the previous year, and in the model for health insurance offer, we also include health insurance offering in the previous year.[6]

Our rationale for presenting two separate sets of model – one on the full cross-section of firms in 2005/2006 and the second on the longitudinal sample – is that the longitudinal data are restricted to the sub-sample of firms that are surveyed in both years. Given the low propensity to offer HRA/HSA plans, it is important to estimate the effect of firm size on CDHP offering with the largest possible sample size.

[6] We were unable to identify a coefficient on lagged health insurance offer in the models for HRA/HSA offering and HD offering. We were also unable to identify coefficients for lagged HRA/HSA and HD offering in the models for health insurance offering.

5. RESULTS

DESCRIPTIVE ANALYSIS

As is well known, the smallest firms (3-49 employees) are less likely to offer health insurance compared to larger firms, as shown in Table 5.1. About 58 percent of the smallest firms offer HI relative to 99 percent of firms with 200 or more employees. Despite the notion that CDHPs may be especially attractive to small firms, there is no evidence that offering HD plans, conditional on offering health insurance, or offering HSA plans conditional on offering HD plans is higher in small firms. Fourteen percent of firms that offer health insurance also offer HD plans in small and large firms. Conditional on offering HD plans, 16 percent of small firms and 17 percent of all firms offer HSAs; however, this difference between large and small firms is not statistically significant.

Table 5.1
Descriptive Profile of Health Insurance by Firm Size and Year

	All firms	Firms with 3-49 employees	Firms with 3-199 employees	Firms with 200+ employees
Years: 2003-2006				
Percent offer	61%	58%	60%	99%
Sample size	7,916	2,227	3,306	4,610
Percent offer HD conditional on offering	14%	14%	14%	14%
Sample size	7,211	1,594	2,619	4,592
Percent offer HSA conditional on offering HD	17%	16%	17%	21%
Sample size	1,173	221	388	785
Year: 2003				
Percent offer HI in 2003	62%	59%	61%	98%
Percent offer HD in 2003 conditional on offering HI in 2003	5%	5%	5%	6%
Percent offer HSA in 2003 conditional on offering HD in 2003	13%	11%	13%	6%
Year: 2004				
Percent offer HI in 2004	62%	60%	61%	99%
Percent offer HD in 2004 conditional on offering HI in 2004	10%	10%	10%	9%

	All firms	Firms with 3-49 employees	Firms with 3-199 employees	Firms with 200+ employees
Percent offer HSA in 2004 conditional on offering HD in 2004	4%	3%	3%	21%
Year: 2005				
Percent offer HI in 2005	60%	57%	59%	99%
Percent offer HD in 2005 conditional on offering HI in 2005	20%	20%	20%	22%
Percent offer HSA in 2005 conditional on offering HD in 2005	12%	11%	11%	14%
Percent offer HRA or HSA in 2005 conditional on offering HD in 2005*	20%	18%	19%	27%
Year: 2006				
Percent offer HI in 2006	61%	58%	60%	99%
Percent offer HD in 2006 conditional on offering HI in 2006	21%	21%	21%	20%
Percent offer HSA in 2006 conditional on offering HD in 2006	30%	29%	30%	32%
Percent offer HRA or HSA in 2006 conditional on offering HD in 2006*	33%	30%	32%	43%

* Information on HRAs is only available in the 2005 and 2006 data.

CDHPs have grown in popularity between 2003 and 2006. In 2003, only 5 percent of firms that offered health insurance also offered HD plans, and 13 percent of firms that offered HD plans also offered HSAs. By 2006, these percentages had grown to 21 percent offering HD plans, and 33 percent offering HRAs or HSAs conditional on offering HD plans. In 2003, 11 percent of firms with 3-49 employees offered HSA plans compared to only 6 percent for firms with 200 or more employees; however this difference is not statistically significant. In 2004, the situation had rapidly reversed with 21 percent of firms with 200 or more employees offering HSA plans compared to 3 percent of the smallest firms, yielding a large and statistically significant difference by firm size. In 2005 and 2006, this difference between firms eroded slightly, but remained economically (although not statistically) significant. The trend in the uptake of CDHP products suggests that even though small firms were more likely to be early adopters, they were quickly outpaced by larger firms.

Given that CDHPs are new products, we may expect a moderate degree of churning in the offering of these plans. Firms may choose to offer CDHPs in one year and drop them the following year if take-up was poor or if they proved to be onerous to administer. To examine this issue, we

analyze firms that are surveyed in two consecutive years in order to develop a longitudinal descriptive profile of CDHP offering. We find that 59 percent of firms that offered HD plans continued to offer them the following year. Small firms (3-49 employees) appear to be slightly less likely to offer HD plans, conditional on having offered them the previous year. Fifty-six percent of firms with 3-49 employees offer HD plans conditional on having offered them the previous year, relative to 67 percent of firms with over 50 employees; however, this difference is not statistically significant. In addition, 35 percent of small firms (3-49 employees) that offered HSAs or HRAs offered these plans the following year, compared to 81 percent of larger firms (50+ employees) – a large and statistically significant difference. These statistics provide some evidence of higher churning in the CDHP offerings of small firms – small firms are less likely to retain their CDHP offerings from year to year.

MULTIVARIATE ANALYSIS

The odds ratios from the three logit models, based on data from 2005 and 2006, are reported in Table 5.2. The first column shows that small firms employing 3-49 employees and mid-size firms that employ 200-499 workers are significantly less likely to offer HRAs or HSAs conditional on offering HD plans relative to firms with more than 500 employees. The odds ratios suggest that the differences by firm size are quite substantial – the odds ratio for firms that employ between 25 and 49 workers relative to firms that employ more than 500 workers is 0.12. The second column shows that firms that employ 200-499 workers are less likely to offer HD plans relative to larger firms, conditional on offering health insurance; however, firms that employ less than 200 workers are not statistically different from firms with more than 500 employees in their propensity to offer HD plans. The third column shows that small firms are substantially less likely to offer health insurance, consistent with the rest of the literature on small firms and health insurance.

The results also show that firms with a higher proportion of low income workers are more likely to offer HRA/HSA plans and less likely to offer health insurance. CDHP offering also varies by industry and

location. Construction and health care industries are more likely to offer HSAs than manufacturing (the omitted category), and government firms are less likely to offer HD plans than manufacturing. Furthermore, HD plans appear to be most popular in the Midwest, followed by the South. There also appears to be an increase in HRA/HSA offerings in 2006 relative to 2005, suggesting that these plans are growing in popularity.

Table 5.2
Logit Model of CDHP Offering

	Offer HRA/HSA conditional on HD	Offer HD conditional on HI	Offer HI
	offerhrahsa	offerhd	offer
size3_24	0.40*	0.75	0.01***
	[0.21]	[0.17]	[0.01]
size25_49	0.12***	0.68	0.08***
	[0.09]	[0.17]	[0.05]
size50_99	0.58	0.84	0.09***
	[0.37]	[0.21]	[0.06]
size100_199	1.35	0.91	0.38
	[0.72]	[0.22]	[0.29]
size200_499	0.17***	0.61***	1.05
	[0.09]	[0.11]	[0.99]
percent of workforce earning $20,000 or less	7.17**	1.2	0.23***
	[5.92]	[0.75]	[0.09]
percent of workforce working part-time	0.21	0.24*	0.11***
	[0.27]	[0.18]	[0.04]
union	2.29	0.86	1.94
	[2.27]	[0.26]	[1.15]
rural/urban indicator	7.65***	0.50**	1.28
	[5.05]	[0.17]	[0.29]
industry==mining	2.97	2.01	
	[3.42]	[1.78]	
industry==construction	11.43***	0.87	0.38**
	[10.11]	[0.48]	[0.15]
industry==transportation/utilities/communications	0.83	0.99	1.01
	[0.96]	[0.69]	[0.57]
industry==wholesale	10.00***	1.37	1.38
	[8.75]	[0.75]	[0.63]

	Offer HRA/HSA conditional on HD	Offer HD conditional on HI	Offer HI
industry==retail	2.15	0.86	0.96
	[1.78]	[0.45]	[0.40]
industry==financial	5.22	0.59	1.78
	[5.73]	[0.33]	[0.91]
industry==service	5.71***	1.07	1.28
	[3.68]	[0.49]	[0.44]
industry==government	2.41	0.34**	7.38***
	[2.44]	[0.16]	[3.14]
industry==healthcare	9.06***	0.95	0.92
	[6.84]	[0.51]	[0.42]
region==midwest	0.9	3.57***	0.56*
	[0.53]	[1.29]	[0.17]
region==south	0.58	2.78***	0.54**
	[0.39]	[1.00]	[0.16]
region==west	0.32*	2.76**	0.7
	[0.22]	[1.25]	[0.25]
percent of covered employees	3.77	0.24**	
	[3.99]	[0.15]	
year06	2.89**	1.12	1.05
	[1.33]	[0.30]	[0.21]
Observations	863	3755	4135

Standard errors in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

The models presented in the tables focus on data from 2005 and 2006 primarily because HRA/HSA offering is only available for these years. Recently, HRAs have become an important part of the CDHP landscape. Given the rapidly changing landscape of CDHP plans, we believe that analysis based on the most recent years presents the most accurate picture, and therefore, we have focused on the results from 2005 and 2006.

MULTIVARIATE LONGITUDINAL ANALYSIS

Our results in Table 5.3 show a very similar pattern of results for firm size compared to Table 5.2. In general, the statistical significance of the firm size indicators is weaker due to the smaller sample size in the longitudinal analysis. The main variables of interest are the lagged health insurance indicators. We find evidence of

persistence in CDHP offering – firms that offered HD plans in the previous year were significantly more likely to offer them in the current year - the odds ratio is large (9.76) and statistically significant. Firms that offered HRA/HSA plans were also more likely to offer HD plans in the current year. However, we don't find any statistically significant evidence of persistence in HRA/HSA offering. Even though the odds ratio on lagged HRA/HSA offering is almost 4, it is not statistically significant. In the last column, we estimate the persistence of health insurance offering and find that the odds ratio for lagged health insurance offering is extremely large and statistically significant, suggesting the firms that offer health insurance continue to do so, and firms that do not offer health insurance are unlikely to offer health insurance.

Table 5.3
Longitudinal Logit Model of CDHP Offering

	Offer HRA/HSA conditional on HD	Offer HD conditional on HI	Offer HI
	offerhrahsa	offerhd	offer
size3_24	0.41	0.75	0.03***
	[0.24]	[0.24]	[0.03]
size25_49	0.06***	0.8	0.03***
	[0.05]	[0.25]	[0.03]
size50_99	0.63	1.4	0.04***
	[0.49]	[0.43]	[0.05]
size100_199	1.04	1.19	1.55
	[0.79]	[0.38]	[1.34]
size200_499	0.15***	0.77	
	[0.09]	[0.21]	
pctlowin	0.00***	0.53	0.14*
	[0.00]	[0.28]	[0.16]
pctprttm	0.24	0.9	0.03***
	[0.32]	[0.70]	[0.03]
union	5.95**	1.18	0.22
	[5.18]	[0.41]	[0.27]
construc	0.35	0.93	0.5
	[0.43]	[0.49]	[0.44]
transport	6.23	0.37*	2.74

	Offer HRA/HSA conditional on HD	Offer HD conditional on HI	Offer HI
	[8.55]	[0.20]	[2.86]
wholesale	15.82**	4.24**	3.36
	[17.16]	[2.67]	[6.01]
retail	1.28	1.92	0.94
	[1.30]	[0.95]	[0.77]
financial	0.56	1.02	0.38
	[0.53]	[0.49]	[0.43]
service	4.68*	1.08	3.34
	[4.00]	[0.45]	[4.26]
govt	2.32	0.77	2.05
	[2.51]	[0.36]	[1.67]
health	23.83***	2.55	6.71
	[24.59]	[1.46]	[8.47]
mining	7.38	2.06	
	[10.65]	[1.35]	
midwest	5.48**	3.26***	1.09
	[3.73]	[1.21]	[0.89]
south	2.92	1.78	0.48
	[2.18]	[0.69]	[0.38]
west	0.25*	2.32**	8.3
	[0.19]	[0.89]	[11.61]
offer_prev			291.96***
			[221.52]
year06	0.7	0.34***	3.06**
	[0.38]	[0.09]	[1.74]
offerhd_prev	1.06	9.76***	
	[0.75]	[3.18]	
offerhrahsa_prev	3.97	4.56**	
	[4.31]	[3.07]	
Observations	540	2364	2603

Robust standard errors in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

We also ran additional models (not presented in tables) that included interactions of firm size and lagged health insurance variables to determine if persistence varied by firm size. We found some evidence that smaller firms displayed less persistence, consistent with the descriptive evidence presented earlier. However, these additional models

should be interpreted with caution, since the identification of the interactions relies on very small sample sizes.

In summary, our results show that there is substantial persistence in the offering of HD plans, with firms that previously offered HD and HRA/HSA plans being more likely to continue offering them even after controlling for other determinants of CDHP offering. The persistence in HD plan offering is dwarfed by the overall persistence in health insurance offering; however, this is to be expected, since churning within health insurance packages is a much smaller change to a firm's benefit offering than adding or dropping health insurance.

6. DISCUSSION

Our analysis of the Kaiser-HRET survey shows that small firms that employ between three and 49 workers are less likely to offer HRA/HSA plans, but are no less likely to offer HD plans compared with firms that employ over 500 workers. Firms that employ 200-499 workers appear to be less likely to offer both HRA/HSA plans and HD plans compared to large firms. Larger small firms (i.e., those employing between 50 and 199 employees) are neither more nor less likely than the largest firms to offer HRA/HSA and HD plans. Smaller firms have been no quicker in their uptake of CDHPs than larger firms, and appear to display somewhat more churning in CDHP offering than large firms, although the evidence on this issue will need to be reviewed with additional years of data.

This paper adds to existing evidence that small firms have not been more likely than larger firms to take advantage of new health insurance options such as HSAs that were, in part, intended to benefit small firms. Our analysis distinguishes different categories of small firms employing less than 500 workers. As a result, we are able to identify some differences in HRA/HSA and HD offering and firm size among smaller firms. Of particular interest is the finding that the smallest firms - those that employ between 3 and 49 workers - are no less likely to offer HD plans, but are less likely to offer HRA/HSA plans compared with large firms. If these small firms are offering HD plans, yet failing to offer HRA or HSA plans that shield employees from taxes on the money used to pay for health insurance premiums or costs up to the deductible, then employees may view this benefit package offered by the smallest firms as inferior. Because HSAs allow contributions to come from either employers or employees, it is a benefit that can be provided at relatively low cost to the employer. Further research should be directed toward understanding why small firms that are offering HD plans are not offering HRAs or HSAs.

Another key finding from our analysis is the non-linear relationship between firm size and probability of offering HRA/HSA and HD plans. Surprisingly, we found that the smallest firms look more like the largest firms in terms of their propensity to offer these plans and

that it is the mid-sized firms – those employing 200-499 employees — that are less likely to offer HD, HRA, and HSA plans. We know that HD offering among large firms looks very different from HD offering at small firms. Specifically, large firms that offer HD plans typically offer it as one of several plans from which employees can choose, whereas smaller firms typically offer HD as the only health insurance plan.[7] This suggests that the market for large group HD plans is likely to be quite different from the market for small group HD plans. In addition, it suggests that the pattern we observe in this analysis may reflect mid-sized firms are more likely to offer only one plan, and prefer that plan be something other than an HD plan.[8]

A recent survey of large employers revealed that most employers cited employee communication as their biggest challenge in the implementation of CDHPs (McDevitt et al., 2007). It is possible that mid-size firms that do not have full-fledged human resources departments may find it particularly difficult to explain the new policies to their employees, and this factor may be partly instrumental in the lower take-up among these firms.

Small business health insurance reform is a policy issue that is continually in the limelight. Solutions to the problem of health insurance access and affordability will likely need to address fundamental issues driving the escalation in health insurance costs. Since CDHPs are potentially less costly than traditional health plans and may appeal to younger workers with low health care demand, health insurance observers hoped that these plans may appeal to small firms (Laing, 2007). This study adds to existing evidence that suggests that small businesses have been no more likely than larger businesses to offer such plans.

More information on the implementation of CDHPs, and especially HRA/HSAs, within smaller firms would be valuable in improving our understanding of the market for CDHP plans and assessing the causes of

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[7] Authors' calculations based on KFF-HRET data.

[8] Fifty-two percent of insured firms with 200-499 workers offer one plan compared to 33 percent of firms with 500 or more workers and 82 percent of firms with less than 200 workers (based on authors' calculations).

churning and ultimately, whether these are indeed a panacea for small business.

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