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## Employer contribution and premium growth in health insurance<sup>☆</sup>

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### ABSTRACT

We study whether employer premium contribution schemes could impact the pricing behavior of health plans and contribute to rising premiums. Using 1991–2011 data before and after a 1999 premium subsidy policy change in the Federal Employees Health Benefits Program (FEHBP), we find that the employer premium contribution scheme has a differential impact on health plan pricing based on two market incentives: 1) consumers are less price sensitive when they only need to pay part of the premium increase, and 2) each health plan has an incentive to increase the employer's premium contribution to that plan. Both incentives are found to contribute to premium growth. Counterfactual simulation shows that average premium would have been 10% less than observed and the federal government would have saved 15% per year on its premium contribution had the subsidy policy change not occurred in the FEHBP. We discuss the potential of similar incentives in other government-subsidized insurance systems such as the Medicare Part D and the Health Insurance Marketplace under the Affordable Care Act.

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### 1. Introduction

The rising cost of health insurance has received enormous attention in the past decade. According to an annual survey conducted by the Kaiser Family Foundation and Health Research & Educational Trust (henceforth known as Kaiser/HRET), the nominal annual premium of employer-sponsored health insurance has more than doubled from 2001 to 2013, outpacing the rate of inflation every year. While new medical technology and aging population may explain part of the premium growth (Schwartz, 1987; Newhouse, 1992, 1993; Chandra and Skinner, 2012), we argue that employer contribution to health plan premium can be another important driver. Both theoretically and empirically, we show that a

seemingly neutral change of employer contribution scheme can have unintended consequences on premium growth.

In the U.S. most employers offer employees health insurance as a fringe benefit for risk pooling and tax reasons. Employer-sponsored health insurance covers on average 60% of all Americans and 65% of working-age Americans in the last decade (U.S. Census Bureau, 2011). Under employer sponsorship, one common premium-sharing rule is a capped proportional contribution scheme where the employer contributes a fixed percentage of the total gross premium up to a dollar maximum, leaving workers responsible for the rest.<sup>2</sup> For example, in the largest employer-sponsored health insurance program in the U.S., the Federal Employees Health Benefits Program (FEHBP), the federal government subsidizes 75% of any plan premium up to a dollar maximum.<sup>3</sup> The large share of employer contribution is not unique in the FEHBP. According to Kaiser/HRET, employers contribute on average 82% of the premium

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<sup>2</sup> Virtually all employer premium contribution schemes can be viewed as a capped proportional contribution scheme, given a certain fixed margin and a dollar maximum. When the dollar maximum is very large, we have a simple proportional contribution scheme given a fixed margin. When the dollar maximum is very small, we have a simple voucher system where each plan gets the same amount of employer contribution.

<sup>3</sup> This employer contribution scheme applies to all federal civilian employees, annuitants, and their dependents.

for single coverage plans and 72% for family coverage plans in 2011.<sup>4</sup>

Researchers have analyzed the role that employer contribution plays in the demand for health insurance, but very few look at the supply side. To fill this gap, we exploit a shift of employer contribution scheme in the FEHBP and analyze how premium growth has changed after the shift. In particular, before 1999, the dollar maximum from the FEHBP employer contribution was defined as 60% of the simple average premium of the biggest six plans, which we refer to as the “Big Six” formula. After 1999, a “Fair Share” formula took effect, and the maximum employer contribution was calculated as 72% of the enrollment-weighted average premium of all health plans in the program.<sup>5</sup> Not only does this policy change redefine the dollar maximum applicable to all plans, it changes the influence that each plan may have in defining the dollar maximum. This implies differential effects on health plans depending on their enrollment in the previous year, thus allowing us to identify heterogeneous effects of the policy change on premium growth.

Before diving into the data, we present a simple oligopoly model to argue that the employer contribution scheme can affect health plan pricing via two incentives: first, consumers are less price sensitive when they only need to pay part of the premium increase; second, each health plan has an incentive to increase the employer's premium contribution to that plan. Both incentives can contribute to premium growth.

Consistent with the theoretical insights, we have three main empirical findings: (1) due to differences in consumer price sensitivity below and above the subsidy cap, plans that have charged below the subsidy cap in the previous year increase their premiums more than those above, (2) the farther away the plan premium is below the subsidy cap, the faster the premium grows, whereas the opposite is true for plans above the subsidy cap, and (3) when health plans are able to influence the employer premium contribution after 1999 through their FEHBP-wide market share, larger plans above the subsidy cap raise their premiums more, which is consistent with their incentives to push up the upper limit of the employer contribution.

Counterfactual analysis shows that average premium would have been 10% less than observed had the subsidy policy change not occurred in the FEHBP. Due to higher employer premium contributions under the new “Fair Share” subsidy policy where the maximum employer contribution is endogenously determined by health plan premiums, the federal government bears most of the increase in insurance premiums after 1999, and would have saved 15% per year on its premium contribution toward the FEHBP.

We believe our results are useful for not only employer-sponsored health insurance but also any insurance that allows some enrollees to receive government subsidies in insurance premiums. Such subsidies, if done in a capped proportional scheme, will discourage insurers from charging gross premiums strictly below the cap. If the cap is endogenously determined by gross premiums set by insurers, the incentive to raise the premium is even greater because higher premiums can raise the cap and in turn allow insurers to receive more subsidies from the government. These supply-side incentives must be taken into account when policy makers design the subsidy scheme and predict the actual cost of government subsidies. In this sense, our findings have important implications for the Medicare Part D program and the Health Insurance Marketplace under the 2010 Patient Protection and Affordable

Care Act (ACA), because both programs are heavily subsidized by the federal government and the government subsidy is capped according to some function of the endogenously determined health plan premiums.

The rest of the paper is organized as follows. Section 2 discusses the background and reviews related literature. We present an analytical framework of the health insurance market in Section 3. We then describe the data set in Section 4, followed by empirical strategies to analyze the effect of employer premium contribution schemes on health plan pricing as well as the corresponding results. Counterfactual analysis is presented in Section 5. Section 6 discusses extensions and robustness checks, and Section 7 concludes with the implications of our findings on other government-subsidized insurance programs.

## 2. Background

### 2.1. Employer premium contribution

From 1960s to 2010, health care spending in the U.S. has climbed from 6% of the GDP to 18%, and the share of the expenditure attributable to health insurance costs has soared from 30% to 76% (Centers for Medicare & Medicaid Services, 2011). As a result, health insurance now plays a pivotal role in the nation's health care spending, and this role will only be strengthened with the implementation of ACA, which mandates universal individual health insurance coverage starting 2014.

There are many forms of health insurance, the most common being employer-sponsored health insurance, which covers about 150 million non-elderly people in the U.S. Since employer-sponsored health insurance has such a wide coverage in the U.S., and employers typically contribute to 70–80% of health plan premium, it is important to know whether the employer premium contribution scheme itself can affect both the demand and supply sides of health insurance. Lessons learned from employer-sponsored health insurance are also useful to many other health insurance programs that allow premium sharing between individual enrollees and public entities.

In analyzing the role of employer contribution in health insurance, much of the previous literature has focused on the demand side. In 1995, Harvard University moved from a linear premium subsidy scheme, where premiums are subsidized at a certain percentage rate, to a fixed contribution scheme, where each plan receives the same amount of employer contribution. Using this policy change, Cutler and Reber (1998) showed that the new fixed contribution scheme induced significant adverse selection while reducing plan total premiums by 5–8%, thus creating a net effect of welfare loss from adverse selection. By simulating the effect of lowering the subsidy cap to the lowest plan premium in the market using data from the FEHBP, Florence and Thorpe (2003) found a similar yet smaller effect.

Other than plan selection, researchers have also looked at whether premium subsidy affects health insurance take-up. In the FEHBP, federal civilian employees used to deduct their out-of-pocket insurance premiums from their after-tax income. Starting from October 2000, they were allowed to pay their portion of the premium on a pre-tax basis. After this tax subsidy policy change, however, Gruber and Washington (2005) found little change in insurance take-up.

Other studies looking at tax subsidies have generally used data on health insurance take-up and amount purchased among the self-employed, thanks to recent changes in tax laws on the deductibility for self-employed health insurance premiums, but many have found mixed results (e.g., Gruber and Poterba, 1994; Selden, 2009; Heim and Lurie, 2009).

<sup>4</sup> The average percentage of employer contribution includes those who contribute 100% of the premium.

<sup>5</sup> Each plan's enrollment weight is determined by its previous year's (or lagged) FEHBP program-wide market share.

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