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Changing the Tax Code to Create Consumer-Driven Health Insurance Competition

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Policy Points

- Current tax law prevents workers from trading employer-paid insurance premiums for greater take-home pay, and many middle- and lower-income workers thus pay for health plans that are more expensive than plans they would directly choose for themselves in a consumer-driven system.

- Minor changes to current tax law can allow employees to receive their employers' premium contribution directly and then purchase health insurance themselves, using tax-free funds. Employees could deduct for income tax purposes the amount used for insurance and, if they spend less than the amount transferred, take the remainder as taxed income. Our simulation shows that giving workers this option will increase incomes ($160-$167 billion annually) and tax revenue ($46-$48 billion annually), reduce income inequality, and may control health care costs.

- Three countries with high-performing, cost-controlled health systems—Germany, Switzerland, and Singapore—institute similar policies that allow individuals to purchase their own health insurance tax-free.

Abstract

Context: Because current tax laws exclude employer-paid health insurance premiums from employees' taxable wages and income, employer-sponsored insurance remains the primary source of health insurance for most employed Americans. Economists have long blamed the employer-based insurance tax exclusion for inflating health care costs, and, more recently, for constraining income growth and exacerbating income inequality.

Methods: We execute a simulation to test the effect of permitting employees to receive their employers' premium contribution directly and then purchase health insurance themselves, using tax-free funds. Employees could deduct for income tax purposes the amount used for insurance and, if they spend less than the amount transferred, take the remainder as taxed income.

Findings: Our simulation indicates that in this consumer-driven system many workers would trade some insurance dollars for higher income, even if the latter is taxed. Our alternative tax treatment causes annual after-tax household income to grow by more than $160 billion and

federal tax revenues by more than $46 billion. Along the way, take-home pay inequality is reduced, and the greater take-up of slimmed down policies could lead to greater cost control.

Conclusions: A simple change in the tax treatment of employer-sponsored health insurance can give workers the flexibility to economize on health insurance purchases. With this flexibility, many workers will select health plans that are less expensive than those now chosen for them. This will inject much-needed price competition in health insurance markets. It will also allow workers to enjoy more take-home pay, thereby counteracting the negative and regressive effects of escalating health care inflation. These results cannot be achieved from granting tax credits for the purchase of health insurance because such credits do not permit workers to trade insurance dollars for wages.

Keywords

Tax policy, health insurance, income inequality, consumer-driven health care

Introduction

The outsized costs of the U.S. health care system create major economic problems. Health care expenditures squeeze out needed funds for education, public safety, and other social responsibilities, rising costs constrain income growth, and the incidence of costs exacerbates income inequality. And health care cost inflation continues to grow at rates far higher than the rest of the economy causing an increased percentage of U.S. GDP to be spent in the health care sector, growing from 13.1% in 2000 to 17.1% in 2014, while health care remains one of the least productive sectors in the U.S. economy.[1]

The current federal tax treatment of employer-paid health insurance expenses is a major cause of these problems. Current law excludes from taxable wages and income any health insurance premiums that employers pay for their employees or self-employed individuals pay for themselves.[2] In contrast, individuals who are not self-employed and purchase health insurance for themselves receive much more limited tax deductions.[3] The favorable tax treatment for employer-sponsored insurance is a primary reason why the U.S. lacks the kind of consumer-driven, competitive market for health insurance that it enjoys for most other products. Instead, in 2013, 150 million Americans were insured by employers while only 6 million paid for individual insurance out of their own pockets.[4] This employer-sponsored market allowed only limited choice: in 2016, 83% of the employers that offered health insurance offered only one kind of plan.[5]

Economists and health policy experts have long argued that the tax exclusion for employer-sponsored health insurance has pernicious economic consequences for both the national economy and workers' incomes.[6] First, most economists agree that employer-purchase of health insurance causes needless inflation of health care costs.[7] Although employers' payment

of their employees' health insurance expense is one component of employees' wages or salaries,[8] employees typically view it as a free benefit and, thus, are insulated from the cost control that generally accompanies direct consumer purchase.[9]

Second, rising health insurance costs suppressed wage growth:[10] health insurance premiums grew at annual rates of 7.5-7.7% for family and single coverage from 2000-2016, whereas wages grew at rates ranging from only 1.80% (for the lowest quintile of family incomes) to 2.64% (for the highest quintile).[11] In addition, employers increased their employees' contributions to health insurance premiums at higher rates than their own contributions: for family coverage, employee contributions grew at an annual average of 7.5% between 2000 and 2016, whereas employer contributions grew at 6.74%.[12] This seemingly small difference translated to major financial effects. We illustrate in Table 1 how this difference over time translates into large differences from a normalized contribution. Also, over this same period, insurance plans became less generous, imposing more cost sharing burdens on the insureds. Out-of-pocket health care expenses by insured employers rose at an annual rate of 6.34%, from $558 to $747, from 2004-2016.[13] Those in the top 15% of spending, who accounted for 75% of total health benefit costs, spent $2,678 for cost sharing in 2014.[14]

Table 1: Compound Annual Growth Rate (CAGR) of Employers' and Employees' Contributions to Family Health Insurance Premiums, 2000-2016, and Its Effect on 2000 Payment of $10,000

	Contribution CAGR*	***2000***	***2016***
Employee:	7.50%	$10,000	$35,503
Employer:	6.74%	$10,000	$28,253

***Source:** Kaiser Family Foundation, Employer Health Benefits Surveys, http://kff.org/health-costs/report/2016-employer-health-benefits-survey/, accessed March 2, 2017

These cost and inflation dynamics increased income inequality, a matter of growing political concern. Because employer-based health insurance premiums typically do not vary with income, the employer's shift of increased payments for health insurance to employees exacted a larger toll on lower income employees.[15] As average employer-sponsored family premiums rose from $3,660 to $15,745 between 1988 and 2012, they increased from between 13% to 60% of the growth of total compensation for families in the bottom 40% of the income scale, but from only 1.4% to 4.5% for families in the upper 5%.[16]

The underlying problem of the tax exclusion is that what appears to be a subsidy for an employee's benefit works contrary to their interest. The resulting employer-driven system discourages competition by limiting the number of health insurers that would contain costs if subjected to greater competition;[17] causes workers to purchase more health insurance than they would otherwise purchase directly; and disproportionately increases the workers' share of the costs of insurance.

This paper tests that proposition by executing a simulation that examines the consequence of changing the way health insurance is purchased. In our simulation, employees directly receive their employers' payment for health insurance and may spend up to that amount on a plan of their choosing. If they purchase a plan that costs less than the full amount, which fulfills the requirements of the Affordable Care Act (ACA), they may take the remainder as taxed take-home pay.

Our simulation indicates that workers capitalize on this opportunity to economize on health insurance. As a result, many benefits accrue to the economy: annual after-tax household income grows by more than $160 billion, tax revenues grow by more than $46 billion; income inequality is reduced—low income workers benefitted far more than high income ones; and

perhaps most important, the health insurance market is subjected to greater pressures for cost control.[18]

Proposals of this nature were also suggested by Martin Feldstein[19] and Regina Herzlinger.[20] As we discuss below, other proposals to deal with the tax exclusion issue seem similar but differ in their intent, political appeal, and, perhaps, their economic consequences: some recommended tax credits rather than deductions for the purchase of health insurance[21] and others required taxing employer contributions to health insurance.[22]

We then analyze how this proposals fits into the ACA or its most likely replacements. We continue to describe how three nations with high performance, cost-controlled, universal coverage health care systems – Switzerland, Singapore, and Germany – implement similar consumer-driven mechanisms in which individual tax deductions facilitate the individual purchase of health insurance. Finally, we outline the (surprisingly simple) regulatory changes required to implement such a system in the U.S.

Simulating the Effect of a Personal Income Tax Deduction

If employees directly received their employers' payment for health insurance and could deduct the amount they used to purchase health insurance, the problems of stagnating personal income and inequality would be ameliorated. Our simulation indicates that after tax-income will grow by more than $160 billion annually with lower income earners gaining much more proportionate after-tax income than higher income ones. Federal income tax revenues will rise by more than $46 billion as workers opt for more marginal after-tax income and less pre-tax health insurance.

The mechanisms that drive these results are:

a) Employees receive payments from employer's equal, in aggregate, to the total health insurance payments paid out as part of their normal wages.

b) Employees then purchase their own plans and the cost of these employee-purchased plans is excluded from taxable income. If employees purchase plans that cost less than the aggregate payment they receive from their employers, they take home the remainder as taxed wages.

c) People who purchase their own insurance are more cost-conscious than when their employer purchases it on their behalf. Thus, when employees are given the opportunity to purchase their own plans, more will purchase less expensive plans than under the current system. The insurance market, in turn, will make less expensive plans more readily available.

   Although some employers may claim that their self-insured health plans (i.e. a plan in which the organization takes on the risk function of insuring health expenses itself and uses insurers only for administrative services) controlled premiums better than the fully insured plans consumers can buy for themselves, premium growth rates for self–insured plans were not materially different from those in fully-insured plans. Between 2000 and 2014, the premium growth rate for self-insured plans was 7.7%, versus 7.65% for fully insured ones.[23]

d) If employees purchase less expensive plans, then less income is excluded from taxation and more goes towards wages; thus employees enjoy more take home income and the government receives more tax revenue.

Central to our argument is the premise that health care consumers respond to the availability of choice and opportunities to economize. Economic research bears this out. One

analysis found a 20% increase of employee consumer surplus resulting from a similar tax policy because it enables employees to choose different plans from those offered by their employers.[24] Similarly, a study of 51 Medicare Part D prescription drug plans (PDPs) available to the average enrollee found that by switching plans individuals significantly reduced their annual prescription drug expenses.[25] Yet few employer-sponsored health insurance markets give individuals meaningful choices. In 2015, for example, 83% of employers offered a choice of only one plan and 13% offered only two.[26]

There is widespread recognition that health insurance consumers would like more choices and market participants are looking for opportunities to provide them. For example, Aon Hewett, a private-sector health insurance exchange marketplace, offered workers hundreds of health plans.[27] And, likely in recognition of a growing consumer-driven health insurance market, venture capitalists (VCs) in 2015 doubled their investments in health insurance and technology. These newly-minted insurance firms included Oscar, valued at $2.7 billion, Clover, and Melody Health Insurance. VC money also poured into firms involved with buying, selling, and managing health insurance.[28]

There is, however, debate about whether a larger set of choices helps or overloads employees. One evaluation of the choices of elders across the many insurance options available under Medicare Part D found that consumers place more weight on plan premiums than on expected out-of-pocket costs; value plan financial characteristics beyond any impact on their own financial expenses or risk; and place almost no value on variance-reducing aspects of plans. This analysis implied that welfare would have been 27 percent higher if patients had all chosen rationally.[29] Yet, a different analysis of individuals' decisions to switch PDPs from 2006-2010 found that only 50% of individuals were in their original PDP by January 2010. Individuals

switched PDPs in response to increases in their status quo plans' costs, and over time they become increasingly responsive to large increases in their status quo plans' costs. Switching increased when more plans were available, particularly more relatively lower-cost plans.[30] Another analysis of a sample of Medicare Part D enrollees found that 81% of consumers reduced overspending over time. Overspending, on average, was reduced by $298. The greatest improvements were by those who overspent most and by those who switched plans. Decisions to switch depended on individuals' overspending and on individual-specific effects of changes in their current plans. The oldest consumers and those initiating medications for Alzheimer's disease improved by more than the average, suggesting the importance of transparency that enables support from others.[31]

We find similar evidence of employers' ability to choose prudently from results obtained after retirement packages moved from defined benefit (DB) plans, in which employers invested their employees' pension funds, to defined contribution (DC) ones, in which individuals invested these funds. The investment performance of employers and employees were virtually identical. One study found that, between 1990 and 2012, DB plans outperformed DC ones by only .7%,[32] and another study concluded that there were only small and statistically insignificant differences in the returns of DC and DB plans, from 1995-2012.[33] Refuting the supposition of administrative economies of scale for large employer-directed plans, the costs for employer-directed and employee-directed pension plans were virtually indistinguishable. A study comparing DC and DB plans found that administrative costs varied with the size of plans and did not differ between DC and DB plans.[34] The large private health insurance exchanges for individuals will likely demonstrate similar results.[35]

The Simulation: Methods, Data and Results

The simulation is carried out at the household level. Households are assumed to vary on two dimensions: income and whether the household's health insurance is employment-based. The proportions of households and mean household income for those with employment-based insurance for each income group were estimated using data from the U.S. Census Bureau's Current Population Survey, Annual Social Economic Supplement.[36]

The simulation accounts for the concentration of health expenditures by transferring greater sums to the sick. The concentration of the costs of sick enrollees is variously estimated as:

- 11% of households account for 69% of costs.[37]
- 20% of households account for 80% of costs (Pareto Principle); and
- 5% of households account for 50% of costs.[38]

The 5% and 20% data are for the population as a whole, rather than for an employer pool; the 11% data are for an employer pool but the data date back to 2005.

The income elasticity of demand for health insurance comes from "The Elasticity of Demand for Health Care: A Review of the Literature and Its Application to the Military Health System,"[39] a report by the RAND Corporation. The estimates of income elasticity of demand are in the range of 0 to 0.2. There is a body of thought that holds that income elasticity might be somewhat higher for analysis done on aggregate levels,[40] but we use the RAND numbers because we are simulating these effects as close to the micro level as feasible. The price elasticity of demand is set to -0.2. This value comes from pages 25 and 26 of "The Elasticity of Demand for Health Care: A Review of the Literature and Its Application to the Military Health System." The literature gives ranges of possible values for the income and price elasticities of demand. We use

the midpoint of those ranges as initial values to our simulation. (To examine how the simulation results respond to variations in those input values see: https://amarder.shinyapps.io/rherzlinger/.)

In response to the relatively wide range of price elasticity estimates in the early health demand literature from -0.07[41] to -1.5,[42] the government funded a social insurance experiment that was designed to answer a number of important questions surrounding the demand for health care. The RAND Health Insurance Experiment (HIE) (Newhouse et al., 1993)[43] ran from 1974 to 1982 and randomized families in six sites into different insurance plans. The plans varied by level of cost-sharing, out-of-pocket maximum expenditure, and size of deductibles. Although the HIE was conducted approximately 40 years ago, the results of the related studies are still considered the 'gold standard' for health demand elasticity estimates. The experimental design enables researchers to sidestep the selection and endogeneity problems associated with observational studies.

The analysis of the HIE compares health care use across individuals in different insurance plans. Use of health care services in the HIE was not affected by the out-of-pocket maximums. Consequently, for estimation purposes all insurance plans with the same coinsurance structure were considered the same. For coinsurance rates between 0 and 25 percent, the price elasticity of medical expenditures was found to be -0.17. Consistent with the patterns seen in observational studies, the demand for health care was found to be somewhat more price sensitive as the coinsurance rate increased. In the HIE, coinsurance rates between 25 and 95 percent yielded elasticity estimates of -0.22. The magnitude of the elasticities estimated from the HIE fall at the lower end of the range of previous estimates."

The simulation presumes continuation of the ACA's mandates, which require that all individuals must purchase insurance with coverage of likely expenses and that insurers must

offer insurance to all individuals without price adjustments for risks, other than age. (Details of the simulation, including the equations used and sources of the data, are in the Appendix.)

The starting data shown in **Table 2**, "Simulation Starting Values and Parameters":

Table 2: Simulation Starting Values and Parameters[44]

Income Group	Has Employment-Based Insurance (ESI)	# Households	Mean Income	Health Insurance Premiums	Income Elasticity	Price Elasticity
Less than $25,000	Yes	4,396,036	$15,884	$17,546	0.1	-0.2
$25,000 to $49,999	Yes	13,131,180	$37,834	$17,546	0.1	-0.2
$50,000 to $74,999	Yes	14,163,020	$61,696	$17,546	0.1	-0.2
$75,000 to $99,999	Yes	11,714,740	$86,244	$12,546	0.1	-0.2
$100,000 or more	Yes	27,934,230	$177,484	$17,546	0.1	-0.2

Table 3 below groups households into two different groups: high- and low-cost. The model recognizes that high-cost households require a large income transfer to cover their high health insurance premiums while low-cost households require a much smaller transfer. Below is an example of how we compute the size of the required transfer if 11% of the employee group accounts for 69% of costs. In this example, we use the numbers from the first row of **Table 2** to derive the pre-intervention health insurance premium in the first two rows of **Table 3**. Prior to the intervention the total cost of health insurance for households with income less than $25,000 is:

$$(4,396,036 \text{ households}) \frac{\$17,546}{\text{household}} = \$77,132,847,656$$

Since 11% of the population accounts for 69% of the costs we can calculate how much a high-cost household costs:

$$c_{high} = \frac{0.69}{0.11} \frac{\$77,132,847,656}{4,396,036 \text{ households}} = \frac{\$110,061.30}{\text{household}}$$

Similarly, the low-cost households comprise 89% of population and only 31% of the costs:

$$c_{low} = \frac{1-0.69}{1-0.11} \frac{\$77,132,847,656}{4,396,036 \text{ households}} = \frac{\$6,111.53}{\text{household}}$$

The simulation indicates that the price effect of removing the employer subsidy to purchase health insurance outweighs the income effect of increasing employee income. This result originates from two sources: (1) the percentage change in health insurance price is larger than the percentage change in income, and (2) as the elasticity, consumers have been found to be more responsive to changes in health insurance prices versus changes in income, as reflected in the elasticity inputs reflect. To assure realistic insurance premiums estimates, we limited the decrease in their price to 20%. The differing elasticities also caused the simulation result that low-income households who received large transfers purchased more health insurance than their total income. To adjust, we used the mid-point formula to calculate percentage changes in income and price. For example, if income increased from $10 to $15, the midpoint formula calculates the change as: (15-10)/ [(10+15)/2] =40%.

The net effects of the policy are a reduction in the cost of health insurance purchased, an increase in taxable income, and an increase in tax revenue, as shown in **Table 3**, "Simulation's Predicted Changes in Health Insurance Premiums, Income, and Tax Revenue," below.

In sum, the simulations indicates that after-tax household income will grow by more than $160 billion and tax revenues by more than $46 billion annually. Income increases proportionately more for lower-and middle-income workers then for upper income ones and more for the sick.

The simulation's explicit transfer of funds to the sick would motivate insurers to focus increased attention on this population, which accounts for a significant 50%-80% of their revenues. The resulting competition could drive down premiums in excess of the 20% reduction we estimated. Experts have estimated that up to a third of health care expenditures are wasted[45] and competition focused on the most expensive users of health care could help to wring out a large proportion of these costs.

Table 3: Predicted Changes in the Health Insurance Premiums, Income, and Tax Revenues with Different Concentrations of Health Care Expenses

11% of population = 69% costs

Income Group	Has ESI	Sick	Number of Households	Health Insurance Premium, Pre-Intervention	Health Insurance Premium, Post-Intervention	Income Increase	Total After-Tax Income Change	New Tax Revenue
Less than $25,000	Yes	Yes	483,563	$110,061	$102,523	46%	$3,166,907,307	$478,338,374
Less than $25,000	Yes	No	3,912,472	$6,112	$4,941	7%	$4,120,141,941	$457,793,549
$25,000 to $49,999	Yes	Yes	1,444,429	$110,061	$98,480	30%	$14,218,507,448	$2,509,148,373
$25,000 to $49,999	Yes	No	11,686,750	$6,112	$4,835	3%	$12,679,817,275	$2,237,614,813
$50,000 to $74,999	Yes	Yes	1,557,932	$110,061	$95,808	23%	$18,874,322,573	$3,330,762,807

Income Group	Has ESI	Sick	Number of Households	Health Insurance Premium, Pre-Intervention	Health Insurance Premium, Post-Intervention	Income Increase	Total After-Tax Income Change	New Tax Revenue
$50,000 to $74,999	Yes	No	12,605,087	$6,112	$4,801	2%	$14,038,080,096	$2,477,308,252
$75,000 to $99,999	Yes	Yes	1,288,621	$110,061	$94,000	16%	$15,522,492,158	$5,174,164,053
$75,000 to $99,999	Yes	No	10,426,118	$6,112	$4,785	1%	$10,369,721,977	$3,456,573,992
$100,000 or more	Yes	Yes	3,072,765	$110,061	$90,605	10%	$43,045,228,233	$16,739,810,979
$100,000 or more	Yes	No	24,861,464	$6,112	$4,764	1%	$24,119,061,712	$9,379,635,110
Totals							**$160,154,280,720**	**$46,241,150,303**

20% of population = 80% of costs

Income Group	Has ESI	Sick	Number of Households	Health Insurance Premium, Pre-Intervention	Health Insurance Premium, Post-Intervention	Income Increase	Total After-Tax Income Change	New Tax Revenue
Less than $25,000	Yes	Yes	879,207	$70,184	$64,149	37%	$4,634,232,194	$671,391,824
Less than $25,000	Yes	No	3,516,828	$4,386	$3,511	6%	$2,769,580,047	$307,731,116
$25,000 to $49,999	Yes	Yes	2,626,236	$70,184	$61,236	23%	$19,975,063,268	$3,525,011,165

Income Group	Has ESI	Sick	Number of Households	Health Insurance Premium, Pre-Intervention	Health Insurance Premium, Post-Intervention	Income Increase	Total After-Tax Income Change	New Tax Revenue
$25,000 to $49,999	Yes	No	10,504,944	$4,386	$3,453	2%	$8,336,967,664	$1,471,229,588
$50,000 to $74,999	Yes	Yes	2,832,604	$70,184	$59,567	17%	$25,563,649,072	$4,511,232,189
$50,000 to $74,999	Yes	No	11,330,416	$4,386	$3,435	2%	$9,165,588,596	$1,617,456,811
$75,000 to $99,999	Yes	Yes	2,342,948	$70,184	$58,534	12%	$20,471,376,404	$6,823,792,135
$75,000 to $99,999	Yes	No	9,371,792	$4,386	$3,426	1%	$6,748,220,141	$2,249,406,714
$100,000 or more	Yes	Yes	5,586,846	$70,184	$56,777	7%	$53,931,083,181	$20,973,199,015
$100,000 or more	Yes	No	22,347,384	$4,386	$3,415	0%	$15,626,792,892	$6,077,086,125
Totals							**$167,222,553,461**	**$48,227,536,681**

Impact of the Affordable Care Act (ACA) on Individual Tax Deduction of Health Insurance Expenses

The ACA diminishes the following concerns about this proposal:

- *"Non Purchase" and "Death Spirals"*: Unaffordable premium prices occur in insurance markets in which sick people are the primary enrollees. The ACA requires the purchase of health insurance, thus reducing the concern that individuals will not

use the transferred funds for the purchase of health insurance and ensuring the participation of healthy enrollees.

Under the ACA, the penalty for those who do not buy health insurance ranges from a minimum of $695 to a maximum of $2,484 per adult and $12,420 for a family of three or more children.[46] It is likely, however, that the ACA did not pool risk adequately because its penalties were too weak. In 2014, approximately 7.5 million individuals paid the penalty rather than purchasing insurance, and of the approximately 15 million uninsured people who were ineligible for Medicaid, an estimated 7.1 million would pay a penalty lower than the cost of the least expensive plan.[47]

Other countries with a consumer-driven health insurance market achieve nearly universal compliance through this and similar mechanisms, though with stiffer penalties. In Switzerland, for example, tax returns indicate whether an individual purchased health insurance. The canton buys health insurance for the uninsured and then bills them, bringing suit against those who fail to pay.[48]

- *Unaffordability of Health Insurance for the Sick*. The ACA enables high-risk individuals to purchase affordable health insurance because it forbids individual underwriting, contains a guaranteed issue provision, and risk adjusts insurers that offer policies in public exchanges.[49] Risk adjustment is also featured for insurers in most private health insurance exchanges that are offered to a specific employer group.[50] Thus, high-risk individuals who receive their employer's average payment as a transfer will be able to buy affordable health insurance coverage.

- *Inadequate Coverage*. The ACA mandates the purchase of insurance plans with adequate actuarial coverage, thus reducing the risk of individuals' buying insurance with inadequate coverage that may cause them to deplete their resources and require public support.[51]
- *Insufficient Transfer of Employer-funds*. Current law requires employers to disclose to both the IRS and to their employees the amounts[52] they spend on health insurance. These disclosures are made by filing W-2 forms, and employers that fail to submit accurate W-2s in a timely manner are subject to a sliding scale of civil and criminal penalties. These enforcement mechanisms thus reduce an employer's ability to shortchange amounts promised to employees.[53] We discuss needed amplifications below.

Likely Impact of ACA Repeal

If each of the features in the ACA listed above are repealed, this plan can still offer worker choice and enable workers to economize without exposing them to financial or health dangers. The key in the absence of ACA requirements to buy insurance products offered is to rely on other regulatory tools to assure that workers use their health care funds to purchase health insurance with adequate protections.

Prior to the ACA, the responsibility of assuring the quality of health insurance products fell to state departments of insurance (DOIs) and general consumer protection laws. In the absence of ACA requirements, state DOIs and Attorneys General are likely to reassume these responsibilities. Moreover, if the Trump Administration pursues the campaign pledge of allowing cross-state marketing of insurance plans, scrutiny of any potential malfeasance by plans, such as misinformation, inadequate benefits, or aggressive denials, will assume

magnified importance. To be sure, giving lay workers the autonomy to select their own plans comes at a hazard, but workers could be adequately protected against predatory or unseemly conduct if other regulatory mechanisms work adequately.

Moreover, removal of ACA protections also highlights the importance and potential of expanding transparency in health insurance regimes. Both state governments and private sector actors would face increased pressure to provide, digest, and disseminate cost and quality information regarding insurance options so that workers could rely on consumer information about their choices when they autonomously select plans.

Should the Trump administration opt to keep the ACA quality requirements in form while reducing their stringency in substance, they might simply reduce the minimum actuarial value currently permitted on the individual market. Under current law, bronze plans offer an actuarial value of 60 percent, meaning that enrollees can, on average, expect that the plan will cover 60 percent of their medical expenses[54] (for reference, employer plans tend to have actuarial values that exceed 80 percent[55]). Lowering actuarial values would commensurately lower premiums. Some Republican thought leaders have proposed reworking ACA's metal tiers in the ACA to actuarial values of 40, 55, 70, and 85 percent for bronze, silver, gold, and platinum plans, respectively.[56]

Another tweak of the ACA could narrow the law's essential health benefits. The ACA enumerates 10 categories of "essential health benefits" (EHBs) that insurers are required to cover, and the law instructs the Secretary of HHS to define those EHB requirements.[57] While the Obama administration delegated to the states the authority to define EHB requirements, a Trump administration might narrowly redefine each category, thereby likely reducing the cost of insurance.[58]

Promoting choice of plans for workers will be pursued within private exchanges, in which large or multiple employers pool a population of workers, to whom multiple plans are offered.[59] Efforts to dilute or remove the ACA's requirements, as described above, will likely also promote worker choice by expanding the number of potential insurance options. Loosening requirements for network adequacy, EHBs, and/or actuarial values would promote the offerings of low-cost insurance plans.

How Direct Transfer and Personal Deduction Differ from Health Insurance Tax Credits for the Purchase of Health Insurance and Taxation of Health Insurance Premiums

Economists have long argued for tax credits to remedy lack of insurance by employed individuals and the problems created by the tax preference for employer-driven health insurance.[60] They opted for credits because, unlike deductions, tax credits do not favor high-income tax payers. The Congressional Republicans' original Patient Care Act offered a tax break equivalent to 65% of an average plan's cost and grew it at the CPI plus 1%.[61] Its updated 2017 version capped the exclusion at $12,000 for an individual and $30,000 for a family and maintained the same growth rate.[62]

But tax credits limit consumers to using the credit only for purchasing health insurance. In contrast, a direct transfer of employer expenses for health insurance and a tax deduction in the amount of the expenditures of the individual's purchase of health insurance enables consumers to choose between marginal pre-tax health insurance and marginal after-tax income. Further, behavioral economics research indicates that people find a credit to be less straightforward and are therefore less likely to act.[63]

Additionally, the original plan, and some of the subsequent plans, unfairly limited the transfer that workers would receive from their employers. Workers pay for all of the health

insurance offered by their employers and so should receive the entire amount. And because employer health insurance transfers are an element of employees' income that was indexed to medical inflation, these transfers should grow with that inflation, not the CPI.

Other economists have recommended eliminating the tax exclusion altogether, an obviously politically perilous option.[64] Unlike our proposal, this recommendation lowers employees' take home pay. As a further difference from our proposal, it does not offer workers a choice between pre-tax health insurance and after-tax income.

Experiences of Other Countries That Allow Personal Tax Deduction of Health Insurance Expenses

Switzerland, Germany, and Singapore are high income countries that have achieved good-to-excellent health care outcomes at significantly lower cost and, for Germany and Switzerland, better cost control than the United States and single payer countries, such as the UK and Canada. (See Table 4, "Percentage of GDP Spent on Health Care (2014); Ratio of Health Care Expense, per capita, CAGR, per capita, CAGR"). Singapore, for example, devotes only 4.7% of its GDP to health care and Switzerland and Germany each spend approximately 11% of GDP versus 17.1% for the U.S. Health care spending per capita ranges from $2,881 for Singapore to $4,920 for Germany and $6,325 for Switzerland compared to $9,086 for the U.S.[65] Lower costs have likely contributed to higher 2015 household savings rate in Germany (9.2%) and Switzerland (17.1%) than the U.S. (5.2%). Similarly, Singapore's overall 2014 savings rate is 54.7% of GDP compared to 17% for the U.S.[66]

Table 4: Percentage of GDP Spent on Health Care (2014); Ratio of CAGR of Health Care Expense, per capita, to GDP, per capita

Canada	10.45%	1.33
Germany	11.30%	1.18

Singapore	4.92%	1.68
Switzerland	11.66%	1.23
United Kingdom	9.12%	1.52
United States	17.14%	1.62

Source: The World Bank, World Development Indicators database, accessed March 2, 2017 and computed by Jeff Cronin, Harvard Business School Research, Boston, MA 02163

The three countries tax shelter individual purchase of health insurance in different ways. In Switzerland, individuals buy health insurance directly and the premiums are tax-deductible.[67] In Germany, premiums are deducted from workers' wages on a pre-tax basis. In Singapore, both contributions to and withdrawals from compulsory health savings accounts are tax exempt, and because they are typically used to pay insurance premiums, premium purchases are tax advantaged as well.[68]

All three are similar to the U.S. in how individual coverage is assured and in the required coverage and benefits characteristics of insurance, allowances for out of pocket payments for medical care, and reliance on a large number of private sector insurers:

a. In Switzerland, tax returns indicate whether an individual purchased health insurance. The canton buys health insurance for the uninsured and bills them, bringing suit against those who fail to pay.[69] All insurance plans offer the same basic basket of coverage but vary in terms of type of plan (standard, managed care, gatekeeping, or telemedicine) and level of deductibles (ranging from 300-2500 Swiss Francs). They offer a variety of provider networks and yield hundreds of options.[70] Insured persons pay co-insurance of 10%, up to an annual cap of approximately $500 for adults. Eighty private health insurers offered coverage in 2011, and the average Swiss resident could choose among 59 insurers.[71]

b. In Germany, insurance is provided for the majority of residents (90%) through a statutory health insurance scheme composed of a large number (124 in 2015) of private, non-profit insurers.[72] The package of benefits is fixed, as are premiums, while cost sharing is capped at 2% of household income for adults (children are exempt from cost-sharing). Germans with household incomes above a certain level and, ironically, civil servants can opt for private insurance through a number (43) of private insurance companies, some of which are for-profit.

c. Singapore requires participation in MediShield Life, the premium-funded, government-administered catastrophic health insurance plan, and has established significant penalties and recovery mechanisms for non-payment. It further mandates contributions to compulsory health savings accounts, called Medisave, which are used to cover routine health care expenses, including outpatient care. MediShield covers hospitalization only in the lower-cost public hospital wards; patients wishing to receive care in more expensive public or private hospital wards must pay the difference out of pocket or purchase additional private insurance plans, available from a number of private insurers, to supplement MediShield's coverage. MediShield also includes significant deductibles (ranging from $1,500 to $3,000) and co-insurance. There are no caps on out-of-pocket spending,[73] but 2015 reforms significantly decreased the amount of co-insurance incurred by patients.[74]

Tax Reform, Transparency, and Consumer Safeguard Laws That Can Make It Happen

To achieve the results of our simulation, employees must have full control over the dollars that purchase their health insurance. Specifically, they must freely decide how much of

an employer's contribution to apply towards the tax-free purchase health insurance and how much to take home as taxed wages. A tax exclusion for employees' purchase of their own health insurance enables them to make wage-insurance tradeoffs that would best meet their financial needs.

Current law, however, would tax any lump sum payments given to an employee, even if some of such payments were for buying health insurance. Although the U.S. Congress could rewrite the tax code to redefine the tax exemption to include certain payments made to employees for purchasing health insurance, federal agencies can act under existing statutory authority to achieve the same result. We propose three such actions that are available to the Internal Revenue Service under current law. Each one requires revisiting IRS Notice 2013-54, which offered a restrictive interpretation to the Affordable Care Act's "annual limit restriction."

Prior to passage of the Affordable Care Act (ACA), many health insurance plans set an annual limit—a dollar limit on their yearly spending for an insured's benefits—and required the insured to pay for the cost of all care that exceeded those limits. Congress deemed such plans to run counter to the primary purpose of health insurance—that is, protection against financial catastrophe—and included in the ACA a prohibition against annual dollar limits for any benefits that fall within the ACA's "essential health benefits." This prohibition applies to all non-grandfathered job-related and individual health insurance plans.

Subsequent to the ACA's passage, a question arose of how to apply the ACA's prohibition of annual dollar limits to health reimbursement arrangements (HRAs), health flexible spending arrangements (FSAs), and especially, health insurance plans that fall under Revenue Ruling 61-146 in which an employer reimburses an employee's substantiated premiums for non-employer sponsored insurance. In each of these arrangements, employers give finite payments to

employees that employees then use to purchase health insurance or other health services. The question presented to the IRS was whether these payments—precisely because they are finite—violate the ACA's ban on annual dollar limits.

On September 13, 2013, the Internal Revenue Service issued Notice 2013-54 to offer guidance on these questions (the Department of Labor, responsible for issuing regulations under ERISA, issued DOL Technical Release 2013-03 the same day, which contained substantively identical rulings). The notice determined that each of these employer-sponsored group health plans, on their own, fails to satisfy the annual dollar limit prohibition. They are permissible under the ACA only if they are integrated with another employer-sponsored group health plan that satisfies the ACA. Thus, Notice 2013-54 disallows strategies employers might use to transfer tax exempt payments to employees for their purchase of health insurance.

Three Alternatives to 2013-54

Notice 2013-54, like any IRS notice, can be reversed at will by the IRS without any formal or informal rulemaking process. To achieve the benefits forecast from the simulation, three alternatives to Notice 2013-54 would bring tax parity to employer and employee purchases of health insurance:

1. The IRS could simply revise Notice 2013-54 for all payments made from employers to employees for the purpose of purchasing insurance. Formally, this would entail reversing Notice 2013-54's determination that HRAs, FSAs, and individual reimbursements under Rule 61-146 are all deemed to be "group health plans" for the purpose of the ACA's market reforms. From a technical standpoint, these plans resist a conventional label as group plans because they are tailored to individual employee decisions. From a substantive perspective, this revision would maintain the spirit of the ACA's market

reforms if the employee uses the exempt funds to purchase an insurance plan that otherwise meets the ACA's essential health benefits and other protections.

2. Alternatively, the IRS could more narrowly revise Notice 2013-54 to exempt Section 105 health reimbursement arrangements (HRAs) from the ACA's annual limit restriction. Although Section 105 plans have typically been considered group health plans, and thus technically would fall under the ACA's market reforms, they were crafted with the intent of allowing employees to individualize their health expenditures, including the purchasing of insurance. Thus, Section 105 appears to be designed to enable employees to obtain insurance in the individual market while enjoying tax parity with workers who have group coverage. Notice 2013-54 could be revised to sustain this purpose of Section 105 plans, perhaps provided that other ACA safeguards are met.

One drawback to this approach, limiting the tax exclusion to Section 105 plans rather than broader 61-146 plans, is that health reimbursement arrangements do not fully allow employees to choose between tax excluded funds to purchase health insurance and taxed take-home income. HRA funds are restricted to health expenses, and unused funds can be forfeited at termination at retirement and are often limited in annual rollover amounts.

3. Finally, the IRS could revise Notice 2013-54 to expand flexibility under Section 125 Cafeteria Plan FSAs. Because employees participating in cafeteria plans are permitted to choose reduced wages in exchange for the pre-tax purchase of insurance and other health services, Section 125 plans enable employees to make precisely the wage-insurance tradeoffs that are at the heart of our proposal. Notice 2013-54 could allow Section 125 plans to be used to purchase insurance plans that satisfy the ACA's market reforms and other requirements. One drawback of typical Section 125 plans is that employees forfeit

whatever contribution they fail to use within the calendar year. However, because the ACA mandates the annual purchase of insurance, and thus would require employees to spend their FSA funds for that purpose, this limitation to Section 125 plans would not newly penalize employees. In sum, federal agencies have the authority under current law to develop rules that would enable employees to use employer contributions to purchase their own plans. To a large degree, such rules would reflect the original Congressional intent behind these employee benefit provisions and would more smoothly reconcile the ACA's requirements with prior law.

Transparency Requirements

Placing the authority to purchase health insurance into the hands of employees requires more than changes to the tax exclusion. There also must be transparency to the employer's lump sum payments, and accounting mechanisms must be in place to assure employees that they have full access to the funds their employers make available to them.

Current law requires employers to report the cost of certain coverage under an employer-sponsored group health plan at the conclusion of each year. But the reporting requirement, disclosed in Box 12 of the employee's W-2, is both abstruse and misleading. Current requirements obligate reporting of only some types of health care coverage, with elements of cost reporting remaining optional. Moreover, the disclosure amount reflects both employer and employee contributions, so the W-2 inadequately informs the employee of the amount available from employer contributions. To induce employees to take charge of their selecting and purchasing health insurance, communication to employees must clearly identify the funds made available to them and their financial alternatives.

Adapting either Section 105 or Section 125 plans for health insurance might resolve this accounting problem. For both HRAs and FSAs, employees are given discrete accounts and charged with clear spending alternatives. This accounting format would make employees fully aware of the funds made available to them for purchasing insurance. Moreover, this accounting method deters employers from any temptation to extract those resources from their unwitting employees and would remain distinct from workers' wages.

Were the tax exemption extended to 64-146 plans, in which employees are much less familiar with the funds available to them, additional mechanisms might be necessary to meaningfully empower employees as insurance consumers. Employer-sponsored funds for health insurance could be presented in accounts that mirror those used for FSAs and HRAs, thus communicating to employees that they have access to a finite budget and safeguarding funds from employer opportunism. In this manner, employees can meaningfully comprehend their options between purchasing insurance and increasing take-home pay.

Default Health Insurance Options

Employees might also require protection in the event that they either fail to purchase health insurance with their employer-allocated funds or fail to update their insurance plan as they age. Just as retirement plans offer a default lifecycle option that reflects asset allocations that adjust for age, insurance purchasing plans can similarly offer age-appropriate default options. The default plan would be more comprehensive, with lower copayments, as the employee ages, and employees could additionally select a lifecycle option that would automatically update their annual insurance selections. A similarly structured wealth-adjusted option could automatically update an employee's insurance selections as she earns higher wages, with more spent on health insurance as the employee's total compensation rises (both the diminishing marginal utility of

income and the increasing marginal tax rate would suggest such a default). Instituting these default options are rudimentary safeguards against consumer inertia, inattention, or confusion.

The essential lesson is that employees can act as powerful consumers—and can trigger powerful market effects—if they receive adequate information to act intelligently, have access to meaningful options, and enjoy the basic safeguards to protect them from the most egregious errors.

Conclusion

It is unfortunately common for well-intended tax policies to work against middle class workers and introduce costly economic distortions. In the case of the health insurance tax exclusion, we see a perfect storm of bad policy, and to the many harms that economists have traced from the exclusion, we add one more: it traps workers into health plans that are costlier than those they would prefer to purchase, and in turn it prevents them from adding to their take-home pay. Our simulation quantifies this effect, finding that if workers were given the opportunity to trade untaxed insurance dollars for taxed wages, they would choose to increase their take-home pay from $7,000-8,200. This, in turn, causes nationwide after-tax household income to grow by more than $448 billion and tax revenues to increase by more than $122 billion annually. And it introduces much-needed price competition in health insurance, making the cost of insurance more affordable for all.

Fortunately, only a minor tweak to our tax laws would usher in these valuable results. A simple administrative revision to IRS Notice 2013-54 would allow employers to give full control over their premium contributions to employees and generate the positive consequences predicted by our simulation. The successes of the German, Swiss, and Singaporean health systems—each

of which allow individuals to make insurance purchases directly—offer additional evidence of the promise for such a reform.

And as beneficial as these changes would be for the U.S. health insurance markets and national treasury, even more compelling is its direct effect on individual workers that have suffered from stagnant wages and growing income inequality. This plan gives them both the opportunity to use their limited incomes for the purposes that suit them most and the dignity of making those choices for themselves.

Appendix

Simulation Formula

The income increase variable is the percent increase in household income from receiving the employer contribution as income:

$$\%\Delta\text{income}=\text{income1}-\text{income0}\text{income0}=\text{employer contribution}\text{income0}.$$

$$\%\Delta\text{income}=\text{income1}-\text{income0}\text{income0}=\text{employer contribution}\text{income0}.$$

The price increase variable is the percent increase in the price of health insurance after the employer subsidy is removed:

$$\%\Delta\text{price}=\text{price1}-\text{price0}\text{price0}=\text{employer contribution employee contribution}.$$

$$\Delta\text{price}=\text{price1}-\text{price0}\text{price0}=\text{employer contribution employee contribution}.$$

The new health insurance purchase variable is the amount of health insurance purchased once health insurance is no longer subsidized and salaries are increased:

$$\text{insurance1}=\text{insurance0}[1+(\%\Delta\text{income}\times\%\Delta\text{insurance}\%\Delta\text{income}) + (\%\Delta\text{price}\times\%\Delta \text{insurance}\%\Delta\text{price})].$$

$$\text{insurance1}=\text{insurance0}[1+(\%\Delta\text{income}\times\%\Delta\text{insurance}\%\Delta\text{income})+(\%\Delta\text{price}\times\%\Delta\text{insuranc e}\%\Delta\text{pri ce})].$$

Assuming that health insurance purchases are tax-deductible before and after the reform, the household's increase in taxable income is:

$$-\Delta\text{insurance} = [\text{employer contribution} + \text{employee contribution}] - \text{insurance1}.$$

$$-\Delta\text{insurance} = [\text{employer contribution} + \text{employee contribution}] - \text{insurance1}.$$

To calculate the new U.S. Federal tax revenue, the simulation sums over the five income classes, multiplying the number of people with private health insurance times their new taxable income times their marginal tax rate.

Caveats

This simulation has the following caveats caused by limitations on available data:

1. It uses the same insurance expense for all income classes. But lower-income employees who work in a firm primarily composed of lower–income workers receive less health insurance than those who work in firms whose employees have a more diverse mix of income. The results thus likely overstate the tax and income benefits to lower income classes and understate these benefits to upper income ones. The data needed to disentangle these effects - health insurance expenses by income class-were not readily available.

2. The simulation uses the mean of marginal tax rates in the cases where tax rates straddle its income classes. The effect of this on the results is likely small.

3. The simulation does not address the impact on payroll taxes, but it is likely much smaller than the effects on Federal tax revenues and after-tax income

4. Household responsiveness (elasticity) to income and price changes are assumed to be constant 1 and equal to 0.1 and -0.2, respectively, across income classes. Consequently, the simulation finds the counter-intuitive result that low-income households purchase more health insurance than high-income households.

This model's simplicity is its greatest strength and its greatest weakness. Simplicity is a strength because the assumptions (input data) are easy to understand. Simplicity is a weakness

because the models conclusions are subject to more caveats due to the strong simplifying assumptions used. After an extensive literature review, we believe the input data (simulation assumptions) are quite reasonable.

We have made the simulation available online at https://amarder.shinyapps.io/rherzlinger/. Please edit the input data (simulation assumptions) to see how the simulation conclusions change in response.

The literature gives ranges of possible values for the income and price elasticities of demand. We use the midpoint of those ranges as initial values to our simulation. Please vary these input values to see how the simulation results respond.

Frequently Asked Questions

1. The marginal tax rate is known. Why is it a variable in the simulation?

The input data for the simulation has five income ranges. These ranges are defined in the 2014 CPS ASEC. Because some of these ranges overlap multiple marginal tax rate ranges, it is difficult to know the actual marginal tax rate applied to households in those income classes. The simulation took the mean of the marginal tax rates if an income class straddled two tax rates.

2. Why did you use these data?

The data for the household income, population, and population with private insurance variables come from the CPS ASEC. “The CPS is a monthly U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics. Initiated in the 1940s in the wake of the Great Depression, the survey was designed to measure unemployment. A battery of labor force and demographic questions, known as the 'basic monthly survey,' is asked every month.

Over time, supplemental inquiries on special topics have been added for particular months. Among these supplemental surveys, the Annual Social and Economic Supplement (hereafter referred to as the ASEC) is the most widely used by social scientists and policymakers." IPUMS-CPS FAQ

References

[1] Burtless G, Milusheva S, Effects of Employer-Sponsored Health Insurance Costs on Social Security Taxable Wages. S*ocial Security Bulletin*. Vol. 73, No. 1, 2013; Zachary Tracer, Employees' Share of Health Insurance Costs Rising. *Insurance Journal*. September 22, 2015, http://www.insurancejournal.com/news/national/2015/09/22/382429.htm. Accessed June 9, 2016; Jay Hancock. Employers Shift More Health Costs to Workers, Survey Finds. *Kaiser Health News*. September 22, 2015, http://khn.org/news/employers-shift-more-health-costs-to-workers-survey-finds/. Accessed June 9, 2016; Spiro T, Calsyn M, O'Toole M, The Great Cost Shift: Why Middle-Class Workers Do Not Feel the Health Care Spending Slowdown. *Center for American Progress*. March 2015, https://cdn.americanprogress.org/wp-content/uploads/2015/02/Affordability-report3.pdf. Accessed June 9, 2016; Jayne O'Donnell. Companies continue chipping away at health insurance benefits. *USA Today*, November 11, 2015. http://www.usatoday.com/story/news/2015/11/11/companies-continue-chipping-away-health-insurance-benefits/75571354. Accessed June 9, 2016.

[2] Because individuals are not taxed for the insurance benefits paid for by their employers, employees may not know how much of their total compensation is spent on employer-paid and employer-selected insurance premiums. Some employees can also pay their share of the premiums for employer-sponsored health insurance with pretax earnings. https://www.irs.gov/publications/p502/ar02.html#en_US_2015_publink1000178947. Accessed March 7, 2017.

[3] Generally, Internal Revenue Service, Schedule A (Form 1040) allows deduction only of the amount of medical and dental expenses that exceeds 10% of adjusted gross income (AGI). Internal Revenue Service. Publication 502, 2015, Medical and Dental Expenses. https://www.irs.gov/publications/p502/ar02.html#en_US_2015_publink1000178947. Accessed March 7, 2017.

Self-employed people can deduct their health insurance premiums from their federal income taxes (but not from their self-employment payroll taxes). https://www.healthinsurance.org/obamacare/self-employed-health-insurance-deduction/. Accessed March 7, 2017.

[4] In 2014, 55.5% of the 270.2 million non-elderly population were insured by employers (149.9 million). The Uninsured - A Primer Supplemental Tables. *The Henry J. Kaiser Family Foundation*. November 2015. http://files.kff.org/attachment/supplemental-tables-the-uninsured-a-primer-key-facts-about-health-insurance-and-the-uninsured-in-the-era-of-health-reform. Accessed March 7, 2017.

And about 6 million bought unsubsidized individual insurance. http://www.urban.org/sites/default/files/publication/23356/412757-why-the-aca-s-limits-on-age-rating-will-not-cause-quot-rate-shock-quot-distributional-implications-of-limited-age-bands-in-nongroup-health-insurance.pdf. Accessed Feb. 21, 2017

[5] Kaiser Family Foundation. *2016 Employer Health Benefits Surveys*. http://kff.org/health-costs/report/2016-employer-health-benefits-survey/. Accessed March 2017 and computed by Jeff Cronin, HBS Baker Library, Research.

[6] Furman J. Health Reform Through Tax Reform: A Primer, Health Affairs, May 2008 vol. 27 no. 3 622-632. doi: 10.1377/hlthaff.27.3.622; Gruber J. The Tax Exclusion for Employer-Sponsored Health Insurance. National Tax Journal. June 2, 2011; 64(2):511-530.

[7] Pauly M. Taxation, Health Insurance, and Market Failure in the Medical Economy. *Journal of Economic Literature*. Vol. 24, No. 2. (Jun., 1986), pp. 629-675.

[8] Lowry S, Gravelle J. The Affordable Care Act and Small Business: Economic Issues, Congressional Research Service. *CRS Report R43181*, January 15, 2015, 2017. https://www.fas.org/sgp/crs/misc/R43181.pdf. Accessed February 6, 2017.

Executive Office of the President, Council of Economic Advisers, The Economic Case for Health Reform, June 2009, pp. 9-17.

https://www.whitehouse.gov/assets/documents/CEA_Health_Care_Report.pdf. Accessed March 7, 2017.
Buff M, Terrel T. The Role of Third-Party Payers in Medical Cost Increases. "Journal of American Physicians and Surgeons. Vol 19. No 2, Summer 2014, pp. 75-79.
Douglass Farnsworth. Moral Hazard in Health Insurance: Are Consumer Directed Plans the Answer? *Annals of Health Law*. Vol. 15, No. 2, Summer 2006, pp. 251-273.
[9] Richard D. Miller, Estimating the Compensating Differential for Employer-Provided Health Insurance. *International Journal of Health Care Finance and Economics*. Vol. 4, No. 1, March 2004, pp. 27-41.
Craig A. Olson. Do Workers Accept Lower Wages in Exchange for Health Benefits? *Journal of Labor Economics*. Vol. 20, No. S2, April 2002, pp. S91-S114.
[10] U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, various years. https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-finc.html. Accessed March 7, 2017.
Accessed March 7, 2017 and computed by Jeff Cronin, HBS Baker Library, Research
[11] Burtless G, Milusheva S. Effects of Employer-Sponsored Health Insurance Costs on Social Security Taxable Wages. *Social Security Bulletin*. Vol. 73, No. 1, 2013.
Zachary Tracer. Employees' Share of Health Insurance Costs Rising. *Insurance Journal*. September 22, 2015. http://www.insurancejournal.com/news/national/2015/09/22/382429.htm. Accessed March 2017.
Jay Hancock. Employers Shift More Health Costs To Workers, Survey Finds. *Kaiser Health News*. September 22, 2015. http://khn.org/news/employers-shift-more-health-costs-to-workers-survey-finds/. Accessed March 2017.
Spiro T, Calsyn M, O'Toole M, The Great Cost Shift: Why Middle-Class Workers Do Not Feel the Health Care Spending Slowdown. *Center for American Progress*. March 2015. https://cdn.americanprogress.org/wp-content/uploads/2015/02/Affordability-report3.pdf. Accessed March 2017.
Jayne O'Donnell. Companies continue chipping away at health insurance benefits. *USA Today*. November 11, 2015. http://www.usatoday.com/story/news/2015/11/11/companies-continue-chipping-away-health-insurance-benefits/75571354/. Accessed March 2017.
[12] Kaiser Family Foundation. *2014 and 2015 Employer Health Benefits Surveys*. http://kff.org/health-costs/report/2015-employer-health-benefits-survey/. Accessed March 2017 and computed by Jeff Cronin, HBS Baker Library, Research
[13] Kaiser Family Foundation. *2014 and 2016 Employer Health Benefits Surveys*. http://kff.org/health-costs/report/2015-employer-health-benefits-survey/. Accessed March 2017.
[14] Blumberg Linda, Waidmann T, Blavin F, Roth J. Trends in Health Care Financial Burdens. 2001-2009, *The Milbank Quarterly*, Vol. 92, No. 1, 2014, pp. 88-113.
[15] Furman, Jason Health Reform through Tax Reform: A Primer. *Health Affairs*. May/June 2008, Vol. 27 (3), pp. 622-623.
[16] Auerbach D, Kellerman A, A Decade of Health Care Cost Growth has Wiped out Real Income Gains for an Average U.S. Family. *Health Affairs*. 30:9 (2011), 1630-36.
Kaiser Family Foundation. 2014 and 2016 Employer Health Benefits Surveys. http://kff.org/health-costs/report/2015-employer-health-benefits-survey/. Accessed March 2017.
Curtis, R, Neuschler E, Forland R. Consumer-Choice Purchasing Pools: Past Tense, Future Perfect. *Health Affairs*. No. 1 (2001): pp. 164-168.
Curtis R, Neuschler E, Forland R. Private purchasing pools to harness individual tax credits for consumers. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*. No. 2 (2001): 159-176.
[17] Dafny L, Ho K, Varela M, Let Them Have Choice: Gains from Shifting Away from Employer-Sponsored Health Insurance and toward an Individual Exchange. *American Economic Journal: Economic Policy* 5(1), 2013, pp. 32-58.

[18] Liu L, Rettenmaier A, Saving T. The welfare gain from replacing the health insurance tax exclusion with lump-sum tax credits. International journal of health care finance and economics 11, no. 2 (2011): pp. 101-113.
[19] Martin S. Feldstein. Hospital Costs and Health Insurance. Cambridge, MA: Harvard University Press, 1981.
[20] Herzlinger, Regina E. Who Killed Health Care? America's $2 Trillion Medical Problem—and the Consumer-Driven Cure. McGraw-Hill, 2007; Herzlinger, Regina E. Consumer-Driven Health Care: Implications for Providers, Payers, and Policymakers. San Francisco: Jossey-Bass, 2004; Herzlinger, Regina E. Market-Driven Health Care. Reading, MA: Addison-Wesley Publishing Company, 1996.
[21] Cogan, John F., R. Glenn Hubbard, and Daniel P. Kessler. Making markets work: five steps to a better health care system. Health Affairs 24, no. 6 (2005): pp. 1447-1457.
[22] Pauly M, Danzon P, Feldstein P, Hoff J. A plan for' responsible national health insurance.' Health Affairs 10, no. 1 (1991): pp. 5-25.
[23] Kaiser Family Foundation. *2014 and 2015 Employer Health Benefits Surveys*. Exhibit 1.17. http://kff.org/health-costs/report/2015-employer-health-benefits-survey/. Accessed March 2017
[24] Dafny L, Ho K, Varela M, Let Them Have Choice: Gains from Shifting Away from Employer-Sponsored Health Insurance and toward an Individual Exchange. *American Economic Journal: Economic Policy* 5(1), 2013, pp. 32-58.
[25] Ketcham J, Lucarelli C, Powers C. Pay Attention or Paying Too Much in Medicare Part D. *American Economic Review*. 105:1, January 2015, pp. 204-233.
[26] Kaiser Family Foundation. Employer Health Benefits 2015. pp. 73. http://files.kff.org/attachment/report-2015-employer-health-benefits-survey. Accessed March 2017.
[27] Herzlinger R, Feng A, Oliver M. Aon Hewitt's Private Health Insurance Exchange. Harvard Business School. Case 314-037, August 2013. (Revised March 2017).
[28] Herman, Bob. Why Venture Capital firms are pouring money into health insurance. *Modern Healthcare*. March 19, 2016.
[29] Abaluck J, Gruber J, Choice Inconsistencies among the Elderly: Evidence from Plan Choice in the Medicare Part D Program. *American Economic Review*. 101(4), 2011, pp. 1180-1210.
[30] Ketcham J, Lucarelli C, Miravete Eugenio, Roebuck C, Sinking, Swimming, or Learning to Swim in Medicare Part D. *American Economic Review*. Vol. 102, No. 6, October 2012, pp. 2639-2673.
[31] Ibid.
[32] John B. McGee, Defined Contribution Pensions Are Cost-Effective. Manhattan Institute, New York, NY, 2015.
[33] Madrian B, Shea D. The Power of Suggestion: Inertia in 401(K) Participation and Savings Behavior. *The Quarterly Journal of Economics*. Vol. CXVI, November 2001, Issue 4.
[34] McGee, John B. Defined Contribution Pensions Are Cost-Effective, Manhattan Institute, 2015.
[35] Geisel, Jerry. Private health insurance exchanges see continued growth. *Business Insurance*. January 20, 2016, http://www.businessinsurance.com/article/20160120/NEWS03/160129973/1287. Accessed June 8, 2016
Private health insurance exchange enrollment doubled from 2014 to 2015. Accenture Consulting. https://www.accenture.com/us-en/insight-private-health-insurance-exchange-annual-enrollment. Accessed June 8, 2016.
Mike Gaal, The Elusive Nature of Private Exchanges, Pension and Benefits daily, March 4, 2016, http://www.milliman.com/uploadedFiles/insight/2016/elusive-nature-private-exchanges.pdf. Accessed June 8, 2016.
[36] U.S. Census Bureau, Current Population Survey. Annual Social Economic Supplement (CPS ASEC), https://www.census.gov/did/www/saipe/data/model/info/cpsasec.html, accessed March 2, 2017.
[37] The Henry J. Kaiser Family Foundation. *Snapshots: Illustrating the Potential Impacts of Adverse Selection on Health Insurance Costs in Consumer Choice Models*. November 03, 2006.

[38] The Concentration of Health Care Spending, NIHCM Foundation Data Brief, National Institute of Health Care Management. July 2012.
[39] Ringel, J., Hasek S, Vollard B, Mahnovki S. The Elasticity of Demand for Health Care: A Review of the Literature and its Application to the Military Health System. Santa Monica, California. RAND Corporation, 2002.
[40] Getzen, Thomas E., Aggregation and the Measurement of Health Care Costs, Health Services Research 41, no.3: pp. 1938-1954.
[41] Beck R.G. *The Effects of Co-Payment on the Poor*. Journal of Human Resources. 1974. pp.129-140.
[42] Rosset, RN and LF Huang, The Effect of Health Insurance, Journal of Political Economy ,1973.
[43] Newhouse, JP, Phelps C. *New Estimate of Price and Income Elasticities*. RN Rosset (NBER, No. 27).
[44] U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, various years. https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-finc.html. Accessed March 7, 2017.
[45] Institute of Medicine, *Best Care at Lower Costs*, 2013
[46] The Henry J. Kaiser Family Foundation and Health Research & Educational Trust. *The Cost of the Individual Mandate Penalty for the Remaining Uninsured*. December 2015, pp. 28-43.
[47] Rae M, Damico A, Cox C, Claxton G, Levitt L. The cost of the individual mandate penalty for the remaining uninsured. http://kff.org/health-reform/issue-brief/the-cost-of-the-individual-mandate-penalty-for-the-remaining-uninsured/. December 9, 2015. Accessed January 26, 2017.
[48] Herzlinger, Regina E. Fixing Obamacare presentation, Harvard Kennedy School, October 2014, https://www.dropbox.com/s/uclbgkk6s98nq2o/Fixing%20Obamacare%20presentation%2010%2015%2014.pptx?dl=0 36
[49] The Henry J. Kaiser Family Foundation. *Summary of the Affordable Care Act*. April 25, 2013, http://kff.org/health-reform/fact-sheet/summary-of-the-affordable-care-act/. Accessed March 2017.
[50] Herzlinger R, Feng A, Oliver M, Aon Hewitt's Private Health Insurance Exchange. HBS Case No. 314-037, Revised August 2014, (Boston: Harvard Business School, 2015).
[51] The Henry J. Kaiser Family Foundation. Summary of the Affordable Care Act. April 25, 2013, http://kff.org/health-reform/fact-sheet/summary-of-the-affordable-care-act/. Accessed March 2017.
[52] For a list of employer-sponsored health benefits that are currently subject to reporting, see Internal Revenue Service, *Form W-2 Reporting of Employer-Sponsored Health Coverage*, at http://www.irs.gov/Affordable-Care-Act/Form-W-2-Reporting-of-Employer-Sponsored-Health-Coverage. Currently, employers can pick one of multiple ways to calculate the amount of health benefits listed on an individual's W-2, but not all of them measure the actual value of health benefits received by the individual. For more information, see Internal Revenue Service, Notice 2012-9, at http://www.irs.gov/pub/irs-drop/n-12-09.pdf. Accessed March 7, 2017.
[53] Dorn, Stan. Capping the Tax Exclusion of Employer-Sponsored Health Insurance: Is Equity Feasible? June 2009. Urban Institute. http://www.urban.org/research/publication/capping-tax-exclusion-employer-sponsored-health-insurance-equity-feasible. Accessed March 7, 2017.
[54] Does the ACA deserve the credit (or blame) for rising deductibles? The Incidental Economist. http://theincidentaleconomist.com/wordpress/does-the-aca-deserve-the-credit-or-blame-for-rising-deductibles-ctd/. Published March 13, 2014. Accessed March 7, 2017.
[55] https://freopp.org/transcending-obamacare-why-the-health-laws-struggles-argue-for-a-new-approach-to-health-reform-5517bd69e0d8#.pqp14sm2v. Accessed March 7, 2017.
[56] *Id*.
[57] *See* 42 U.S. Code § 18022 - Essential health benefits requirements
[58] Trump can end Obamacare's free birth control – and he doesn't need Congress's help. http://www.vox.com/2016/11/10/13578550/trump-obamacare-birth-control-iuds. Published November 10, 2016. Accessed March 6, 2017.

[59] Herzlinger R, Richman B, Schulman K, Shifting toward Defined Contributions – Predicting the Effects, *The New England Journal of Medicine*. June 26, 2014. http://www.nejm.org/doi/full/10.1056/NEJMp1314391#t=article.

[60] Butler S, Kendall D. Expanding access and choice for health care consumers through tax reform. Health Affairs 18, no. 6 (1999): pp. 45-57.
Pauly M, Herring B. Expanding coverage via tax credits: trade-offs and outcomes. Health affairs 20, no. 1 (2001): pp. 9-26.
McClellan M, Baicker K. Reducing uninsurance through the nongroup market: health insurance credits and purchasing groups. Health affairs (Project Hope) (2001): W363-6.
Etheredge, L. Massachusetts reform plus President Bush's tax credits: a national model?. Health Affairs 25, no. 6 (2006): w444-w446.
Gruber J, Levitt L. Tax subsidies for health insurance: costs and benefits. Health affairs 19, no. 1 (2000): pp. 72-85.

[61] Burke A, Misra A, Sheingold S, Premiums Affordability, Competition, and Choice in the Health Insurance Marketplace, 2014. https://aspe.hhs.gov/sites/default/files/pdf/76896/2014MktPlacePremBrf.pdf. Accessed March 6, 2017.

[62] The World's Greatest Healthcare Plan Act of 2016, H.R. 5284, 114th Cong. (2015-2016). https://www.congress.gov/bill/114th-congress/housebill/5284/text?q=%7B%22search%22%3A%5B%22worlds+best+healthcare+plan%22%5D%7D&resultIndex=1. Accessed March 7, 2017

[63] Epley N, Gneezy A. The Framing of Financial Windfalls and Implications for Public Policy. *Journal of Socio- Economics*. 36 (1), pp. 36-47, 2007.
Gale W, Liebman J, Orszag P, Saez E, Duflo E. *Saving Incentives for Low and Middle Income Families: Why is the Saver's Credit Not More Effective? Journal of the European Economic Association*. Vol. 5, Nos 2-3, April-May 2007, pp. 647-661.

[64] Pauly, M., 2006. The tax subsidy to employment-based health insurance and the distribution of well-being. *Law and Contemporary Problems*, *69*(4), pp. 83-101.

[65] Mossialos E, Wenzl M, Osborne R, Sarnak R, 2015 International Profiles of Health Care Systems. *Commonwealth Fund*. January 2016.

[66] OECD, *OECD StatExtracts*, Income Distribution and Poverty, http://stats.oecd.org/Index.aspx?DataSetCode=IDD. Accessed March 7, 2017.
OECD, *Economic Outlook*. November 2014. http://www.stats.oecd.org. Accessed March 6, 2017.
OECD, *Gross National Savings*, Percentage of GPD. http://www.EconomyWatch.com. Accessed March 7, 2017. 2015.

[67] Robbin Davies. Swiss taxes and Various Deductions. http://www.spectrum-ifa.com/swiss-taxes-and-vario us-deductions. Accessed March 7, 2017.

[68] Herzlinger, Regina E., Fixing Obamacare presentation, Harvard Kennedy School, October 2014, https://www.dropbox.com/s/uclbgkk6s98nq2o/Fixing%20Obamacare%20presentation%2010%2015%2014.pptx?dl=0. Accessed March 7, 2017.

[69] S. Thomson, R. Busse, L. Crivelli, W. van de Ven, C. Van de Voorde, Statutory health insurance competition in Europe: a four-country comparison, Health Policy, 109 (2013), pp. 209–225.

[70] Thomas Zeltner, personal correspondence with the senior author. For details on types of insurance plans and numbers of options, see https://en.comparis.ch/krankenkassen/default.aspx. Accessed March 7, 2017. See also Mossialos E, Wenzl M, Osborne R, Sarnak D. 2015 International Profiles of Health Care Systems. pp. 69-72.

[71] Van Ginneken E, Swartz K, Van der Wees P. Health Insurance Exchanges In Switzerland And The Netherlands Offer Five Key Lessons For The Operations Of US Exchanges. *Health Affairs*. 32:4, April, 2013, pp. 745-47.

[72] Mossialos E, Wenzl M, Osborne R, Sarnak R, 2015 International Profiles of Health Care Systems. pp. 69-72. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2016/jan/1857_mossialos_intl_profiles_2015_v7.pdf. Accessed March 7, 2017.

[73] Medishield Life Benefits. https://www.moh.gov.sg/content/moh_web/medishield-life/about-medishield-life/medishield-life-benefits.html. Accessed March 7, 2017.
[74] Miller, Tom. Entrepreneurship & Economic Dynamism: Marginal Returns from Health Policy Thus Far. Kauffman Foundation (2016) http://www.kauffman.org/~/media/kauffman_org/resources/2016/entrepreneurship_and_health_policy.pdf Accessed March 7, 2017.