

Economics Thesis

Employer Vs. Individual Health Insurance Under The Affordable Care Act

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ABSTRACT

An unintended consequence in the employer mandate of the Affordable Care Act (ACA) has resulted in millions of employees and their families not having access to affordable health insurance. This occurs because the definition of affordable insurance in the ACA in regards to employer-provided insurance only pertains to self-only premium contributions rather than family contributions, resulting in families being unable to access subsidies on the exchanges set up by the ACA. By looking at two case studies of actual companies and setting up a model to compare the health insurance cost of employer-provided insurance with the cost of individual insurance through the exchanges, this paper determines that the employer mandate has a negative impact on low and middle income employees' abilities to obtain affordable health care insurance for themselves and their dependents and spouses. It is also shown that employers with a majority of low and middle-income workers could benefit from dropping employer coverage and having the employees obtain coverage through the individual insurance exchanges. However, because of the employer mandate, this benefit diminishes for large employers, which has created a two tiered benefit system, where employees of larger companies have significantly less opportunity to obtain affordable insurance for themselves and their families than employees of small companies. This paper suggests that significant changes need to be made to the ACA to ensure that all Americans have access to affordable health insurance.

Keywords: health care reform, affordability, employer-sponsored health insurance, affordable care act

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1. Introduction:

The three primary purposes of the 2010 Affordable Care Act (ACA) are to expand access and coverage of comprehensive health insurance to Americans, to reform the individual health insurance market and to slow cost growth by building upon the traditional structure of the health insurance system, which includes a mixture of private and public insurance programs. The ACA's primary means of tackling coverage expansion is through the individual mandate. Individuals are mandated to purchase insurance if it is deemed that affordable insurance is available. This mandate is enforced by imposing tax penalties for individuals who, despite having access to affordable insurance, do not purchase insurance. An insurance plan is considered affordable, if the premium paid is less than 9.5% of the household income. This provision ensures that a larger number of individuals are insured and prevents an adverse selection death spiral, the situation where only individuals with poor health buy insurance, which would be unsustainable for the insurers and would make the provision of guaranteed issue¹ and affordable insurance virtually impossible (Levitt 2012; Cutler 1998).

Several provisions were added to the ACA to help individuals access affordable insurance by expanding ways in which individuals can obtain insurance. Medicaid was expanded to include all individuals that fall below the poverty level, rather than restricting it only to children and their mothers. Although many states have refused this expansion in their states, the provision technically allows low-income individuals that cannot afford insurance premiums, co-pay or deductibles to obtain healthcare coverage. U.S. employers with 50 or more full-time employees are now mandated to provide affordable insurance to their employees and their dependents (defined as children under the age of 26) and are penalized if they do not. This

¹ Guaranteed issue is the legal requirement of insurers to offer insurance to individuals regardless

mandate does not apply to employee's spouses or part-time workers (defined as employees working less than 30 hours a week). This provision is designed to move a substantial amount of the burden of providing affordable insurance onto employers and away from the taxpayer.

Assuming employers pass on their health care costs to employees in the form of lower wages, the employer mandate does not necessarily take the burden of healthcare costs away from employees.

For individuals and families that do not have access to affordable employer-provided insurance or are not covered through a public health insurance option, health insurance exchanges were created. On these exchanges, individuals can shop for private insurance policies and low to middle income families, defined as those making less than 400% of the poverty level, can qualify for health care subsidies. The subsidies are a key component of helping low to medium income individuals and families afford health insurance coverage. The Supreme Court is currently deciding whether these subsidies will be available in all states.² This reform in private health insurance markets is also accompanied by a mandate for insurance companies to provide comprehensive insurance to all individuals that apply for insurance, regardless of whether they have pre-existing medical conditions. Part of this mandate is that insurance companies cannot determine insurance premiums based on the current or past health of the applicant, cannot impose annual or life time limits on coverage, and cannot selectively deny coverage for certain diseases or conditions, among other requirements.

The implementation of the ACA has made major strides in expanding coverage by increasing health insurance coverage of 15 million additional Americans, which is close to one

² The ongoing Supreme Court case will determine whether the federal government can provide subsidies to individuals. The law, as passed, indicates that individuals can purchase subsidies provided by exchanges established by a state.

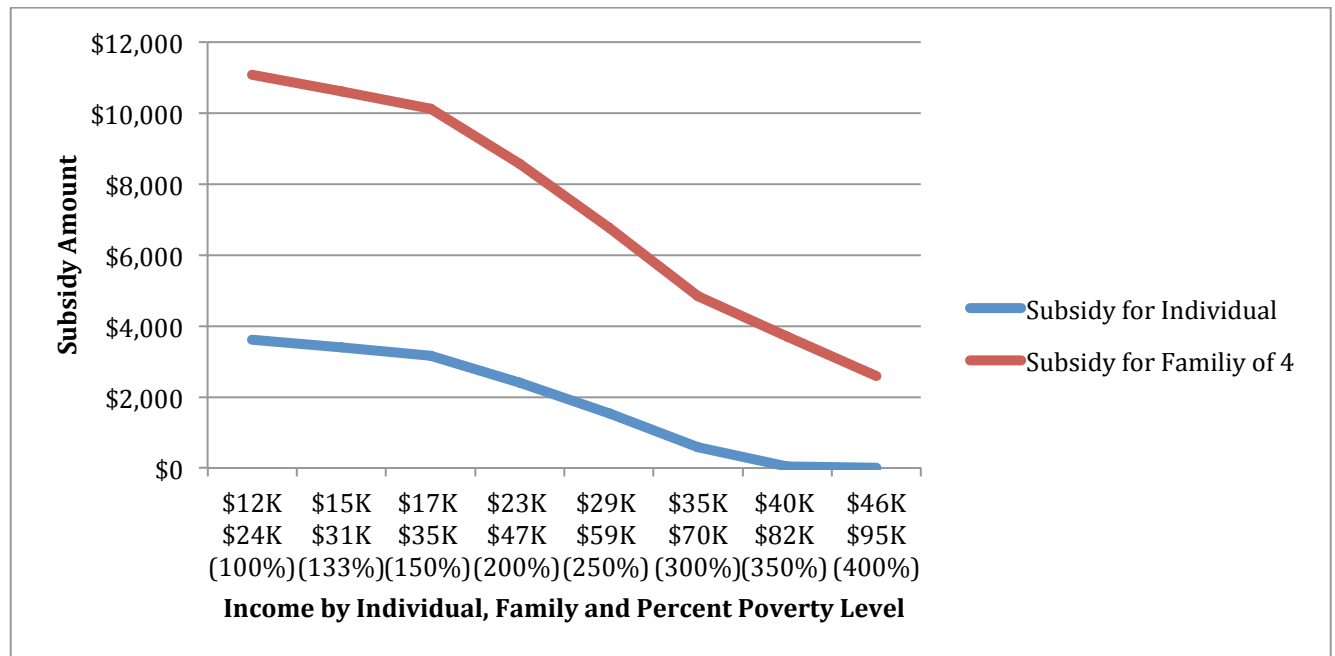
third of those uninsured before the act was passed (Gallup 2015). However, as a result of unintended consequences of the definition of affordability within the law, the other primary goal of ensuring that all individuals have access to affordable insurance was not met. Low income and middle income individuals and families, that should technically qualify for subsidies by making less than 400% of the federal poverty level, and cannot obtain affordable insurance elsewhere, may be denied these subsidies. This is because subsidies are only available for low and medium income individuals and their family members who have not been offered an “affordable” plan elsewhere, specifically from their employer. The definition of an affordable employer-provided plan, as determined by the IRS, requires a premium contribution of less than 9.5% of one’s income and only applies to self-only coverage plans for the employees themselves but does not take into account whether the insurance is affordable for any dependent or family member.³ Therefore, cases can arise in which the employer offers “affordable” health care for the individual employee, but offers unaffordable coverage to the employee’s family members, resulting in the entire family being unable to obtain subsidies. In this case, it costs the employee significantly more money to insure his/her family with an employer-sponsored plan than if the employer had not offered the employee healthcare coverage at all. This problem has been referred to as the “family affordability glitch”, which has been estimated to leave millions of

³ In fact, there are effectively two definitions of “affordable” in the ACA. One applies to employers, which determines whether or not they meet the requirement of offering affordable insurance to their employee and family members, so that they will not be penalized. This same definition is used to determine whether or not the individual and family member qualifies for subsidies. This first definition, as stated above, is based on the affordability only to the single employee and ignores affordability to the entire family. However a different definition of “affordable” is used to determine whether an individual that does not purchase insurance has to pay a penalty. In this case, affordability is applied to the whole family and is considered 8.05% of income. This means that a family member can be denied subsidies because they were offered “affordable” insurance from an employer, but later, when taxes are filed, it can be determined under the other definition that in fact the family member did not have access to affordable insurance and does not have to pay a penalty.

dependents and spouses without means of obtaining affordable insurance (Jacobs 2011; Burkhauser 2011; CBO 2012).⁴

As seen by the following graph, a single 40-year-old employee could on average obtain subsidies if he/she made between \$11,500 and \$40,200. In the former case, these subsidies could be as high as \$3,600 a year, which represents 32% of their income. A family of four can obtain subsidies if family income is between \$23,500 and \$94,200, with subsidies on the lower income level as high as \$11,000 per year, which is 47% of their family income. As income grows, subsidy opportunities decrease as seen in the graph below.

Figure 1 - Subsidy Opportunity for Individuals and Families of Four based on Income Level



⁴ Some children of these families are eligible for health insurance coverage through Medicaid or the Children’s Health Insurance Program (CHIP); this is not necessarily the case. Some spouses and children will continue to not have access to affordable insurance and remain uninsured if the affordability definition is not changed. CHIP’s funding also needs to be reapproved by Congress in September 2015. If it is not approved many more children could be left uninsured.

In both the individual and family case, the percentage of income premium contribution grows from 0% to 2% to the maximum 9.50% as income rises. This suggests that an employee and their families making between 100% and 300% of the poverty level could obtain more economical health insurance on the exchanges if their employer is offering the maximum 9.5% contribution level and costs of insurance are equivalent. However, one main difference between obtaining insurance through the exchanges rather than through one's employer is a loss of tax benefits. Currently, both employer and employee spending on health insurance premiums through an employer-provided plan are exempt from taxation⁵. Any insurance bought by employees through the exchanges occurs with after-tax money, whereas self-employed individuals are allowed to deduct any private health insurance premiums from taxable income.

Despite some additional tax costs of subsidized health care insurance, many low and middle income employees and their families (specifically of small and medium sized firms) could still significantly benefit from buying their insurance through the exchanges with the help of subsidies. According to the Kaiser Family Foundation (KFF) Employer Health Benefits Survey, workers of employers with a higher percentage of low-wage workers (at least 35% of workers earn \$ 23,000 or less) contribute a higher percentage of health insurance premium for single and for family coverage, on average around 27% and 44% respectively (Kaiser 2014). For example, if a family of four making \$50,000 a year, which is around 200% of the poverty level, contributes 44% of the average annual family premium estimated by KFF for 2014 of \$17,000, then the family is paying about \$7,500 for health insurance coverage, which is around 15% of

⁵ Any health insurance costs are tax deductible to employer and employees. The higher the income of the employee, the bigger the tax benefit to the employee of the untaxed health insurance, making the current tax structure of employer health care regressive. This tax break benefits high-income employees far more than lower income ones.

their income. Instead, this family could obtain coverage through the exchanges and pay approximately \$3,300 annually or 6.5% of their income on health insurance. This would save the family \$2,200 a year. If the employer has less than 50 employees, then this switch from employer-provided insurance to the exchanges would be a win-win situation for both the employee and employer. The benefit of switching to the exchanges however decreases for the employee as their income rises. A family of four, making around \$90,000, which is around 400% of the federal poverty, would be paying up to 9.5% of their income and would be receiving limited or no subsidies if they obtain their insurance through the exchanges rather than through their employer. In this case, it is not clear that the employee would benefit as a result of the tax benefits lost from employer-provided insurance.

The size of the company also reduces the benefits of switching from employer-provided insurance and actually creates a two-tiered benefit system. This is because not offering insurance is more problematic for larger employers as a result of the employer penalty. Beginning in 2015, large employers (those with 100 or more full-time employees) who do not provide coverage or have employees receiving subsidies will be penalized. Beginning in 2016, employers, with 50 or more full-time equivalent employees, that do not offer coverage or cover fewer than 95 percent of its employees, will pay \$2,000 per full-time employee above the first 30 employees. Large employers offering coverage to at least 95 percent of its employees but that have employees receiving subsidies through the exchanges pay the lesser of \$3,000 per full-time employee receiving subsidies or \$2,000 per full-time employee above 30 employees. The latter penalty is supposed to incentivize companies to offer affordable insurance so that no employee has to obtain subsidized insurance through the exchanges. Due to these penalties, large employers will have a significant incentive to offer their employees' health insurance, even if some of the

employees would be far better off if the employer did not offer it to them (per the situation described above). Although there are several affordability safe harbors⁶ to protect companies from having to pay the \$3,000 penalty, the threat of the penalty leaves some employees of large companies at a distinct disadvantage to those of small companies – cutting them out of any possibility of health insurance subsidies even if they have the same income as their counterparts at the smaller companies that don't face these penalties.

As a result of these unintended consequences of the law and the new health insurance options, there have been questions and issues raised regarding a potential movement out of employer-sponsored insurance towards subsidized exchange coverage and the consequences thereof (Begley 2015). Although various studies have shown that as of today this has not been the case (Levy 2015), the Congressional Budget Office estimates that about 11 million fewer employees will receive health insurance by 2022 (CBO 2012). The crowd-out may be partially reduced by the penalties imposed on firms that drop their employer-provided insurance. However, the loophole in the “affordability” definition makes it possible for some firms to limit family coverage of employees and still avoid the penalty. An employer could intentionally or unintentionally offer a health insurance plan that is, in fact, affordable to the individual employee but unaffordable to the family as a whole, providing an incentive for the employee to decline the employer's offer of health insurance. As long as the employee single-coverage is affordable, the company may choose any price for the family coverage. A decline of coverage by the employee would provide significant savings to the employer, since the company would have

⁶ Employers will not be subject to the penalty if the lowest cost employee-only plan with minimum value offered to the employee does not exceed 9.5% of the employee's W-2 income. The second safe harbor compares the cost of the plan to an hourly employee's rate of pay multiplied by 130 hours or non-hourly employee's monthly salary. The third safe harbor is based on the federal poverty level for a single individual.

no health care expense for that employee but would not be penalized either because the plan offered met the legal definition of affordability. Although the result would be savings to the employer, it would leave the employee and/or their family without insurance or would require the family to buy an expensive unsubsidized policy on the private market. However, if the family decided to go without insurance as a result of the unaffordability of the family plan offered through their employer, the individual family members would not be subject to the penalty of the individual mandate, because when the family files their taxes, then the IRS takes into account the affordability of family coverage (not just self-only coverage) and agrees that the insurance was in fact unaffordable. This shows a discrepancy in the definition of affordability in the Affordable Care Act.

This paper will investigate (1) whether the employer mandate, as currently defined in the ACA, has a negative impact on low and middle income employees' abilities to obtain affordable health care insurance for themselves and their families, (2) whether employers and their employees can benefit from dropping employer coverage and having the employees obtain coverage through the insurance exchanges through cost-benefit analysis, (3) whether the size of the company affects an employee's opportunity to obtain the most economical health insurance and whether the current ACA creates a two tiered benefit system, one applying to employees of small companies and one applying to employees of larger companies, and (4) how many people and families are susceptible to these potential gaps in affordable coverage.

To investigate and answer these questions, this paper will provide two case studies of actual companies, one small and one large, offering group healthcare employee coverage that are thinking of dropping their coverage and have their employees receive insurance through the exchanges. Observations will be made regarding the type of insurance being offered by the

employer and the take-up rates of self-only and family insurance plans. The group health care coverage rates will then be compared to insurance rates offered through the state exchanges. The savings or costs to the company, the employees, and the government will be calculated in the situation that the company drops its employer insurance and helps its employees get health insurance on the individual market by increasing take-home pay, equivalent to a percentage of health care costs on the individual market, to employees. As will be shown, in both companies the take-up rate of family insurance is extremely low as the cost is less affordable than self-only plans. A switch in insurance to the individual market will be shown to result in significant savings for both the employer and their employees. To illustrate how many employees and their families could be impacted by the definitions of affordability, this paper provides calculations using a nationally representative sample of the population from the March 2014 Current Population Survey (CPS) as well as data sets and information regarding average health insurance premiums from the Kaiser Family Foundation's 2014 Employer Health Benefits data.

The paper will proceed with background information regarding features of employer-provided insurance. After a review of existing literature regarding this and similar topics, the methodology and calculations for the case studies and the CPS and KFF data will be presented. Following this description of the study's model, the paper will provide the results of the case studies and data. Based on a discussion and summary of the results, possible policy recommendations will be made that are intended to create a more equitable situation for employees of both small and large companies. Finally, the paper will suggest further steps for research.

2. Background of Employer-Provided Insurance in the U.S.

Before investigating the potential costs and benefits of affordability issues and employer-provided insurance, this paper will proceed with a description of the past and present state of employer-provided insurance in the U.S. Employer-provided insurance stems from World War II, during which significant price and wage controls were enacted to prevent salaries from being raised. Instead of raising salaries, businesses increased fringe benefits such as health coverage to compete and attract employees. In 1943 the Internal Revenue Service implemented a tax rule that protected the employee from paying taxes on the value of their health care premiums paid by their employer. Consequently, the practice of offering tax-free health insurance was institutionalized in businesses and has become a standard benefit to this day.

Pre and post ACA, employer-provided insurance has been the most common way of obtaining insurance for Americans. The Gallup poll found that two in five Americans under 65 received employer-provided insurance in 2013 and 2014, as can be seen by the following table.

Type of Health Insurance Coverage in the U.S. Among 18- to 64-Year-Olds

Is your insurance coverage through a current or former employer, a union, Medicare, Medicaid, military or veterans coverage, or a plan fully paid for by you or a family member?

Note: Primary and secondary insurance combined

	Q3 2013*	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014
	%	%	%	%	%	%
Employer	44.4	44.2	42.5	43.5	43.3	43.4
Self-paid	16.7	17.6	19.3	20.7	20.7	20.6
Medicaid	6.8	6.9	7.9	8.4	8.7	8.6
Medicare	6.4	6.1	6.3	6.9	7.1	7.5
Military/Veterans	4.3	4.6	4.8	4.7	4.9	4.7
Union	2.8	2.5	2.6	2.5	2.4	2.6
(Something else)	3.8	3.5	3.7	3.8	3.6	4.1
No insurance	21.2	20.8	19.0	16.2	16.2	15.5

Gallup-Healthways Well-Being Index

*August-September 2013 only

The Kaiser Health Benefits survey shows that 55% of firms offer health care benefits to at least some of their employees and that approximately 62% of employees are covered in those firms with an 80% take-up rate. Of large firms in the U.S. 95.7% of large firms with 50 or more employees offer insurance. It is not uncommon to see uninsured Americans decline their employer's health insurance. Employees may decline their employer-provided insurance for several reasons. They may be offered insurance through another family member or in some cases they prefer a higher take-home pay to insurance coverage. The Kaiser study shows that 9% of firms provide additional compensation to employees that do not enroll in health benefits. This occurs more commonly in small businesses employing low-wage workers (Kaiser 2014).

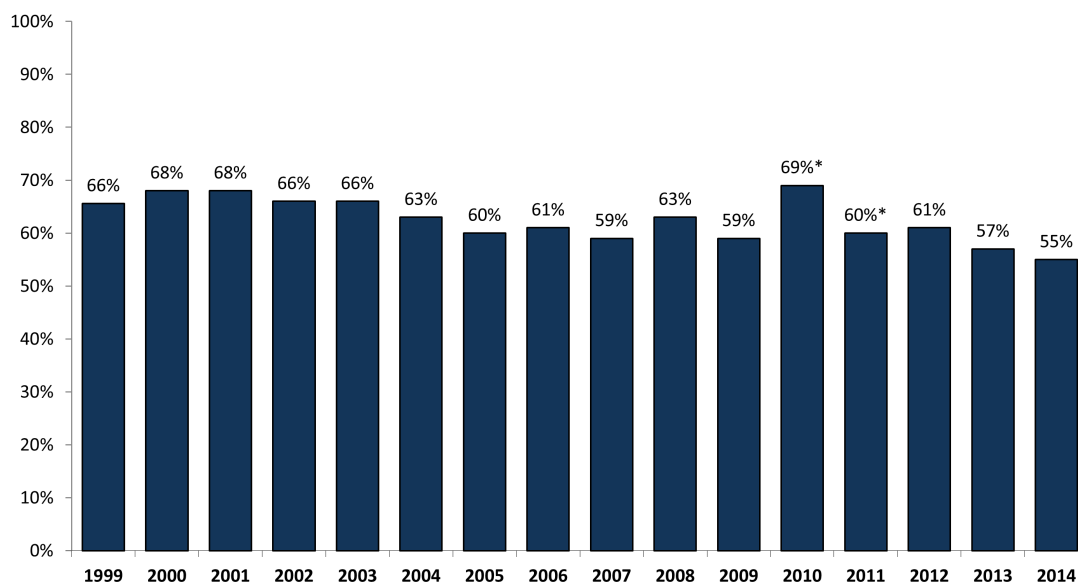
Workers in small firms often face higher premiums for similar plans purchased by workers in large firms, as the price of coverage is lower for larger groups, as commissions and other marketing costs can be spread over more employees in large businesses. Firms with many lower-wage workers are also significantly less likely to offer health insurance (33% vs. 55%) (Kaiser 2014). The table below shows percentage of firms offering coverage based on size and workforce demographics. As employer size increases and as average income increases coverage opportunities increase. As can be seen, there has been a decline of employers offering insurance in the decade between 2000 and 2010.

Figure 2 - Percentage of private sector establishments offering health insurance, 2000 and 2010 by firm size and wage

	Number of employees in firms					
	All sizes	<10	10–24	25–99	100–999	1,000+
All firms						
2000 (%)	59.3	39.6	69.3	84.5	95.0	99.2
2010 (%)	53.8	31.8	60.9	80.6	94.9	99.5
Percent change	–9.3	–19.7	–12.1	–4.6	–0.1	0.3
Firms with 50% or more employees low wage						
2000 (%)	42.5	25.4	46.3	73.5	94.2	96.4
2010 (%)	40.5	16.6	33.4	60.0	89.5	99.0
Percent change	–4.7	–34.6	–27.9	–18.4	–5.0	2.7
Firms with less than 50% of employees low wage						
2000 (%)	64.7	50.2	83.4	92.4	96.9	99.4
2010 (%)	61.2	40.1	75.8	90.9	98.1	99.7
Percent change	–5.4	–20.1	–9.1	–1.6	1.2	0.3

Source: Agency for Healthcare Research and Quality, Center for Cost and Financing Studies. 2000 and 2010 Medical Expenditure Panel Survey–Insurance Component.

Since the early 2000s, health care costs to employees have been growing faster than any other employee cost. Over this time period, costs have been shifted significantly to the employee through higher premiums, deductibles and higher co-pays. These costs have especially been rising for small businesses. Over the last ten years family coverage has increased 69% and since 2009 average annual family premiums have risen 26% (Kaiser 2014). It is assumed that these increases in health insurance costs have resulted in less firms offering health care benefits over the last 15 years, as can be seen by the following table.

Figure 3 - Percentage of firms offering health benefits, 1999 - 2014

* Estimate is statistically different from estimate for the previous year shown ($p < .05$).

NOTE: The 55% offer rate in 2014 is statistically unchanged from the 2013 and 2012 estimates (61% and 57%, respectively). As noted in the Survey Design and Methods section, estimates presented in this exhibit are based on the sample of both firms that completed the entire survey and those that answered just one question about whether they offer health benefits.

SOURCE: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2014.



Of those firms offering coverage, nearly all of them (96% of small firms and 99% of large firms) offer benefits to family members. Although employers have continued to offer coverage to spouses and dependents, the study shows that there has been an increase in employers (9%) that add restrictions to spousal and family medical care eligibility depending on their ability to obtain insurance from another source (Kaiser 2014). The availability of family coverage can result in equity distortions. If an employer pays a percentage contribution to health insurance plans including family coverage, then an employee buying family coverage may be receiving more benefits than an employee with an equivalent income buying single coverage.

In 2014, the average annual premiums for employer-provided health insurance were around \$6,000 for single coverage and \$17,000 for family coverage. Employees that take up coverage pay on average a contribution of 18% of the premium for single coverage and 29% of

the premium for family coverage. However, these contributions vary significantly across size of the firms and average employee wages. (Kaiser 2014)

Employers are not required to offer coverage to part-time workers. Part-time or part-year workers are less likely to be offered insurance by their employer and therefore face higher premiums in the individual market and have to forego the tax advantages of employer-sponsored insurance. In fact, Congress is currently pushing for a reform that will change the legal definition of part-time workers to workers that work less than 40 hours instead of 30 hours a week. This is expected to significantly increase the number of part-time workers for which companies are not responsible for paying health care and would weaken the employer mandate. However, this could become a benefit to these employees if for the first time they could then buy subsidized insurance on the exchanges.

Before the ACA, there was awareness that employer-provided insurance had some negative consequences. Much of the literature focuses on the “job-lock” effect of employer-provided insurance, as insurance was tied to one’s employer and one would lose health insurance at the same time as losing one’s job. Additionally reapplying for coverage on the private market was often much more expensive, especially if one had developed a subsequent medical condition, in which case one could be denied coverage or suffer a significant increase in premium. The ACA addressed these issues through provisions of guaranteed issue.

Additionally employer-provided insurance is known to result in a distortion on the amount of coverage bought and benefits taken. This occurs because employees feel they are getting free health care through their employer, when in fact the costs are being passed on to the employee through lower financial compensation. Economists have done several studies that support the notion that the total cost of premiums and health care come out of the employees’

pockets, even though the employer is officially paying a large percentage of the premiums, often as much as 80% (Bhattacharya 2009). However, the illusion that the employer is paying results in employees overusing health care while at the same time making no attempt to negotiate lower prices with health care providers, contributing to increases in health care costs (Gruber 1996; Bhattacharya 2014).

Nevertheless, most of the literature presents the positive sides of employer-provided insurance, specifically, the presumed superior affordability of such insurance coverage. Since employers usually buy group-health insurance policies or self-insure for all their employees in the firm and pay one group premium, they can often obtain lower pricing as a result of economies of scale and as a result of a reduction in adverse selection. It is often assumed that employers may be able to procure health insurance coverage for their employees as a group-basis more economically than would have been available for employees in non-group (individual) health insurance markets. This affordability of employer insurance is also impacted by tax laws, which results in health care premium charges treated as tax-deductible business expenses for the employer and a tax-free benefit for the employee, whereas employees buying insurance through the individual insurance market occurs with after-tax income. This tax benefit is a further reason for most employees accepting their employer-provided insurance. The total federal subsidy towards employer-provided health insurance exceeds \$200 billion (Rae 2015). This tax subsidy benefits high-income employees more than low-income employees because of the progressive marginal tax rates and the tendency to provide higher value insurance to higher income employees. The result is an overall regressive tax of health care benefits (Iglehart 1999; Jeske 2009). The affordability of employer-provided insurance now comes into question with new ways of obtaining insurance.

3. Literature Review

The issues of affordability of insurance in general and the concept of affordability in the context of the ACA have been covered in various academic studies. Up to the present date, this paper appears to be the first study of the ACA's affordability gap specific to employer-provided insurance that uses data and case studies from specific companies. While most of the previous literature focuses on the effect of the affordability gap from the employees' perspective and incentive, this paper will analyze the cost and benefits of dropping employer-provided insurance to all parties involved, including the employer and the government. This paper also appears to be one of the first to focus on the difference between large and small companies. Since there are millions of employers working in large companies, the findings that there is an arbitrary two-tiered benefit system, that puts workers of large employees at a large disadvantage to those working in small firms, is very important in understanding the consequences of several provisions of the ACA. By focusing on how health insurance costs could be allocated to make both the employer and employees better off, this paper presents arguments for several policy changes in the ACA and shows the benefits of a move away from employer-sponsored insurance.

Kate Bundorf and Mark Pauly's (2006) paper is one of the first to study the meaning of affordability in the context of health insurance. They examined the meaning of affordability for the uninsured in America in 2000 and determined that between one-quarter and three-quarters of the uninsured did in fact have access to affordable health care. In their study, they use various models of affordability to predict how many uninsured could afford coverage. To measure affordability they create two major models based on normative and behavioral definitions of affordable health care. The results from their analysis found that 35% and 36% of uninsured using both definitions of affordability could not afford private health insurance. However, they

also found that purchasing behavior does not correspond well with the normative standard of income relative to poverty level, as many technically non-afforders actually purchased insurance and afforders did not. The paper implies that policymakers will face problems when trying to design policies to address affordability for the uninsured and suggests that compulsory mechanisms instead of subsidies for the uninsured would be more effective in increasing the number of insured. This has been one policy result of the ACA, which now has the individual mandate. However, they also tried to address affordability issues through employer-provided insurance that actually leaves many employees families with unaffordable plans. This paper will be using the definition of 9.5% of family income to determine whether coverage is affordable to individuals and families.

The paper by Burkhauser et al. (2011) investigated the question of whether affordability should be measured based on single coverage alone or family coverage. This study was undertaken before the definition of affordability was finalized. They provide an answer to their question by analyzing the behavioral changes of employees based on the two definitions. They estimate that as many as 1.3 million more employees would try to obtain insurance for themselves and their families if access to exchanges was determined by a family affordability rule instead of a single affordability rule. They estimated that if premium shares for employees rise to 50% (assuming that premium shares are rising in the future) more than 6 million employees would want to seek health care through the exchanges. They also estimated that 4 million dependents of workers would not have access to affordable health insurance from any source, which could grow to 13 million, if employee premium contributions increase to 50% and the definition of affordability applied to self-only coverage (Burkhauser 2011). Although their paper was published before a ruling was made on the affordability definition, as of January 2015,

the IRS confirmed that a self-only affordability rule will apply, because household income is nearly impossible to measure for an employer. The difficulty of measuring household income will also provide a limitation to the case study of this paper. This paper will build on the aforementioned research by focusing on the definition of self-only coverage and including an analysis of companies' incentives to opt out of employer plans.

The ADP Research Institute's inaugural study of health benefits (2013) within large companies (with over 1000 employees) also complements the research of this study, as they investigate the effect of income and affordability on the take-up of employer-provided insurance. They also study what percentage of employees purchase affordable coverage and whether there is an income threshold below which an employee might prefer to participate in the exchanges. Finally, they compare employer contribution with premium subsidies potentially available through the marketplace. Using data from 2012 health and welfare benefits from approximately 300 U.S. based organizations, the study concludes that companies may want to reconsider and calculate the cost of penalties versus providing insurance to their employees. They found that there is a positive relationship between an employee's wages and their participation in a health benefits plan. Through their study they found that approximately 8.6% of full-time employees who are single pay 9.5% or more to obtain coverage, but that out of that percentage only 1.0% obtain self-only coverage, while the remaining purchased with covered dependents. This indicates that affordability may not take into account dependents of family plans. Despite the significant number of employees who do not pay for affordable coverage, the study finds that most employees would still pay a smaller premium through their employer than the premium subsidies available through an exchange. A new analysis will be done in this paper through the analysis of two actual companies and by comparing prices of employer provided insurance and

exchange insurance in those states, which will contradict the conclusion of the APD study. Unlike the APD study, this paper will also look at small firms that are not subject to the employer penalty, which affects the profitability of employees receiving insurance through exchanges rather than through their employer.

A paper by Linda J. Blumberg et al. (2001) argues that employers will continue to provide health insurance despite the possibility for both employers and employees to be better off if companies dropped their insurance and employees received insurance through the exchanges. They argue that the economics of competitive labor markets will result in compensations that are of equal value to the employee's work, so that in the long run the employer will not be better off, merely providing more compensation instead of benefits. However, since the higher-paid workers remain better off with employer-provided insurance, and employers compete with one another to attract skilled workers, employers will continue to have an incentive to provide health care benefits. However, their research does not include the incentive of small companies that are not susceptible to the penalty. Additionally, their paper doesn't take into account the nuance in the affordability definition that leaves many workers' families without the means of obtaining affordable insurance. If employers do not stop offering insurance to their employees as a result of competitive labor mechanisms and despite the affordability gap of millions of Americans, policy options will still need to be introduced to make affordable insurance available to all.

Blumberg and Nichols (2001) studied uninsured Americans who declined employer-provided health care to provide insight into the characteristics of "decliners". Their study of the health status of workers who declined employer-sponsored insurance showed that the uninsured decliners fare much worse on every mental health measure compared to those that did take up

coverage. Decliners of employer-provided insurance also have a harder time obtaining needed services than workers who take up coverage. Yet decliners have better access to services than uninsured that were not offered such coverage. This research paper complements the investigation within this study by addressing the consequences of workers declining their employer-provided insurance (Blumberg 2011). Whereas the mentioned study is not directly related to this study, it shows the significance of individuals and families declining employer-sponsored insurance and remaining uninsured, as a result of being unable to obtain subsidies through the exchanges.

4. Methodology

4.1. Case Study

To analyze the current situation of employer-provided insurance and its affordability for low and middle income employees, two companies were chosen to be used as case studies. These two company profiles were provided by Benefitter, a consulting firm that helps companies choose between employer-provided insurance and individual exchange insurance. The data was provided anonymously, with no identifier of the companies or their employees. The relevant data for each company and its employees is comprised of zip code, age, salary, and employer and employee monthly contribution to employer-provided insurance and coverage tiers. Employees can choose between four different coverage plans: employee only coverage (EE), employee family coverage (EF), employee spousal coverage (ES), and employee child coverage (EC), which determine how many people are covered under the insurance policy.

These companies were chosen because of their employee demographics. The majority of the individuals are low and middle-income, middle aged and full time employees. One company is considered small (fewer than 50 employees) and one is considered larger (50 or more

employees), which will be used to compare the cost and benefits of switching to private insurance based on the size of the firm. Additionally, one company contributes to their employees' insurance through a fixed contribution and the other through a percentage contribution. This is used to demonstrate different ways employers may choose to insure their employees and how this affects the affordability of coverage. One limitation of the data is that it is unknown whether the employees are married or have a family. Therefore, assumptions will be made regarding employees' need for and take-up of family coverage.

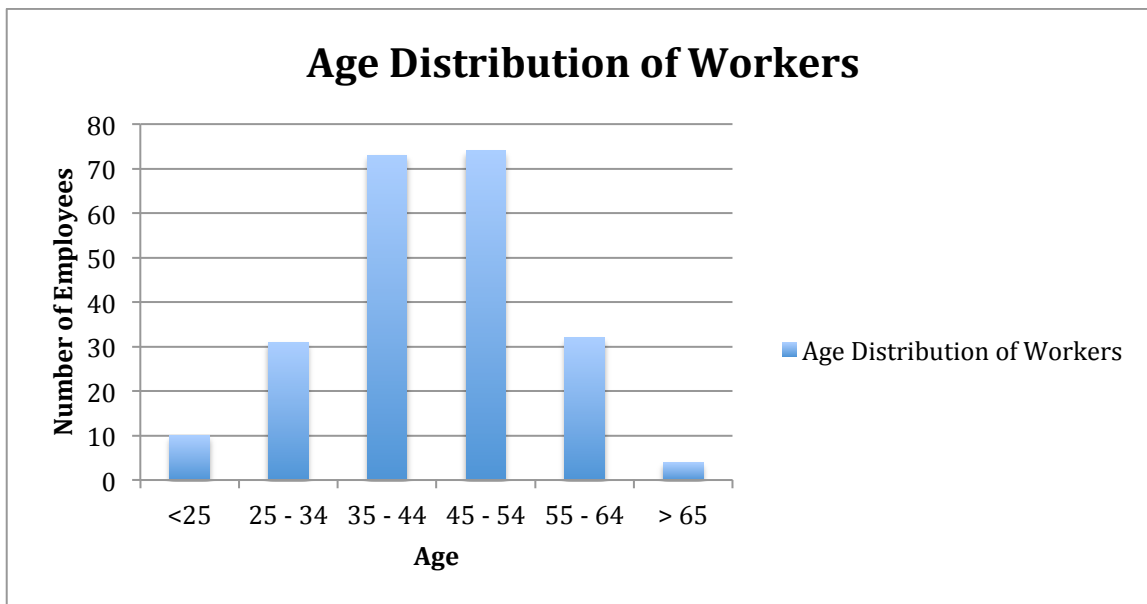
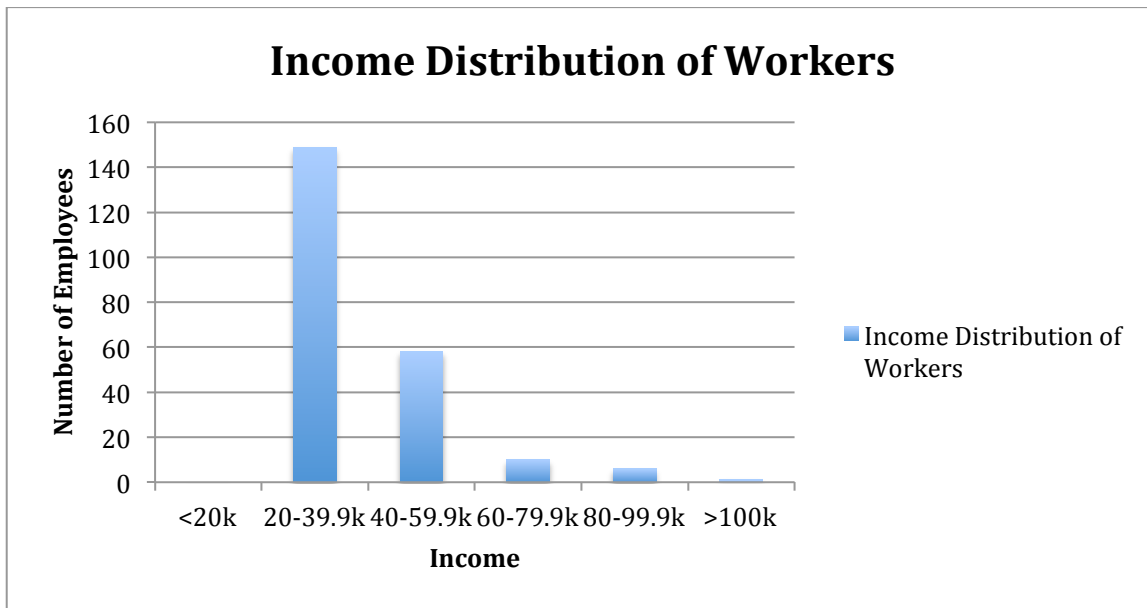
The case study begins with an analysis of the employees' behavior. This will help answer the first question of whether the employer mandate, as currently defined in the ACA, has a negative impact on employees' abilities to obtain affordable health insurance for themselves and their families. This issue is addressed by analyzing the employees' behavior regarding their decision to take-up coverage, and calculating the differences in coverage cost, including incremental costs of adding family members or obtaining larger benefit plans. Affordability percentages are calculated based on the employee's income and an assumed family income. Family income is determined based on the average total family income given a person's income as calculated using the CPS data.⁷

Company 1:

The first company analyzed is a Florida firm with 224 employees, an average employee income of \$38,500, and an average age of 44. Sixty-seven percent of employees make less than \$40,000, which indicated that they are likely eligible for subsidies on the exchanges. However this percentage does not take into account the possibility that these employees have families. It is possible that employees making far more than \$40,000 can qualify for subsidies if they have a

⁷ Based on income levels of individuals, the family income levels were summed in the CPS data. This can be seen in Table 5 in the Appendix.

family and their income is the primary income for the family. Therefore it is most likely, that even more of these employees would qualify for subsidies. The total distribution of income and age of all the employees in this company can be seen by the following graphs. Any employee over 65 would be eligible to obtain insurance through Medicare and any employee under 26 could potentially obtain insurance through a parent's plan. The latter employees are still included in the calculations of the model.



In addition to the four coverage tiers, this company offers three different benefit plans, a medical low/local plan, a medical medium/access plan, and a medical high/open access plan. These plans correlate with the amount of benefits offered within each policy, and get increasingly more costly. Regardless of the coverage and benefit plan, the company pays a flat contribution rate of \$360 per employee per month, which amounts to an average cost of \$1 million annually.

A medium benefit plan for self-only coverage typically costs between \$430 and \$500 per month and therefore costs the employee on average \$80 a month. A medium family plan costs the employee around \$1,000 or twelve times more than a self-only plan. The following graph shows the cost of the combination of every coverage and benefit plan to the employee. The total market cost of the plan would include the \$360 paid per month by the employer. The table also shows in parenthesis how many employees chose each type of coverage.

Figure 4 - Average cost of coverage based on who is covered and benefit level (number of employees that take up each coverage)

Coverage Type	Take-up	Low	Medium	High
EE	(189)	\$55 (110)	\$81 (63)	\$135 (16)
EC	(13)	\$465 (7)	\$513 (5)	\$622 (1)
ES	(8)	\$510 (2)	\$546 (6)	- (0)
EF	(4)	- (0)	\$965 (2)	\$1,103 (2)
Declined	(10)			

Of the 224 employees in the Florida company, 10 employees declined coverage (4%), 189 chose the self-only coverage (84%), 13 employees opted for child coverage (6%), 8 chose spousal coverage (4%) and only 4 chose to cover their entire family (2%). In the analysis, this study will focus on the 25 employees that chose to cover a dependent and the cost of these plans. Although employees self-select their plans and may not have families, the low number of

employees choosing to cover family members suggests that these plans are unaffordable, especially given the average age of 44 as can be seen by the above graph.

In fact, the flat fee shows that employees are required to pay the full price of adding any family member to their plan. On average, adding an additional member is \$5,400 per year, which for the average employee at this company is 14% of their income. Covering one's family is \$10,000 more per year, which results in an average income contribution of 24%, which is much more than the 9.5%, which is considered affordable in the ACA. Getting any coverage other than self-only coverage breaks the 9.5% affordability threshold, assuming that the employee's income makes up the total family income⁸. When adjusting family income by assuming CPS family income, the employee contribution only exceeds the legal definition of affordability for employee-family plans (EF), with an average contribution of 13% of family income. However, on the exchange a family of four making up to \$95,400 is eligible to obtain subsidies. In fact, 72% of all the employees at this company, looking purely at their individual income without regards to family coverage, would be eligible for subsidies on the exchanges which comes out to \$429,000 in subsidies. Yet having an affordable plan offered through the employer makes it impossible for any of these employees to obtain subsidies for themselves or their families.

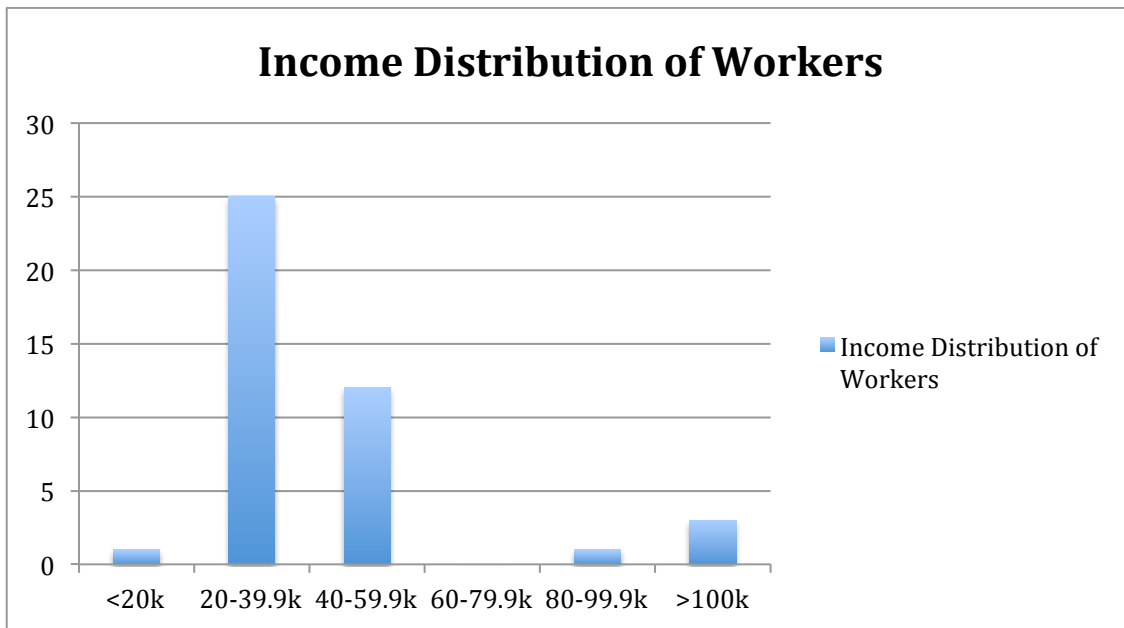
The choice of benefit plans among the Florida employees also suggest that the additional cost for a medium or high coverage plan adds a burden to employees, with 119 employees choosing a low/local plan (54%), 76 choosing a medium plan (34%) and only 19 choosing a high plan (8%). The average difference between the low and medium plan is an additional \$440 and the average difference between the medium and high benefit plan is \$1,200. Employees that are

⁸ These costs can be seen in table 6 in the Appendix.

already burdened by choosing to cover their spouse or their family are also more likely to choose a medium or high benefit plans⁹.

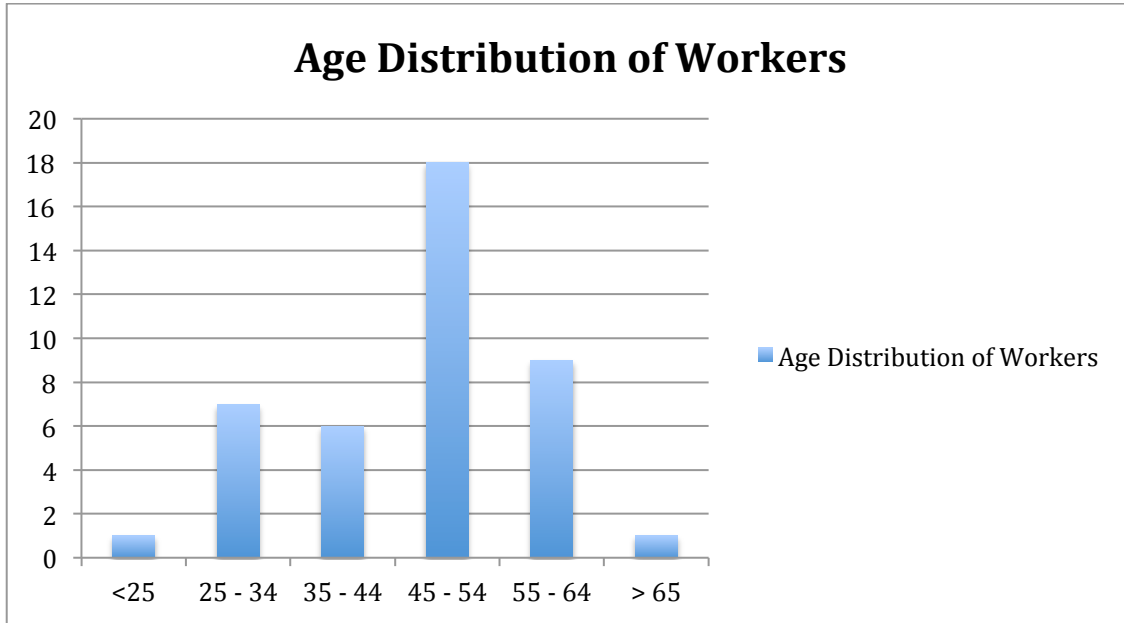
Company 2:

The second company used as a case study is a California company¹⁰ with 42 eligible employees and an average employee income of \$44,000 and average age of 47. 62% of employees make less than \$40,000 and are most likely eligible for subsidies on the exchanges. The same possibility applies to this company, where it is likely that even more employees would qualify for subsidies if they have families. The distribution of income and age of the employees of this company can be seen by the following graphs.



⁹ These costs can be viewed in table 6 in the Appendix.

¹⁰ The raw data of this company can be found in the Appendix.



This company pays a contribution of 75% of the total cost of the health insurance plan for employee only coverage (EE) and 0% for dependents or other family members. As seen from the health benefits survey not subsidizing dependents, although uncommon, is more common for smaller firms that face higher costs of covering employees. Although the data for this company does not distinguish between benefit plans, variations in the cost of all the plans suggest that there are similar benefit options as available to the employees of the Florida company.

For this company, the average cost of coverage is \$639 a month with an average contribution of \$160 for the employee. The cost of coverage seems to vary primarily with age. This could mean that older employees are choosing more expensive and comprehensive policies. The low take-up rate of insurance of the employees of this company indicates unaffordability of insurance. Of the 42 eligible employees, 15 or 36% of employees decline coverage. 26 employees chose self-only coverage (62%) and only one employee chose a plan to cover a dependent, specifically a spouse (2%). There may be several reasons why employees decline their employer insurance. However these employees and their families are not eligible to obtain

insurance through the exchanges as they are being offered “affordable” insurance, which can be seen by the average contribution of 5% of employees’ income. Of the 15 employees that declined the insurance, at least 10, or 66%, are eligible for subsidies on the exchanges, which are unavailable to them unless the company decides to drop their employer-provided insurance. (As stated above, more of these employees may be eligible for subsidies, depending on family size and income, which is not available in this data).

4.2. Model

To determine whether there is a way to fix the problems with affordability with the ACA, the previous two companies are used as case studies to model a switch from employer-provided insurance to exchange insurance. A model is set up that compares current employer-provided insurance of the two companies with rates on the state exchanges to determine whether there is a win-win situation, where both employees and employers benefit. This paper will also look at the potential cost to the government of having to pay additional subsidies.

For the California case the focus will be on a switch of all employees, whereas for the Florida company the focus will be on extending to family coverage. The California case was primarily used to determine whether individual employees could see a benefit of having their employer drop insurance and alternatively obtain coverage through the exchanges, irrespective of whether or not they have family members that could receive even more benefits from such a move. Although affordability is even more of an issue to families and dependents of employees, illustrating the financial benefit to individuals of moving to individual exchange insurance could alone encourage policy changes to the Affordable Care Act that would make it easier for low income workers to get affordable insurance. The even greater potential benefits for families moving to the exchanges are depicted in the Florida case.

When analyzing the effect of switching from employer-sponsored insurance to the exchanges, all employees will be switched from their health insurance. Federal nondiscrimination laws prohibit employers from offering benefits to a few employees and therefore makes it difficult for employers to match health benefits with employees' needs and preferences. The calculations within this paper assume that employers and employees view exchange and employer-provided insurance as equivalent coverage. However, there is uncertainty regarding the value and quality differences in coverage, especially as prices and plan characteristics have been changing in the exchanges.

To determine whether it is possible to obtain more affordable health insurance through the state exchanges, employer-sponsored insurance costs are compared to rates on the market. These rates are obtained through the *KFF Health Insurance Marketplace Calculator* based on the state, zip code, income, number of people in the family, and age. The calculator determines the cost of a silver coverage plan, which is the standard and second lowest cost plan on the health insurance market, thus does not necessarily reflect the total cost of coverage if an employee decided to choose a higher or lower coverage tier.

Employee-only plans (EE) are easily compared with rates from the KFF Marketplace Calculator as all the necessary information was provided by the data. However, the limitation of not knowing whether employees have families and their household income and size results in a few assumptions needing to be made regarding plans including dependents and spouses. Family size was assumed as follows: an employee-spouse (ES) coverage plan includes one additional adult, an employee-child (EC) coverage plan includes one additional child, and family coverage (EF) includes one additional adult and two additional children. The same age was assumed for each additional adult. Since subsidy availability primarily depends on family income, two cases

were analyzed. In the first case, it is assumed that the family income is the same as the employee income, and in the second sensitized case, the family income is assumed through the estimated average family incomes using CPS data.¹¹

To make up for a loss of benefits, the model will include the assumption that the employer pays a comparable contribution to the employee's health care, which now will be obtained through the exchanges. The companies will offer additional income to all employees, so that they are effectively paying a 90% contribution to a self-only plan on the marketplace and a 50% contribution rate for a plan including dependents or spouses. These contributions will be calculated based on the market rates of the insurance contingent on the original income of the employees and will be called *coverage allowance*. These contribution rates were chosen, despite being slightly higher than the average contribution rate of 82% for individual and lower for family coverage of 70% as determined by the KFF, because the two companies analyzed paid something in between for this coverage, with family coverage much lower, or in the case of the California company none at all. Additionally, any added income is subject to taxes and will actually cause employees to lose some subsidies, which means that realistically the company will be paying for less than 90% and 50% of their insurance coverage.

It is assumed that a switch will primarily benefit low and medium-income individuals and families (between 125% and 400% of the poverty level) and mainly employees of smaller companies, as these companies do not face a penalty for not providing insurance. However, high income employees are expected to be worse off if cost of coverage is comparable or higher through the insurance since they will not be receiving subsidies and will lose the tax-break. Employers could consider increasing the income of these individuals even more, so that they are

¹¹ See table 5 in Appendix

not worse off from this switch. However, as will be shown in some cases, the price of coverage through the exchange is actually more economical than the price of the employer-provided insurance, regardless of availability of subsidies, so that most employees are better off obtaining insurance through the marketplace, regardless of their income.

With the additional income it is assumed that the employee will buy health insurance off the marketplace. There is the potential that additional income could significantly reduce the amount of subsidies available to the employee, which may change the incentive of employers to provide less income to their employees to save them an indirect tax on compensating them higher. In extreme cases, a single dollar of additional income could cause hundreds of dollars lost in subsidies. Employers and employees must be extremely sensitive to the impacts of any increases in income when subsidies are relevant.

Based on the fixed coverage allowance for each employee, which depends on the coverage contributions of 90% and 50%, the employer will realize savings for an employee if:

$$[1] \quad \alpha * (P_{EX}(I_x) - S(I_x)) (1 + t) < C_{ESI}$$

where the right side of the equation is the original cost to the employer (C_{ESI}). In the CA company this represents a percentage contribution ($\alpha * P_{ESI}$), whereas the FL company pays a flat contribution of \$360. The left side of the equation represents the cost of paying additional income to the employee and represents the new cost to the employer (C_{EX}) times the cost of the additional payroll tax. The coverage allowance to the employee is (C_{EX}). This depends on the contribution rate (α) times the cost of health insurance on the exchanges. P_{EX} measures the price of the exchange insurance based on the original income of the employee. $S(I_x)$ is the subsidy amount available to the employee based on the original income of the employee. The company is

also subject to taxes by increasing income rather than paying tax-free health insurance benefits. Therefore the total cost include the company's payroll tax t , which considered 7.6%.

The coverage allowance to the employee is (C_{EX}). This will be the additional income to the employee and when added to the original income (I) will result in a new income. However, to determine the correct subsidies this income is subject to payroll taxes to the employee. The new income (I_N) to the employee is:

$$[3] \quad I_N = (I + C_{EX} (1 - t_x))$$

For employees the additional income, which will be used to purchase the insurance from the market, will result in a decline in the subsidy as well as a loss in the tax break, as the individual market provides plans on a post tax basis. The employee will realize savings if:

$$[2] \quad (P_{EX}(I_N) - S(I_N) - I_N) < P_{ESI} - C_{ESI}$$

where the right side of the equation represents the original cost of the employee: the premium cost of employer provided insurance (P_{ESI}) minus the employer contribution (C_{ESI}). The left side of the equation represents the cost of the health insurance through the exchange, which is the price of the exchange premium (P_{EX}) dependent on the new income derived from equation [2] and the subsidy allowance for this new Income $S(I_N)$ minus the additional income.

The cost to the government will be compared to what the initial potential taxes lost to employer provided insurance. The new cost to the government represents the cost of the subsidy and the taxes gained from the additional income paid to the employees (this includes the 7.6% tax on the employer and the payroll tax to the employee).

The following examples of individual employees from the two companies will illustrate how cost and benefits were calculated in each case when employees switch from employer-provided insurance to the exchanges.

Example 1: CA company – Employee coverage with subsidy opportunity

A 53-year-old employee making \$31,000 and covered under an employer-only (EE) plan is paying \$2,600 through his employer per year, which represents 8% of his/her income. The employer is paying \$8,000 a year, making the total cost of the plan \$10,500. Based on this employee's age, zip code, and income, he or she could obtain a health insurance plan off the exchanges for \$220 per month or \$2,600 per year, with subsidies of \$400 each month¹². The market cost of the silver plan is thus \$630 per month (\$7,600 per year), which is cheaper than the total cost of insurance provided by the employer.

Assuming an employer contribution of 90% for self-only plans, this employee's coverage allowance from his/her employer is \$2,300 per year. The cost to the employer of increasing income by this amount will include the payroll tax, and amounts to a total of \$2,500 a year. Instead of paying \$8,000 a year for this employee, the employer would be paying \$2,500, which would result in a saving of \$5,500 per year.

With the additional income of \$2,300 the employee will have an income of \$33,300. Based on the new income, the employee can obtain a health insurance plan of \$250 per month, or around \$3,000 per year, with subsidies as much as \$380 per month. Although the employee is technically paying for the full price of insurance, the new cost to the employee is the \$3,000 less the additional income of \$2,400 plus income taxes of \$500, assuming a payroll tax of 20% on the added income. Therefore, the new cost to the employee is \$1,100 a year, or 3% of his/her income and results in a saving of \$1,500 a year. The employee can save up to 5% of his/her income by obtaining insurance through the exchanges instead of through his/her employer.

¹² These numbers are found through the KFF calculator, using the data of the California company,

With the original employer-provided insurance the government is losing \$1,120 in taxes each year. However, if the employee obtains insurance through the exchanges, the subsidies cost the government \$4,536, while it is only taking in an extra \$658 through taxes. Therefore, the government will be paying \$3,900 a year for this employee, if he/she were to obtain insurance through the exchange.

Example 2: CA company – Employee coverage without subsidy opportunity

A 50-year-old employee making \$52,000 and covered under an employer-only (EE) plan is paying \$1,400 through his employer per year, which represents 3% of his/her income. The employer is paying \$4,000 a year, making the total cost of the plan \$5,400. Based on this employee's age, zip code, and income, he or she could obtain a health insurance plan off the exchanges for \$550 per month (\$6,600 per year). This individual would not qualify for subsidies on the exchange.

Assuming an employer contribution of 90% for the \$6,600 self-only plan, this employee's coverage allowance from his/her employer is \$6,000 per year. The cost to the employer of increasing income by this amount will include the payroll tax, and amounts to a total of \$6,400 a year, which would result in a loss of \$2,400 per year to the employer. Based on the new income of \$56,000, the employee can obtain the same health insurance plan for \$550 per month. The new cost to the employee is \$2,400, which would result in a loss of \$1,000 a year. With the original employer-provided insurance the government is losing \$709 in potential taxes each year. However, if the employee obtains insurance through the exchanges, there is no subsidy cost, and the government will make

\$2,300 a year on the taxable income added to the employee¹³. This is clearly an example where neither the employee nor the employer is better off. However, this could be mitigated if the employer provides more income to this employee and less money to another employee that gets higher benefits and subsidies from the higher market.

Contrastingly, another example demonstrates a case in which an employee is not eligible for subsidies, but can still gain from switching to the exchange. A 59-year-old employee making \$54,000 and covered under an employer-only (EE) plan is paying \$3,300 through his employer per year, which represents 6% of his/her income. The employer is paying \$9,900 a year, making the total cost of the plan \$13,200. Based on this employee's age, zip code, and income, he or she could obtain a health insurance plan off the exchanges for \$677 per month (\$8,124 per year). This individual would not qualify for subsidies on the exchange.

Assuming an employer contribution of 90% for self-only plans, this employee's coverage allowance from his/her employer is \$7,312 per year, and overall the employer would save \$2,000 per year. Despite the payroll taxes of 30% on the additional income, the employee will have a new income of \$60,000. Based on the new income, the employee can obtain the same health insurance plan through the exchange. The new cost to the employee is \$3,000, which would result in savings of \$294 a year. With the original employer-provided insurance the government is losing \$1742 in taxes each year. However, if the employee obtains insurance through the exchanges without a subsidy, the government makes an additional \$2,794 per year in taxes.

¹³ This is calculated based on the payroll tax of 30% of the additional \$6000 to the employee and the tax of 7.6% of the \$6000 to the employer.

These two examples show that it really depends on the price of the employer plan, whether an employee making too much income to not be eligible for subsidies can benefit from obtaining insurance through the market exchanges. Clearly, the government would benefit from having employees that do not need subsidies obtain insurance through the exchanges, since they can now collect taxes on the income used to buy health insurance coverage. Thus, the costs of the subsidies of the low and middle income employees can be made up with tax collections from higher income employees not obtaining subsidies.

Example 3: FL company – Family coverage with subsidy opportunity

A 45-year-old employee, making \$42,000 a year, choosing a medium benefit family plan from his/her employer, pays \$1,000 per month, or \$12,400 yearly. The employer contributes the fixed contribution of \$360 a month, or \$4,320 a year. The total price of the family plan through the employer is thus \$1,400 per month, or \$16,800 per year. Two cases are used to determine the costs and benefits of the employee switching to the exchanges. In the first case, it is assumed that the family income is \$78,000, which is the average family income obtained from the CPS data based on a person's income of \$42,000. In the second case, it is assumed that the family income is the same as the employee income of \$42,000.

In the first case with a family income of \$78,000, the family would be paying 16% of their income on insurance, which breaks the affordability threshold of 9.5%. With this income, the family would be eligible for subsidies of \$347 a month and a premium contribution of \$621. With exchange coverage, the family would pay a contribution of 9.5% of its income. The total cost of coverage on the exchange is \$970, which is significantly lower than the coverage offered through the employer of \$1,400.

Assuming the employer would contribute 50% to the family coverage, the additional income paid to the employee would be \$310 per month, or \$3,700 per year. The employer would have to pay payroll taxes on this income, which would result in a total cost to employer of \$4,000. This additional income compared to the \$4,320 paid in benefits to the employee, would save the company \$320 a year.

With the additional income of \$3,700, the employee could obtain an insurance plan off the exchanges with a premium of \$650 and subsidies of \$320. Taking into account the additional taxes on the income, assuming a tax rate of 25%, and the cost of the insurance, the employee and their family would save \$7,400 a year by getting their insurance through the exchange. This would save the family 10% of their income. The government would pay out \$2,600 a year for the family to obtain these subsidies, which includes the collection of taxes on the additional income.

In the second case, with the family income of \$42,000, the family would be saving even more money by obtaining their insurance through the exchanges. With this income, the family is originally paying 30% of their income on health insurance through their employer, which is far above the affordability threshold of 9.5%. If the employer were to drop insurance and increase income to the employee by the coverage allowance, the family would be eligible for \$780 of subsidies per month and pay a premium cost of \$189, which amounts to 5% of their income. This could save the family \$11,000 a year, or 26% of their income. The employer would also save a significant amount of money on the employee, namely \$3,100. However, the government would be paying \$9,000 to cover these subsidies.

Example 4: FL company – Child coverage without subsidy opportunity

A 42-year-old employee, making \$66,000 a year, choosing a medical medium employee and child (EC) coverage plan, pays \$480 a month, or \$5,800 a year for this insurance coverage. This amounts to 8.8% of his/her income, which meets the legal definition of affordable coverage. The employer is paying the fixed contribution of \$360 a month, or \$4320 a year. The total cost of this coverage is thus \$840 a month. Although this individual with a child does not qualify for subsidies on the exchange, the individual can obtain a plan that covers a child for a premium of \$392 a month. Taking into account the 50% contribution of the company which is paid as additional taxable income, the employee could save \$2,900 and the employer could save \$1,800 a year on this employee. The government could collect taxes of \$766 per year as a result of increased taxable income and no subsidy costs.

All the savings to employers and employee, as seen above through the above examples, diminish if the company size is over 50 employees. To determine whether the size of the company affects an employee's opportunity to obtain the most economical health insurance, the cost of penalties are included in the calculations. Since those companies with 50 or more employees are subject to an employer penalty if they do not offer insurance (\$2000 per employee starting at 30 employees) or if any of their employees receive subsidies through the exchanges, the possibility for employees of large companies to obtain more affordable insurance diminishes. Another comparative analysis was modeled for large companies, in which savings to employers and employees are significantly reduced. It is assumed that the employer will take on the cost of this penalty even though this cost may eventually be passed on to the employee, which has been shown to be the case in health insurance costs.

Once the model has been applied to each individual employee of the two companies and it is analyzed how many employees would be better off obtaining insurance through the exchanges, calculations can be made on a macro level to determine whether overall employers and employees would benefit from these two companies switching from employer-provided insurance to exchange insurance.

5. Analysis

When determining whether it is possible to obtain more affordable health insurance through the state exchanges, there may be variations in types of coverage and benefits between the silver plan through the private market and the insurance offered through the employer. However, assuming comparable coverage and using the prices based on the KFF calculator, the results show insurance plans on the individual exchanges were largely more affordable for employees than the plans offered through their employers in both cases, regardless of subsidy opportunities.

In the California case, the total market price of the health insurance plans on the exchanges were lower 69% of the time compared to the prices of employer-sponsored plans and were more economical 92% of time to the purchaser as a result of the subsidies. The Florida case shows similar results. This shows that even for individuals without dependents and that are generally low income, it is generally more economical to move from employer-sponsored insurance to individual insurance.

The Florida case shows similar results at the family level. Including all employees, the total price of the health insurance in the Florida case would be cheaper 75% of the time through the exchanges. By looking purely at the consumer cost (cost of premium excluding subsidies), which the employer and employee will have to split, the private market would be more economical 97% of the time. For plans including dependents, 80% were cheaper on the exchanges. The 2 of the 25

family plans that were more expensive on the individual market had employees that were 60 years or older. Additionally the cost of plans varied very little across age in the employer plans. This suggests that the plans on the individual insurance market may be more price sensitive to age.

These two cases show that it is very likely that health insurance plans through the exchanges are more competitive and therefore more economical than insurance provided by employers. This especially applies to smaller companies, since premium costs are generally more expensive for small companies as they have to ensure smaller pools of people. Since both cases determined that the majority of health insurance plans were cheaper on the exchanges than through an employer group health plan, significant savings for employees could be realized. This is even the case when accounting for the loss of the tax benefit of tax-deductible employer insurance.

The model shows that the majority of employees that are eligible for subsidies are much better off by being able to obtain their insurance through the exchanges. In the California case, 20 out of the 27 employees participating in the employer health insurance, or 74% would realize savings, if they obtained insurance through the exchanges. The average saving for employees is \$829 per year. The largest saving in this sample is \$2,000 a year. Of the 7 that were worse off, 4 had income thresholds above 400% of the poverty levels and would not be eligible for subsidies. However, if these employees have families and this is their primary income, it is very likely that they would be eligible for subsidies, which would allow them to help cover any dependents. The other three cases, in which the employees were worse off, were due to a loss in subsidy as a result of the additional income. The additional income provided by the employer put them just over the 400% of the poverty line, so that they would go from an average of \$388 of subsidies to

zero. To prevent this, the employer could decrease the additional compensation to these employees, so that they would still be eligible for subsidies. It is very important for all families receiving subsidies to weigh the benefits of an increase in salary, as this can result in a loss of subsidies, resulting in an effective marginal tax rate well over 100%.

In the Florida company, 22 of 25, or 88% of employees choosing some type of family coverage see savings by switching to the exchanges. When family income is equal to employee income, 100% of the families benefit. In this case, 22 out of 25 families have a premium contribution over 9.5% of their income under employer-provided insurance. In former case, where family income is sensitized to the average income in the CPS data, there are still 16 families that have unaffordable coverage through the employer. Since these families are guaranteed a premium contribution of less than 9.5% of their income on the exchanges, these families would significantly benefit from moving to an exchange policy. The average saving to the families is \$4,300 a year. The largest saving for a family in this sample is \$11,300, which is obviously a significant percentage of their income. The two families that saw lesser savings were those with employees 60 years or older.

On the aggregate level, both case studies show employee and employer saving across all employees when switching to individual insurance. Looking at the California Company, one can see that the saving to all employees together amounts to \$4,100. (This does not take into account the further savings that could occur if the employees have dependents that would be covered on the exchange.) The employer experiences more significant savings each year by increasing compensation to employees instead of covering their health insurance benefit. Across all employees (that originally participated in insurance coverage), the company could save as much as \$64,000. However to create a more equitable situation where employers increase the

compensation for employees that are made worse off, the company could pay an additional \$16,000 and still save \$48,000 in savings.¹⁴ In this case, those with higher incomes would obtain additional income, so that they could obtain individual health insurance without losing money as a result of losing the tax-break. This would result in an aggregate saving to employees of \$16,600 using the available data. Although it seems that the government would bear the cost of these subsidies, the cost is comparable to the amount the government loses each year from potential foregone taxes of employer provided insurance. In the California case, the government loses \$25,000 in potential taxes each year. With the increased number of employees on the subsidies, the government would pay \$26,000 to cover the low and middle-income employees and families.

In the Florida case looking solely at family plans, significant savings could be realized for both employees and the employer. The aggregate saving to employees in the case where the family income equals income derived from CPS is \$87,400 a year. In the case where family income equals the employee income, the 25 families could see aggregate savings of \$118,000. In the latter case, the employer would see savings of \$40,600 and in the former case savings of \$27,600. The government would see spending of \$78,000 in the latter case and \$21,109 in the former case. This can be compared to the \$48,000 that it forgoes as a result of the tax-break of employer-provided insurance. However, since the Florida company has more than 50 employees it would be subject to the employer penalty if it decided to stop offering employer-provided insurance and the cost to the government would be significantly diminished. However, this would also result in decreased savings or even additional costs to the employer. Including the

¹⁴ This \$16,000 is the sum of compensation added to each employee that suffered losses. The additional compensation includes payroll facing the employee, so that after the purchase of benefits from the exchanges with after-tax dollars, they have gained and lost a net of zero.

penalty for the 25 families, the employer would have to pay \$43,000 each year.¹⁵ In both cases, this would actually result in a loss to the employer and a net gain to the government in the former case. However, the losses to the employer could be reallocated by decreasing income of employees since their aggregate savings are far more than the \$43,000 each year. This would result in lower and middle-income employees receiving even more subsidy opportunities. Therefore, it is still possible for both the employer and the employees to realize savings in this case, if the coverage allowance is modified in the model.

Nevertheless, the additional cost to large employers due to penalties shows that the employer mandate significantly disadvantages middle and low-income employees in large companies. Whereas smaller companies, such as in the California test case here, have incentives to drop their insurance, which would result in savings to the company and most of its employees (especially low and middle income employees) large companies have an incentive to keep employer-provided insurance, despite its detrimental impact on low and middle income employees and their families' ability to obtain affordable insurance. Since there are millions of low-income employees working for large companies, this problem will affect millions of Americans and their families. The above results suggest that in both companies the employees would generally benefit if the employer dropped employer insurance. However, in the case of the Florida company, the employer mandate would cause penalties to occur, eliminating the potential benefit to the employer, making it far less likely that it would drop insurance. However the smaller company has almost no reason not to drop its employer insurance coverage. This would mean that employees of the smaller company would be far better off than those of the

¹⁵ The penalty is \$2000 for each employee over first 30 employees. Since the Florida has 224 employees, the penalty applies to 86% of the employees. This results in 21.5 employees (86% of 25 employees) being subject to the \$2000 penalty, which is \$43,000.

larger company, creating an arbitrary and unfair two-tiered system of benefits for employees of large versus small companies.

Since it is possible that there may be significant differences between these companies and other firms in the U.S., CPS data is used in conjunction with the cases to determine whether there are many employees in the U.S. that decline employer offered insurance or choose self-only plans, despite having families, which indicates unaffordability of obtaining family coverage through their employer. The following results from calculations done on the census data (CPS 2014) show that there is a significant amount of people that could benefit from their employer dropping employer-provided insurance.¹⁶ Of the 60,078 families in the CPS study 21,804 or 36% of families would qualify for federal subsidies through the exchanges.¹⁷ Of the 133 million families in the U.S. (Census 2013) this would mean 48 million households would qualify for subsidies. Of these families, 9854 (45%) had a family member that obtained insurance through their employer, of which 50% obtained family plans and 50% obtained self-only plans. Of families that qualify for subsidies and have an additional family member (e.g.) spouse or child, 1036 or 28% of employees have self-only plans. This does not indicate that they opted out of family plans, as it is unknown whether these families were offered family plans through their employer. Nevertheless, since these employees are offered insurance (most likely affordable insurance for self-only coverage) and since 98% of firms that offer self-only insurance also offer family insurance, it is very likely that the other family members cannot obtain subsidies through the exchanges and will remain uninsured. With the potential of obtaining insurance through the

¹⁶ All the following estimates were found through calculations done on the CPS data from 2014. A new variable was set up that determined whether individuals or families qualify for subsidies by determining income level between 133% and 400% of the poverty line.

exchanges, by the employer dropping insurance or a change in the ACA rules, this indicates significant potential for lowering the uninsured rate.

Of the individuals in families that qualify for subsidies 4849 or (22%) of these individuals are uninsured. Out of the total number of uninsured individuals in the survey, 7% are children, which comes out to around 2.2 million uninsured children in the U.S. By expanding the options for these families to obtain insurance through the exchanges even if they are offered insurance through their employer could help reduce uninsurance rates. Individuals working in the private sector make up the biggest group of uninsured, making up 50% of all uninsured individuals and 6.4% of all individuals. The results show that most of those uninsured that qualify for premiums work in smaller companies with 50% working in companies with fewer than 50 employees. Either these companies do not offer insurance, or the plans are still unaffordable to employees. If this were the case, there wouldn't be a penalty if these companies were to drop employer provided insurance, so that these individuals would then be able to obtain subsidies through the exchanges.

Other estimates of how many dependents and spouses are affected by the affordability glitch include a study by the U.S. Government Accountability Office (2012) that estimated that around 460,000 of those affected are uninsured children. An analysis by the Urban Institute estimated that more than 2 million people, including spouses and children, are affected by the glitch in the definition of affordability, and the Kaiser Family Foundation estimated that in 2008, 3.9 million dependents were part of families in which the a worker could not afford family coverage through their employer but could afford individual coverage.

6. Conclusion

Although the intention of the ACA was to keep in tact employer-provided insurance and to create a comparable option for individuals who do not have access to insurance through their employer or a public option, by creating the exchanges, the flaw in the law's definition of affordability (and its subsequent denial of subsidies to families that actually do not have access to affordable insurance) actually results in millions of low and middle-income employees being unable to obtain affordable insurance. The case study of the two companies with primarily low and middle-income employees reveal that there is a limited take-up of employer-provided insurance for any insurance in the smaller company and an extremely low take-up rate of any family coverage. This could indicate a few different things. Primarily it suggests that obtaining this type of insurance is unaffordable to the families. If these employees and their families wanted to obtain insurance through the exchanges they would not be able to do so – but if they were not offered insurance by their employer they would have potentially significant savings and their insurance would become far more affordable. It could also indicate that companies are purposefully covering only the minimum required self-only and dependent coverage as this does not create a risk of getting fined, but ensures that fewer employees will actually take up the employer's costly offer of family health insurance. This would suggest that the employee mandate is in fact having a profoundly negative effect on employees of larger companies, and provides an opportunity for employers to escape most of the cost of ensuring low income employees, leaving these employees and their families uninsured.

The cases also showed that in many markets it is more affordable to obtain unsubsidized insurance through the market exchanges rather than through an employer, even though it was originally expected that employer provided insurance would be cheaper. Now that the exchanges promote significant competition and have created larger pools of uninsured, the rates through the

exchanges even without subsidies are often cheaper than the insurance rates offered through employer-sponsored insurance. Although employees can buy insurance through the exchanges, they do not have access to the subsidies if they are offered “affordable” insurance, which significantly contribute to savings. Aggregate savings in the samples show that employees and employers would save a significant amount by having employees receive insurance through the individual market, if not for the penalties applied to larger firms.

Finally, the economic viability and benefit of a company dropping employer-sponsored insurance and having their employees obtain insurance through the public market really depends on the size of the employer. As hypothesized, employees at large firms are in fact at a disadvantage to employees at smaller firms with equivalent incomes. Not only will smaller companies be more willing to forgo employer-sponsored insurance, because they are not subject to the penalty, the large companies have a significant incentive to keep offering unaffordable family plans, in the hopes that employees decline the entire offer of employer-sponsored insurance.

7. Potential Policy Changes

To address some of the problems of affordability identified in this paper, there could be several policy changes made to the ACA and employer-sponsored insurance. First, the definition of affordability could be revised to insure that it takes into account family income and family plans. Although the family income and number of dependents could be very difficult for the employer to determine, the ACA could require that the employee report total income to the employer. This would ensure that the companies are in fact offering affordable family plans to their employees. Additionally, rules could be defined in cases where families have multiple employers offering insurance, which would allow employers to share the burden. In fact,

Senator Al Franken introduced a bill, the Family Coverage Act, to change the definition of affordability to be based on the family-cost instead of self-only. However, this bill died in Congress in June 2014.¹⁸

There are several problems with this policy proposal. For one, there are significant privacy concerns regarding employee's having to report family income and dependents to their employer. Furthermore, such a definition change would result in employers having to effectively subsidize the health insurance costs to families of employees. This could reduce the incentive of employers to hire full time employees, reducing overall employment, and it could even cause unintended prejudices against hiring employees that are likely to have dependents (e.g. single parents, middle age workers, women, heads of households etc.). It could also cause employees to underreport or misrepresent their family income.

There is also the possibility to change the definition of affordability pertaining to individuals' abilities to obtain insurance from the exchanges, but leaving the employer's definition of affordability (which would determine penalties) as it is, so that dependents and spouses of employees can obtain insurance from the exchanges, if offered employer-sponsored family coverage is unaffordable based on family income. The employer could still avoid the penalty as long as self-only coverage was affordable. It would also be possible to just allow family members of employees to obtain insurance through the exchanges, regardless if they were offered insurance through a family member's employer. Both of these changes would presumably mean that more subsidies would have to be covered by the government.

Another policy change that has been proposed by several lawmakers could also improve affordability of insurance to some lower paid employees, namely changing the definition of full-

¹⁸ S.2434 (113th) Family Coverage Act.

time employees. By defining full time employees as those working less than 40 hours instead of 30 hours, more employees would have access to affordable policies and subsidies on the exchanges if employers don't offer coverage to part-time workers. Although this may not have been the original intention of the public proposals, this would also diminish the penalty of large employers since it depends on the number of full-time workers. However, any policy that encourages limiting the hours of employees has consequences of potentially limiting incomes of such employees, which could actually have a negative impact on the affordability of insurance.

Another policy change could allow employees to freely choose whether to go on the exchange or take employer coverage and no longer make subsidies dependent on whether the employee is offered employer insurance. This would presumably mean a much higher number of employees would move onto the exchanges and receive subsidies, increasing the overall cost to the taxpayer and the cost of employer-provided premiums. A study by Dafny, Ho and Varela (2010) shows that individuals significantly value being able to choose from a larger variety of health insurance policies on the exchanges and are even willing to pay up to 20% of premiums for this choice. This policy would mean that many more low and middle-income employees would be eligible for subsidies, increasing the cost to the government.

Eliminating the tax penalty in the employer mandate could be another policy change that would incentivize companies with low to middle income employees to drop their coverage, which would help these employees receive more affordable insurance. As the cases show, this would be a net loss for the government, causing it to provide additional subsidies. This policy proposal would also get rid of the inconsistencies of small and large businesses considering dropping employer-provided insurance. The proposal to eliminate the tax penalty (employer

mandate) for health insurance has been actively promoted in the press since the ACA went into effect.

To recoup any losses to the government would face paying for more subsidies, because of the above policy changes, another potential policy change would be to tax employer-provided insurance. This would incentivize employers to drop employer-provided insurance and would eliminate the regressive tax of employer-sponsored insurance.

Finally, the most extreme policy to promote affordability, could be to eliminate employer-sponsored health insurance altogether. This study identifies significant issues regarding the employer mandate, as it can be a significant disadvantage to employees. To some extent the problems identified with the employer mandate actually puts into question the efficacy of a system with employer-provided insurance. If all insurance was purchased over exchanges, larger pools of insurance would be available to all employees and there could be assurances that all poor and middle-income individuals and families would be able to obtain affordable insurance independent of employment. The increased subsidies that would result from such a change could be offset by taxes generated from employers increasing their compensation to employees now that they were spending no money on health insurance. This would of course be a disadvantage to high income earners, who currently receive a large tax benefit by receiving tax free employer insurance, and would then have to pay for insurance with after tax dollars. But such an impact could be offset by changes to the marginal tax rates for high-income earners, which is a more direct way of controlling taxation between various income levels. Non-employer based insurance also has the distinct advantage of being able to follow an employee from job to job, from job to self-employment or unemployment, without the difficulty of choosing a new plan every time a significant employment related event occurs.

8. Limitations and Further Research

Throughout this research, significant assumptions were made regarding employer and employee behavior and it is possible that some of these assumptions are incorrect. This could be attributed to the fact that the data was limited by the company's abilities to receive and reveal information regarding their employees. The most significant limitation was the lack of knowledge regarding family size and family income of employees. This limitation is one of the main difficulties of implementing any changes to the law and has also caused restrictions to other studies regarding this issue. Additionally it is possible that the model and results found are very specific to these particular companies and are not representative of companies across the U.S.

Additionally more research would need to be done regarding employers' ability and choices regarding additional compensation to employees, especially if they were to drop employer-provided insurance but would want to continue to contribute to the benefits of their employees. Therefore, more sophisticated analysis could be done regarding employer and employee cost sharing of health insurance costs.

The landscape of the healthcare system is uncertain and unpredictable, especially the state of the exchanges. It is possible as a result of the Supreme Court case, that millions of Americans won't have access to federal subsidies, which would make this research less relevant. In any case, it is unknown how pricing in the private market will change. Valuable next steps for research would be to continue to analyze the effects of employer-provided insurance and to use more universal data to determine the costs and benefits of allowing employees to choose their health insurance coverage.

Appendix

Table 5: CPS Total family income based on working primary householder

Recode - Total person income recode	Summary of Total family income		
	Mean	Std. Dev.	Freq.
Not in un	78166.095	90337.395	31955
Under \$2,	63994.735	90620.464	20537
\$2,500 to	60837.053	85559.881	2999
\$5,000 to	52449.468	77408.547	3727
\$7,500 to	41237.757	55149.426	4859
\$10,000 t	45131.262	55789.514	5232
\$12,500 t	42432.699	44934.226	3665
\$15,000 t	48686.499	57930.697	4770
\$17,500 t	45851.044	42139.211	3307
\$20,000 t	52464.639	53567.813	4638
\$22,500 t	53909.66	54135.86	2899
\$25,000 t	58903.609	57590.819	3852
\$27,500 t	58406.175	50507.786	2243
\$30,000 t	64089.646	52541.202	4198
\$32,500 t	64057.089	51513.509	1784
\$35,000 t	68782.156	49503.721	3151
\$37,500 t	69953.721	43325.381	1695
\$40,000 t	77952.177	56791.096	3457
\$42,500 t	77574.808	46765.561	1302
\$45,000 t	81680.436	55259.105	2372
\$47,500 t	80312.386	45567.88	1292
\$50,000 t	87821.399	50244.275	2852
\$52,500 t	89338.309	53126.081	941
\$55,000 t	95251.163	65628.439	1560
\$57,500 t	96233.257	54518.098	734

Table 6: Florida company profile, take-up rates, and average premium cost.

(1) Coverage Tier	(2) Number of Employees (%)	(3) Average Employee Premium Cost per year	(4) Average affordability	(5) Benefit Plan	(6) Number of Employees	(7) % Choose Benefit Plan	(8) Average Premium Cost per Year	(9) Additional Cost of Benefit Plan ¹⁹	(10) Additional Cost of Coverage Tier
EE	189 (84%)	\$840	2%	Low	110	58%	\$654		
				Medium	63	33%	\$967	\$312	
				High	16	8%	\$1,615	\$648	
EC	13 (6%)	\$5,942	15%	Low	7	54%	\$5,576		\$4,921
				Medium	5	38%	\$6,152	\$575	\$5,184
				High	1	8%	\$7,458	\$1,306	\$5,843
ES	8 (4%)	\$6,440	14%	Low	2	25%	\$6,120.96		\$5,466
				Medium	6	75%	\$6,546.52	\$425	\$5,579
				High	0	0%			
EF	4 (2%)	\$12,409	24%	Low	0	0%			
				Medium	2	50%	\$11,579		\$10,612
				High	2	50%	\$13,240	\$1,660	\$11,624
Declined	10 (4%)								

¹⁹ Incremental difference between the next highest benefit plan.

California Company Data:

Last Name	First Name	Date of Birth	Coverage Tier	Salary	Employer Premium	Employee Premium	Zip
1	Employee	4/11/62	Declined	100000	0	0	94070
2	Employee	7/13/73	Declined	46000	0	0	94010
3	Employee	12/25/89	EE	23000	235	78	94402
4	Employee	12/12/61	EE	31000	654	218	94063
5	Employee	1/22/55	EE	39000	825	275	94661
6	Employee	3/1/77	Declined	25000	0	0	94063
7	Employee	8/26/64	EE	23000	335	112	94403
8	Employee	12/7/72	ES	93000	482	161	94010
9	Employee	3/14/53	Declined	34000	0	0	94063
10	Employee	1/28/70	EE	31000	482	161	94579
11	Employee	2/5/58	EE	45000	825	275	94010
12	Employee	8/21/82	Declined	25000	0	0	94040
13	Employee	9/26/89	EE	29000	235	78	94661
14	Employee	3/26/64	EE	29000	335	112	94061
15	Employee	1/4/93	Declined	23000	0	0	94070
16	Employee	2/27/55	EE	54000	825	275	53029
17	Employee	8/15/59	Declined	36000	0	0	53005
18	Employee	6/19/68	EE	31000	335	112	94402
19	Employee	12/13/61	Declined	52000	0	0	94062
20	Employee	11/25/70	EE	40000	482	161	94402
21	Employee	10/20/70	EE	25000	335	112	94025
22	Employee	6/5/62	Declined	23000	0	0	94402
23	Employee	4/3/83	EE	23000	260	87	94579
24	Employee	1/16/70	Declined	31000	0	0	94010

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