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Trends of employment-based health insurance: Why did the coverage for private-sector workers decrease during economic boom

Yan Ni
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Trends of Employment-Based Health Insurance:

Why Did the Coverage for Private-Sector Workers Decrease during Economic Boom

(TITLE)

BY

Yan Ni

THESIS

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I HEREBY RECOMMEND THAT THIS THESIS BE ACCEPTED AS FULFILLING
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ABSTRACT

After a decade of erosion of employment-based health insurance coverage in the American population, the overall employment-based health insurance coverage increased beginning in the mid-1990s when the strong economy occurred. According to the previous studies, the labor market and health insurance premium are primary determinants of the coverage rate. However, in spite of the tight labor market and non-existent health care cost inflation (the growth of health insurance premiums is close to the growth of wages), the health insurance coverage of private-sector workers continued to decline. Since the private sector workers are the bulk of the population who benefit from employment-based health insurance, these two trends would appear to contradictory: Coverage for the overall increased, while coverage for private- sector workers continued to decline even under the strong economy. This thesis provides detailed evidence to describe and analyze the phenomenon.

Current Population Survey data evidence shows that a higher percentage of public sector workers and children getting health insurance through their own or family members' employers contributed to the overall increase of employment-based health insurance. Furthermore, I emphatically analyze the decrease of coverage among private sector employees. The coverage rate is directly limited by three factors: offer rate (percentage of employees who work in an establishment offering an health insurance plan), eligibility rate (percentage of employees who are

qualified for the health insurance plan provided by their employers), and take-up rate (percentage of employees who elect the plan when they are eligible for the health insurance provided by their employers). I examine these three rates to see how they affected the coverage rate. Medical Expenditure Panel Survey provides detailed data for private sector establishments and employees. By using decomposition of these three important rates whose product is the coverage rate, I find that employees' eligibility and take-up rate lead to the decline of coverage for private sector workers, especially the reduced take-up rate. Reasons leading to the decline of eligibility and take-up rate can explain the paradox - coverage of private-sector decreased during economic broom-, such as employers restricted access to health insurance, employees had to pay more contribution share of the health insurance premium, employees switching to other sources of health insurance.

To my mother and husband

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Firstly, I would like to thank my thesis committee of Dr. Dell Champlin, Dr. Mukti Upadhyay, and Dr. Hui Li for their efforts, supports and encouragement. Without them, my thesis can not be completed.

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CHAPTER 1

INTRODUCTION

Employment-based health insurance is the most common form of health insurance in the United States. The employment-based health insurance market provides insurance coverage to nearly two-thirds of the population under sixty-five. But from the late 1970's to the mid 1990's, there was a gradual but significant drop in the proportion of Americans covered by employment-based health insurance. This decline in employment-based health benefits was coupled with an increase in the number and percentage of Americans uninsured. The erosion of employment-based coverage has been the subject of a rapidly expanding body of literature and policy debates. Some authors have documented the decline in coverage in recent trends, some have inquired about its underlying causes, and others have expressed doubts about the future of the employment-based health system.

The erosion in employment-based health insurance coverage had stopped in the mid-1990s; based on the data from Current Population Survey (CPS) and Employee Benefit Research Institution (EBRI) estimates, a rebound of employment-based health coverage began in the mid-1990s. The employment-based coverage rate among the overall population rose from 57.1% in 1993 to 64.3% in 2000; the employment-based coverage rate among non-elderly Americans increased from 63.5% in 1993 to 65.8% in 2000. However after 2000, the erosion trend continued again. The interesting thing is that the data from the Medical Expenditure Panel Survey (MEPS) [1] indicates that the employment-based health insurance coverage rate among private sector employees was decreasing during 1993-2000. Even though, among the all employment-based health

[1] MEPS: It is an annual survey of private-sector establishments and state and local governmental units. It provides estimates of job-related insurance both at national level and at state level for 40 states for any given year.

insurance, the bulk is covered by private sector, which is nearly 80%. This appears to be a paradox. In addition, the health care cost inflation occurred again in 1998, meanwhile the employment-based coverage still continued increasing to its highest level in 2000. According to previous studies of this subject, health care cost inflation and the employment-based health insurance coverage have an inverse relationship. Nevertheless, few studies pay attention to this fact. Although several papers mention the increase of employment-based coverage during the later half of 1990's slightly, they think the increase is only attributed to the strong economy and relatively stable health insurance premium. The strong economy would bring more access for private sector employees to have insurance, but in fact, the health insurance coverage of private-sector workers decreased. Strong economic growth, a tight labor market and low health care cost inflation can not explain all the increase of employment-based coverage that began in the mid-1990s. The trend of employment-based health insurance was more complicated at that time.

The purpose of my thesis is to provide detailed evidence of employment-based health insurance among different sectors of the population during the study period of 1993-2000. Because the employment –based health insurance covers not only working adults but also their family members, especially their children, the change of employment-based health insurance coverage among these family members should have significant effects on the overall employment-based insurance trends. Among those working adults, the health insurance coverage is different from sectors and industries, so I am also going to study the detailed data of health insurance coverage among public and private sector, and different industries, in order to discover what contributes to the overall increase of the

health insurance coverage. Furthermore, I will emphatically analyze the decrease of coverage among private sector employees. My hypothesis is that the employment-based health insurance coverage among family members - children and public- sector employees should increase significantly, which would offset the decline of coverage among provide sector employee. The degree to which employers offer such health insurance, how many employees are actually eligible for such health insurance offered by their employers and how many employees finally participate in the health insurance plan, all these factors would have significant effects on the health insurance coverage change during this study time period. A higher employment rate does not absolutely equate to higher fraction among employers who would offer such health insurance; nor a higher fraction of employees who are eligible for such coverage or participate in the coverage. I will hypothesize that among these three important indicators, at least one decreased which led to the coverage rate decline in the private sector during the study period.

On the other hand, my findings can indirectly explore some explanations of the overall decline of employment-based health insurance coverage prior to 1993 and after 2000, and can help us better understand why the trends exist and determine whether it is likely to continue. Furthermore, policymakers can make realistic policies to increase employment-based insurance, or transform or even replace the current health insurance system to increase the availability and utilization of private source of health insurance.

LITERATURE REVIEW

Decline Trend Study

Researchers have conducted numerous studies of the decline of employment-based health insurance. Most of these studies have documented the trend of employment based health insurance coverage and also have explored some probable underlying causes.

In these previous studies, the possible factors causing the erosion of employment-based health insurance coverage can be divided into two main categories. One is *cost of health insurance*; another is *structural changes in labor market*. Most researchers seem to agree that increasing health insurance premiums compared with declining or stable real wages and family income had a negative impact on health insurance coverage. Researchers also seem to agree that the employment shift from goods-producing sector to service sector and the increase of part-time jobs have contributed to the erosion.

Cost of health insurance:

One of the earliest papers found that the decline of coverage between 1979 and 1989 was confined to low-wage workers and was likely due to an increase in the cost of health insurance (Kronick, 1991). Subsequent research has confirmed that health care cost increases accounted for much of the decline in coverage (Shactman and Altman, 1995; GAO's report, 1997; Fronstin, Goldberg, and Robins, 1997; O'Brien and Feder, 1999; Kronick and Gilmer, 1999; Chernew and Cutler, 2004).

Shactman and Altman (1995) use a supply and demand model, calling the provision of the health insurance by employers the "supply" and the participation of employees in employment provide programs as "demand". They posit that a combination of decreased real wage and increased inflation adjusted cost of health insurance has reduced both the

willingness of employers to provide health insurance and the propensity of workers to participate in employment-based health insurance.

The General Accounting Office (GAO) report (1997) states that loss of employment-based family dependent coverage from 1990 to 1995 accounts for most of the recent loss in private health insurance coverage for dependents. The primary underlying cause is the significant increase in family health insurance premiums relative to the health insurance premium for singles. The average monthly health insurance premium for employment-sponsored family coverage rose from $268 in 1989 to $463 in 1994, with a rate of increase of 73%, compared to the monthly premium for employee-only $119 in 1989 to $181 in 1994, with a rate of increase of 52%.

O'Brien and Feder (1999) found that low-wage workers and their families have always been far less likely to have health insurance than higher wage workers. The gap in health insurance coverage between low wage workers (wage < $7 per hour) and high wage workers ($15 per hour) increased by 15 percentage points from 33% in 1987 to 48% in 1996. The primary explanation of the coverage deterioration for low-wage workers is that "bad" jobs are getting worse. Since the health insurance premium increased significantly, employers have restricted eligibility for low-wage workers. The offer rate by employers to low wage workers was 43%, while the rate to high wage worker was 93% in 1996. Employers also have increased the share of premium that all workers must pay toward their coverage, while low-wage workers are less able to pay for coverage when it is available, for example, in 1996, the family health insurance participation rate among low wage workers was 55% and the rate among high wage workers was 76%.

Recently, Chernew and Cutler (2004) use regression and instrumental variable techniques to estimate the association between rising local health insurance costs and the falling propensity for individuals to have any health insurance coverage. They found that over half of the decline in coverage rates experienced over the 1990s is attributable to the increase in health insurance premiums. Among the total 3.1 percentage points decline, health insurance premium accounted for 2.0 percentage points of the decline. Changes in economic and demographic factors had little net effect. They forecast the number of people uninsured could increase by 1.9 to 6.3 million in the next decade if real, per capita medical costs increase at a rate 1 to 3 percentage points above the GDP growth rate.

Structural change:

Previous research also has documented that shifts in employment have affected how the likelihood of a worker having employment-based health insurance coverage changed prior to 1993 (Chollet, 1994; Shactman and Altman, 1995; Arc, 1995; Fronstin and Snider, 1996/97).

Chollet (1994) found that industry groups that have lost jobs since 1985 (e.g. manufacturing) have lost employer-insured jobs at an even faster pace. Industries with high rates of employer-sponsored health insurance coverage tend to be net exporters of dependent coverage for workers in other industries. The average health insurance coverage rate for manufacturing employees is 85 % (e.g. 89.4% in 1986 and 84.4 % in 1997), and for service industries the coverage rate is 65% (e.g. 70% in 1986 and 64% in 1997). While the employment in manufacturing declined from 27.3 thousand in 1970 to 16.6 thousand in 1992. Employment shifting out from these industries leads to a big drop of dependents health insurance coverage.

Shactman and Altman (1995) stated that America has undergone several decades of de-industrialization. As global competition has increased and consumption of imported goods has risen, the demand for employment has shifted from goods producing to the service producing sector. The fact as mentioned by Chollet (1995) is that manufacturing is among the industries with the highest employment-based health insurance coverage. David and Stuart also found that the country has also experienced large shifts within industries. The nature of work in American workplaces has changed. For instance, increased high-tech capital (e.g. computer, communication, and photocopy equipment) in manufacturing demands more workers with higher- skill. This leads to the decline in demand for less- educated workers and the increase of uninsured among less educated workers.

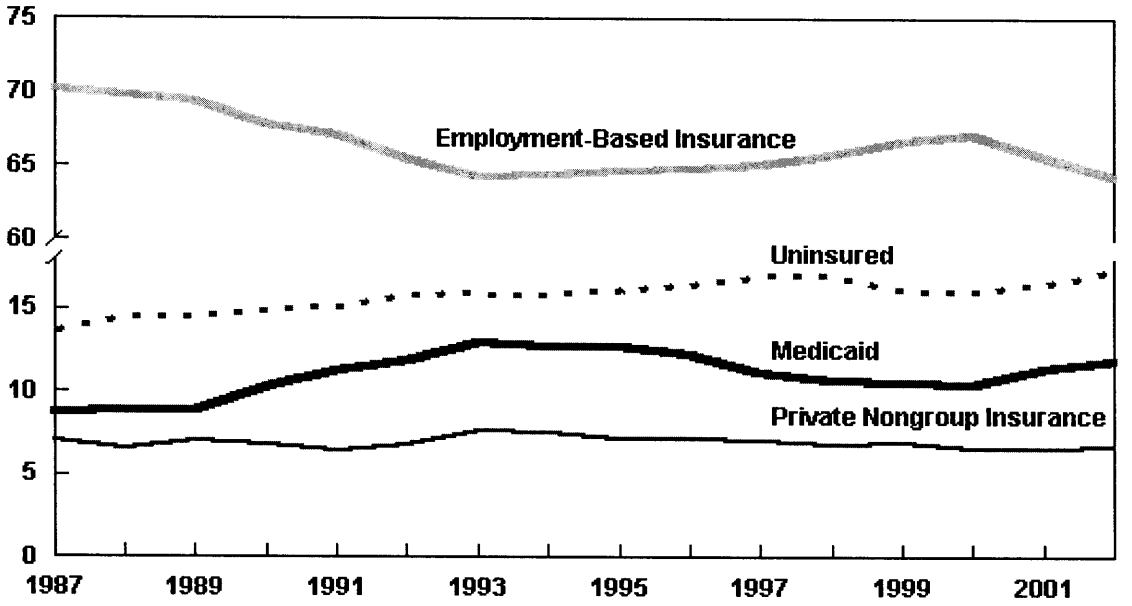
Fronstin and Snider (1996/7) agree that the decline in employment –based coverage between 1988 and 1993 is explained by industry shifts in employment, and a drop in the proportion of employers sponsoring health insurance health plans. By using a mathematical model, they estimated the shift of employment from manufacturing to service sector had contributed 10% of the decline of employment-based health insurance coverage.

Besides the cost of health insurance and labor market structural changes, there are some factors found in previous studies to explain the erosion of employment- based health insurance: falling real income, the increased use of part-time workers, firm sizes, and the decline in unionization, minimum wage, structural unemployment. But these factors have accounted for a small amount of the decline in employment-based health insurance coverage.

Increase Trend Study

Most studies of employment-based health insurance paid attention to the decline trend, while the erosion of employment-based health insurance occurred mainly prior to 1993. In fact the employment-based health insurance began to increase after the year of 1994, while the coverage rate can not reach the highest level as in the late of 1970's. (See Figure 1)

Figure 1 : Percentage of Non-elderly Americans With Employment-Based Health Insurance, Medicaid, and Private Non-group Insurance and Those Without Insurance, 1987 to 2002



Source: Paul Fronstin, *Sources of Health Insurance Coverage and Characteristics of the Uninsured: Analysis of the March 2003 Current Population Survey*, Issue Brief No. 264 (Washington, D.C.: Employee Benefit Research Institute, December 2003).

Some researchers neglected the increase, and they chose a year before 1993 and any one year later 1993 as endpoints to examine the decline trend. From the apparent coverage rate data, there would only be a confirmed decline trend.

The comparisons of late-1980s data with late-1990s data would mask important variability in the circumstances faced by specific workers in 1987-1993 and 1993-2000, because the increased coverage trend did occur during 1993-2000. This would suggest that it is necessary to separate the time period 1993 to 2000 as an independent study period, examine the increased trend of employment-based health insurance during this time period instead of simply studying the overall declining trend of coverage.

For example, most researchers agree that increasing in health insurance premiums would discourage employers to offer health insurance to his employees. Cooper and Schoone (1997) found that between 1987 and 1996 the percentage of workers offered health insurance from their employer increased from 72.4 percent to 75.4 percent. While during this time, overall the employment-based health insurance coverage declined. This appears partially different from the view of Shactman and Altman (1995) state that an increase in inflation adjusted cost of health insurance has reduced both the willingness of employers to provide health insurance and the propensity of workers to participate in employment-based health insurance. Cooper and Schone (1997) may be misrepresenting the underlying trend by examining 1987 and 1996 as endpoints of a trend. It is possible that the increasing offer rate shown in Cooper and Schone may have occurred solely between 1993 and 1996, and did not start in 1987.

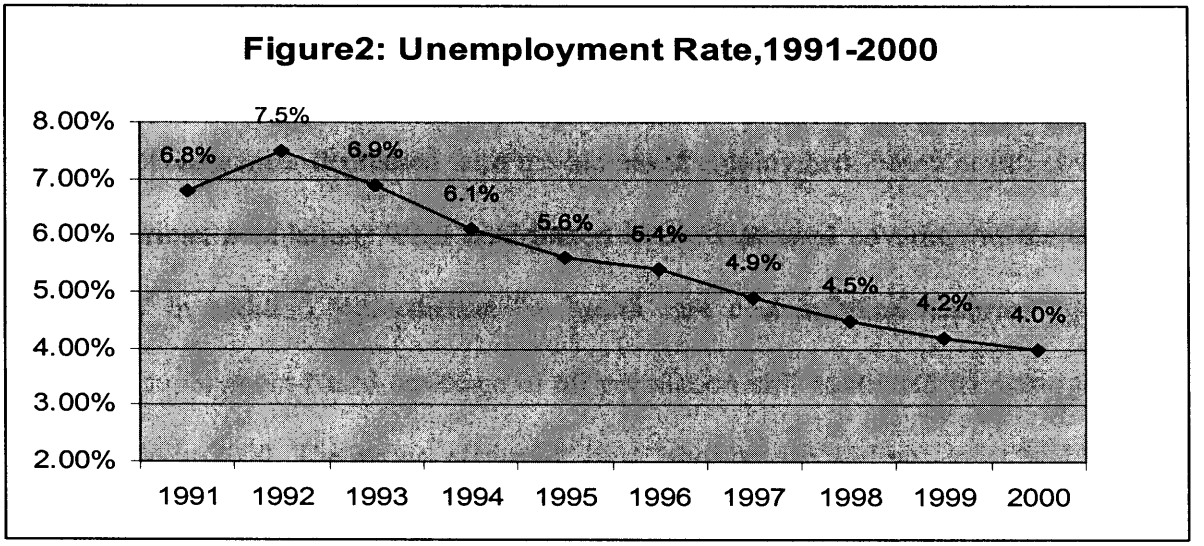
Few researchers carefully study the increased trend of employment-based health insurance during the late of 1990. Among these researchers, most think this increase is just simply attributed to the *strong economy* and relatively *low medical cost inflation.*

Strong economic growth:

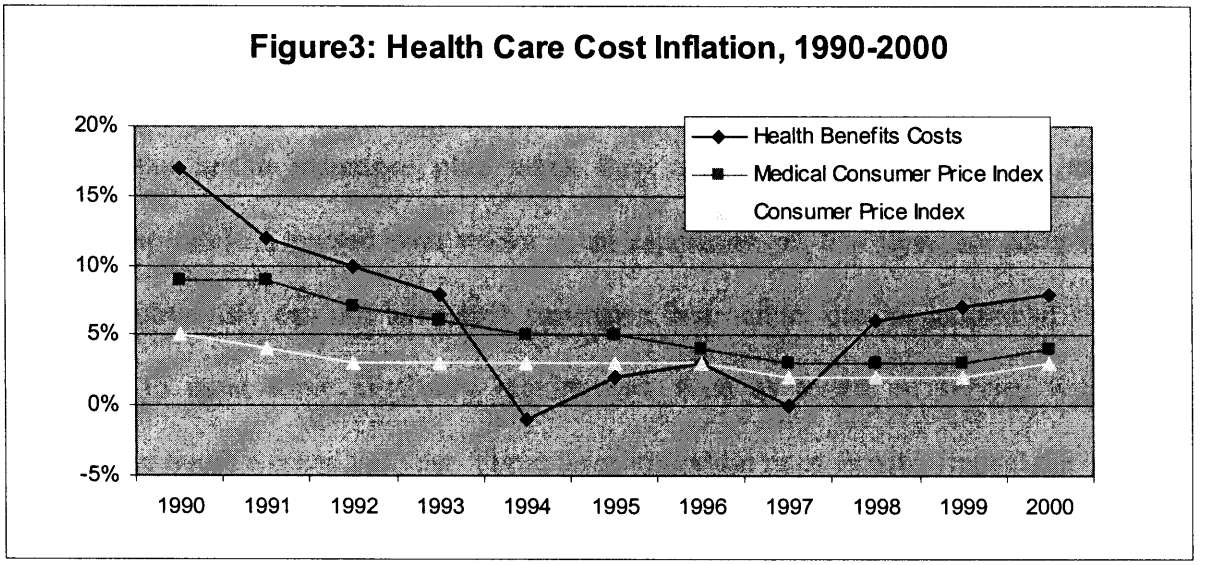
Fronstin (2001), points out that strong economic growth had a great effect on the increase of health insurance coverage. During this time, due to strong economic growth, the unemployment rate had declined since 1992 (See Figure 2). Low unemployment drove more employers to offer health benefits and to improve the benefits package they offered, in order to attract employees. In 2000, roughly three-quarters of small employers offered health insurance compared with one-third of small employers offered health insurance prior to 1993. Since the offer rate by employer increased, more workers have access to employment-based health insurance. Fronstin also posits that during 1994 to 2000, both full time employment and the employees in large size firm (>100 employees) increased. Since full time workers and employees in large size firm are more likely to be covered by employment-based health insurance, the overall health insurance coverage of workers increased.

Low health cost inflation:

In addition, the medical consumer price index was much lower compared with those before 1993, and much closer to the overall consumer price index. Fronstin (1998) says health benefits costs increased faster than the overall consumer price index and faster than the medical portion of the consumer price index during the late 1980s and early 1990s. These cost increased nearly 20 percent in some year. But since 1993 to 1998, the employment-based health cost inflation had been virtually nonexistent. (See Figure 3)



Data source: U.S. Department of Labor, Bureau of Labor Statistics.



Data source: U.S. President, Economic Report of the President (Washington, DC: U.S. Government Printing Office:2001)

Despite the significant increase of private sector and public sector employment due to strong economic growth and lower health care cost inflation compared prior to 1993, the employment-based health insurance coverage among private sector employees was decreasing during 1993-2000 according to the data from the Medical Expenditure Panel

survey (MEPS). This appears to be a paradox. I am wandering why the health insurance coverage of employees in the private sector - the bulk of population which is covered by employment-insurance- decreased with the increased employment-based health coverage of all American population. What contributed to the increased coverage in the overall population? In addition, nevertheless the health care cost inflation occurred again in 1998, the employment-based coverage of all population still continued increasing to its highest level in 2000. The strong economic, tight labor market and non-exist health care cost inflation can not explained all the increase of employment-based coverage.

Besides the economic factors, analyzing employment-based health insurance requires knowing three important measures whose products compose the health insurance coverage rate: the fraction of firms that offer health insurance (offer rate); the fraction of workers who are eligible for health insurance (eligible rate); the fraction of workers who enroll in the health insurance plan when they are eligible for it (take-up rate or participation rate). A person who works in an establishment that does not offer health insurance obviously can not have such insurance, but neither can an individual worker who fails to meet some eligibility requirement, such as length of service with the employer or hours worked per year. These three important rates directly impact the health insurance coverage. In order to analyze the "paradox" (decreased coverage among private sector), I will study the changes of offer rate, eligible rate and take-up rate both in public-sector and private sector during 1993 -2000, and also explore the underlying determinates for the changes.

My paper would begin with providing detailed data evidence on the trend of employment-based health insurance during the study period of 1993-2000 among

different characteristics of population, discover which part population's employment-based health insurance change contributes the overall increase of the coverage. These preliminary findings would lead me to ask about why the private sector had different phenomenon from others. I will examine three intermediate measures of access to health insurance: 1) the offer rate 2) the eligible rate 3) the take-up rate. The product of these three rates is the rate of coverage by employment-based health insurance. I will focus on each one and study its trend, then explain why the coverage among private sector's employees decreased during this study time period. Finally explore the underlying factors leading these changes in coverage.

CHAPTER 2

DATA AND METHODS

Employment-based health insurance is the dominant method of financing health care in the United States, with recent estimates indicating that 160 millions Americans under age 65, representing two-thirds of this population are covered by a health plan related to the employment of a family member. Although some individuals aged 65 and older are also covered through health insurance policies related to their current or former employment, most of elderly individuals are as supplements to Medicare benefits. So in this thesis, I will focus on the population under age 65 covered by employment-based health insurance.

First, I will classify this non-elderly population into two large parts according to their ages: children and adults, because children can be covered by health insurance through their parents as dependants. Here I define children as the group aged 0-17 years old; then another adult group aged 18-64 years old. I will check the trends of employment-based health insurance coverage among these two groups using the data from the Current Population Survey.

"The Current Population Survey (CPS) is a monthly survey of about 50,000 households, conducted by the Bureau of the Census for the Bureau of Labor Statistics. The survey has been conducted for more than 50 years. It is the source of official government statistics on employment and unemployment. An important secondary purpose of this survey is to collect demographic data such as age, sex, race, marital status, educational attainment, and family structure." [2] Additionally, the CPS provides answers to questions such as health, education, income, and work experience. The often-

used March CPS focuses on health insurance coverage. The health insurance coverage questions in the survey determine whether an individual has had coverage from various sources at any time during the previous year.

Among the adult group, here I will focus on working adults, and not include non-workers. The health insurance coverage varies widely based on sectors, industry and other factors. Workers in the public sector (including Federal, State and Local Government) are more likely to have health care benefits than are their counterparts in the private sector. The industry in which an employee works is a major factor in determining whether or not health care benefits will be available. Within the private sector, workers in good-producing industries, such as manufacturing and mining, more often have health care than do workers in certain service- producing industries. The health insurance coverage also varies with firm size, usually, workers in small size firms are less likely to be covered by employment-based health insurance. In order to examine the trend of health insurance change among working adult, I will first find the data of health insurance for working adults among public sector and private sector, and then check the coverage among different industries and firms with different size (Small size, mid size and larger size).

The data of working adults are from the annual Medical Expenditure Panel Survey (MEPS). MEPS survey includes components on households, nursing home, medical providers, and insurance. It provides detailed nationally representative data on health status, health care use and expense, and health insurance coverage of individuals and families in the U.S. civilian population. The Medical Expenditure Panel Survey Insurance Component (MEPS IC) is conducted for the Agency for Health Research and Quality by

[2] CPS home page: www.bls.census.gov/cps/overmain.htm

the U.S. Census Bureau. The MEPS IC is an annual survey of private-sector establishments and State and local governmental units. It provides estimates of job-related insurance both at the national level and at the state level for 40 states in any given year. These estimates include the health insurance coverage rate, premium, contribution of employers and employee...All of this information can be used to present the change trends and analysis the underlying factor leading to these changes.

As mentioned above, researchers think a strong economy lead to significantly increase of employment which let more workers and their families have access to get the employment-based health benefits. Did the strong economy really increase the access for workers to get employment-based health insurance, and then improve the coverage rate? The coverage rate is limited by three factors: employer's insurance offer rate, employee's eligibility rate, and employees' take up rate. I will examine these three rates to see how they affected the coverage rate. MEPS data provides all these useful data information for my study.

There are two measurements for the offer rate, one is at the establishments' level, and another is at the employees' level. Establishment level offer rate measures the percentage of all establishments which are offering health insurance plan to their employees, and employees' level offer rate measures the percentage of all employees who are working in the establishments offering health insurance plan. During economic boom, both offer rates increased, but with different degrees. Employees level offer rate should be more precise which directly impact the coverage rate.

Eligibility measures the fraction of workers who are eligible for employment-based health insurance, conditional on being in a firm where the health insurance is offered.

Take- up rate (participation rate) indicates the fraction of workers who enroll in health insurance when they are eligible for it.

When these three rates are multiplied together, we can get the coverage rate. By decomposing these three rates, I can find how much each rate affects the coverage rate change. Therefore, I will find the primary effect which leading the coverage rate declined among private sector workers having employment-based health insurance.

CHAPTER 3

In this chapter, the overall trend of employment-based health insurance will be presented firstly. Following, the employment-based health insurance trends among different population classified by age and sectors will be compared. Finally I proceed to my analysis of exactly which elements of coverage are causing the decline in the private sector.

THE OVERALL TRENDS OF EMPLOYMENT-BASED HEALTH INSURANCE

Employment-based health insurance is the most common form of health insurance coverage in the United States. Most Americans under the age of 65 who have health insurance get their insurance through their employers. The U.S. employer-based health insurance system traces its origins to World War II; and has expanded during the postwar year. For first time, "employer responsibility for health insurance provision was brought about by wage and price controls that prevented labor from bargaining for higher wages. Employers were allowed to buy health insurance tax free, and employees received a tax free health insurance growth consequently accelerated."[3] Until now, employment-based health insurance remains the most effective mechanism for pooling of health insurance risk in the private health insurance market.

Since the late 1970s, there has been a steady decline in the fraction of Americans, especially non-elderly who receive health insurance through employment. While evidence shows that the much-reported decline in employer coverage occurred solely in

[3] Long, Stephen H: *Stability and Variation in employment-based health insurance coverage, 1993-1997*

the later 1980s and very early 1990s, and the coverage rate has been stable and then increased since 1994. (See Table 1)

Table1: Employment-Based Health Insurance Coverage among All Population and Non-elderly Population

Year	Among all population	Among non-elderly population	Increase or decrease
2000	64.1%	67.7%	
1999	63.3%	66.6%	
1998	62.0%	65.8%	
1997	61.4%	65.0%	
1996	61.2%	64.8%	
1995	61.1%	64.6%	
1994	60.9%	64.4%	
1993	57.1%	63.5%	
1992	57.9%	64.7%	
1991	59.7%	66.3%	
1990	60.4%	67.0%	
1989	61.6%	68.6%	
1988	61.9%	69.0%	
1987	62.1%	69.2%	

Date source: Employee Benefits Research Institute estimates from the March Current Population Survey of each year.

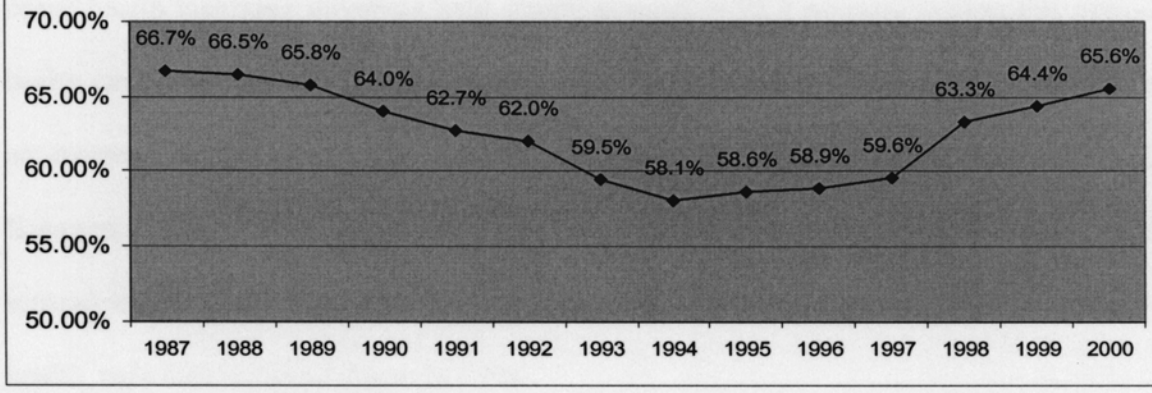
TRENDS IN COVERAGE RATE BY AGE GROUP

Employment-based health insurance is the main source of health insurance for the non-elderly population, since mostly elderly people are as eligible for Medicare benefits. Among the non-elderly population, there are two main parts: Children and Adults.

From Figure 4 and Figure 5, we can see that during my study period, the increase in coverage among the non-elderly population was due to in large part to a higher likelihood that children were covered by employment –based health benefits. As we can see in Figure 4, between 1994 and 2000, the percentage of children covered by

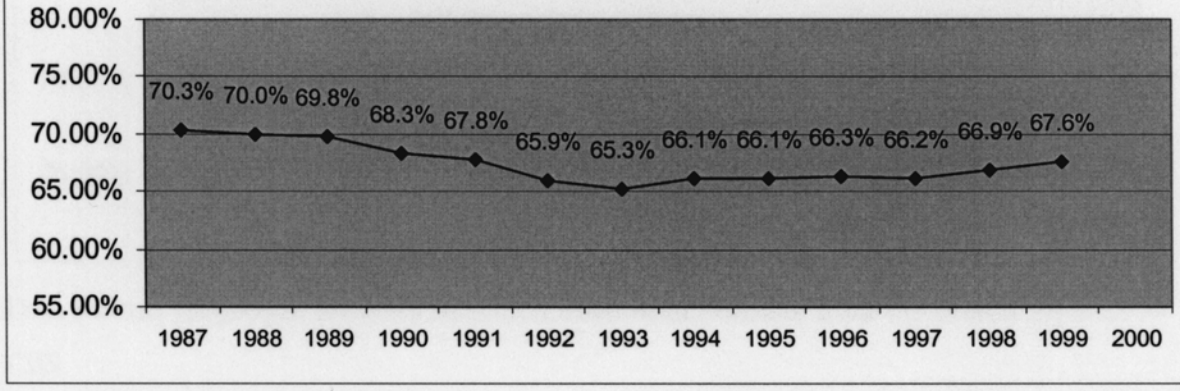
employment-based health insurance increased from 58.1% to 65.6. For adults, the coverage rate roses from 66.1% to 67.6 % (See Figure 5).

Figure 4: Coverge of American Children, age 0-17, with employment-based health insurance, 1987-2000



Data source: Employee Benefits Research Institution estimate from the March 1998-2000 CPS

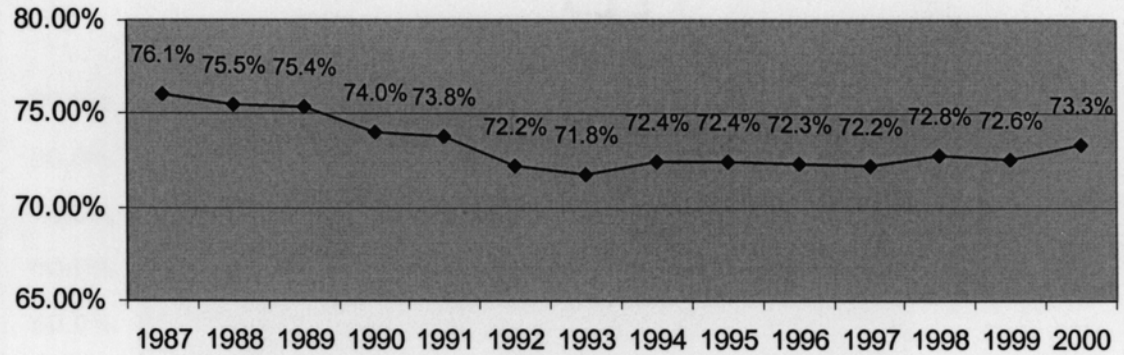
Figure 5: Coverage of American Adults, age 18-64, with Employment-based health insurance, 1987-2000



Data source: Employee Benefits Research Institution estimate from the March 1998-2000 CPS

Among American adults covered by employment-based health insurance, most are working adults, and very small proportion of adults who are non-workers but can be covered as dependent coverage. Here I am going focus on the change of the coverage of working adults. During 1994-2000, the coverage of workers gradually increased (See Figure 6). Between 1994 and 1997, the percentage of working adults with employment-based health insurance coverage held steady at roughly 72.3 percent. During this period, health care cost inflation was essentially nonexistent. Working adults finally experienced an increase in the likelihood of having employment-based health benefits in 1998. Between 1997 and 2000, the percentage of working adults with employment-based health insurance increased from 72.2 percent to 73.3 percent, despite the apparent return of health care cost inflation began in 1998.

Figure 6: Coverage of Workers, ages 18-64, with Employment-based health insurance, 1987-2000



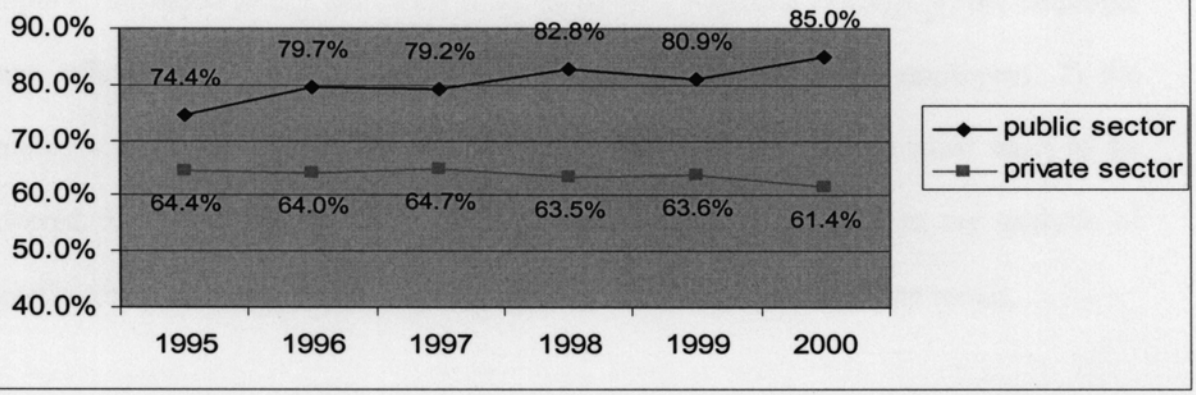
Data source: Employee Benefits Research Institution estimate from the March 1998-2000 CPS

TRENDS IN THE COVERAGE RATE BY SECTOR

The health insurance coverage of workers would vary widely based on sectors. Workers in the public sector (including Federal, State and Local Government) are more likely to have health care benefits than are their counterparts in the private sector. Use data from MEPS IC, I find that employment-based health insurance coverage in the public sector increased over the period I examine (1994-2000), from 74.4 percent to 85 percent, but the health insurance coverage rates in the private sector declined from 64.4 percent to 61.4 percent (See Figure 7).

During most of the 1990s, the United States enjoyed a thriving economy marked by a low unemployment rate. This strong economic growth was having positive effect on employment-based health insurance over all non-elderly. But among the private sector, the coverage continues declined.

Figure 7: Coverage of employees with employment-based health insurance among public and private sector, 1995-2000



Data source: Medical Expenditure Panel Survey Insurance component.
The percentage is calculated by total number of employees with employment-based health insurance divide by total number of employees in public (private) sector.

In sum, since 1994, the employment-based health insurance coverage among the overall population and non-elderly Americans stopped its decline and increased until 2000. The most part of the increase was due to the fact that more children got health insurance through their parents; there was a 7.5 percentage increase among children covered by employment-based health insurance. Meanwhile, among the working adults, there was a 2.3 percentage increase in coverage. But the situation among the public and private sector were different. The public sector had nearly 10 percentage increase of coverage which offset the decrease of coverage in private sector. It is surprising that the coverage for private- sector workers, who are the bulk of population that benefits from employment-based health insurance, kept declining under the strong economy. According to previous studies, they concluded that the cost of health insurance and changes in labor market would have an impact on the employment-based coverage. During 1994-2000, the health insurance cost was relatively stable, and the labor market with low unemployment rate. Why did the proportion of private sector employees who are covered by the health insurance decline? As I noted above, besides the economic factors, coverage by employment-based health insurance is the result of a sequence of steps: 1) the employer must offer health insurance as a fringe benefit to at least some employees, 2) the employee must be eligible for the coverage, and 3) the employee must elect to be covered. I analyze each of these steps in turn. I therefore proceed to my analysis of exactly which elements of coverage are causing the decline in the private sector.

DECLINE OF COVERAGE RATE IN PRIVATE SECTOR

To better understand the mechanics behind the declining coverage trend among private sector, rates of coverage can be broken into three steps: whether the employer offers coverage, whether the employee is eligible for coverage, and finally, whether eligible employees take up coverage. I will focus on each of them in turn in order to understand the decline in health insurance coverage among private sector employees. Because the annual MEPS begun in 1996, the data used for my study is available from 1996 till present. I choose the five year data (from 1996 to 2000) of offering rate, eligibility rate and take-up rate to process my analysis.

The Offer Rate

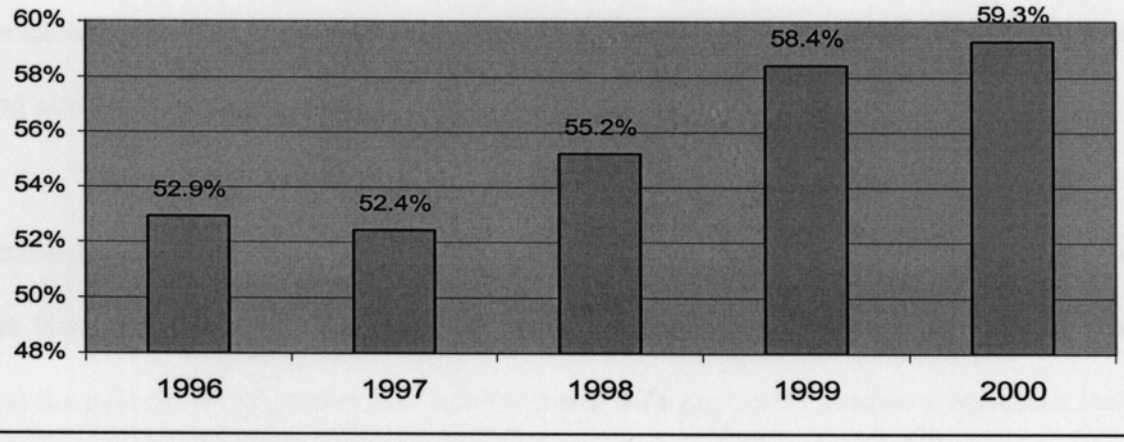
My analysis of the offer rate proceeds in two steps. First I examine the data at establishments' level. Looking at employers' responses to the question about how often do firm change their compensation package with regard to health insurance, either adding or dropping coverage? Then I turn to an analysis on the employees' side, using their responses to the question about whether their employers offer health insurance to any employees in the firm.

1) Establishment Analysis

The MEPS survey asked employers whether the establishment in question had a health insurance program for employees. Nationwide, the higher percent of private-sector establishments offered health insurance from 1996 to 2000 (See Figure 8). In 1996, among all establishments, only 52.9 % claimed that they offer health insurance program

to at least one employee, this rate increased to 59.3 %. This offer rate varies across industries and establishment size, establishment age, and other categories.

Figure 8: Percentage of Establishment offering health insurance plan, 1996-2000



Data source: Medical Expenditure Panel Survey Insurance component

The likelihood that an establishment will offer health insurance benefits to employees varies considerably across industries (See Table 2).

Table 2: Percent of Establishments Offer Health Insurance by Industry

	1996	1997	1998	1999	2000	Change
Agriculture	29.00%	21.60%	28.10%	29.30%	30.90%	1.90%
Mining	67.70%	42.50%	83.10%	68.90%	70.00%	2.30%
Construction	40.10%	40.40%	43.10%	48.80%	47.10%	7.00%
Manufacturing	70.90%	68.40%	71.90%	76.90%	77.70%	6.80%
Transportation	58.20%	59.10%	64.40%	67.50%	67.60%	9.40%
Wholesale Trade	67.80%	65.60%	69.60%	71.00%	71.20%	3.40%
Retail Trade	53.20%	53.60%	54.90%	59.00%	65.30%	12.10%
Professional Service	62.70%	62.30%	64.40%	68.30%	70.40%	7.70%
Other Services	49.80%	50.50%	53.50%	56.60%	61.00%	11.20%

Data source: Medical Expenditure Panel Survey Insurance component

Nationwide, the manufacturing industry had the highest percent of establishments offering health insurance to their employees, followed by mining industry and whole trade industry. From 1996-2000, five industry groups showed a statistically significant increase of offer rate – manufacturing, transportation, retail trade, finance; insurance and services. Construction and agriculture had small growths in the establishments' offer rate, and also below national average level.

Table 3 explores the link between establishment size and the likelihood that an establishment will offer a health insurance program to employees. The smaller the size, the lower the percent of establishments offer health insurance plan to their employees. But the percentage of smaller size establishment offering health insurance increased most rapidly.

Table 3: Percent of Establishments Offer Health Insurance by Size of Establishment

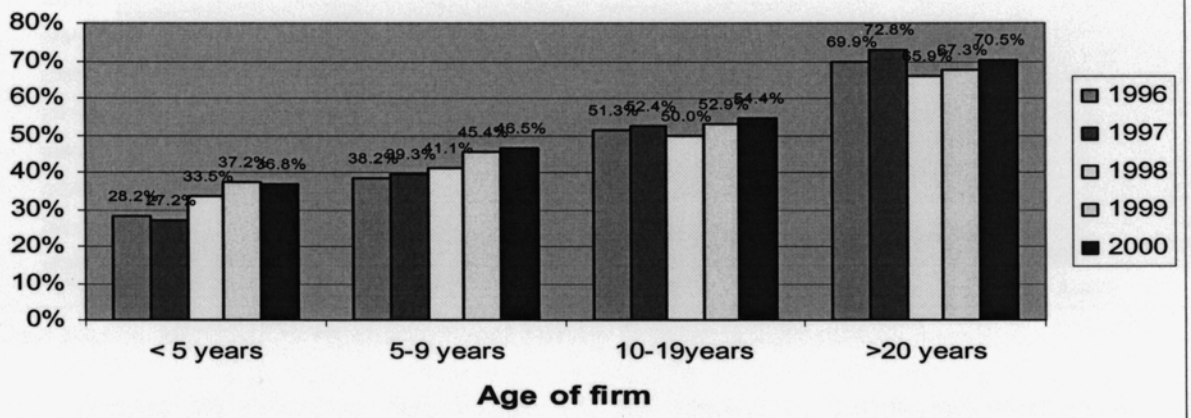
	1996	1997	1998	1999	2000	change
<10 workers	34.20%	32.90%	35.90%	39.30%	39.60%	5.40%
10-24	64.90%	63.50%	66.70%	69.90%	69.30%	4.40%
25-99	80.80%	82.70%	83.80%	85.30%	84.50%	3.70%
100-999	92.70%	93.80%	94.10%	95.20%	95.00%	2.30%
>1000	96.70%	98.20%	99.20%	99.10%	99.20%	2.50%

Data source: Medical Expenditure Panel Survey Insurance component

Figure 9 notes that the offer rate also varies by the age of firms. The pattern occurred during 1996 to 2000 was increasing overall. One exception is in older firms (20 or more years old), the establishments in such firm offering health insurance declined first then increased to exceed the level in 1996. However, despite some dip from 1996 to

1999, establishments in older firms still had a larger percent of establishments offering insurance than establishments in newer firms.

Figure 9: Percent of private sector establishments offering health insurance, by age of firm



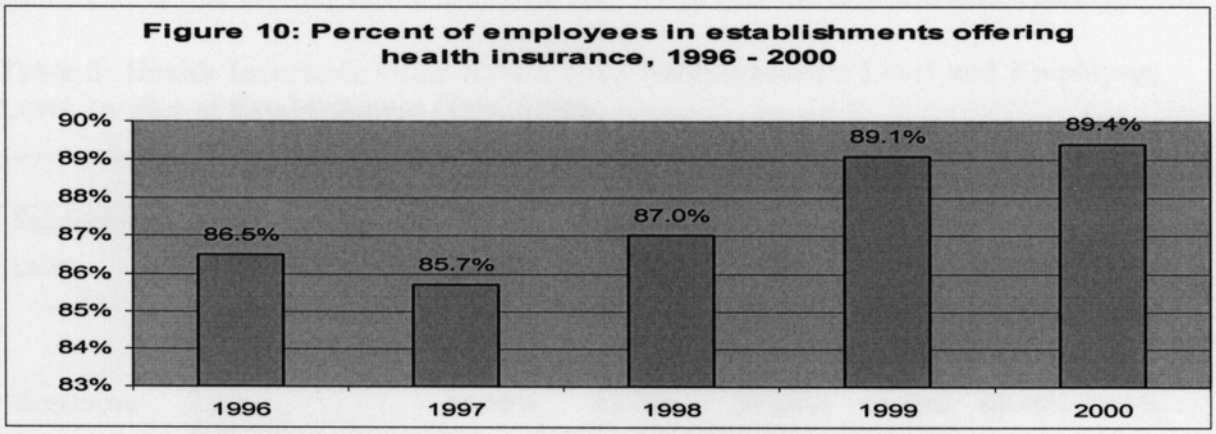
Data source: Medical Expenditure Panel Survey Insurance component

Generally, the same trend toward increasing offer rates appeared regardless firm size, industry, type of employee, or other establishment characteristics. We can not directly address the question of how much of the decline in employment-based health insurance access and coverage rate is due to changing compensation arrangements offered by firms, rather than to movements of workers across firms with fixed compensation. However, MEPS also allow me to look at an alternative perspective, percent of employees who worked for establishments offering health insurance.

2) Employee Analysis

The overall percent of employees who worked in private sector establishments that offered health insurance increased from 86.50% in 1996 to 89.40% in 2000 (See

Figure 10). There were some exceptions to this trend for specific establishment characteristics.



Data source: Medical Expenditure Panel Survey Insurance component

Among all industries, See Figure 13, the percent of employees working in establishments offering health insurance also increased from 1996 to 2000, while compared with the percent of all establishments which offer health insurance, the increase was not so significant. For example, manufacturing, the increase in Figure 9 is 6.8 %, while in Table 4 is 2.5 %.

Table 4: Percent of Employee in Establishments Offering Health Insurance, by Industry (1996-2000)

	1996	1997	1998	1999	2000	change
Agriculture	60.10%	50.50%	61.40%	59.60%	68.10%	8.00%
Mining	94.50%	81.60%	94.70%	95.90%	97.30%	2.80%
Construction	73.70%	70.00%	72.40%	77.30%	79.40%	5.70%
Manufacturing	94.80%	95.50%	96.10%	97.30%	97.30%	2.50%
Transportation	91.10%	91.70%	93.30%	95.20%	93.00%	1.90%
Wholesale Trade	91.60%	91.30%	93.10%	93.20%	93.50%	1.90%
Retail Trade	81.30%	81.20%	81.90%	85.10%	90.00%	8.70%
Professional Service	92.40%	92.30%	93.50%	94.70%	95.70%	3.30%
Other Services	85.10%	84.30%	85.10%	87.90%	91.50%	6.40%

Data source: Medical Expenditure Panel Survey Insurance component

As the offer rate in establishment level, the percent of employees working in establishment that offering health insurance also varies with the firm size (See Table 5).

Table 5: Health Insurance Offer Rate among Establishments Level and Employees Level, by Size of Establishment (1996-2000)

		1996	1997	1998	1999	2000	change
Establishment	All	52.9%	52.4%	55.2%	58.4%	59.3%	6.4%
Level	< 50 employees	41.7%	40.4%	43.7%	47.1%	47.2%	5.5%
	> 50 employees	93.9%	95.6%	96.3%	96.9%	96.8%	2.9%
Employee	**All**	**86.50%**	**85.70%**	**87.00%**	**89.10%**	**89.40%**	**2.9%**
Level	**< 50 employees**	**62.30%**	**62.30%**	**64.70%**	**67.60%**	**67.80%**	**5.5%**
	> 50 employees	**97.10%**	**96.60%**	**97.50%**	**98.30%**	**98.10%**	**1.0%**

Data source: Medical Expenditure Panel Survey Insurance component

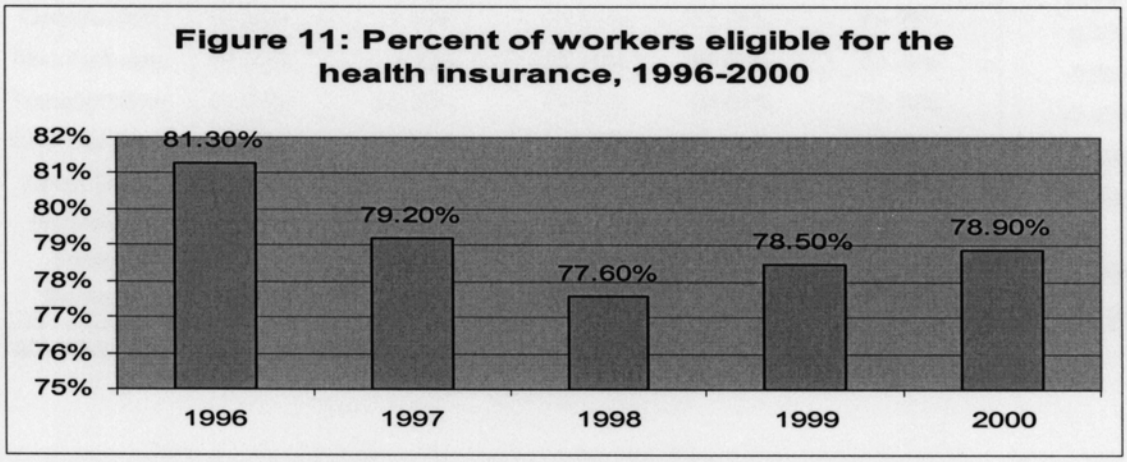
The percent of employees who work in establishments offering health insurance increased from 1996 to 2000 (from 86.5% to 89.4%). The workers in larger size firm are more likely to have been offered a health insurance plan. While during the economic boom, the increase of offer rate among employee level in smaller firms was more significant than those in larger firms (a 5.5 percent increase for workers in smaller firms, compared to a 1.0 percent increase for workers in larger firms). But compared to the overall increase of offer rates at the establishment level which is 6.4 percent, the overall offer rate at employee level increased only 2.9 percent.

These differences imply that under economic boom, more firms claimed that they offer health insurance plan to their employees, but it did not mean that all employees can benefit from the increase which brought more access to employees to get health insurance. The offer rate among all employees working in establishments that offer health

insurance is a more precise measurement. I will use this as an important explanatory factor in my following decomposition model.

The Eligibility Rate

Given that coverage rates fell during 1996- 2000 while offer rate increased, it must be the case that eligibility rate or take-up rate fell over this period. I present an examination of eligibility conditional on offering. Figure 11 summarizes the percent of employees who were eligible for the health insurance provided by their employers. We can see the portion of workers who actually were eligible for employment-based health insurance coverage fell. In 1996, 81.3 % workers were eligible for health insurance plan offered by their employers. This rate fell to 78.9 % in 2000.



Data source: Medical Expenditure Panel Survey Insurance component

Table 6 and Table 7 present more figures on average eligibility, providing respectively a breakdown of the rate by industry and the size of establishment. As we can see in Table 6, employees in agriculture, retail trade and service industries are less likely to be eligible for health insurance provided by their employers. With the exceptions of agriculture, construction and retail trade industries, the eligible rate of employees who are

eligible for health insurance decreased among most industries from 1996 to 2000. Mining and transportation industries experienced the largest decrease in the eligible rate by 6 percent (from 98.3 % to 92.3%) and 7.4 percent (from 91.8% to 84.4%). From Table 7, we can see the proportion of employees who are eligible for health insurance trough employment decreased regardless the size of establishments. For establishments in firms with 100 to 999 workers, the figures were 81.9% in 1996 to 77.4% in 2000, deceased by 4.5 percent, following by the 3.8 percent decrease in firms with 25 -99 workers. For establishments in firms with more than 1000 workers, the figure decreased by 1 percent.

Table 6: Average Percent of Establishment Employees Eligible for Health Insurance by Industry

Industry	1996	1997	1998	1999	2000	change
Agriculture	74.80%	71.30%	74.10%	72.60%	75.00%	0.20%
Mining	98.30%	97.60%	94.10%	92.90%	92.30%	-6.00%
Construction	76.80%	77.80%	75.50%	75.70%	79.00%	2.20%
Manufacturing	93.10%	91.90%	92.00%	91.80%	92.30%	-0.80%
Transportation	91.80%	89.20%	84.50%	88.00%	84.40%	-7.40%
Wholesale Trade	88.60%	87.30%	85.60%	88.80%	88.50%	-0.10%
Retail Trade	63.60%	62.50%	62.90%	62.10%	67.40%	3.80%
Professional Service	92.70%	87.60%	86.00%	89.40%	89.00%	-3.70%
Services	78.70%	75.90%	73.00%	74.70%	74.00%	-4.70%

Data source: Medical Expenditure Panel Survey Insurance component

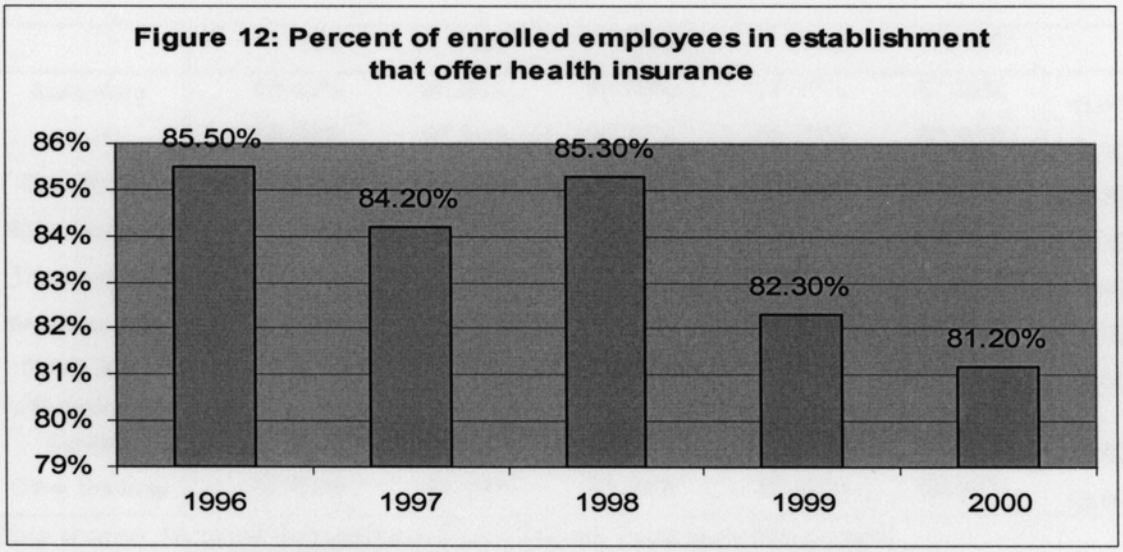
Table 7: Average Percent of Establishment Employees Eligible for Health Insurance by Size of Establishment

	1996	1997	1998	1999	2000	change
<10 workers	85.20%	81.00%	78.10%	80.60%	81.60%	-3.60%
10-24 workers	81.80%	81.00%	76.00%	79.00%	78.50%	-3.30%
25-99 workers	79.00%	77.20%	74.00%	77.90%	75.20%	-3.80%
100-999 workers	81.90%	76.90%	75.20%	76.40%	77.40%	-4.50%
>1000	81.10%	80.30%	79.80%	79.10%	80.10%	-1.00%

Data source: Medical Expenditure Panel Survey Insurance component

The Take-Up Rate

Within private sector establishments offering health insurance, the overall take-up rate (the fraction of eligible workers who choose to be covered by health insurance by their employer) appeared to decline from 85.5 % in 1996 to 81.2% in 2000 (See Figure 12).



Data source: Medical Expenditure Panel Survey Insurance component

Figures on the average percent of those eligible who enrolled in an establishment's health insurance plan by industry and size of establishment are presented in Table 8 and Table 9. Table 8 presents the decline trend of workers taking up health insurance appeared among all industry except the manufacturing industry with a slight increase by 0.1 percent. The proportion of workers in trade and service industries being not willing to take up the health insurance decreased significantly than other industries. The take-up rate in retail trade industry decreased by 7.6 percent which is higher than the overall decline across all industries (see Figure 15), which is 4.3 percent (from 85.5% to 81.2%). Table 9 shows that more proportion of workers declining to take up health insurance plan offered by their employers regardless the size of establishments. The

situation is similar to eligibility rate analysis, the take up rate of workers in firms with 100-999 employees decreased significantly than others by 5.8 percent, following is the firms with 25-99 employees, the decreased rate is 5.3 percent.

Table 8: Average Percent of Enrolled Employees in Establishments that Offer Health Insurance by Industry

	1996	1997	1998	1999	2000	
Agriculture	88.40%	86.60%	78.00%	77.60%	87.50%	-0.90%
Mining	90.90%	97.50%	95.20%	96.70%	88.80%	-2.10%
Construction	82.90%	81.40%	80.40%	81.00%	80.70%	-2.20%
Manufacturing	88.70%	89.60%	91.30%	90.30%	88.80%	0.10%
Transportation	89.10%	91.80%	91.50%	86.50%	87.70%	-1.40%
Wholesale Trade	90.00%	89.90%	90.80%	87.10%	87.00%	-3.00%
Retail Trade	80.30%	72.60%	79.30%	68.80%	72.70%	-7.60%
Professional Services	88.40%	87.30%	85.10%	86.10%	85.60%	-2.80%
Other Services	83.00%	82.10%	81.90%	80.40%	80.00%	-3.00%

Data source: Medical Expenditure Panel Survey Insurance component

Table 9: Average Percent of Enrolled Employees in Establishments that Offer Health Insurance by Size of Establishment

	1996	1997	1998	1999	2000	
<10 workers	81.90%	82.70%	82.80%	82.30%	79.80%	-2.10%
10-24	79.90%	80.60%	79.00%	79.00%	79.30%	-0.60%
25-99	82.50%	81.20%	78.70%	79.10%	77.20%	-5.30%
100-999	85.90%	83.10%	82.80%	82.50%	80.10%	-5.80%
>1000	87.70%	86.60%	89.40%	83.70%	83.10%	-4.60%

Data source: Medical Expenditure Panel Survey Insurance component

Decomposing the Decline in Health Insurance Coverage

If the health insurance only can be purchased by employees through their own employers ("own coverage"), the health insurance coverage is composed only by the three important components. Henry S. Farber (1998) defined the employment-based health insurance coverage rate by the formula:

$$C_t = O_t * E_t * T_t \qquad (1)$$

Where C_t is the coverage rate in period t, O_t is the offering rate in period t, E_t is the eligibility rate conditional on offering rate, and T_t is the take-up rate conditional on offering and eligibility rate in period t. However workers can be covered by employment-based health insurance through their own employer, through a spouses' employer. Workers who get health insurance form their spouses do not need take up health insurance plan from her/his employer, even the employer offers health insurance plan, and also the worker eligible for the plan. Farber's definition masks the difference in the sources of that coverage. Coverage rate is affected by both the rate of workers through their own employers and rate of workers as dependent. Here I will define the coverage rate among working adult is:

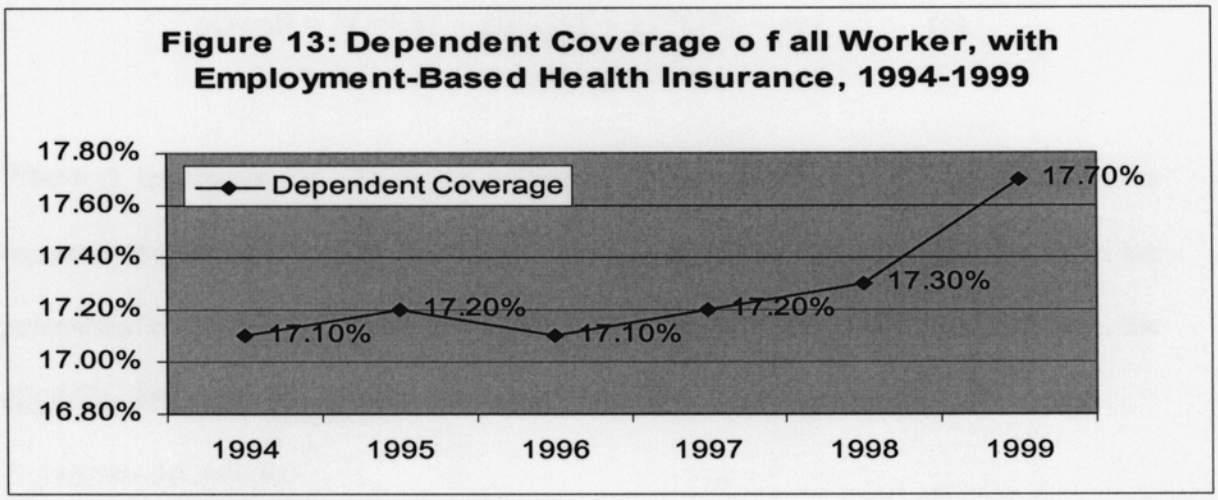
$$C_t = \text{Own Coverage} + \text{Dependent Coverage} \qquad (2)$$

Here own rate $= O_t * E_t * T_t$, so finally the coverage rate can be rewritten as:

$$C_t = O_t * E_t * T_t + D_t \qquad (3)$$

In order to explore the decline coverage among the private sector, I should analysis all these determinants' decomposition for the coverage. Unfortunately, the

detailed data of dependent rate is insufficient, but I find a trend for all workers of dependent health insurance rate from 1995-1999. (See Figure 13)



Date source: Employee Benefits Research Institute estimates from the March Current Population Survey

During the study time period, the fraction of all workers with the dependent health insurance coverage increased. I have not found detailed data of dependent coverage for private sector workers year by year. But the data in Henry Farber and Helen Levy's paper indicate that dependent coverage rate in 1993 is 10.7% and in 1997 is 10.9%. Since then, I may conclude that the decline of the employment-based health insurance of private sector workers was mainly contributed by the decline of "own coverage" part, and the dependent coverage should offset some decline from own name coverage. Then I can turn to focus on decomposing the decline in the "own coverage". The "own coverage" is written as "$O_t * E_t * T_t$", the change in coverage (from 1996 to 2000) can be written as:

$$OwnR_{00} - OwnR_{96} = (O_{00}-O_{96})\,E_{96}T_{96} + (E_{00}-E_{96})O_{96}\,T_{96} + (T_{00}-T_{96})O_{96}\,E_{96} + \text{covariance term}, \quad (5)$$

or in more compact nation as:

$$\Delta OwnR = \Delta O*E8T + \Delta E*O*T + \Delta T*O*E + cov \qquad (6)$$

Where Δ represents the difference between 1996 an 2000, and unsubscripted terms represent the average level in 1996. The first three terms at right side of the equation are percentage changes in the "own coverage" change due to changes in the offering rate, the eligibility rate and take up rate respectively. [4]

1. Analysis by industry

The analysis of the decomposition in equation (6) using data for all private sector workers classified by industry and firm size are presented in Table 10.

For workers in mining, transportation, wholesale trade, professional service and other service industries, the "own coverage" declined. These declines contributed the overall decrease of coverage across industries in private sector. In these industries, both eligibility and take up rate decreased. So I would conclude that the eligibility and take up rate had great impact on the decline of coverage.

The elements of the decomposition for all workers are presented in the far right-hand column of the fourth panel in table 10. A similar decomposition performed separately for each industry group of workers is presented in the relevant columns of fourth panel of Table 10.

[4] The covariance term is$\Delta O*\Delta E*T + \Delta O*E*\Delta T + O*\Delta E*\Delta T + \Delta T*\Delta O*\Delta E$, this term represents the share of the coverage change in "own rate" coverage due to the interaction of changes in offering, eligibility and take up.

Table 10: Decomposition of decline in health insurance own coverage, Private sector workers, by industry

1996

Year	Agriculture	Mining	Construction	Manufacturing	Transportation	WholeS Trade	Retail Trade	Professional Service	Service	Total
Offering	60.10%	94.50%	73.70%	94.80%	91.10%	91.60%	81.30%	92.40%	85.10%	86.50%
Eligibility	74.80%	98.30%	76.80%	93.10%	91.80%	88.60%	63.60%	92.70%	78.70%	81.30%
Take-up	88.40%	90.90%	82.90%	88.70%	89.10%	90.00%	80.30%	88.40%	83.00%	85.50%
Own Coverage	39.74%	84.44%	46.92%	78.29%	74.51%	73.04%	41.52%	75.72%	55.59%	60.13%

2000

Year	Agriculture	Mining	Construction	Manufacturing	Transportation	WholeS Trade	Retail Trade	Professional Service	Service	Total
Offering	68.10%	97.30%	79.40%	97.30%	93.00%	93.50%	90.00%	95.70%	91.50%	89.40%
Eligibility	75.00%	92.30%	79.00%	92.30%	84.40%	88.50%	67.40%	89.00%	74.00%	78.90%
Take-up	87.50%	88.80%	80.70%	88.80%	87.70%	87.00%	72.70%	85.60%	80.00%	81.20%
Own Coverage	44.69%	79.75%	50.62%	79.75%	68.84%	71.99%	44.10%	72.91%	54.17%	57.28%

change, 1996-2000

Year	Agriculture	Mining	Construction	Manufacturing	Transportation	WholeS Trade	Retail Trade	Professional Service	Service	Total
Offering	8.00%	2.80%	5.70%	2.50%	1.90%	1.90%	8.70%	3.30%	6.40%	2.90%
Eligibility	0.20%	-6.00%	2.20%	-0.80%	-7.40%	-0.10%	3.80%	-3.70%	-4.70%	-2.40%
Take-up	-0.90%	-2.10%	-2.20%	0.10%	-1.40%	-3.00%	-7.60%	-2.80%	-3.00%	-4.30%
Own Coverage	4.95%	-4.69%	3.70%	1.46%	-5.68%	-1.05%	2.58%	-2.81%	-1.42%	-2.85%

Decomposition, within-group

Year	Agriculture	Mining	Construction	Manufacturing	Transportation	WholeS Trade	Retail Trade	Professional Service	Service	Total
Offering	5.29%	2.50%	3.63%	2.06%	1.55%	1.52%	4.44%	2.70%	4.18%	2.02%
Eligibility	0.11%	-5.15%	1.34%	-0.67%	-6.01%	-0.08%	2.48%	-3.02%	-3.32%	-1.77%
Take-up	-0.40%	-1.95%	-1.25%	0.09%	-1.17%	-2.43%	-3.93%	-2.40%	-2.01%	-3.02%
Covariance	-0.04%	-0.09%	-0.03%	-0.02%	-0.05%	-0.05%	-0.41%	-0.09%	-0.27%	-0.07%
Total	4.95%	-4.69%	3.70%	1.46%	-5.68%	-1.05%	2.58%	-2.81%	-1.42%	-2.85%

The decomposition for all workers shows that that declines in eligibility and take-up rate contributed to the overall decline in coverage. Eligibility rate contributed 1.77 percent decline in coverage and the take up rate contributed the most decline in coverage by 3.02 percent. These two factors were offset by an increase in the offer rate that reduced the overall decline in coverage by about 2.02 percent.

Among private sector, workers in agriculture, construction, manufacturing and retail trade did not experience decline of heath insurance coverage purchased through their own employments. Actually, "own coverage" in agriculture, construction, retail trade grew due to increased offer rate and eligibility, while in manufacturing, the growth in "own coverage" was most due to the increased offer rate, and slightly affected by increased take up rate.

In order to know the contribution of change in each component for a particular industry the overall change in coverage, employment share should be noted. During these time period, as we can see in the Table11, more workers shifted to service industries which experienced significant decline of coverage.

Table 11: Employment share by industry, 1996 -2000

	1996	2000	Coverage change	Employment share change
Agriculture	1.73%	1.74%	+4.95%	0.01%
Mining	0.58%	0.49%	-4.96%	-0.09%
Construction	5.52%	6.02%	+3.70%	0.50%
Manufacturing	18.26%	16.74%	+1.46%	-1.52%
Transportation	6.03%	6.17%	-5.68%	0.14%
Wholesale Trade	6.51%	6.36%	-1.05%	-0.15%
Retail Trade	21.46%	21.18%	+ 2.58%	-0.28%
Professional Services	6.70%	6.74%	-2.81%	0.04%
Other Services	32.96%	34.23%	-1.42%	1.27%

Data source: Bureau of Labor Statistics

2. Analysis by size of establishment

I also perform similar analyses for workers in different size of establishment (less than 10 employees, 10 to 25 employees, 25 to 99 employees, 100- 999 employees and more than 1000 employees). Table 11 shows the analysis. In private sector, health insurance coverage for workers in small size firms increased due to a significant increase in the offer rate, even though their eligibility and take up rate decreased slightly. This is consistent with Fronstin's finding (2001).In 2000, roughly three-quarters of small employers offering health insurance compared with one-third of small employers offered health insurance prior to 1993. The increased offer rate brought more access to employees in small size firms to get employment-based health insurance. While in larger firms, the situation is different. For firms with employees more than 25 had a decline in health insurance coverage for their employees. This decline contributed the overall decline in coverage for private sector workers. Firm with 100 to 999 employees experienced the most declines in coverage by 7.14 percent, following by mid-size firms.

To summarize the results I have presented so far: I find that there was a decline in health insurance coverage in private sector from 1996 to 2000. By industry, mining, transportation, wholesale trade, professional service and other service industries contributed this decline. By firm size, larger firms contributed this decline. The overall rate at which workers are offered insurance grew during the economic boom, while eligibility declined and take-up rates declined. The factors contributing to the decline in health insurance were declines of eligibility and take-up rate, especially, the take –up rate which reduced employees' willingness to take up the health insurance program when they were eligible for get the program and also their employers offer it.

Table 12: Decomposition of decline in health insurance coverage (own rate), Private sector workers, by firm size

1996

	<10	10 to 24	25 to 99	100 to 999	> 1000	Total
Offering	47.30%	69.70%	85.90%	95.90%	98.80%	86.50%
Eligibility	85.20%	81.80%	79.00%	81.90%	81.10%	81.30%
Take-up	81.90%	79.90%	82.50%	85.90%	87.70%	85.50%
Own Coverage	33.01%	45.55%	55.99%	67.47%	70.27%	60.13%

2000

	<10	10 to 24	25 to 99	100 to 999	> 1000	Total
Offering	53.20%	75.20%	88.40%	97.30%	99.40%	89.40%
Eligibility	81.60%	78.50%	75.20%	77.40%	80.10%	78.90%
Take-up	79.80%	79.30%	77.20%	80.10%	83.10%	81.20%
Own Coverage	34.64%	46.81%	51.32%	60.32%	66.16%	57.28%

change, 1996-2000

	<10	10 to 24	25 to 99	100 to 999	> 1000	Total
Offering	5.90%	5.50%	2.50%	1.40%	0.60%	2.90%
Eligibility	-3.60%	-3.30%	-3.80%	-4.50%	-1.00%	-2.40%
Take-up	-2.10%	-0.60%	-5.30%	-5.80%	-4.60%	-4.30%
Own Coverage	1.64%	1.26%	-4.67%	-7.14%	-4.11%	-2.85%

Decomposition, within-group

	<10	10 to 24	25 to 99	100 to 999	> 1000	Total
Offering	4.12%	3.59%	1.63%	0.98%	0.43%	2.02%
Eligibility	-1.39%	-1.84%	-2.69%	-3.71%	-0.87%	-1.77%
Take-up	-0.85%	-0.34%	-3.60%	-4.56%	-3.69%	-3.02%
Covariance	-0.24%	-0.16%	-0.01%	0.13%	0.02%	-0.07%
Total	1.64%	1.26%	-4.67%	-7.14%	-4.11%	-2.85%

The Underlying Causes to the Decline of Eligibility Rate and Take-Up Rate

The strongest determinants of eligibility are the eligibility standards for variation of employment, and the waiting time for new employees before they are deemed eligible for the health insurance provided by their employers.

Health insurance benefits coverage within an establishment may be limited to certain workers. For example, health care benefit eligibility may be extended to full- time workers, but not to part-time workers. According to MEPS data, from 1996 to 2000, with low unemployment rate, the number of full-time and part-time workers in private sector increased dramatically. Full- time workers increased by 6.9 %, and part-time workers increased by 13.94%. The proportion of part- time workers in private sector grew from 18.06% to 19.01%. Most of these part-time workers are not eligible for health benefit offered by their employers. Less frequently, benefits may be extended to salaried workers, but not hourly workers.

For employees who are in occupations eligible for the coverage, other restrictions may apply. According to Bureau Labor Statistics (BLS) data from 1994, 44 % of full-participants in health insurance plans were subject to an eligibility requirement for waiting time, typically 1 to 3 months. During this waiting time, coverage may not be available at all. The requirements are getting more restricted. More lately, the waiting time in some establishments is getting longer to 4 months even more. One of the reasons extend the waiting time was to retain their new employees. From 1994 CPS data, for those workers who were not eligible for the coverage, 25 percent workers cited they did not work for their employer long enough to qualify for benefits as the reason why they were not eligible. In 1997, more than 27 percent had not worked long enough to qualify

for the benefits. As mentioned above, during economic booms, due to tight labor market, more employers claimed that they offer health insurance plan to their employees, but they could impose more restrictions to the plans. These restrictions would reduce the eligibility rate among private sector.

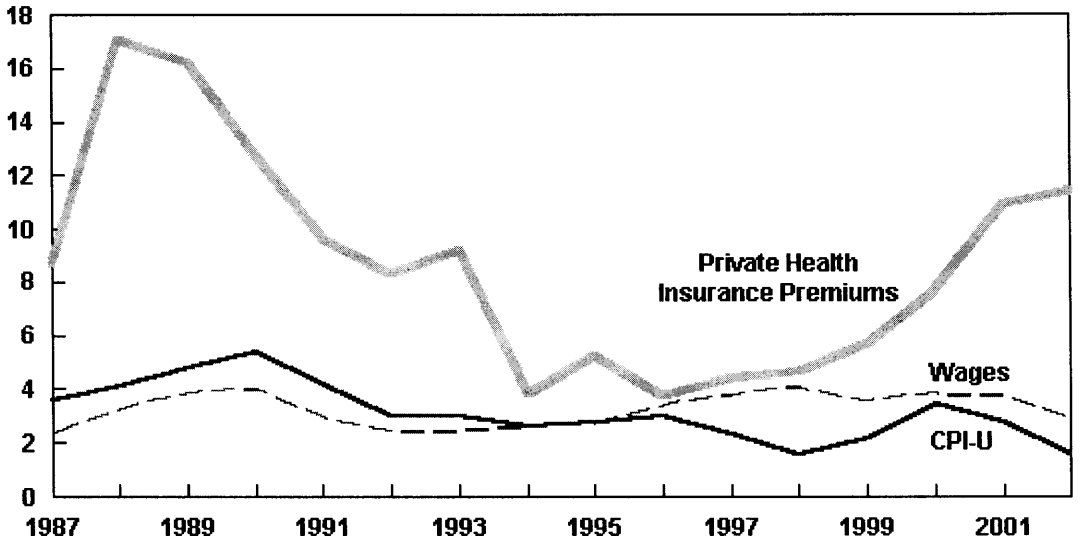
The fact that the take-up declined among private sector workers had the most impact on the decline of the overall coverage rate. This leads me to wonder whether some of the coverage decline reflects a shift from one source to another.

So far I have considered only workers who are covered by group health insurance provided by their employers. Workers can also obtain the health insurance by directly purchasing the non-group insurance or low wage workers can benefit from Medicaid program provided by government. Let's go back to Figure 1. We can see during time period 1996- 2000, the private non-group insurance coverage kept constant around 7 % level, and the Medicaid coverage declined. In addition, as mentioned above, workers can obtain health insurance as dependents in a spouse's employment-based health insurance. During the time, the dependent's coverage did increased. While this is not the main reason for workers declined to take-up health insurance through their own employment.

Data from the February 1997 Contingent Workers Supplement to the Current Population Survey examined why workers who were eligible for health insurance through their employers declined coverage. Nearly 68 % uninsured workers cited its high cost as their reason for rejecting it. Few uninsured workers (only 5 percent) noted that health insurance because they preferred higher wages and they did not need insurance, this may be possible for some young. Even most of this study time; the health cost inflation had been virtually nonexistent (see Figure 3). Compared with time periods from 1987 to 1993

and after 2000, the health insurance premium health insurance premiums grew at a more moderate pace beginning at 1993 until accelerating again in 1999, and declined in 1996(See Figure 14). However, a premium keeping constant or even declining does not necessarily indicate a lower cost paid by employees. The total health insurance premium is shared by employers and employees. If employers switched more share to employees, even total premium declines, employees may pay more than before. Here we need look at how the employee's health insurance contribution changed during study time period. Jonthan Gruber and Robin Mcknight explore that from 1982 to 1998. The share of premium paid by workers kept increasing. The fraction of workers receiving employer-provided health insurance who paid no premium fell from 44% to 28 % between 1982 and 1998. The average annual employees' contribution toward health insurance for employee-only coverage increased from 17.2% in 1996 to 18.3 % in 2000. The authors identify several reasons that employers had switched premium share to employee. Employers may have increase the employee's share of premium to encourage them to choose low-cost health insurance option, encourage them to switch health insurance trough a spouse's employer or through Medicaid. Finally, the authors investigate that the effect of decline of income tax rates, which reduce the subsidy to employer-provided insurance.

Figure 14: Annual Percentage Change in Private Health Insurance Premiums, Wages, and the Consumer Price Index, 1987 to 2002



Source: Data on health insurance premiums are from the Center for Medicare and Medicaid Services' national health accounts, data on wages and the CPI-U are from the Department of Labor, Bureau of Labor Statistics.
Note: CPI-U = consumer price index for all urban consumers.

CHAPTER 4

CONCLUSION AND POLICY IMPLICATIONS

During the resurgent economy of the 1990s, employment-based health insurance coverage in the overall American non-elderly population had stopped its erosion trend and rebounded by nearly 5 percentage points. This increase was mostly explained by the higher proportion of children and public sector working adults who obtained coverage. While in the private sector, the decline trend of employment-based health coverage continued, in spite of the low unemployment rate and moderate health insurance premium. The decline did not appear in all industries. Workers in mining, transportation and utility, whole-sale trade and service industries experienced the decline. By firm's size, workers in mid-size firms experienced the most declines. Moreover, I find that the declining coverage rate among private workers was contributed to the decline of "own coverage", while dependent coverage increased slightly.

A lower percentage of private sector workers received coverage from their employers, not because fewer employers offer coverage. In fact, during the time period 1996 to 2000, more establishments offered health insurance plan, and a higher percent of employees were working in establishments offering health insurance plan. Data from MEPS suggests that two factors are primarily responsible for declines in coverage. The first one is a decline in eligibility in mining, construction, transportation and utility, wholesale trade and service industries. The second factor is a decline of the take –up rate almost across all industries. Finally, I use the decomposition to find that how much eligibility rate and take – up rate account the decline of own- coverage for all workers in private sector. The results show that the decreasing take- up rate is the most determinant

for the decline of coverage. A higher contribution share that must be paid by employees reduced workers' willingness to take up employment –based health insurance. Decreased eligibility rate meanwhile contributed to the decline of coverage rate. Employers' restriction reduced the eligibility rate which limits workers access to employment-based health insurance

Until now, employment-based health insurance remains the most effective mechanism for pooling of health insurance risk in the private health insurance market. If employment-based health insurance continues its present decline, it will not only impact the health and well being of the increasing number of the uninsured, but also entail cost to government and the private insured. Furthermore, policymakers must make realistic policies to increase employment-based insurance, or transform or even replace the current health insurance system to increase the availability and utilization of private source of health insurance.

Previous studies are limited by the overall trends. During the economic boom, the overall increase trends masks the difference among varied population groups. Study the decrease trend among private –sector workers raise important issues for policymakers seeking effective ways to reverse the decreased trends, because private-sector workers are the bulk of the population who benefit from employment-based health insurance. Compared to previous studies of the probable factors leading to decline in coverage, some of my findings are consistent, like "structural change in labor market" – workers shift from good- producing industries into service industries; "increased use of part-time workers". My new findings are that higher premium share, decline of tax rate, and shift to other health insurance sources reduced workers' willingness to take up health

insurance benefits, thereby lead to the decline of coverage; longer waiting time required for new employees limit workers' eligibility for employment-based health insurance.

Previous study	My findings
increased cost of health insurance	increased premium share
structural changes in labor market	structural changes in labor market
falling real income	decline of income tax rates
the increased use of part-time workers	the increased use of part-time workers
small size firm	large size firm
the decline in unionization	shift to other health insurance sources
structural unemployment	variation of employment and waiting time

What public polices might increase the eligibility rate? Several incremental health care reforms could be considered based on my findings. One could be that if the federal government could mandate coverage for former workers under Consolidated Omnibus Budget Reconciliation Act (COBRA)[5], which could improve the portability of employment-based health insurance by limiting the waiting period before new workers become eligible for the benefits. Americans may have a number of different jobs throughout their work life. Workers who switch jobs often will lose employment-based health insurance, because eligibility requirements, especially a required waiting time, might be imposed to new employees. "COBRA requires employers to make health care benefits available to employees and dependents who have lost coverage because of certain qualified circumstances such as voluntary separation (quitting or retiring from

[5] Former workers pay 102 percent for the monthly cost of health insurance premium under COBRA to keep their health insurance plan provided by former employers.

job), layoff, divorce, and dependent children exceeding the age of eligibility."[6] Under COBRA, job-switcher may maintain coverage from their former employers until they are eligible for coverage through new employers. COBRA allows employers to charge the former employees or dependent up to 102 percent of the total premium. Since the cost of COBRA is so high for individuals, many workers do not take advantage of the opportunity. Less premium share or certain premium assistance for job-switcher may encourage more worker take this opportunity to maintain coverage.

Second could modify the existing nondiscrimination rules and increase the number of workers eligible for health insurance when it is offered. Access to coverage among those part-time and temporary workers who are outside traditional wage-and –salary workers is relatively limited. These workers accounted for nearly 15 percent of labor force. The nondiscrimination could be broadened to those workers working at least twenty hours per week. Such change could make 3.5 million additional workers eligible for employment-based health insurance.

As the gradually increased health insurance premium share paid by employees is the main factor leading the decline of take-up rate, policymakers are seeking effective ways to subsidize health insurance premium share, especially for low-income workers. Most uninsured population occurred among the poor and near-poor, the majority of uninsured is workers or lives in working families. The primary reason for this uninsured is that these low-wage workers are not qualified for Medicaid and meanwhile are less likely to take up the coverage due to high cost related to their wage. The Health Insurance Premium Payment (HIPP) program and State Children's Health Insurance Program

6 Wiatrowski, William J. (1995) Who Really Has Access to Employment-Provided Health Insurances? Source: Monthly Labor Review, June 1, 1995, Vol 118, Issue 6

(SCHIP) was enacted to provide premium share assistance on the part of states. HIPP program was enacted into law as part of the Omnibus Budget Reconciliation Act of 1990. Under the HIPP program, States could use their Medicaid funds to pay partial premium for employment –based health insurance on behalf of Medicaid-eligible individuals and their families. Congress had hoped that HIPP would expand employment-based health insurance, and keep families together in same health insurance plan. In 1997, SCHIP was enacted in premium assistance on the part of states. As part of SCHIP legislation, Stats could use SCHIP dollars to subsidize employment-based health insurance premium. To date, only six states have implemented these plans for premium share assistance: Maryland, Massachusetts, Mississippi, New Jersey, Virginia, and Wisconsin.

After five years of low inflation, the cost of health insurance has grown fast again. The take-up rate would tend to decline more. With the unemployment rate increasing, firms may not feel a need to offer health insurance to attract workers, so the offer rate would also fall. In fact, the employment-based health insurance coverage has declined again since 2000. How to reverse the decline trend would be a big challenge for policymakers, employers and workers.

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