

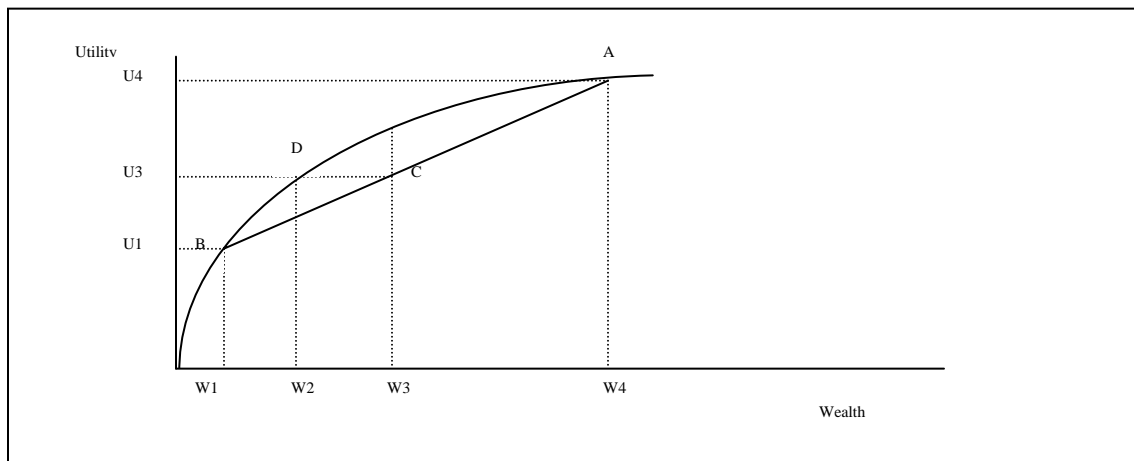
## Chapter 11 The Organization of Health Insurance Markets

This chapter deals with some of the specifics of insurance markets in the US – mainly the importance and effects of employer-provided health insurance.

### I. Loading Costs

Loading costs refer to the administrative costs of providing insurance. These costs are related to the numbers and types of customers and claims that the firm processes. Note that if the insurance industry is competitive (or something close), then these costs must be passed on to consumers or the firms will not be able to cover their costs and will go out of business. This has some implications for the types of things that will be covered by insurance contracts.

Recall that it is the certainty equivalent that allows the market for insurance to exist. This is the amount of expected wealth the consumer is willing to give up in order to avoid all risk:



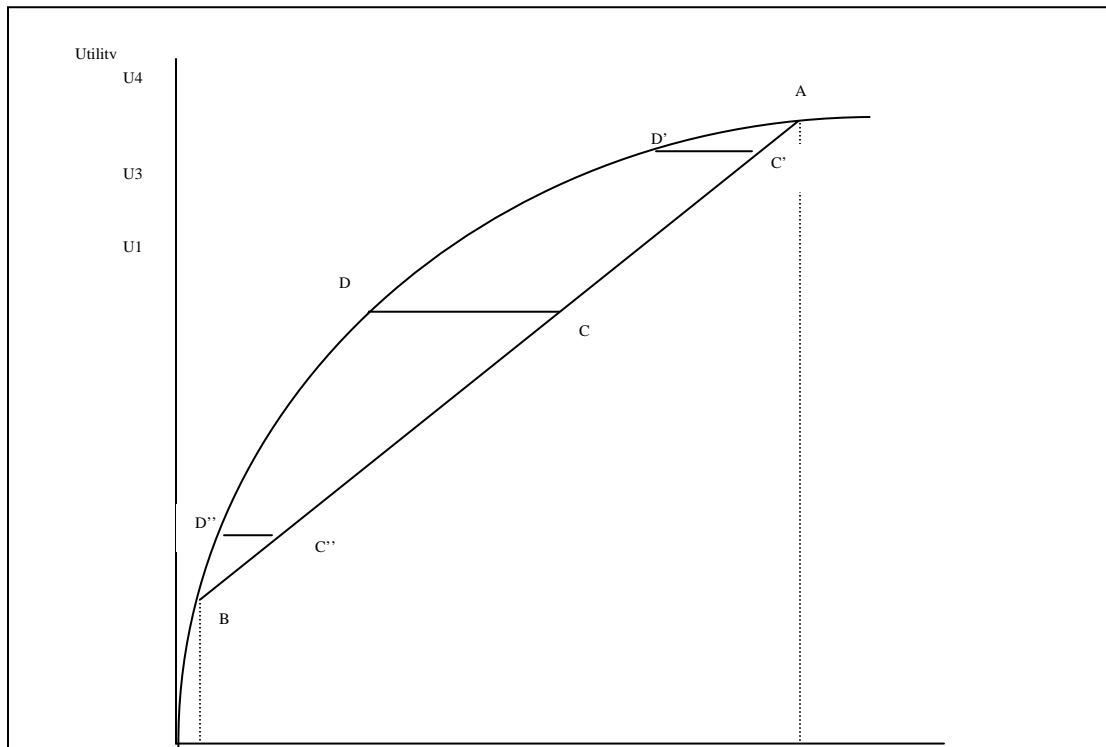
Here an individual who currently is at Point A with a wealth of  $W_4$  and utility of  $U_4$ , faces some risk of losing part of their wealth, and would end up at Point B with wealth  $W_1$  and Utility  $U_1$ . On average they would expect to be at Point C with wealth  $W_3$ . Expected utility is  $U_3$  (if they had  $W_3$  for SURE, they would be happier). Note that if they could have wealth  $w_2$  for sure, they would be at the same level of utility as  $W_3$  *on average*. So they would be willing to give up  $(W_3 - W_2)$  in wealth to eliminate the uncertainty.

The larger the certainty equivalent (CE) the more likely it is that an insurance market will exist. The maximum price the consumer will pay for insurance is  $W_4 - W_2$ . The amount  $W_4 - W_3$  covers the cost of medical care, what is left over is the CE. This must cover the firm's loading costs, plus allow for some "normal" return on their investment.

Events that have a really high or really low probability of occurring will have a low CE:

For example, in the diagram below (a blown up version of the above) if the Illness event has a high probability of occurring then the uninsured outcome will be at  $C''$  and the individual's CE will be the ray  $D''C''$ . Likewise if the illness event has a very low probability of occurring, then the individual will be at point  $C'$  and the individual's CE will be the ray  $D'C'$ . However, if the event has a "medium" probability of occurring, the individual will be at C and the CE will be DC.

Consumers will be willing to pay less for insurance to cover events that are highly likely or highly unlikely to happen.



For example, insurance for dental care tends to be much rarer than medical care. Most people know for sure that they will need to have their teeth cleaned twice a year (a point like C'' above), and there is a very small chance that an individual will have to have other dental work done (root canal, crowns, fillings, etc.). Thus there is not much risk to cover. Most individuals are better off saving their money for the rare dental events and plan to spend the money to get their teeth cleaned regularly. Firms that do offer dental benefits are typically doing so as a (tax free) benefit to their employees and is not really insurance against risk. Typically this benefit provides for routine care and a slight discount off of other procedures.

Also, everything else held constant, insurance markets will work better for "big" events than for "small" events. I don't think I need to draw it, but if the loss in wealth is large then the CE will also be large, whereas if the loss in wealth is small (point B in the above graph would be closer to point A) then the CE will also be small.

## II. Employer Provision of Health Insurance

Most people with insurance obtain it through their employer through either private insurance, Blue Cross and Blue Shield plans, managed care plans or self insured companies

In 2005 expenditures in health care were about \$1.66 trillion. Of this about 45 percent was paid with public funds and 55 percent was privately funded. This percentage has not changed much over the last 20 years: in 1980 public funds accounted for about 40 percent of expenditures.

Note that out of pocket payments have dropped dramatically (in %terms) from 1970 to 2005. in 1970 out-of-pocket payments accounted for about 40% of expenditures, by 200 or so, this dropped to 15%. Most of the shift going to private health insurance.

More detail is below in the table from the Centers for Medicare & Medicaid Services.

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf>

**Table 6 Personal Health Care Expenditures Aggregate, Per Capita Amounts, and Percent Distribution, by Source of Funds: Selected Calendar Years 1970-2007**

Year	Total	Out-of-Pocket Payments	Third-Party Payments						Medicare <sup>2</sup>	Medicaid <sup>3</sup>
			Total	Private Health Insurance	Other Private Funds	Public				
						Total	Federal <sup>1</sup>	State and Local <sup>1</sup>		
Billions of Dollars										
1970	\$62.9	\$24.9	\$38.0	\$14.1	\$1.7	\$22.2	\$14.4	\$7.8	\$7.3	\$5.0
1980	214.8	58.1	156.6	61.2	9.2	86.2	62.3	23.9	36.1	24.7
1990	607.6	136.2	471.4	204.6	30.5	236.3	172.8	63.5	106.6	69.7
2000	1,139.2	192.6	946.6	402.8	57.0	486.9	369.7	117.1	215.9	187.0
2001	1,238.3	199.5	1,038.8	441.0	56.4	541.4	411.7	129.7	238.8	208.9
2002	1,340.3	211.2	1,129.1	482.3	58.3	588.6	448.3	140.3	256.0	230.7
2003	1,447.5	224.6	1,222.9	521.5	63.8	637.6	486.5	151.1	274.1	250.9
2004	1,550.2	234.9	1,315.4	560.6	65.0	689.8	527.6	162.1	300.6	269.9
2005	1,655.1	247.0	1,408.2	598.9	69.0	740.2	563.3	176.9	327.4	288.8
2006	1,765.5	255.0	1,510.5	637.9	73.8	798.7	620.6	178.1	382.8	285.4
2007	1,878.3	268.6	1,609.7	680.3	78.8	850.6	663.0	187.6	409.6	303.9
Per Capita Amount in Dollars										
1970	\$299	\$119	\$181	\$67	\$8	\$106	\$69	\$37	(4)	(4)
1980	932	252	680	266	40	374	270	104	(4)	(4)
1990	2,394	536	1,857	806	120	931	681	250	(4)	(4)
2000	4,032	682	3,350	1,426	202	1,723	1,309	415	(4)	(4)
2001	4,339	699	3,640	1,545	198	1,897	1,443	454	(4)	(4)
2002	4,651	733	3,918	1,674	202	2,042	1,556	487	(4)	(4)
2003	4,979	773	4,206	1,794	219	2,193	1,673	520	(4)	(4)
2004	5,281	800	4,481	1,910	221	2,350	1,798	552	(4)	(4)
2005	5,588	834	4,755	2,022	233	2,499	1,902	597	(4)	(4)
2006	5,902	852	5,049	2,133	247	2,670	2,075	596	(4)	(4)
2007	6,219	889	5,330	2,253	261	2,816	2,195	621	(4)	(4)
Percent Distribution										
1970	100.0	39.6	60.4	22.3	2.8	35.3	22.9	12.4	11.6	8.0
1980	100.0	27.1	72.9	28.5	4.3	40.1	29.0	11.1	16.8	11.5
1990	100.0	22.4	77.6	33.7	5.0	38.9	28.4	10.4	17.5	11.5
2000	100.0	16.9	83.1	35.4	5.0	42.7	32.5	10.3	18.9	16.4
2001	100.0	16.1	83.9	35.6	4.6	43.7	33.2	10.5	19.3	16.9
2002	100.0	15.8	84.2	36.0	4.3	43.9	33.4	10.5	19.1	17.2

2003	100.0	15.5	84.5	36.0	4.4	44.0	33.6	10.4	18.9	17.3
2004	100.0	15.2	84.8	36.2	4.2	44.5	34.0	10.5	19.4	17.4
2005	100.0	14.9	85.1	36.2	4.2	44.7	34.0	10.7	19.8	17.4
2006	100.0	14.4	85.6	36.1	4.2	45.2	35.2	10.1	21.7	16.2
2007	100.0	14.3	85.7	36.2	4.2	45.3	35.3	10.0	21.8	16.2

<sup>1</sup> Includes State Children's Health Insurance Program (Title XXI) and State Children's Health Insurance Program (SCHIP) expansion (Title XIX). <sup>2</sup>Subset of Federal funds. <sup>3</sup>Subset of Federal and State and local funds. <sup>4</sup>Calculation of per capita estimates is inappropriate. NOTE: Per capita amounts based on July 1 Census resident-based population estimates for each year. Numbers and percents may not add to due to rounding. Dollar amounts shown are in current dollars. SOURCE: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group; U.S. Bureau of the Census.

Note the large change in the out of pocket proportion. Almost 40% of total expenditures in 1970, declined to 17% in 2000. The percentage for 2007 is 14.3% . So other than those on public programs, the majority of health care is funded through insurance.

The existence of private insurance came largely out of the Great Depression. Prior to this there was no such market, or people were self insured.

Depression hit hospitals and physicians very hard. So in an effort to get back patients Hospitals provided the initial capital to start the Blue Cross plans and controlled the organization. Physicians did the same to start the Blue Shield plans. These were non-profit insures controlled by their prospective provider and thus served their interest. In the 1970s these organizations were split off from the providers. Most states "Blues" have merged together into one Blue Cross/Blue Shield independent non-profit organizations. These plans were originally given special tax exemptions, which made them more attractive to employers, since they were able to offer cheaper coverage, but these advantages have withered as the tax laws and insurance laws have changed.

Most coverage is financed by employers. During WWII there were wage and price controls which fixed earnings, but the federal govt. exempted health insurance benefits (and others) from these freezes. Employer-paid insurance premiums are excluded from the taxable income of workers (this cost about 50 billion in tax revenues in 2001). To see how this encourages compensation in the form of benefits consider the following example

An individual earns \$1,000 per week and would like to by health insurance. Suppose he is in the 28% tax bracket so his take home pay is \$720 per week. If his insurance cost \$50 per week then his take home pay would be \$670 per week. Now suppose that his employer provided his insurance for him at a cost of \$50 and pays him \$950 in cash so that his compensation is the same. His take home pay is now 72% of 950 which is \$684. So he is \$14 better off if his employer provides the insurance. Employers also benefit from this since they do not have to pay Social Security taxes on the \$50 since it is considered an expense and not a factor payment.

Note also that the cost of the same level of coverage will not be the same if the worker buys an individual policy than if he gets it through his employer. Employers will pool risk groups making the insurance company more willing to provide insurance. Thus the worker can get more for his money if he gets the coverage through his employer.

### Changes over time

Data from the Employee Benefit Research Institute show that Employer-based coverage reached its peak in the 1980s and has been declining since then. Between 1987 and 1999 coverage of workers ages 18-64 fell 2.8 percentage points, between 1999 and 2004 it fell another 3.5 percentage points. Thus, 6.3 percentage points over the 1987 to 2005 period. Data from the Bureau of Labor Statistics show a decline for full-time workers in the private sector of 15 percentage points between 1989 and 2003.

Another large shift that has occurred in employer-based insurance is its transformation from quasi-social insurance to insurance based on actuarial principles. The latter assumes that insurance is to protect against unpredictable risks for individuals or subgroups; if risks are predictable, premiums are adjusted for the differential. Under social insurance, individuals or subgroups who are expected to use more care to not pay a differential premium; the excess costs are shared collectively – those with lower risk cross-subsidize those with higher risk.

Early in the post WWII period employment-based insurance was mostly quasi-social insurance. The principle underwriters were nonprofit Blues; they typically followed community rating in pricing their policies. Thus, there was considerable cross-subsidization of insurance across industries and firms in the same community and across workers in the same firm. This cross-subsidization was facilitated by the dominance of large firms in many of the most important industries of the time – GM, US Steel, Alcoa, and DuPont – who enjoyed substantial profit and were shielded from both domestic and global competition. In regulated industries, profits were even more secure allowing such firms as AT&T, the largest private employer, to offer generous health insurance benefits to its employees. When premiums rose, AT&T could easily pass on the increase to telephone subscribers. Now AT&T is in a competitive struggle with many other companies, and competition in the auto industry is driving GM close to bankruptcy.

Strong unions also played a role in the spread of employment-based insurance. In industries dominated by a few giant firms, unions used their “countervailing power” to make the firms share some of their potential profits with workers in the form of higher wages and generous health insurance benefits. Unions provide a “collective voice” to the worker’s needs and so allow the compensation (as well as working conditions and other aspects of the job) to the workers to be divided into the components that are most valuable to those particular groups of workers. In the absence of unionism there is much less flexibility.

In industries with many small firms, such as residential construction or clothing manufacturing, unions organized industry-wide labor-management health insurance plans that provided considerable cross-subsidization among firms and among individual employees within firms by charging uniform premiums regardless of expected utilization.

Large-scale entry of commercial health insurance companies into employment-based insurance led to a shift from community rated plans to those with premiums based on actuarial risk. The community rating system could not survive when those groups with below-average expected utilization were skimmed off by the offer of lower premiums. The actuarial approach quickly evolved into “experience rating” where the premium for a group in any given year is based on its use of services in the previous year. Larger firms realized that it was cheaper to self-insure, and self-insurance received an additional boost in 1974 when the Employee Retirement Income Security Act (ERISA) prohibited states from applying coverage mandates to self-insured plans. The world of employment-based insurance is now largely one of every firm on its own, and the advent of health savings accounts reduces cross-subsidization even among employees in the same firm. As firm size has decreased and markets have become more competitive, this has made things even tougher.

## Flaws in the system

Today the flaws in employment-based insurance are apparent:

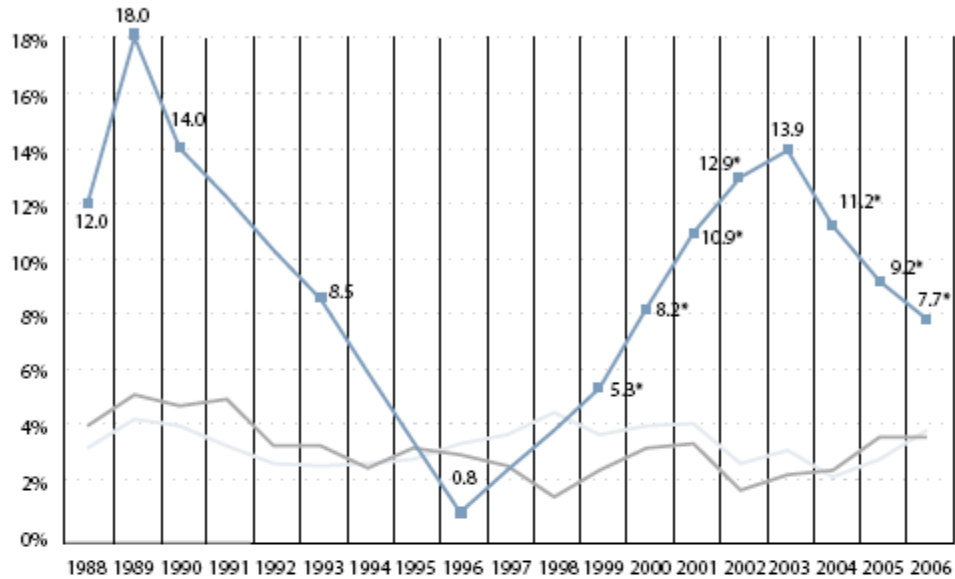
1. administrative costs. The need for more than 1000 health insurance companies to sell and contract with millions of employers, underwriting each one, adds greatly to administrative overhead. The website for America's Health Insurance Plans (AHIP) claims 1300 member companies (<http://www.ahip.org/content/default.aspx?bc=36>). Administrative costs are estimated to be on the order of 11 percent of the premium, and this does not include the cost to employers to purchase and manage health care spending, including consultants, benefits managers, and brokers.
2. allocation of costs. Under job-based insurance, the costs of health care are passed on to workers in a way that many people believe is inequitable. In competitive markets, employers' contributions to health insurance typically result in lower wages (see below). Average earnings have been pretty flat (after adjustment for inflation), while health care costs have been increasing (See related NYTimes article). Before taxes, the cost of \$10k per year is borne approximately equally by a worker making 30k and by one whose salary is 200k. After taxes, higher-paid workers actually pay less for health insurance than lower-paid workers, because they are in higher tax brackets.
3. coverage of the population. Employer coverage leaves out many people and cannot provide the basis for comprehensive coverage of the whole population that is not aged, disabled, or poor. Only 60% of firms with 1-199 workers offered coverage in 2005, about 20 percent of workers in firms that offer insurance are not eligible. Small firms are least likely to offer coverage. People lose their coverage when they lose their jobs. Job-based coverage leaves out many self-employed, nonpoor, and pre-Medicare widows.
4. labor-management relationships. Employer-based insurance is an important contributor to labor-management strife and bankruptcies. It also affects job mobility. As employers attempt to pass on insurance costs to employees, that are forced to do painful things such as reducing coverage or reducing wages. *Note that when the price of gasoline increases to more than \$3.00 per gallon, we don't yell at our employer as if it is his/her fault.*
5. misaligned incentives. Employment-based insurance has assigned to employers the responsibility to manage health care purchasing for most Americans, but employers have, at best, weak incentives to act collectively to increase the efficiency of the system. Health care purchasing is not a part of most employers' "core competencies". As it has evolved, employer insurance has helped perpetuate the inefficiencies inherent in the fragmented, uncoordinated fee-for-service small-scale practice model that still accounts for most health care delivery. FFS contains incentives for overuse, underuse, and misuse. There are few incentives for disease management, or any other type of preventative care, etc. Firms are not in the position to negotiate with multiple providers and offer a menu of contracts to their employees. This increases the bargaining position of the insurer, and does not allow the employee to appreciate any savings (or extra expense) inherent in any given plan.
6. The 'Graying' of Group Health Insurance. Note that the declines in employer coverage has not been uniform across all demographic groups. Private coverage has been in a slow decline since the late 1980s, and younger and lower-income groups have disproportionately lost coverage. Between 2000 and 2004, for example, declines in employment-based coverage were steepest for younger and low-income people, while coverage rates for older non-elderly adults (55-64) increased slightly. Note that this could affect the stability of the system over time: if those with systematically lower spending are more likely to lose coverage over time, the effects of increasing costs and declining coverage could become multiplied. This type of an effect suggests that that huge problem looming ahead for Medicare, may actually hit private insurance first!

For these reasons, many economists now feel that it is time to get past employer-based insurance. This is not saying that employers should not contribute to the cost (though some arguments can be made for that as well), but that the risk pool should not be based on the place of employment.

## Trends in Employer coverage

### EXHIBIT A

Percentage Increase in Health Insurance Premiums Compared to Other Indicators, 1988–2006



Year	1988	1989	1990	1993	1996	1999	2000	2001	2002	2003	2004	2005	2006	Indicator
Health Insurance Premiums	12.0	18.0	14.0	8.5	0.8	5.3*	8.2*	10.9*	12.9*	13.9	11.2*	9.2*	7.7*	HEALTH INSURANCE PREMIUMS
Overall Inflation	3.9	5.1	4.7	3.2	2.9	2.3	3.1	3.3	1.6	2.2	2.3	3.5	3.5	OVERALL INFLATION
Workers' Earnings	3.1	4.2	3.9	2.5	3.3	3.6	3.9	4.0	2.6	3.0	2.1	2.7	3.8	WORKERS' EARNINGS‡

\* Estimate is statistically different from the estimate for the previous year shown at  $p < .05$ . No statistical tests are conducted for years prior to 1999.

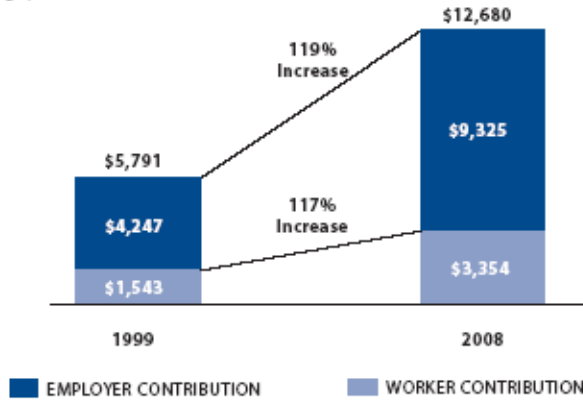
‡ Data on percentage increase in workers' earnings are seasonally adjusted data from the Current Employment Statistics survey (April to April). For additional information about this data, see the Survey Design and Methods section in the full report.

Note: Data on premium increases reflect the cost of health insurance premiums for a family of four. For additional information about the increase in workers' earnings estimate, see the Survey Design and Methods section in the full report.

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999–2006; KPMG Survey of Employer-Sponsored Health Benefits, 1993, 1996; The Health Insurance Association of America (HIAA), 1988, 1989, 1990; Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation (April to April), 1988–2006; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey (April to April), 1988–2006.

**EXHIBIT A**

**Average Health Insurance Premiums and Worker Contributions for Family Coverage, 1999–2008**



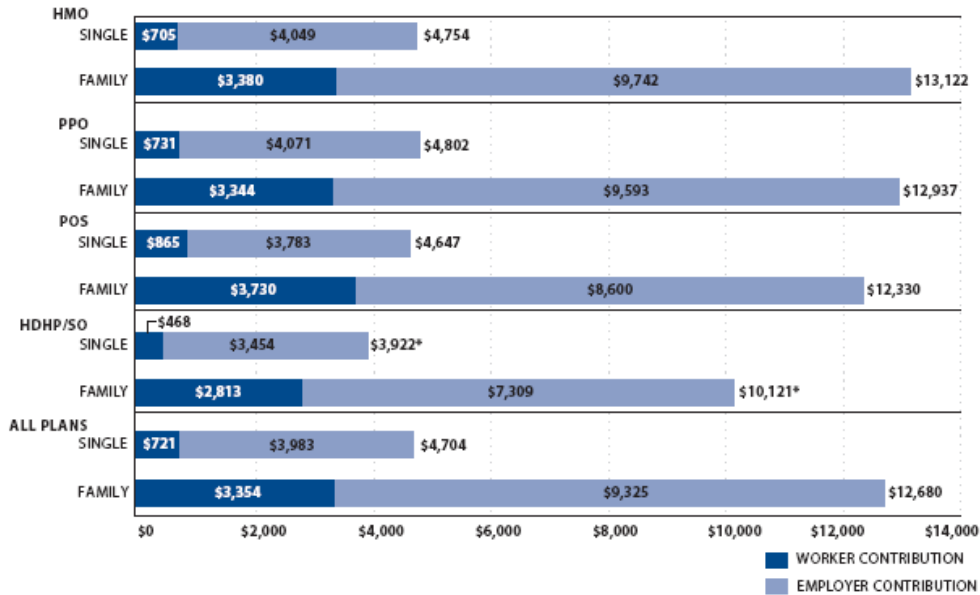
Note: The average worker contribution and the average employer contribution do not add to the average total premium due to rounding.

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999–2008.

Note that the employee’s percentage of the premium has not changed much. In 1999 it was  $1543/5791=26.6\%$ . In 2008 it was  $3354/12680=26.5\%$ .

**EXHIBIT B**

**Average Annual Firm and Worker Premium Contributions and Total Premiums for Covered Workers for Single and Family Coverage, by Plan Type, 2008**



\* Estimate of Total Premium is statistically different from All Plans estimate by coverage type ( $p < .05$ ).

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2008.

**Percentage of Firms Offering Health Benefits, by Firm Size, 1999–2008**

FIRM SIZE	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
3–9 Workers	56%	57%	58%	58%	55%	52%	47%	48%	45%	49%
<b>All Small Firms (3–199 Workers)</b>	<b>65%</b>	<b>68%</b>	<b>68%</b>	<b>66%</b>	<b>65%</b>	<b>63%</b>	<b>59%</b>	<b>60%</b>	<b>59%</b>	<b>62%</b>
<b>All Large Firms (200 or More Workers)</b>	<b>99%</b>	<b>99%</b>	<b>99%</b>	<b>98%</b>	<b>98%</b>	<b>99%</b>	<b>98%</b>	<b>98%</b>	<b>99%</b>	<b>99%</b>
<b>ALL FIRMS</b>	<b>66%</b>	<b>69%</b>	<b>68%</b>	<b>66%</b>	<b>66%</b>	<b>63%</b>	<b>60%</b>	<b>61%</b>	<b>60%</b>	<b>63%</b>

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999–2006.

Offer rates have fallen the most for small firms.

Percentage of All Workers Covered by Their Employers' Health Benefits, in Firms Both Offering and Not Offering Health Benefits, by Firm Size, 1999–2008*										
FIRM SIZE	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
3–24 Workers	50%	50%	49%	45%	44%	43%	41%	45%	42%	43%
25–49 Workers	56	63	62	57	59	56	55	55	51	57
50–199 Workers	61	62	67	64	61	56	59	62	59	60
200–999 Workers	69	69	71	69	68	69	65	66	65	67
1,000–4,999 Workers	68	68	69	70	69	68	69	68	69	69
5,000 or More Workers	64	66	69	68	68	67	66	60	63	64
All Small Firms (3–199 Workers)	55%	57%	58%	54%	53%	50%	50%	53%	50%	52%
All Large Firms (200 or More Workers)	66%	67%	69%	69%	68%	68%	66%	63%	65%	66%
<b>ALL FIRMS</b>	<b>62%</b>	<b>63%</b>	<b>65%</b>	<b>63%</b>	<b>62%</b>	<b>61%</b>	<b>60%</b>	<b>59%</b>	<b>59%</b>	<b>60%</b>

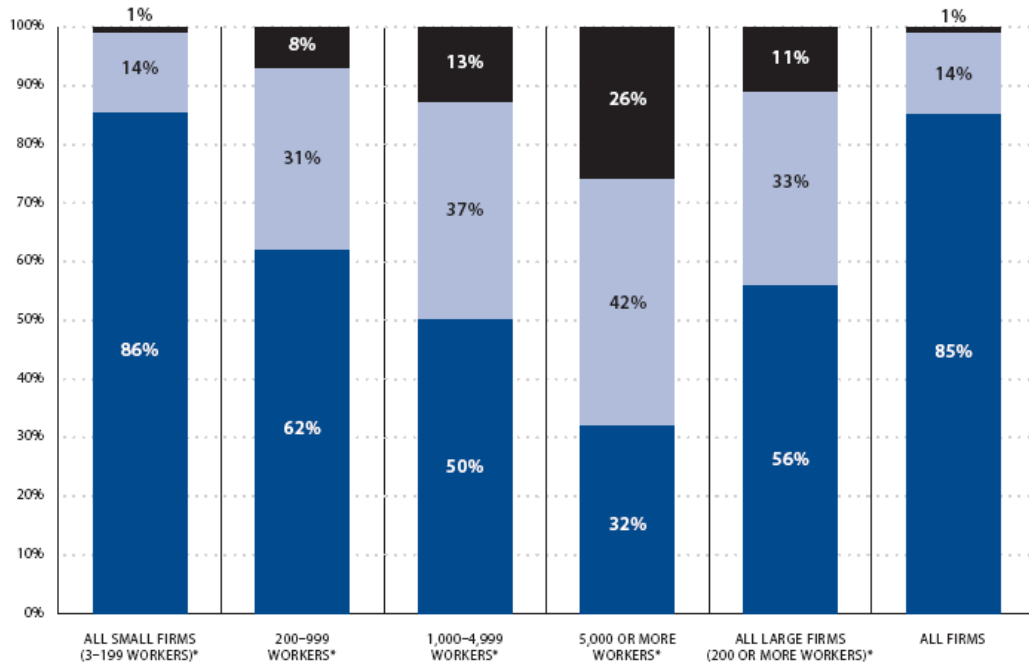
SOURCE:  
Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999–2008.

\* Tests found no statistical difference from estimate for the previous year shown (p < .05).

Coverage rates have not declined as much – except for the smallest firms

**EXHIBIT 4.1**

**Among Firms Offering Health Benefits, Percentage That Offer One, Two, or Three or More Plan Types, by Firm Size, 2008<sup>†</sup>**



**SOURCE:**

Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2008.

\* Distribution is statistically different from distribution for all other firms not in the indicated size category ( $p < .05$ ).

† Although firms may offer more than one of each plan type, the survey asks how many are offered among the following types: conventional, HMO, PPO, POS, and HDHP/SO.

Note: The survey asks firms how many plans of each given type they offer. However, we do not know if each plan type is offered to all covered workers at the firm. For example, some workers might be offered one type of plan at one location, while at another location they are offered a different type of plan.

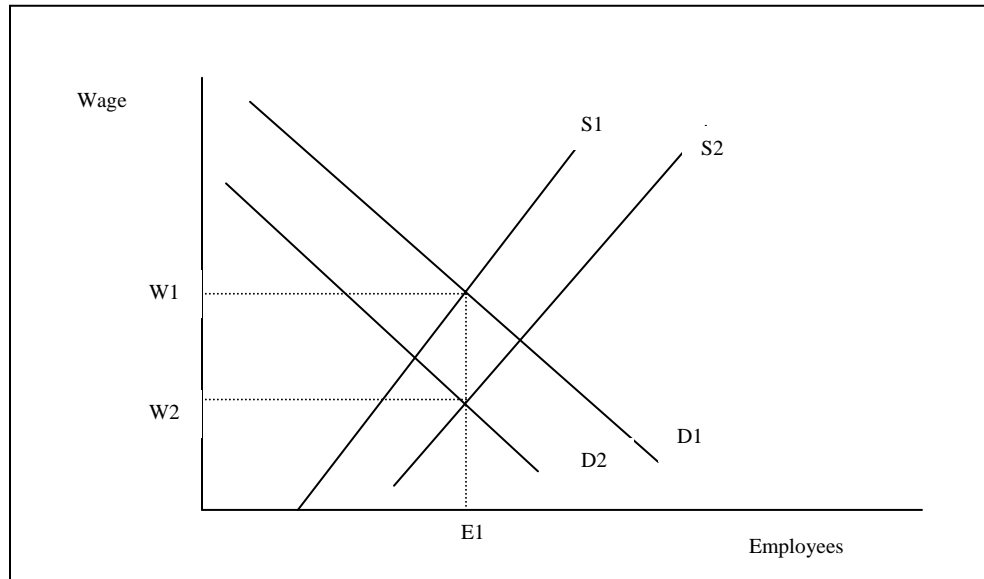
- THREE OR MORE PLAN TYPES
- TWO PLAN TYPES
- ONE PLAN TYPE

Most firms are only offering one or two types of plans.

## Who Pays for Insurance?

For many employees the firm provides them with insurance coverage. But who bears the burden of this benefit is a different question.

To see this consider the supply and demand for labor:



Here the supply is a supply of labor – workers’ willingness to work at various wages. The demand for labor is firm’s willingness to hire workers based on what their contribution to revenue for the firm. Before any benefits are offered the supply is S1 and demand is D1 and so equilibrium is a wage of W1 at an employment level of E1. Note the Y axis measure the monetary wage paid to workers.

Now suppose the firm offers the worker an insurance policy worth \$z per hour (assume for simplicity that this policy also cost the firm \$z per hour as well). Then the demand curve will shift down by an amount \$z – the firms’ willingness to pay wages will decrease by an amount equal to what it has to pay in insurance benefits. At the same time the supply of labor will increase –shift to the right by an amount \$z. Thus the new equilibrium will be along the new demand D2 and Supply S2, at a wage of W2 and employment of E1. So notice that the new wage W2 is exactly equal to W1-z, and employment stays the same.

In other words, the worker’s wage is lowered by an amount exactly equal to the amount of insurance. Thus the worker “pays” for the insurance by accepting a proportionate lower wage.

Note that this ignores the potential of moral hazard with health insurance. Suppose that once insured, individuals tend to consume health care to the point where marginal benefit is lower than marginal cost. This will tend to drive up the cost of health insurance for everyone, so that while the firm still pays \$z/hour for the insurance it is worth something less than \$z to the worker. In this case the supply curve still shift down by something less than \$z and so the

new equilibrium will tend to entail a higher wage than  $W_2$ , but the employment level will be lower than  $E_1$ .

At the same time the above analysis also ignores the fact that since the firm is able to pool risk, the amount of coverage it is able to provide for  $S_z$  is likely to be more generous than what the employee could purchase on his or her own. In this case the supply will shift by something more than  $S_2$  and the equilibrium will be a wage lower than  $W_2$  and employment higher than  $E_1$ .

So the risk pooling effect tends to work against the moral hazard effect.

Family Coverage – Most firms that offer insurance for family members of their employees typically require the worker to pay directly for the additional cost of that coverage. Single workers and workers with families receive the same salary, if the worker with family wants the family coverage the premium is taken directly out of the worker's wage. Ignoring the differences in tax liability that this creates, both are equally well off.

For firms that do pay for family coverage, note that there will be a cross-subsidization. The firm is legally prevented from paying equally qualified workers different wages because one has a family, so it must pay both the same wage. In this case the single workers will tend to subsidize the insurance coverage of their co-workers with families. Note that this will tend to result in these types of firms attracting only workers with families, which may be a good thing! This is an example of how a firm can use benefits to attract a certain type of worker that would be illegal to do with wages (if the firm thinks married workers are more stable and productive by offering spousal coverage they will attract married workers, but if they offer higher wages to those who are married, they will be found guilty of discrimination).

Note that the above analysis is static (there is no change over time). What happens as health care costs increase? This is where it gets sticky!

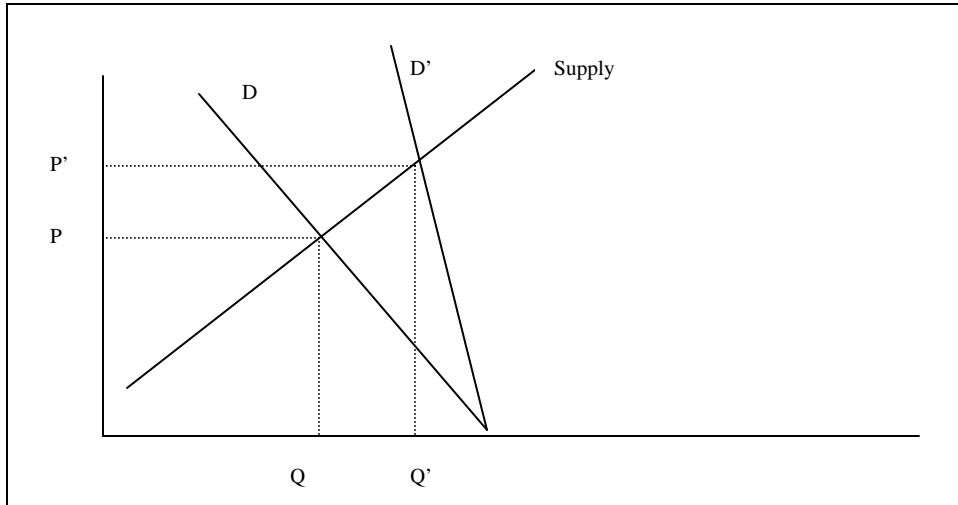
See the following:

[Boston Globe: On-The-Job Training](#)

[Denver Post: Companies rewarding good health with gifts](#)

## Managed Care

Recall the moral hazard problem of traditional fee-for-service insurance:



Without insurance the market will be in equilibrium at a price of  $P$  and a quantity of  $Q$ . This is the efficient level of health care since the marginal benefit of the last unit produced (from the demand curve) is just equal to the marginal cost of producing it (from the supply curve). But now with FFS insurance with some co-insurance rate  $c$ , the demand curve pivots out to  $D'$  since the consumer does not have to pay the full price, but some fraction of the price,  $cP$ . Now the market will produce  $Q'$  units of health care at a price of  $P'$ . Thus, insurance causes an over-consumption of the good and prices are too high.

The problem is that once the consumer has paid his or her premium he or she has no incentive to restrict their consumption. Since the marginal cost to the consumer is close to zero, the consumer will consume health care until the marginal benefits are close to zero. Providers are happy to accommodate this since the insurance company pays the “reasonable” costs.

Managed care is a (primarily market based) attempt to alleviate this problem. Under its various forms, the common theme is that the insurance company pays the providers some fixed fee to treat the patients under the insurance company’s contract. The consumer generally has a small co-payment for care, but the marginal cost to the consumer is still close to zero. The incentive to restrict care is given to the provider.

In addition, managed care will generally use the following to contain costs:

Selective Contracting – payers negotiate prices and contract selectively with local providers

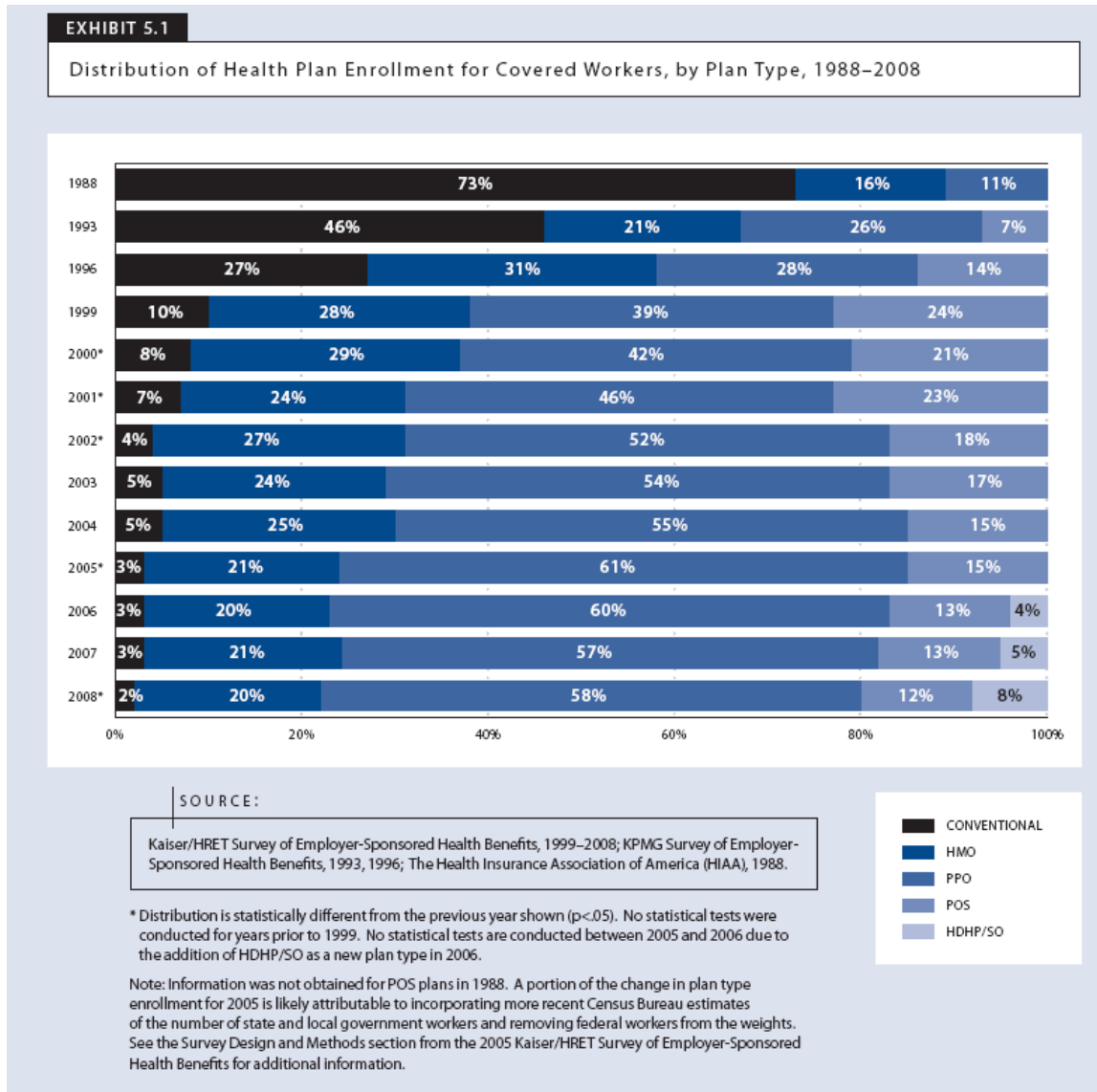
Steering of enrollees to the selected providers

Utilization review of the appropriateness of provider practices. This may be prospective, concurrent, or retrospective.

From another perspective managed care is not a good thing to the extent that it gives providers little incentive to provide adequate care for their patients, restricts the choices of physicians and consumers and lowers the quality of care being provided.

The distribution of employee-sponsored insurance

Among employee sponsored plans, managed care is now the dominate mode:



**Managed care:**

HMO = Health Maintenance Organization. These plans generally provide comprehensive care and the marginal costs are generally very low (no copays or deductibles), but they require that all care be delivered through the plan’s network and that the primary care physician (or gatekeeper authorize most services provided. Generally if you receive care out of plan there is no coverage (though there are exceptions for being out of town or not having a particular specialty in the plan, etc.) The Staff Model HMO employs the physicians directly. Plans that set up networks by contracting with physicians in solo or small group practices are called independent practice associations (IPAs).

There are still a few staff model HMOs around (they are popular in California with Kaiser), but are less popular than PPOs.

PP0= Preferred Provider Organization. These are similar to HMOs, but they give the patient the option of going out of network. Usually the marginal costs are very low if care is received in-network, but there is a large penalty for going out of network (large deductible and copays)

POS = Point of Service Plans. Like PPOs, POS plans offer two tiers of insurance benefits with higher cost for out of network providers than with in-network providers. But like HMOs, POS plans assign each member a gatekeeper physician who must authorize care in order for the care to be covered.

HDHP/SO are high deductible health plans with a savings option. – see health savings account.

As managed care became a dominant form of health insurance throughout the 1990s there is pretty convincing evidence that this resulted in a one time reduction in health care expenditures. This is consistent with managed care helping to alleviate the moral hazard problem

But note that this did nothing to affect the *growth rate* in health care expenditures.

While, from society's standpoint the emergence of managed care seems to have improved efficiency. It made lots of people angry.

From the view of the hospital and physician, moral hazard is “good for business”, and so reducing it hurt business. Physician incomes were reduced throughout the 1990s, and they were some of the most outspoken opponents of managed care. Consumers tend to dislike managed care because given the way the system is structured they are not allowed to consume all the care they would like. The marginal cost to them of additional care is quite low (a \$10 co-pay, plus transportation costs, etc.) so they would like to consume additional care, but their insurance company does not allow them to. Thus, the structure of the insurance contract creates friction between consumers, physicians, the hospital, and the insurance company.

A successful managed care contract must provide providers enough compensation to cover their costs of treatment plus enough to make them willing to sign on, but the premium charged to consumers must be low enough to attract consumers into the contract (typically through employers). This balance has been difficult to achieve.

Thus as managed care insurance companies were pressured to expand the choices available to consumers and physicians, their ability to achieve cost savings has been diminished and they have lost market share to other forms of insurance.

While managed care still has a large share of the private insurance market, the future is somewhat unclear.

## Consumer-Driven Health Care

### The shopping problem in health care

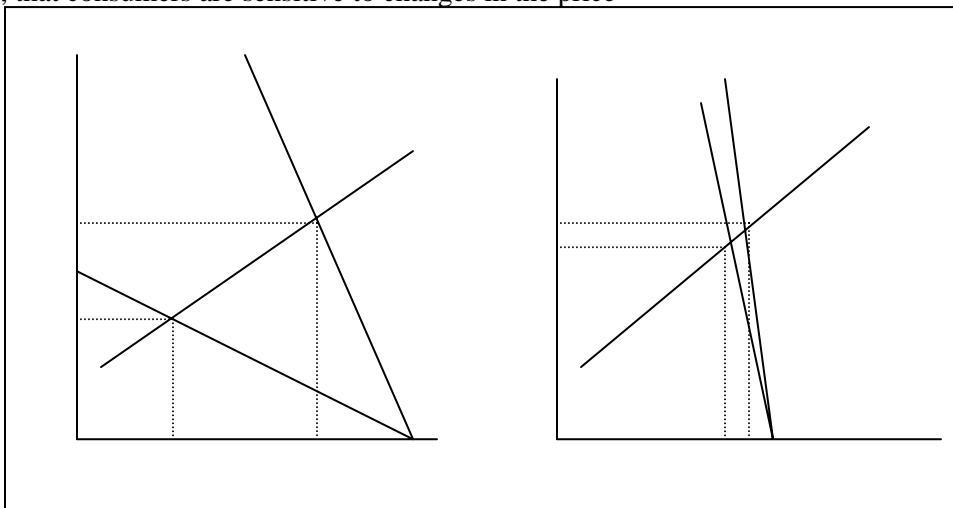
One of the big problems in health care is that consumers really don't understand the good they are producing. The idea is that we have some stock of health and are “producing” that good through the use of inputs (environment, lifestyle, etc. and health care). But, in many situations,

we really don't understand how health care inputs affect our health. In other markets we have the same problem, but can solve it through trial and error. These are so-called "experience goods". Over time you can figure out what you like and don't like by learning from "mistakes". This is not possible for health care since the mistakes can be pretty expensive. So we have a shopping problem. We've come up with numerous ways of solving this problem:

1. Traditional fee-for-service insurance allowed the physician to be the shopper for the patient
2. managed care – the insurer in many ways became the shopper for the patient.
3. consumer-driven health care. The consumer is the shopper?

Note that managed care was a supply-side attempt at reducing the moral hazard problem of over-consumption. The incentives were given to the physicians and hospitals to limit the amount of healthcare provided. On the other hand, consumer driven health plans are a demand-side attempt at lowering spending. The logic here is to increase the *marginal* cost of care by increasing co-payments and deductibles while lowering monthly premiums. Then giving the consumer a "savings" account that he/she spends as needed for his/her health care needs. This type of plan then forces the consumer to compare the marginal cost of care to the marginal benefits.

Note that the moral hazard issue all assumes that the demand for health care is price-elastic. That is, that consumers are sensitive to changes in the price



Note that in the graph on the left, demand is pretty elastic and when we add insurance the moral hazard effect results in a large price increase and quantity increase, thus the market inefficiency is quite large. In the graph to the right, however, the demand is pretty inelastic to begin with, so when we add insurance to the mix the shift is not as large and so we end up with much less over-consumption.

So the effectiveness in consumer driven plans in lowering health care costs, to a certain degree, depend on how elastic the demand for health care is. These are pretty tough to estimate, but estimates are as follows:

Hospital Admissions:	-.14
Hospital LOS	-.06 to -.29
Physician Office Visits	-.08 to -.35
Total Spending	-.22 to -.79
Preventative Care	-0.43

These numbers imply demand is pretty inelastic: A 10 percent decrease in price will result in about a 1.4 percent increase in hospital admissions. So these numbers would imply that the moral hazard effect from insurance is not all that large in general (though for certain markets the demand is likely to be much more price sensitive (second opinions, the marginal test, etc. and so consumer driven plans are likely to result in savings here).

Note that the demand elasticities above are for the market in general, firm specific elasticities are much larger.

Physician Services -3 to -5.7

Hospital services (patient days or admissions) -.74 to -.8

These are numbers as they apply to a particular hospital or office.

So if a physician practice increased its price by 10% (relative to other offices in the market) we'd expect visits to decrease by 30 to 60 percent,

Likewise if a hospital increased its prices by 10% (relative to the market) visits would decrease by 7 to 8 percent.

Note this implies that physician services are much more competitive than hospital services.