

Employer sponsored health insurance, Part 1

**ECON 40565
Fall 2007**

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Introduction

- **Most health insurance in this country is provided by employers as a fringe benefit**
 - Not all companies provide insurance
 - Function of the 'tax-preferred' nature of health insurance
- **Subsequently, insurance status is tied to employment**
- **However, the 'group' nature of the policy provides some benefits**

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This section of class

- **Outline some of the advantages and disadvantages of employer-sponsored health insurance**
- **How did we get this way?**
- **How does tax preferred status change the demand for insurance?**
- **What problems does it solve?**
- **What problems does it cause?**

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- **Will look at the implications of employer mandates – what will happen if we can try to require employers who currently do not provide health insurance to do so**

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Tax Treatment of Employer-Provided Health Insurance

- **Income from your employer is taxable**
- **You take the income and spend it on goods**
 - Cars, house, food, etc.
- **Under the tax laws, your employer cannot provide you these items directly to avoid taxes.**
 - ‘Company cars’ used to be popular fringe benefit, now they are severely restricted

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- **However, the Federal government has established some ‘tax preferred’ methods of compensation.**
 - When you receive certain items, they are not taxed as income
- **Two largest categories**
 - Pension contributions
 - Health insurance
 - Has been the case since 1954
 - If college employee, tuition remission for your dependents

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- **Taxes then reduce the cost of health insurance**
- **Because you do not have to purchase insurance in after tax dollars**
- **Ignores other important advantages of group coverage**
 - Lower administrative costs
 - less adverse selection

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History of tax preferred status

- **Modern health insurance began in the 1930**
 - Blue Cross/Blue Shield – non-profit firms, began offering pre-paid plans for hosp and MD visits
 - Offered to groups of employees
 - The blues were a success so commercial forms began offering HI
 - 12.3 (9% of population) was covered by HI in 1940
 - Increased to 32 million by 1945

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- **Why offered through employee groups?**
 - Reduce adverse selection
 - Lower admin costs
 - Wage and price controls in effect
 - Restricted wage hikes
 - To keep workers, started to offer fringes in lieu of wages
 - 1942 stabilization act codified
 - 1943 administrative tax court decision that firm payments for health insurance were not taxable as income

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- **1943 decision generated lots of uncertainty**
 - Decision based on analysis from life insurance provided to employees
 - Some question about applicability to health insurance
- **Certainty resolved in 1954 by IRS ruling stating explicitly that employer-sponsored HI was indeed tax preferred**

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Fraction of Population Covered by Private Insurance

Year	Percent w/ Pvt Insurance
1950	6.7%
1960	50.6%
1970	68.3%
1980	78.1%
1990	73.1%
2000	72.3%

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Example: Impact of Tax preferred status

- \$1500 weekly earnings
- Tax at 30% marginal rate (state+federal+FICA+medicare)
- Suppose you can get insurance for \$100/week
- Implications of tax preferred status
- Key assumption: firm does not care how they compensate you. They only care about the total cost of employment

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- Firm is indifferent between paying you
 - \$1500/week in wages or
 - \$100/week in insurance, or \$1400 in compensation
- Both of these are expenses for the firm and treated equally as costs
- What is the net after-tax income when health insurance is tax preferred and provided by the employer?

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- Without tax preferred status
 - Receive \$1500
 - Minus taxes \$450
 - After tax \$1050
 - Insurance \$100
 - Net income \$ 950
- With tax preferred status:
 - firm gives you \$100 worth of insurance and \$1400 in income
 - Receive \$1400
 - Minus taxes \$420
 - Net income \$980

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- You make \$30/week on the deal
- If the firm gives you money to buy insurance, the govt takes 30% away before you can spend it.
- To get you \$100 cash to buy an insurance policy, a firm would have to pay you \$142.85
 - Pay you \$142.85
 - After tax, $\$142.85 \cdot 0.7 = \100
 - Notice that $\$142.85 \cdot 0.7 = \100

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Tax Benefit of EPHI

- A family w/ \$70,000 in income
- 36.5% marginal tax rate
 - 25% federal
 - 3.5% state (Indiana)
 - ~8% Social Security and Medicare
- Want to purchase \$12,000 policy in AFTER TAX DOLLARS

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Without tax advantage:

- Receive \$18,897 in income
- Pay 36.5% or \$6,897 in taxes
- \$12,000 left over for health insurance
- Net benefit of tax deduction is \$6,897

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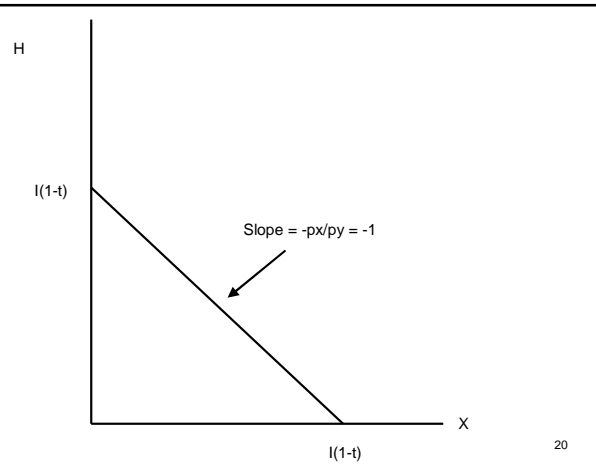
Modeling the budgets

- Firm willing to pay workers I dollars in compensation
- Workers faces a marginal tax rate of t percent
- Worker can spend after tax dollars on
 - All other goods (X), with a price of \$1
 - Health insurance (H), with a price of \$1
- Budget constraint
 - $X + H = I(1-t)$

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- Most you can spend on H is $I(1-t)$
- Most you can spend on X is $I(1-t)$
- If a consumer wants another dollar in health insurance, must give up \$1 in other goods
- Slope of budget constraint is therefore -1
- Now consider a situation where health care is tax preferred

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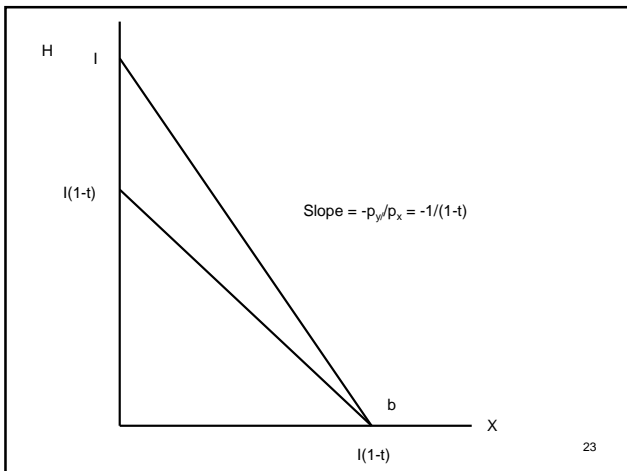
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- Firm will pay a total of I dollars in compensation
 - Can be any combination of salary (S) and health insurance, so long as it sums to I
 - Salary is taxed at a rate of t , can be used to purchase X
- How much X can you get?
 - $I = H + S$
 - $X = S(1-t)$, and $S = X/(1-t)$
 - $I = H + X/(1-t)$

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- Suppose you spend all your money on X ,
 - $I = H + X/(1-t)$
 - $X = I(1-t)$
- Suppose you spend all your money on H
 - $I = H$
- Notice that the budget constraint has now rotated about point b
- What is the slope of the budget constraint?
 - $-1/(1-t)$

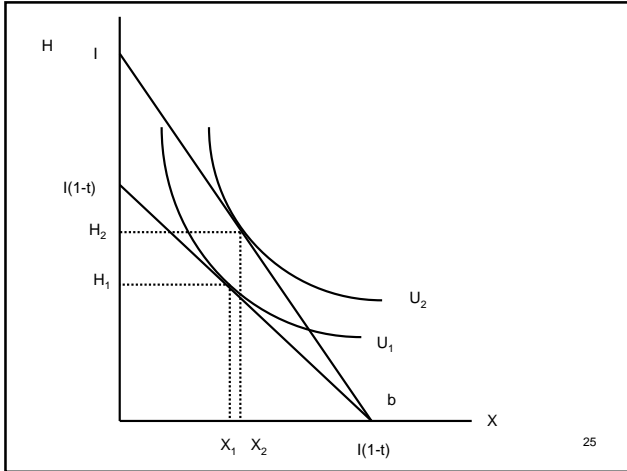
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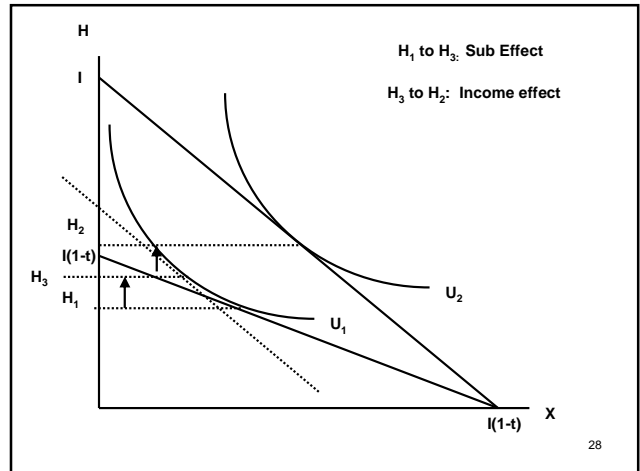
- Recall what the slope of the budget constraint equals, $-P_x/P_y$ or, what you need to give up in Y to get 1 more unit in X
 - In this case, how much H you have to give up to get one more $\$1$ in X
- Before, tradeoff was one for one
- Now, to get $\$1$ in X , it costs you $1/(1-t)$ in H
 - Suppose $t=0.33$
 - $1/(1-t) = \$1.5$. To get $\$1$ in X , need to give up $\$1.5$ in H
 - To get $\$1$ in X , receive $\$1.5$ in income, pay $\$0.50$ in taxes, receive $\$1$ in X
 - Price of X has risen relative to H , or, the price of health care has fallen relative to other goods.

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- Income and sub effects
(Moving from taxable to tax preferred)**
- w/ tax preferred status, price of insurance falls relative to other goods
 - Income effects encourages more use
 - Substitution effect encourages more use
 - Unambiguous increase in demand for health insurance
 - What about other goods
 - Sub. Effect, should decline
 - Income effect, should increase
 - Net effect, uncertain
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- On graph – draw line parallel to new budget constrain, tangent to old indifference curve
 - Movement along old indifference curve is substitution effect
 - H_1 to H_3 (+)
 - X_1 to X_3 (-)
 - Movement between two parallel budgets is income effect
 - H_3 to H_2 (+)
 - X_3 to X_2 (+)
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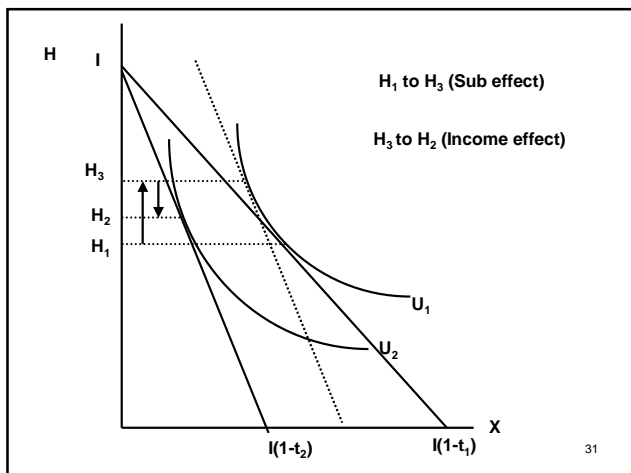
New Scenario

- Suppose that EPHI is already tax-preferred
- Now, the tax rate increases from t_1 to t_2
- What is the likely response on the part of consumers?
- What has happened to the price of H?
- What has happened to take-home income?

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- $1/(1-t)$ is the cost of obtaining \$1 in X
 - If taxes increase from 25% to 50%
 - price of X has increased from \$1.33 to \$2
 - Therefore, price of H has fallen
 - Substitution effect says – consume less
- With rising tax rates, take home pay declines
 - Have less income to spend on all goods
 - Health insurance is a normal good
 - Income effects says H should decline

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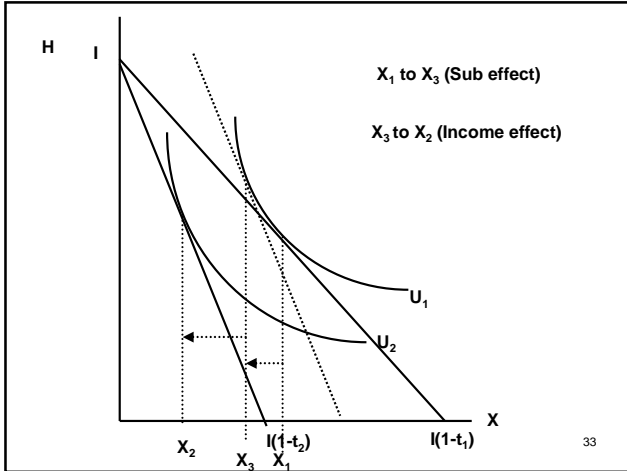


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What is going on with X

- Price of X relative to H has increased, so demand for X should fall (Sub effect)
- Taxes take a bigger bite out of income, purchasing power has declined, X is normal good, demand for X should fall (income effect)

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Costs/Benefits of Employer-Sponsored Insurance

- ### Group insurance may increase coverage
- **Group insurance solves adverse selection problem**
 - Pricing at the 'group' level rather than individual
 - Low costs purchases subsidize higher care users
 - **Group insurance lowers price**
 - Favorable tax treatment reduces costs (subsidized by government)
 - Economies of group plans
 - Group plans efficient
 - Economies of scale

- ### Economies of scale
- **Definition**
 - Average price declines as # insured increases
 - **Why economies of scale?**
 - Do not have to gather info about insured (health habits, etc.) to price accordingly
 - Cost of developing plan similar regardless of size
 - Administrative costs not linear in members, some economies of scale
 - Loading fee much higher in non-group plans
 - Loading fee declines with group size

Loading fees in group plans

- Next table – load fees as a function of size of employer health insurance
- Given cost advantage of large groups, great predictor of coverage is the size of the group.
- Larger group (e.g. employer), lower cost of providing health insurance

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Loading Fees

Year	Group Insurance			Non-group Insurance		
	Prem.	Bene.	Ratio	Prem.	Bene.	Ratio
1990	94	79	1.18	8.9	5.8	1.53
1995	117	102	1.15	12.9	8.4	1.50
2000	125	105	1.19	20	13.3	1.50

In Billions of dollars

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Loading Fee by Group Size

# of employees	Load fee (as % of benefits)
Individual policies	60-80%
Small group (1-10)	30-40%
Moderate (11-100)	20-30%
Medium (100-200)	15-20%
Large (201-1000)	8-15%
Very large (>1000)	5-8%

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- **Group insurance requires subsidy from low to high risks**
 - Policy is priced for the group
 - Suppose you have 2 groups, high and low risk
 - High risk (25%) will spend \$10,000 per year
 - Low risk (75%) will spend \$1000/year
 - Expected costs are $(.75)(\$1000) + (.25)(\$10000)$
 - = \$3250
 - Firm will 'charge' workers the same 'cost' of insurance per worker

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- **Group health insurance is therefore a subsidy from low to high spenders**
 - Both charged the same amount for health care
 - One group will use it more than others
- **Possible implications**
 - Maybe people 'sort' to particular jobs with particular health insurance
 - Low risk workers may opt out of insurance

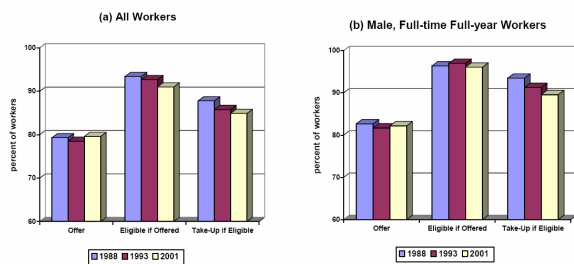
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Interactions: Tax Code and Group Plans

- **Group plans use low risk workers to subsidize high risk**
- **This lowers the cost to higher risk enrollees**
- **The tax subsidy reduces the burden of the transfer to the low risk workers**
- **Some estimates:**
 - Without the tax subsidy, 20 million would lose health insurance

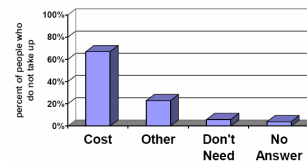
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Figure 3: Offer, Eligibility, and Take-Up of Employer Provided Health Insurance



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Figure 4: Explanations for Not Taking Up Insurance Coverage



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Some problems

- Insurance status is tied to your job
- Those without jobs or those in low-paying jobs may not be offered health insurance
- Subsequently, the uninsured in this country is
 - A large group
 - Has predictable characteristics
 - The uninsured are more likely to be: young, low earning, lower educated, minorities, those in poor families, working part time, not working, working in smaller firms

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Coverage

- Uninsurance is a persistent problem in US
- Dimensions of the problem
 - 47 million people
 - 16% of population
 - 9 million children
- Uninsurance rates have increased steadily over time

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Who are the uninsured?

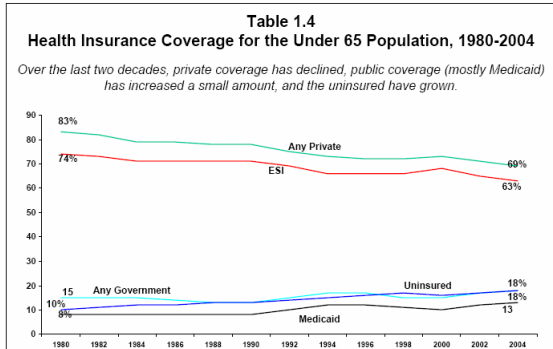
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|------------|-------|--|
| • Race | | |
| – White | 10.8% | |
| – Black | 20.5% | |
| – Hispanic | 34.1% | |
| • Age | | |
| – <18 | 11.7% | |
| – 18-24 | 29.3% | |
| – 25-34 | 26.9% | |
| – 35-64 | 16.0% | |
| – 65+ | 1.5% | |
- | | | |
|-----------------|-------|--|
| • Family Income | | |
| – <\$25K | 24.9% | |
| – \$25-\$50K | 21.1% | |
| – \$50-\$75K | 14.4% | |
| – >\$75K | 8.5% | |

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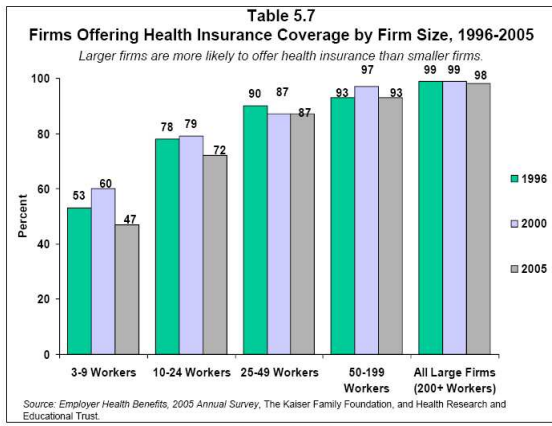
Time Series

- Number uninsured
 - 31 million in 1987
 - 47 million in 2006
- Percent uninsured
 - 12.6 in 1987
 - 15.8 in 2006

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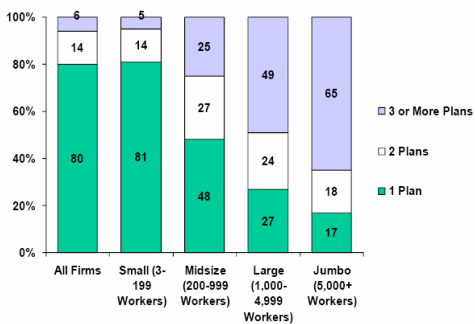
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Table 5.8
Number of Health Plans Offered by Firm Size, 2005

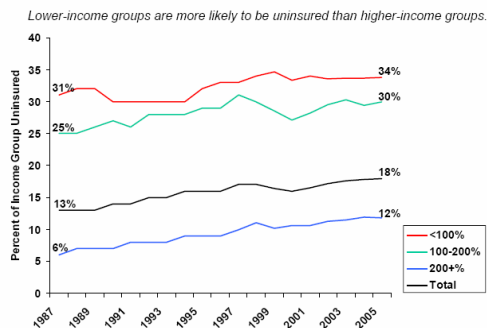
Large firms are more likely to offer employees a choice of plans.



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Table 6.4
Percent Uninsured Within Income Category, 1987-2005

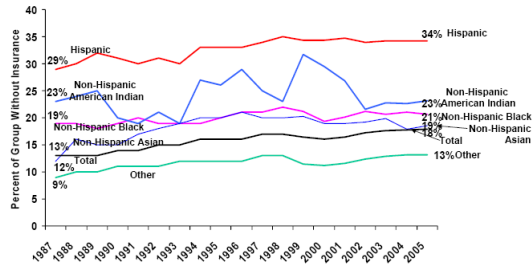
Lower-income groups are more likely to be uninsured than higher-income groups.



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Table 6.5
Percent Uninsured by Ethnicity, 1987-2005

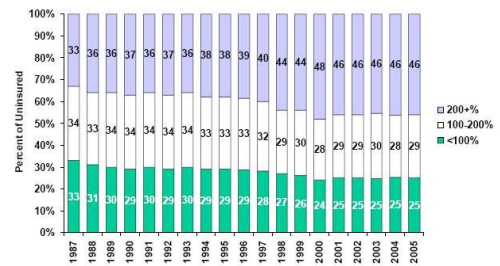
About half of the uninsured are white, and the other half are racial or ethnic minorities.



Note: Under 65 population.
Source: Tabulations of the March Current Population Survey files by Actuarial Research Corporation, incorporating their historical adjustments.

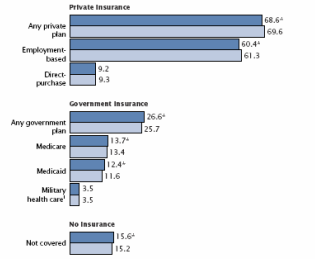
Table 6.7
The Uninsured by Income, 1987-2005

The share of the uninsured with incomes above 200% of poverty is growing.



Note: Under 65 population.
Source: Tabulations of the March Current Population Survey files by Actuarial Research Corporation, incorporating their historical adjustments.

Figure 5.
Coverage by Type of Health Insurance:
2002 and 2003
(Percent)



^a Statistically different at the 90 percent confidence level.
Military health care includes: CHAMPUS (Comprehensive Health and Medical Plan for Uniformed Services) and CHAMPVA (Civilian Health and Medical Program of the Department of Veterans Affairs), as well as care provided by the Department of Veterans Affairs and the military.
Note: The estimates by type of coverage are not mutually exclusive; people can be covered by more than one type of health insurance during the year.
Source: U.S. Census Bureau, Current Population Survey, 2003 and 2004 Annual Social and Economic Supplements.

Table 7
Health Insurance Coverage of Workers, 2003

	Workers (millions)	Percent Distribution by Coverage Type				
		Private	Public	Uninsured	Other ^a	
		Employer	Individual	Medicaid	Other ^a	
Total - Workers^a	141.8	70.7%	5.6%	3.8%	1.1%	18.7%
Age						
18-34	62.7	62.2%	8.4%	5.1%	0.9%	23.4%
35-44	70.3	75.4%	4.8%	2.9%	1.0%	15.2%
45-64	18.3	78.5%	6.4%	1.8%	2.3%	11.3%
Worker's Annual Income^b						
<\$20,000	46.2	47.6%	7.5%	8.7%	1.6%	34.2%
\$20,000-\$39,999	46.6	74.9%	4.8%	2.4%	0.3%	17.2%
\$40,000+	66.1	87.7%	4.5%	0.8%	0.0%	4.2%
Family Poverty Level^c						
<100%	12.2	21.6%	8.5%	17.9%	1.5%	49.5%
100-99%	22.2	42.7%	8.8%	5.2%	1.8%	40.8%
200-299%	23.2	67.6%	6.0%	3.2%	1.3%	22.0%
300-299%	20.6	75.3%	4.8%	1.4%	1.2%	13.3%
400%+	64.1	87.8%	4.6%	0.7%	0.3%	6.0%
Work Status^d						
Full-time/Full-year	97.4	77.7%	4.2%	1.9%	0.6%	14.4%
Part-time/Part-year	15.4	55.7%	8.5%	8.2%	1.5%	28.8%
Part-time/Full-year	12.1	68.2%	10.6%	6.1%	2.2%	22.0%
Part-time/Part-year	11.3	61.8%	11.1%	10.8%	2.2%	24.7%
Business Size (# Workers)						
Self-employed ^e	12.8	48.8%	16.6%	2.7%	1.8%	27.4%
<20	29.7	63.3%	7.3%	6.4%	1.4%	20.6%
20-99	17.2	65.8%	4.5%	4.5%	0.3%	20.9%
100-499	16.3	77.2%	2.9%	3.7%	0.7%	15.6%
500-999	6.1	78.2%	2.7%	3.3%	1.1%	13.9%
1000+	29.3	79.4%	2.2%	3.7%	0.9%	12.8%
Public sector	20.4	86.4%	2.7%	2.3%	1.5%	7.1%

Table 1
Health Insurance Coverage of the Nonelderly, 2003

Nonelderly (millions)	Percent Distribution by Coverage Type					
	Private		Public			
	Employer	Individual	Medicaid	Other ^a	Uninsured	
Household Type						
Single Adults Living Alone	19.3	60.6%	9.0%	9.5%	4.2%	16.2%
Single Adults Living Together	27.7	44.1%	8.8%	8.2%	2.7%	35.5%
Married Adults	51.7	71.2%	5.4%	3.3%	3.6%	16.5%
1 Parent with children ^b	31.2	38.3%	4.8%	26.2%	1.3%	19.5%
2 Parents with children ^b	110.7	71.7%	4.3%	10.4%	1.4%	12.2%
Multigenerational/Other with children ^b	13.0	38.2%	3.3%	27.1%	2.8%	28.6%
Family Work Status						
2 Full-time	70.1	83.2%	3.0%	4.2%	1.0%	8.6%
1 Full-time	136.7	64.7%	6.3%	10.3%	1.4%	18.3%
Only Part-timer ^c	19.4	30.3%	12.8%	22.4%	3.1%	29.6%
Non-workers	29.1	16.8%	6.6%	28.9%	8.7%	39.1%
Race/Ethnicity						
White only (non-Hispanic)	165.9	69.7%	6.4%	8.7%	2.3%	12.9%
Black only (non-Hispanic)	32.0	48.8%	2.7%	26.6%	2.5%	21.0%
Hispanic	38.2	40.5%	2.7%	20.9%	1.4%	34.3%
Asian/Is. Pacific Islander only	11.2	62.3%	6.8%	9.0%	1.4%	20.4%
Am. Indian/Alut. Eskimo only	1.5	38.2%	3.9%	24.9%	5.0%	28.0%
Two or More Races ^d	3.9	54.5%	4.6%	21.0%	3.3%	16.7%
Citizenship						
U.S. citizen - native	222.2	64.1%	6.4%	13.3%	2.4%	14.9%
U.S. citizen - naturalized	10.5	63.7%	6.1%	6.9%	2.2%	21.2%
Non-U.S. citizen, resident for ≥ 6 years	8.4	31.9%	4.3%	11.2%	0.6%	52.1%
Non-U.S. citizen, resident for < 6 years	11.6	41.1%	3.6%	10.6%	1.2%	43.4%
Health Status						
Excellent/Very Good	177.2	66.5%	6.8%	10.4%	1.3%	15.9%
Good	64.7	65.9%	4.4%	18.0%	2.4%	22.7%
Fair/Poor	20.7	39.4%	3.7%	27.6%	9.8%	19.7%

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Health insurance and the tax code

- Employer-provided health insurance is tax-preferred
- Taxable income may also be reduced through flexible spending accounts
- Families who itemize deduct health care spending is in excess of 7.5% of adjust gross income

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Equity of the tax preferred health insurance

- Vertical equity
 - Is it equitable across income classes
- Horizontal equity
 - Is it equitable within income classes

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Vertical Inequity

- Economic model: Employer premium are assumed to come out of earnings
- Tax-preferred status leads to tax expenditures that are smaller for higher income households: vertically inequitable.
- Higher income households benefit more because they have
 - higher tax rates,
 - are more likely to have insurance
 - they buy more generous and costly insurance
 - live in high-priced areas.

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Federal Marginal Income Tax Rates (Married filing jointly)

- If income is between Marginal tax rate
- 0 and \$14,599 10%
- \$14,601 and \$59,399 15%
- \$59,400 and \$119,949 25%
- \$119,950 and \$182,799 28%
- \$182,800 and \$326,449 33%
- \$326,450 and above 35%

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Value of Federal Tax Exclusion, 2004 (Sheils/Haught)

- Total value: \$188.5 billion (about 29% of private insurance spending).
 - Income tax exclusion: \$100 Billion;
 - OASDI (Social Security) tax, \$50 Billion.
- Exclusion of employment based premiums is 80% of subsidy; income tax deduction is 7%; smaller percentages for flex accounts, self employed, HSA/CHP (very small now)

* John Shiels and Randall Haught. "The Cost of Tax-Exempt Health Benefits in 2004." *Health Affairs Web Exclusives*, February 25, 2004. 62

Cost to Government of subsidies to health insurance via the tax system = tax expenditures

TAX-EXEMPT BENEFITS

EXHIBIT 1 Tax Expenditures For Employer Health Benefit Contributions, 2004

	Expenditure amount, billions (\$)	Percent of total
State and federal	209.9	100.0
State	21.4	10.2
Federal	188.5	89.8
Federal tax expenditures		
Social Security OASDI tax	52.2	27.7
Medicare HI	14.2	7.5
Income tax health benefit exclusion	101.0	53.6
Retiree exclusion	7.5	4.0
Self-employed deduction	4.6	2.4
Health reimbursement accounts	1.6	0.8
Out-of-pocket deduction	7.4	3.9

SOURCE: Levin Group estimates using the Health Benefits Simulation Model (HBSM).
NOTES: OASDI is Old Age, Survivors, and Disability Insurance. HI is Hospital Insurance.

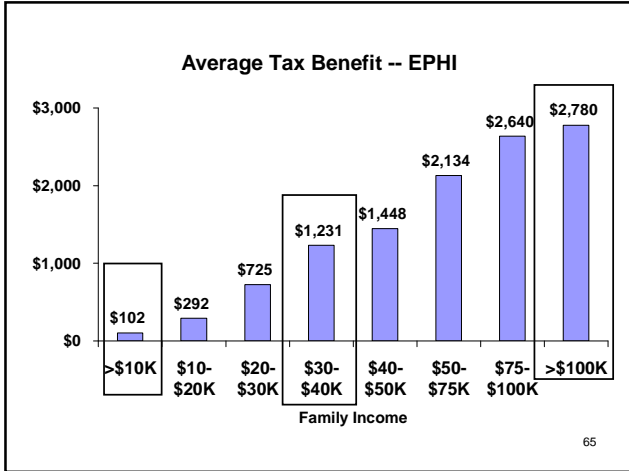
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Value of tax exclusion as % of poverty line

% of Poverty Line	Average Value of Exclusion*	% of Total Exclusion	% with Private Insurance (adults)	% of Total Uninsureds
>400	\$2,500	61	91	17
300-400	1800	16	86	10
200-300	1300	15	76	19
100-200	500	8	59	29
<100	175	1	26	25

* Value of exclusion = additional tax on excluded income.

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Who Benefits from the Tax Subsidy

EXHIBIT 3
Distribution Of Federal Health Benefit Tax Expenditures, By Family Income, 2004

Family Income	Expenditure amount, billions (\$)	Percent of total
\$150,000 or more	25.9	13.7
\$100,000-\$149,999	24.1	12.8
\$75,000-\$99,999	40.8	21.6
\$50,000-\$74,999	44.2	23.4
\$40,000-\$49,999	17.9	9.5
\$30,000-\$39,999	17.1	9.1
\$20,000-\$29,999	12.2	6.5
\$10,000-\$19,999	5.0	2.7
Less than \$10,000	1.3	0.7
Total	188.5	100.0

SOURCE: Lewin Group estimates using the Health Benefits Simulation Model (HBSM).

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- ### Summary: Effects by Income
- The half of the population above the median income gets 75% of the subsidy
 - The lower half of the population receives 25% of the subsidy
 - The half of the population above the median income makes up 25% of uninsured; half below makes up 75%
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- ### Horizontal Inequity
- Within a “full” income class, those who work for a firm offering insurance pay less taxes.
 - Those who chose higher priced insurance pay lower taxes.
 - Those who use flex accounts, especially those who “clean out” the account, pay less taxes.
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Tax Benefits Lead to Uneven Distribution of Risk Protection and Medical Care Use

- Higher income people are induced to buy more generous coverage with high administrative costs, may also be more likely to obtain coverage.
- This more generous coverage causes higher spending for them.
- The tax treatment thus worsens disparities in insurance coverage, use of care, and perhaps health outcomes.

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Proposed reform?

- President's advisory panel on tax reform
- Considering options for tax reform
- Started January 2005
- Three goals
 - Simplify tax laws
 - Share the burden (equity)
 - Promote growth

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• Preliminary proposals

- Reduce mortgage deduction
- Reduce # of tax brackets
- Eliminate marriage penalty
- Cap tax-preferred status of health insurance per family at \$11,500

- The cap on the mortgage deduction killed this reform

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• What does and average premium cost

- Data for 2004
 - Family coverage \$9,950 annually
 - Single coverage \$3,695 annually
- Premiums have been increasing at a double digit pace for a few years
- Worker contributions
 - \$2,661 for Family plan (firm pays 73%)
 - \$558 for a single plan (firm pays 85%)

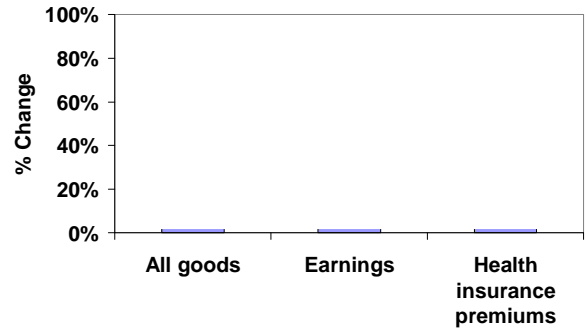
72

**Average Annual Premiums
Covered Workers, 2006 (KFF)**

- Individual plan
– \$4,242 total
- Family plan
– \$11,480

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Change in Prices, 2000-2006



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