Employer sponsored health insurance

Health Economics
Bill Evans

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
  – There are some advantages benefits to employer provision
  – But lots of inequality – who has insurance, who gets tax benefit

Insurance coverage by type, 2013

• Any insurance 86.6%
• Any Private 64.2%
  – Employment based 53.9%
  – Direct purchase 11.0%
• Any government 34.3%
  – Medicare 15.6%
  – Medicaid 17.3%
  – Military 4.5%
• Uninsured 13.4%

Source of Insurance, Ages 19-64
2010 March CPS

<table>
<thead>
<tr>
<th>Group</th>
<th>% insured</th>
<th>% with EPHI</th>
<th>% with dep. coverage</th>
<th>% with public insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>81.0%</td>
<td>51.9%</td>
<td>14.6%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>50.2%</td>
<td>15.3%</td>
<td>14.5%</td>
<td></td>
</tr>
<tr>
<td>Not in labor force</td>
<td>74.3%</td>
<td>24.4%</td>
<td>25.7%</td>
<td></td>
</tr>
</tbody>
</table>
This section of class

- How did we get to EPHI?
- How does tax preferred status change the demand for insurance?
- Outline some of the advantages and disadvantages
  - What problems does it solve?
  - What problems does it cause?
- Tax equity of EPHI

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

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

Empirical evidence – who pays for EPHI
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
- If college employee, tuition remission for your dependents

Tax preferred status allows you to purchase insurance in before tax dollars
- Reduces the cost of health insurance
- This ignores some other important advantages of group coverage
  - Lower administrative costs
  - Less adverse selection

Modern Health Insurance

- Began in the 1930 with 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 which generated for-profit entry
  - 12.3 million (9% of population) had HI in 1940
  - Increased to 32 million by 1945

Why offered through employee groups?

- Reduce adverse selection
- Lower admin costs
- Wage and price controls in effect
  - Wage hikes were restricted
  - Firms offered fringe benefits in lieu of wage hikes
  - 1943 National War Labor Board decided that firm payments for health insurance were not taxable as income
• 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 by Revenue Act of 1954 -- stating explicitly that employer-sponsored HI was indeed tax preferred

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent w/ Pvt Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>9.0%</td>
</tr>
<tr>
<td>1960</td>
<td>50.6%</td>
</tr>
<tr>
<td>1970</td>
<td>68.3%</td>
</tr>
<tr>
<td>1980</td>
<td>78.1%</td>
</tr>
<tr>
<td>1990</td>
<td>73.1%</td>
</tr>
<tr>
<td>2000</td>
<td>72.3%</td>
</tr>
</tbody>
</table>

Example: Impact of Tax preferred status

• $1500 weekly earnings
• Tax at 30% marginal rate (state+federal+FICA+medicare)
• Suppose you can get insurance for $200/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

• Firm is indifferent between paying you
  – $1500/week in wages or
  – $200/week in insurance, or $1300 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?
• Without tax preferred status
  • Receive $1500
  • Minus taxes $450
  • After tax $1050
  • Insurance $200
  • Net income $850

• With tax preferred status:
  • firm gives you $200 worth of insurance and $1300 in income
  • Receive $1300
  • Minus taxes $390
  • Net income $910

• You make $60/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 $200 cash to buy an insurance policy, a firm would have to pay you $285.71
    – Pay you $285.71
    – After tax, $285.71(.7) = $200
    – Notice that $85.71*.7 = $60
  • On annual basis, benefit is $60*52=$3120

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
  – $X + H = I(1-t)$

• 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
• 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 $S = X/(1-t)$
  - $I = H + X/(1-t)$

• 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?
  - $-1/(1-t)$
• Recall what the slope of the budget constraint equals, \(-\frac{P_x}{P_y}\) 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
• When both are taxed, tradeoff is one for one
• Now, to get $1 in X, it costs you \(\frac{1}{1-t}\) in H
  – Suppose \(t=0.33\)
  – \(\frac{1}{1-t} = \$1.5\). To get $1 in X, 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.

Income and sub effects
(Moving from taxable to tax preferred)

• w/ tax preferred status, price of insurance falls relative to other goods
  – Substitution effect encourages more use
• Income effect
  – Purchasing power has increases
  – Income effects encourages more use
• Therefore, unambiguous increase in demand for health insurance

• On graph – draw line parallel to new budget constraint, tangent to old indifference curve
• Movement along old indifference curve is substitution effect
  – \(H_1\) to \(H_2\) (+)
  – \(X_1\) to \(X_2\) (-)
• Movement between two parallel budgets is income effect
  – \(H_1\) to \(H_2\) (+)
  – \(X_3\) to \(X_2\) (+)
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?

• $1/(1-t)$ 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
Costs/Benefits of Employer-Sponsored Insurance

Group insurance will 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)
  - Economics of group plans
    - Group plans efficient
    - Economics 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
  - Loading fee much higher in non-group plans
  - Loading fee declines with group size

Loading fees in group plans

- Premium to benefits ratio
  - Amount over 1 is the loading fee – what fraction of premiums are NOT paid in benefits
- 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
### Loading Fees

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>94</td>
<td>79</td>
<td>1.18</td>
<td>8.9</td>
<td>5.8</td>
<td>1.53</td>
</tr>
<tr>
<td>1995</td>
<td>117</td>
<td>102</td>
<td>1.15</td>
<td>12.9</td>
<td>8.4</td>
<td>1.50</td>
</tr>
<tr>
<td>2000</td>
<td>125</td>
<td>105</td>
<td>1.19</td>
<td>20</td>
<td>13.3</td>
<td>1.50</td>
</tr>
</tbody>
</table>

In Billions of dollars

### Loading Fee by Group Size

<table>
<thead>
<tr>
<th># of employees</th>
<th>Load fee (as % of benefits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual policies</td>
<td>60-80%</td>
</tr>
<tr>
<td>Small group (1-10)</td>
<td>30-40%</td>
</tr>
<tr>
<td>Moderate (11-100)</td>
<td>20-30%</td>
</tr>
<tr>
<td>Medium (100-200)</td>
<td>15-20%</td>
</tr>
<tr>
<td>Large (201-1000)</td>
<td>8-15%</td>
</tr>
<tr>
<td>Very large (&gt;1000)</td>
<td>5-8%</td>
</tr>
</tbody>
</table>

### Benefits of size leads to self insurance

- Two levels of regulation
  - State: purchase insurance in market
  - Federal: run your own insurance plan (ERISA)

- Large firms typically do not purchase insurance but rather run their own insurance company

### Benefits of self insurance

- Design your own plan
- Lower administrative costs
  - Not paying for overhead and profits of carrier
- Have access to claims data to monitor costs
- Improve cash flow
- Avoid state premium tax (1-2.5% on premiums paid)
**Funding of EPHI by Plan Size (2009)**

<table>
<thead>
<tr>
<th>Participants in plan</th>
<th>Fully insured</th>
<th>Mixed</th>
<th>Self-insured</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-99</td>
<td>0.8%</td>
<td>30.8%</td>
<td>68.4%</td>
</tr>
<tr>
<td>100-199</td>
<td>74.2%</td>
<td>5.0%</td>
<td>20.8%</td>
</tr>
<tr>
<td>200-499</td>
<td>67.8%</td>
<td>7.2%</td>
<td>24.9%</td>
</tr>
<tr>
<td>500-999</td>
<td>53.5%</td>
<td>13.6%</td>
<td>32.9%</td>
</tr>
<tr>
<td>1,000+</td>
<td>42.6%</td>
<td>20.3%</td>
<td>37.1%</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>31.2%</td>
<td>30.7%</td>
<td>38.1%</td>
</tr>
<tr>
<td>5,000+</td>
<td>20.8%</td>
<td>44.2%</td>
<td>35.0%</td>
</tr>
<tr>
<td>All</td>
<td>56.4%</td>
<td>12.5%</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

Source: Form 5500 health plan filings.

- 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 $1,000/year
    - Expected costs are (0.75)($1000) + (0.25)($10000)
      = $3250
  - Firm will "charge" workers the same "cost" of insurance per worker

- 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 and get insurance through a spouse

**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
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
    • more likely to be: young, low earning, lower educated, minorities, those in poor families, working part time, not working, working in smaller firms
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

Equity of the tax preferred health insurance

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

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.
Federal Marginal Income Tax Rates (Married filing jointly, 2012)

- If income Marginal tax rate
  - 0 to $17,400 10%
  - $17,401 to $70,700 15%
  - $70,701 to $142,700 25%
  - $142,701 to $217,450 28%
  - $217,451 to $388,350 33%
  - $388,351 and above 35%

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)

Value of tax exclusion as % of poverty line

<table>
<thead>
<tr>
<th>% of Poverty Line</th>
<th>Average Value of Exclusion*</th>
<th>% of Total Exclusion</th>
<th>% with Private Insurance (adults)</th>
<th>% of Total Uninsureds</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;400</td>
<td>$2,500</td>
<td>61</td>
<td>91</td>
<td>17</td>
</tr>
<tr>
<td>300-400</td>
<td>1800</td>
<td>16</td>
<td>86</td>
<td>10</td>
</tr>
<tr>
<td>200-300</td>
<td>1300</td>
<td>15</td>
<td>76</td>
<td>19</td>
</tr>
<tr>
<td>100-200</td>
<td>500</td>
<td>8</td>
<td>59</td>
<td>29</td>
</tr>
<tr>
<td>&lt;100</td>
<td>175</td>
<td>1</td>
<td>26</td>
<td>25</td>
</tr>
</tbody>
</table>

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%

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.
Tax Benefits Lead to Uneven Distribution of Risk Protection and Medical Care Use

• Higher income people
  – More likely to have insurance
  – are induced to buy more generous coverage (e.g., lower copays, coinsurance, etc.)

• 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.