Using Elasticity to Predict Cost Incidence

A Definition & A Question

- Definition of Incidence: the fact of falling upon; in this case, where costs fall
- A Question for you - what does a statement like this mean?
  “The health benefits provided to GM employees adds $500 to what every consumer pays when they buy a GM car.”

Who pays when payroll tax added to wage rate?
Remember Own-Price Elasticities

- **Demand:**
  - Higher the elasticity, greater demand response to price change

- **Supply:**
  - Higher the elasticity, greater supply response to price change

Who Bears Cost of New Payroll Tax?

- **Case 1:**
  - Employer bears entire cost
  - Possible in very short run in firm where demand is perfectly inelastic

Who Bears Cost of New Payroll Tax?

- **Case 2:**
  - Employees bear entire cost in form of lower wages
  - Possible in short run in firm where supply is perfectly inelastic
Who Bears Cost of New Payroll Tax?

- Case 3: Shared Cost (Moderate elasticity of supply & demand)
  - Employees bear cost in form of lower wages & employment
  - Employer bears cost in form of wage reduction less than tax

\[ W_0 \] \[ E_0 \]
\[ W_0^{\text{tax}} \] \[ E_0^{\text{tax}} \]

Point:

- The more inelastic the demand for labor, the less employment will decrease with a payroll tax, i.e., the firm will bear more of the cost of a payroll tax, ceteris paribus
- The more inelastic the supply of labor, the smaller the decrease in supply, i.e., labor will bear the cost of a payroll tax, ceteris paribus

COMPENSATING WAGE DIFFERENTIAL

WAGES & OCCUPATIONAL CHOICE
ASSUMPTIONS ABOUT WORKERS

- Utility maximization
- Perfect worker information
- Perfect worker mobility
- Jobs have different non-pecuniary characteristics
- Individuals differ in preferences for non-pecuniary characteristics

Definition
Compensating wage differential

- Premium firms have to offer workers to compensate for working conditions
- Can have both “positive” and “negative” premium

MARKET FOR NON-MONEY CHARACTERISTICS OF WORK

⇒ IMPlicit price of non-pecuniary job characteristics
- Positive differential for negative characteristics
- Negative differential for positive characteristics
⇒ One explanation why more than 1 wage rate in labor market
EMPLOYEE PERSPECTIVE

- TRADE-OFF BETWEEN EARNINGS & NEGATIVE JOB ATTRIBUTE
  - Constant Utility
  - Slope = Rate of exchange between wage & negative job aspect
  - Diminishing marginal returns
  - Preferences differ across individuals

Employee Trade-off

People differ
EMPLOYER CONSIDERATIONS

• TRADE-OFF BETWEEN
  - Cost of reducing negative aspects of job
  - Cost of compensating employees to put up with those aspects
• Firm offer is bounded
  - Upper bound: Competitive mkt. → 0 profits
  - Lower bound: Need sufficient # workers
• Firms vary in ability to change aspects

Firm Trade-off

- Wages vs. Risk
- Below 0 profits
- Zero Profits
- Above 0 profits

Firms differ

- Wages vs. Risk
- Expensive
- Inexpensive
THE OFFER CURVE

• DEFINITION: Curve of all employers in market
  - Wage/Job characteristics combinations from which workers can choose
  - Market clearing implicit price
• Offer curve can shift over time
  - Technological Change
  - Change in worker preferences

The Offer Curve

MATCH BETWEEN EMPLOYEES AND EMPLOYERS

(Another Constrained Maximization Problem)

• WORKERS: Maximize utility s.t. offer constraint (highest wage for given risk or lowest risk for given wage)
• EMPLOYERS: Set wage high enough to attract enough but not too many
• THE MATCH: Utility maximized at tangency b/n utility & offer curves
Matching workers to employers

Individual Workers' Utility

Market offer curve

Wages

Risk

INSIGHTS FROM COMPENSATING WAGE DIFFERENTIAL MODEL

- Wages increase with risk (or any uniformly bad aspect), ceteris paribus
- Workers with strong preferences (aversion) for job aspect will work at firm that provides that most cheaply (reduces it at lowest cost)
- CWD allocates labor
- Source of equity in compensation