Overview: Incentives & employment

• Case discussion: 'Outsourcing Sales'
• Specialization & Comparative Advantage
• Principal-Agent Problems
  – Pay for performance
  – Promotion Tournaments
• Moral Hazard

Set-up: “Outsourcing Sales?”

• TV station considers outsourcing sales
• Sales company asks variable compensation:
  – 10% on first $400 million
  – 5% on part between $400 and $600 million
  – 2% on sales above $600 million
• Sales costs are all variable
• TV Station has
  – $500 million advertising revenue
  – $450 million fixed costs
  – $50 million variable cost from sales
Outsourcing Sales?

Assume first that sales company has same MC as TV station
Conclusion: “Outsourcing Sales?”

- Proposed deal has very poor incentives for sales firm
  - MR of sales firm is much lower than MR of TV station
  => it will typically sell many fewer ads, costing TV station revenues
- Deal can make sense
  - If sales firm is much more efficient than TV station, or
  - If compensation scheme is changed (to increasing)
Specialization

- Specialization on individual and firm level
- Advantages
  - Scale effects
  - Learning effects
  - Less change-over costs
  - Comparative advantage
- Disadvantages
  - Causes motivation (incentives) and coordination problems
  - Dependency fears may lead to duplication and under-investment

Comparative Advantage: Example

- To produce a line of code, it needs to be programmed and debugged
- Productivity (lines per day)

<table>
<thead>
<tr>
<th></th>
<th>Program</th>
<th>Debug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Barry</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

- Optimal solution:
  - Specialize: Anna debugs and Barry programs
  - This gives 2 lines per day (vs. 1.87 if they work on their own)
Comparative Advantage

• Key Insight: Relative productivity (lines programmed / line debugged): 1.5 for A vs. 2 for B
  => B should do the programming and A the debugging

• Principle of Comparative Advantage:
  1. What matters in allocation of tasks is comparative advantage, not absolute advantage.
  2. Whenever there are differences in relative productivity, there are gains from specialization and trade.

• Note: CA is also important in international trade
The Principal-Agent Problem

• Arises when one person or organization hires another person or organization to act on its behalf (e.g. employment)

• Principal is party doing the hiring
• Agent is the person hired to act on behalf of the principal

What’s the Problem?

• Agent may have different objectives than the principal. Contracts and monitoring are imperfect.
• Examples:
  – Sales Agents
  – Managers and shareholders
  – HMO’s and doctors
  – Administrators, faculty, TAs
  – Others
Solutions

• Monitoring
  – Requires carrot & stick: efficiency wage, bonuses, employee’s reputation
  – More effective in repeated relationship
• Incentive schemes (i.e. method of compensation)
  – Pay for performance
    • Commissions, piece rates
    • Lawyers: fixed fee, hourly rate, or contingency
    • Doctors: fee for service
  – Promotion tournaments
• Intrinsic motivation via selection and socialization
• Integration (for firms) ... but same issues remain
Pay for Performance

• Output per worker typically goes up
• Sorting: most productive workers stay
  – Also causes productivity to go up.
  – Average wage may increase.
  – Note: sorting is a leading source of misinterpreted analyses.
    • Productivity goes up after pay for performance is introduced: money makes people work harder?
    • Do MBA’s earn more than others in professional firms?

Issues with Pay for Performance

• Difficult to get correct incentives
  – ‘Outsourcing sales’ issue applies broadly: \( \alpha \text{MR} = \text{MC} \) instead of \( \text{MR} = \text{MC} \)
• You get what you pay for
  – Caesarean sections
  – Evaluating teachers by test performance
  – Stock options for executives
  – Typist at Lincoln Electric
  – Multi-tasking problems
• Agent bears part of risk and requires risk premium
Promotion Tournaments

• Have employees compete on output & promote the winner
• Implications
  – Flattening of hierarchy increases wage differential
  – Up-or-out policy (and tenure)
• Issues
  – Competence for next level
  – Sabotage
Backloaded wages and rewards

• To prevent employees from shirking, make it very costly to get fired.
• Efficiency wages (i.e. paying more than market wage) are costly.
• Solution: pay part of the wage at the end of career
  – Pensions
  – Backloaded wages (underpay when young, overpay when old) in form of increasing wage profile
  – Note: increasing wage profile might also reflect increase in skills

Moral Hazard

• Principal-Agent problem is part of larger problem: unobservability of actions or hidden behavior.
• Imperfect information can encourage people to behave in "incorrect" ways.
• Moral Hazard in Insurance Markets
  – Car Insurance - would you drive differently if you didn't have insurance?
  – Health Insurance - would you behave differently if you didn't have health insurance?
Moral Hazard: The RAND Health Insurance Experiment

<table>
<thead>
<tr>
<th>Copayment Rate</th>
<th>Expenditures on Medical Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>50</td>
<td>142</td>
</tr>
<tr>
<td>25</td>
<td>300</td>
</tr>
<tr>
<td>0% (free)</td>
<td>417</td>
</tr>
</tbody>
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Take Away Points

- Comparative Advantage is an important reason for specialization and trade.

- The Principal Agent problem is fundamental to understanding many aspects of employment relationship.

- Potential solutions include monitoring, pay for performance, and promotion tournaments.

- With any incentive plan, it is important to take the other's perspective, to understand their real incentives.