

**Personnel Economics**  
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**Problem Set 2**  
**Due: August 31 2000**

**Important:**

**In order to receive full marks, you must show all of your work and explain your answer. Simply stating an answer is not sufficient.**

**Problem 1: Seniority-Based Compensation**

Consider a worker who works for your firm for two periods. The worker can work at a high level of effort, producing \$50,000 of output per period or at a low level of effort, producing \$40,000 per period. The worker can get an alternative job that pays \$40,000 per period for low effort. While low effort costs the worker nothing, the worker values the costs of high effort at \$8,000 per period.

- (a) What is the efficient effort level for the worker in each period? **Why?** What if high effort levels only produced \$45,000 in output per period?
- (b) Suppose the firm offered to pay the worker \$50,000 in period 1, \$45,000 in period 2, but fire the worker at the end of period 1 if her effort turned out to be low. What level of effort would the worker provide in period 1? **Why?**
- (c) Suppose the firm offered \$10,000 during the first period and \$80,000 during the second period. Again if she works at the low effort level she will be fired at the end of period 1. What level of effort does the worker provide in periods 1 and 2? **Why?**
- (d) Suppose the worker is **unexpectedly** worth \$75,000 at another firm in period 2 (i.e., this is not known in period 1) and she is offered a salary of \$70,000 at that firm. Does this change your answer to part (c)? **Why?**
- (e) Can you think of a severance package (i.e., an amount of money paid to this worker to get her to quit your firm and move to the other firm) that would make the worker, your firm, and the other firm better off in period 2?

**Problem 2: Compensating Real Estate Brokers**

Most real estate agents are paid entirely by commission. Commissions are usually paid by the person whose property has been sold, and they are normally calculated as a percentage of the sales price. Agents typically work for brokers who provide office space, phone service, and advertising.

Some real estate brokers split the commission revenue from each sale with the responsible agent. Others require their agents to pay them (the brokers) money up front and then allow agents to keep the entire commission from each sale.

Which agents would you expect to have a larger volume of sales, those who split their commissions with their employers or those who pay an up-front fee and keep all the revenue? **WHY?**

### **Problem 3: Supperannuation Plans**

You have been hired as a consultant to advise a group of small business owners about the advantages and disadvantages of different supperannuation plans. None of these businesses currently have supperannuation plans for their workers, but the Government is now requiring that they establish plans for their workers and contribute 10% of workers' salaries into the newly established fund.

You have been hired to prepare a short 1 – 2 page **typed** report outlining the types of different plans they might establish. In your report you will want to include the following types of information.

- The advantages and disadvantages of the different types of plans;
- How the different types of plans lead to different incentives on the part of workers;
- How the different plans might affect things like, workers' probability of leaving the firm by quitting or early retirement;
- Who bears the risk under different types of plans;
- Anything else you think is relevant to their decision.

### **Problem 4: Promotion Schemes**

You have been hired as a consultant by a Fortune 500 firm. Your job is to provide advice about its promotion practices. This firm is interested in redesigning its current procedures to provide better incentives for workers.

You have been hired to prepare a short 1 – 2 page **typed** report outlining the issues that they need to take into account. In your report you will want to include the following types of information.

- The advantages and disadvantages of tournament style promotion schemes;
- How promotions tournaments affect worker morale and effort;
- How the amount of luck in the promotion process might affect the appropriate salary schedule;
- What other options the firm might have besides promotions tournaments to motivate workers;
- Whether internal or external promotions are better;
- Anything else you think is relevant to their decision.