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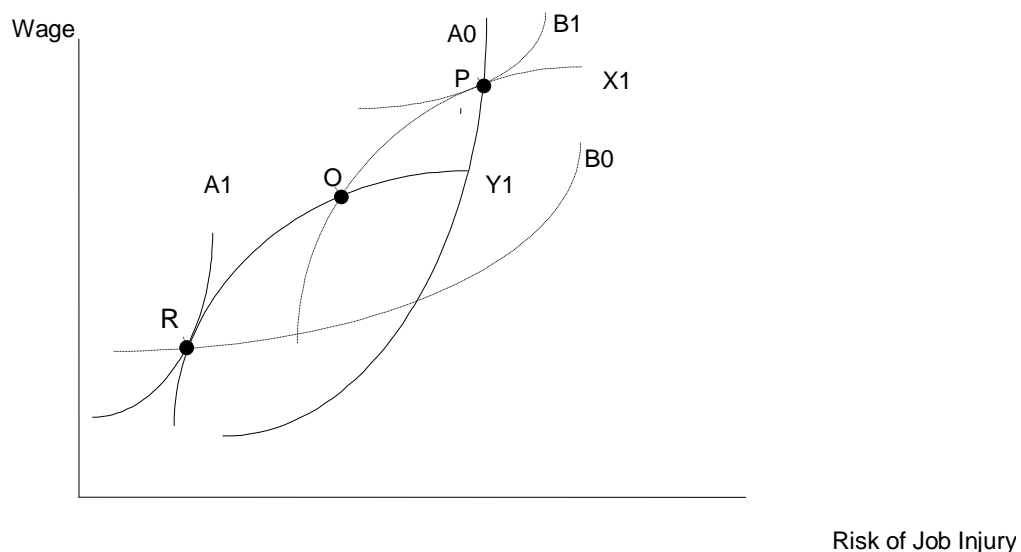
ECO361: LABOR ECONOMICS
SECOND MIDTERM EXAMINATION

NOVEMBER 15, 2007
Prof. Bill Even

DIRECTIONS.

The exam contains a mix of short answer and essay questions. Your answers to the 18 short answer portion of the exam (3 points each) should be listed on the answer sheet attached to the end of the exam. No credit will be given for answers placed elsewhere. Your answers to the essays (48 points total) should be provided in the blue book provided.

To answer the next 4 questions, refer to the diagram drawn below. The indifference curves for worker types A and B are given by A0, A1 and B0, B1. The iso-profit curves for firm types X and Y are given by X1 and Y1.

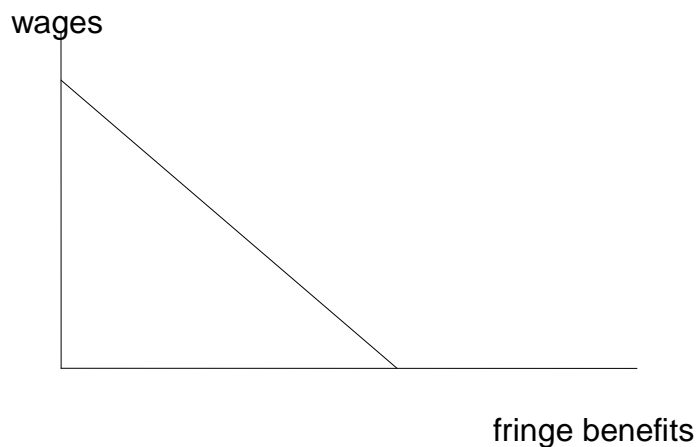


- In the above diagram, firms prefer points to the _____ of any given isoprofit curve and workers prefer points to the _____ of any given indifference curve:
 - southeast; southeast.
 - southeast; northwest.
 - northwest; southeast;
 - northwest; northwest;
- Suppose that X and Y firms are currently offering the wage/risk bundle given by the point O. At point O, compared to type Y firms, it is
 - more costly for type X firms to reduce the risk of job injury for workers because the type of workers that select into type X firms have flatter indifference curves.
 - more costly for type X firms to reduce the risk of job injury for workers because type X firms have steeper iso-profit curves.
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- Based on the above diagram, suppose that there are both type X and type Y firms in the market and all firms offer the package O. Which of the following would be true?
 - if an X firm offers the package P, type A workers will move to this new firm, but type B workers will prefer the original compensation package O.
 - if an X firm offers the package P, type B workers will move to this new firm, but type A workers will prefer the original compensation package O.
 - if a Y firm offers the package R, type A workers will move to the new firm, but type B workers will prefer the original compensation package O.
 - both a and c.
 - both b and c.
- Based on the above diagram, we should expect that in equilibrium, type A workers will receive (higher, lower) wages than type B workers and accept jobs at the firm where it is (more, less) costly to eliminate risk.
 - higher; more.
 - higher; less.
 - lower; more.
 - lower; less.

5. Suppose that Prof. Smith observes that workers of equal skill are in two jobs that differ only in terms of the risk of death. On job A, workers are paid \$50,000 per year. On job B, workers are paid \$52,000 per year. The annual risk of death on job A is $1/3,000$ and the risk on job B is $1/2,000$. Based on this information, what is and the corresponding “statistical value of a life”?

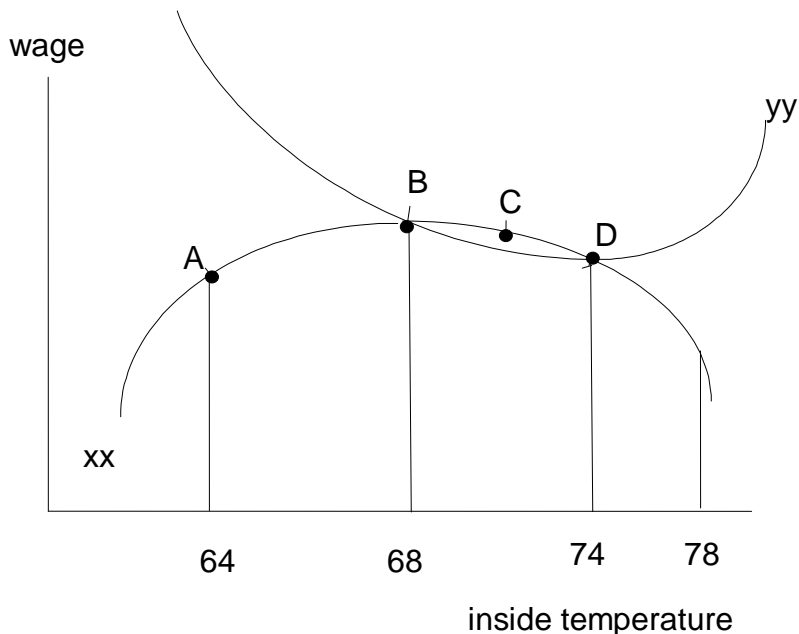
6. The approach used in (5) to estimate the “statistical value of a life” would be
- an overstatement of the true value workers place on fatality risk.
 - an understatement of the true value that most workers in type A jobs place on fatality risk, but an overstatement of the true value for workers in type B jobs.
 - an understatement of the true value that most workers in type B jobs place on fatality risk, but an overstatement of the true value for workers in type A jobs.
 - an understatement of the true value workers place on fatality risk.

Consider the iso-profit line for a firm considering the optimal mix between fringe benefits and wages.



7. The isoprofit line would become flatter (i.e. smaller negative slope) if:
- shifting from wages to fringe benefits helped reduce worker turnover.
 - shifting from wages to fringe benefits attracted a “sicker” group of workers.
 - employers had to pay Social Security taxes on wages paid to their employees, but not on fringe benefits.
 - all of the above
 - a and c.

To answer the next 4 questions, consider the diagram below which provides a firm's zero-profit curve (xx) and a worker's indifference curve (yy) between the hourly wage rate and the inside temperature at the work place.



8. Suppose that it is costless to keep the **inside** temperature equal to the **outside** temperature. Based on the information provided, it is reasonable to conclude that the outside temperature for this firm must be _____ degrees.
9. Based on the information provided, for any given wage rate, the worker would be happiest if the inside temperature was at _____ degrees.
10. Market forces should push the equilibrium temperature at this firm to:
 a. less than 68 b. 68 c. between 68 and 74 d. 74 or above
11. If all workers have identical preferences regarding inside working temperature, but firms differ in the cost of controlling the temperature, we should expect the following relationship between wages and working temperature:
 a. wages would fall until the temperature reaches 68 degrees and rise for temperatures beyond 68 degrees.
 b. wages would rise until the temperature reaches 68 degrees and fall for temperatures beyond 68 degrees.
 c. wages would rise until the temperature reaches 74 degrees and fall for temperatures beyond 74 degrees.
 d. wages would fall until the temperature reaches 74 degrees and rise for temperatures beyond 74 degrees.

12. Over the past 20 years, the returns to education increased
- because the demand for low skill workers dropped as the U.S. reduced trade barriers and imports increased.
 - because there was technological change that increased the demand for more educated workers and decreased the demand for less educated workers.
 - because unionism declined
 - all of the above.
13. When the average difference of earnings between college graduates and high school graduates is used to estimate the “return” to a college degree, an economist would argue that the estimated return would be:
- biased upward if more able workers will be more likely to go to college.
 - biased downward if earnings differences don’t account for the fact that college graduates generally have more generous fringe benefit packages than high school graduates.
 - biased downward if there are non-pecuniary differences between the jobs that college graduates and high school graduates accept -- for example, if high school jobs have a greater risk of job injury.
 - all of the above.
 - only a and b.
14. Other things being the same, the internal rate of return on acquiring a college education would be greater:
- if a person had a longer expected work life.
 - if tuition costs decreased.
 - if the earnings for high school graduates declined.
 - all of the above.
15. As discussed in class, David Card studied the relationship between the immigration rate into cities and earnings and found that cities with higher immigration did not experience lower wage growth. George Borjas argued that Card’s study may not have found a negative effect of immigration on earnings because:
- immigrants may be attracted to cities where wages are highest.
 - natives may have an incentive to leave cities when immigrants enter.
 - natives may have an incentive to enter cities when immigrants enter.
 - both a and b.
 - both a and c.
16. In a monopsonistic model of labor market discrimination, workers with a lower cost of moving have more
- elastic labor supply and are paid higher wages than workers with high moving costs.
 - inelastic labor supply and are paid higher wages than workers with high moving costs.
 - elastic labor supply and are paid lower wages than workers with high moving costs.
 - inelastic labor supply and are paid lower wages than workers with high moving costs.
17. Which of the following would increase the internal rate of return on education?
- a lower interest rate.
 - a decrease in the expected age of retirement.
 - an increase in the wages received by a high school graduate.
 - an increase in the wages received by a college graduate.
18. A firm can use efficiency wage payments to reduce employee shirking. A given efficiency wage payment would become MORE effective at reducing employee shirking if unemployment in the local labor market (increased, decreased) or if workers’ expected life with the firm (increased; decreased).
- increased; increased.
 - increased; decreased.
 - decreased; increased.
 - decreased; decreased.

FOR ALL YOUR ANSWERS TO THE ESSAY QUESTIONS, BE SURE TO USE MAKE USE OF RELEVANT THEORIES/CONCEPTS DISCUSSED IN THE LABOR ECONOMICS COURSE. THE QUALITY OF YOUR ANSWER WILL BE DEPEND LARGELY ON YOUR ABILITY TO IDENTIFY THE RELEVANT CONCEPT(S) DISCUSSED IN THIS CLASS.

1. (12 points) Suppose that there are many construction firms in town and that the competitive wage for a carpenter is \$25/hour. Buck Construction is considering raising its wage offer to \$30/hour even though other firms are only paying \$25.

- a. This strategy of paying above the market wage will definitely drive up Mr. Buck's costs and, ceteris paribus, reduce his profits. On the other hand, it's possible that the wage increase could actually increase profits. Using the concepts discussed in class, explain what other kinds of changes could offset the effect of the \$5/hour increase on Mr. Buck's profits.

Mr. Buck is considering the payment of an efficiency wage where workers will be paid a wage above their next best alternative. While the extra \$5 an hour increases costs and reduces his profits, this could be more than offset by a few factors: (1) workers will work harder to assure that they keep their jobs, thus improving productivity of workers; (2) he will have a larger pool of workers to choose from and be able to select more productive workers; and (3) he can spend less time monitoring workers because they will be less likely to shirk since they risk losing their efficiency wage premium if they shirk.

- b. If Mr. Buck switches to this new compensation method, explain why it could affect his willingness to hire older carpenters.

When paying an efficiency wage, it helps to reduce shirking because a worker will shirk only if the value of shirking to the worker > expected loss from shirking. The expected loss from shirking is $p \cdot q \cdot L$ where p is efficiency wage premium, q is the probability they are caught shirking, and L is the expected remaining life with the firm. For older workers, L is lower which makes the cost of shirking lower. Hence, Mr. Buck might want to avoid older workers since the efficiency wage would be less effective at reducing shirking for such workers.

- c. Suppose that some construction companies hire carpenters to do repetitious jobs (e.g. install windows all day long) where it is very easy to observe how much a worker produces. Other construction companies are involved in custom work where the nature of the job changes regularly (e.g. windows today, cabinets tomorrow, roofs the next day) and it is difficult to keep a tally on production. Which type of firm (window installer or custom contractors) are more likely to follow the Buck compensation scheme? Be sure to explain why using concepts discussed in class.

It is more difficult to monitor output for the custom contractors than for window installers. Where monitoring is costly, efficiency wages may provide a cheaper means of reducing shirking among workers. Where monitoring is cheap, it is easy to detect and fire shirkers and less reason to pay an efficiency wage.

2. (12 points) Suppose that you are the CEO of a financial firm that manages a number of mutual funds. A given fund manager gets to decide what kind of stocks to include in their portfolio. Moreover, to create an incentive for the fund manager to choose stocks wisely, the manager is paid according to the following equation:

$$\text{Pay} = W + b \cdot (r_i - r_{\text{index}})$$

Where W is the fixed component of the fund manager's salary, b represents the "performance pay" parameter, r_i is the rate of return on the fund manager's portfolio, and r_{index} is the return on a stock index (e.g. the return on the S&P 500). For example, a firm might offer $W = \$100,000$ and $b = 20,000$ which implies that if the fund matches the performance of the index, the manager will receive \$100,000. For every percentage point that the fund's performance is above (below) the return on the index, the fund manager receives (loses) another \$20,000.

- a. Suppose that you want to create greater incentive for your fund managers to work hard and "beat the index". Because your average manager beats the index by 1 percentage point currently, you want to increase incentives in a way that would not change total compensation for a manager that beats the index by 1 percentage point. Explain how you could adjust b and/or W to accomplish your objective.

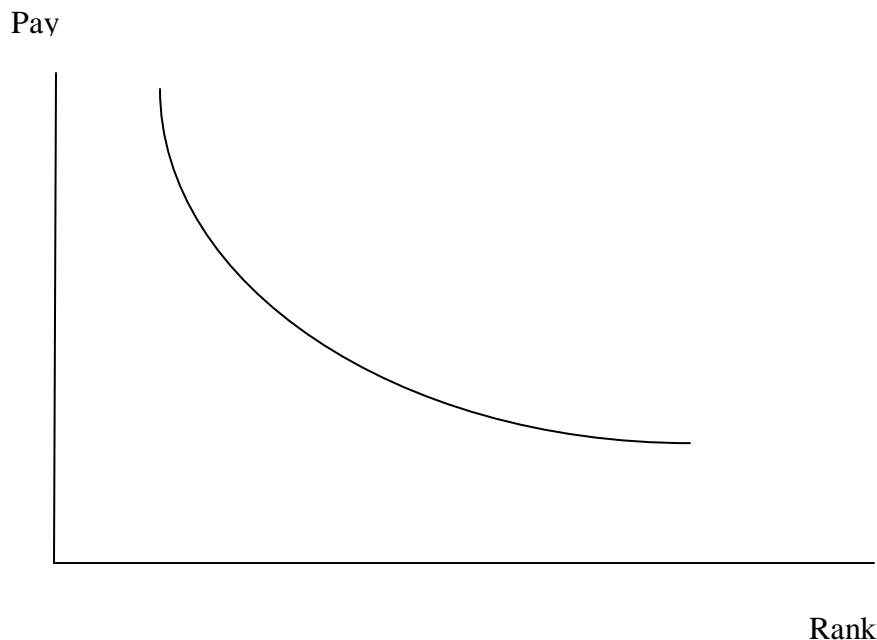
To increase incentives to beat the index, you could decrease W by a fixed amount and increase b by the same amount. For example, set $W = \$80,000$ and $b = \$40,000$. A person that beats the index by one percentage point would receive compensation of \$140,000 under the old and new scheme, but the rewards for increased performance (and penalties for lower performance) are greater under the new payment scheme.

- b. How does the change in the compensation scheme you described in (a) affect the riskiness of the fund manager's pay and the type of manager that you are able to attract and retain?

The riskiness of pay increases substantially as a one percentage point change in your fund's performance relative to the index causes your pay to change by twice as much under the new scheme. This means that the new scheme will attract less risk averse workers. It will also attract the more able fund managers since their pay is likely to rise with the new scheme, whereas less able fund managers would leave since their pay would drop.

- c. Many fund managers are evaluated on a calendar year basis. Consequently, as December approaches, their ability to adjust the portfolio to affect performance that year is diminishing. There is some empirical evidence that as the end of the year approaches, poor performing funds begin to acquire high risk stocks that have potential for high returns, whereas strong performers tend to shift toward safer/lower return stocks. What kind of payment scheme for fund managers that we discussed in class could lead to this kind of behavior? Provide a precise example of such a scheme and explain why it could lead to this type of behavior.

Such behavior could be caused by a "tournament" type of pay structure where the rewards to increased performance are especially high at the higher end of the performance, and the penalty for low performance is small for "under-performers". For example, if pay is structured as in the diagram below:



Fund managers with underperforming funds (high ranks) have much to gain and little to lose from a high risk strategy. On the other hand, those with high performing funds (low ranks) have much to lose and little to gain from a high risk strategy.

Answer any 4 of the next 5 questions.

3. (6 points) Suppose that you own a store that sells carpet. Currently, you pay your carpet installers \$20 per hour and, on average, they install 10 square yards of carpet per hour. You decide to switch the payment scheme to a piece rate and pay the workers \$1.80 per square yard of carpet. Provide a list of the ways that this switch in pay methods could positively or negatively affect your profits.

This could increase profits by (1) increasing the productivity of workers that continue with your firm; (2) causing underperformers to leave for other work since their pay will drop; and (3) attracting high performers from other firms.

This could decrease profits by (1) causing workers to focus more on quantity than quality since reduced quality could eventually reduce the demand for your product; (2) causing workers to abuse equipment if it increases their pay; (3) reducing team work among workers since each worker is paid on their own production; (4) reducing your ability to retain risk averse workers who may have been productive workers.

4. (6 points) Many of the opponents to immigration in the U.S. argue that it hurts American workers by lowering their wages. Using concepts developed in class, explain how immigration could increase the wages of some workers and decrease the wages of others.

An increase in immigration could reduce the wages of native workers who are gross complements to the immigrants. For example, if immigrants are primarily low skill workers, this increases the supply of such workers and reduces their wage as firms substitute immigrants for natives. As wages for low skill workers decrease, this reduces costs of production in the relevant industries that employ these workers and increases the supply of the product. As the supply of the product increases, equilibrium quantity increases and this creates a SCALE EFFECT that increases the demand for all types of workers in the industry. If the scale effect is greater than the substitution effect grants, the demand for the native worker rises and their wages rise.

5a. (6 points) Explain the difference between a “just cause” and “employment at will” doctrine.

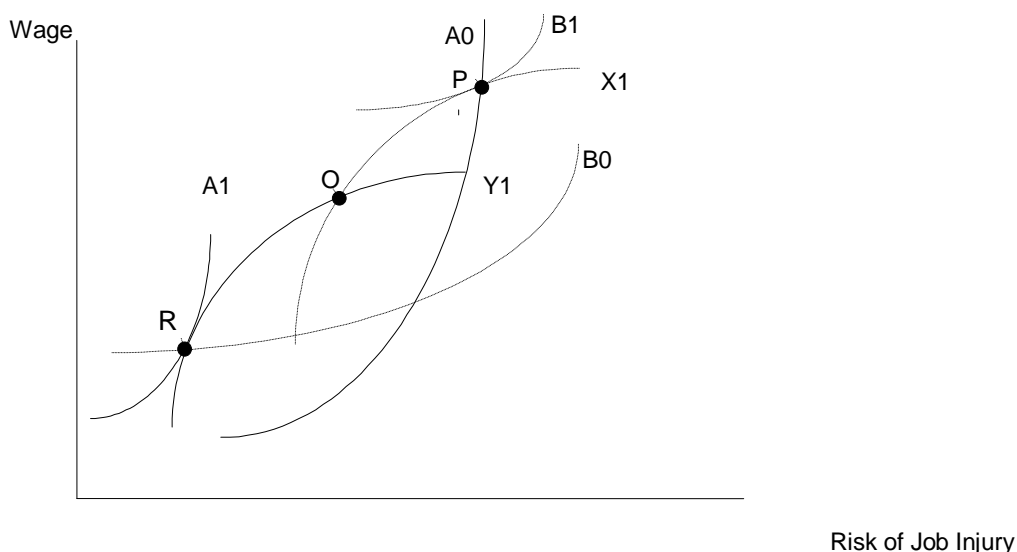
A just cause doctrine requires that a firm provide “just cause” for firing a worker. Just cause might be based upon a worker underperforming (shirking) or a decline in product demand that forces the firm to lay off workers to remain viable. An employment at will doctrine means that the employer need to provide any justification for firing a worker.

c. Explain why these doctrines are relevant to a firm who is considering offering a deferred pay system.

If a firm offers a deferred pay scheme, it will pay a worker below their MP early in the career and above their MP later. If a worker is considering such a pay contract, they should be concerned about the fact that the firm has an incentive to fire the worker when $W > MRP$. Since firms are less able to fire workers with the just cause doctrine, firms will be more able to attract workers to a deferred pay scheme with such a rule. Without such a rule, it will be difficult to attract workers with a deferred pay system unless the firm has established a reputation for living up to its promise. Consequently, firms who wish to use a deferred pay system would prefer the just cause doctrine – unless they are short sighted and willing to sacrifice their reputation and quit using deferred pay contracts in the future.

6. (6 points) OSHA enforces workplace safety regulations. OSHA supporters believe that these regulations make workers safer and are thus “in the worker’s best interest”. OSHA detractors have argued that these regulations could actually make workers worse off. Using the concepts developed in class, provide an economic explanation of how enforcement a workplace safety regulation could make workers worse off.

To illustrate this, consider the diagram below in which the less risk averse workers (type B) match with the firms where it’s expensive to eliminate risk (type X). The type B workers receive higher wages and are exposed to higher risk than type A workers receive higher wages but are faced with higher risk than type A workers at type Y firms. If OSHA forces the firm to reduce risk at type X firms to the level of type Y firms, type B workers will have to accept the compensation package R. Notice that this means that type A workers will move to a lower indifference curve. Workers lose more utility from the reduction in wages than they gain from the decrease in risk.



7. (6 points) Over the past 25 years, the “returns to a college degree” have changed dramatically. Explain how the premium has changed (i.e. did it increase or decrease?) and provide at least 3 explanations for this trend that are supported by economic studies.

1. The decline in unionism has led to a reduction in wages, but it has hurt the wages of high school graduates more than college graduates because unionism is much more common among high school graduates.

2. The decline in the minimum wage has reduced the average wage for high school graduates, but had little effect on college graduates since their wages are generally far above the minimum.

3. Reduced trade barriers have resulted in a reduction in the demand for high school graduates as the U.S. has shifted to imports of “low skill” commodities, and increased the demand for college graduates as the export market for “high skill” commodities has increased.

4. Increased immigration has reduced the wages of high school graduates more than the wages of college graduates because a disproportionate share of (illegal) immigrants are competing with low skill workers.

5. There has been “skill biased” technological change which has reduced the demand for high school graduates but increased the demand for college graduates.

Name _____

ANSWER SHEET

1. B	10 C
2. B	11 C
3. E	12 D
4. D	13 D
5. \$12 million	14 D
6. B	15 D
7. E	16 A
8. 68	17 D
9. 74	18 A