

Homework Problems, Unit 1, ECON 3351, Darren Grant.

WE'LL WORK THESE TOGETHER IN CLASS PRIOR TO THE HOMEWORK DAY

1. Equilibrium. Work review question #2 in Chapter 2.
2. Unemployment. If I was discussing “The Macroeconomics of SHSU,” I could define “unemployment” as the inability of a student to register for a class that he or she wishes to take. In this context, one can find examples of frictional unemployment, structural unemployment, and cyclical unemployment.
  - A) Looking at the SHSU class schedule, most classes in Agriculture and Chemistry are full, while many classes in Library Science and Sociology have open spots. Which type of unemployment does this describe?
  - B) In the California State University system, recession-induced budget cuts reduced the number of classes campus-wide, making it difficult for students to register for a full schedule. Which type of unemployment does this describe?
  - C) Around the beginning of each semester, students sometimes register for one section of a class, then move to a another section when an opening becomes available. This, in turn, creates an opening in the original section that soon gets filled by someone else. Which type of unemployment does this describe?
  - D) Would a tuition increase raise the rate of unemployment, or lower it? Explain.
3. Labor Demand. Work review question #4 in Chapter 3, and review question #3 in Chapter 4.

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4. Equilibrium. Explain, using Supply/Demand analysis, the effects of the following. For each, draw two graphs, one for the labor market (workers), and one for the output market (the product).
  - A) A machine is developed that harvests tomatoes mechanically (on the market for laborers, and the tomato market).
  - B) An economic contraction leads to a slowdown in housing construction (on the housing market, and the market for construction workers).
  - C) A huge natural gas reserve is tapped in the Barnett Shale in Fort Worth, Texas (on the market for workers in the natural gas industry, and the market for natural gas).
  - D) World War I kills a substantial fraction of the unskilled (primarily young) workers in the countries involved (on the market for low-skill labor, and for products made by low-skill labor).
5. Equilibrium. Assume the child care industry is a perfectly competitive industry, and that child care workers are hired in a perfectly competitive labor market. There is a sizable Child Care Tax Credit, which lowers the taxes of those parents who put their children in (paid) child care while they (the parents) work.
  - A) On an S/D graph, illustrate how the tax credit affects the price and quantity of child care in the short run.
  - B) On an S/D graph, illustrate how the tax credit affects wages and employment in the nursing market (many nurses require child care for their children while they are at work).
  - C) On an S/D graph, illustrate how the tax credit affects wages and employment in the child care industry. An academic study (really) has found that the supply of child care workers is quite elastic. Be sure this is

shown in your graph. Which changes more: the wages of child care workers, or the total number of child care workers employed?

6. Unemployment. Work review question #6 in Chapter 14 (#7 is similar, and is answered in the back of the book).

7. Labor Supply. As discussed in the priests articles, Catholic priests take a vow of chastity, forgoing marriage and intimate non-marital relationships.

A) How does the vow of chastity affect the labor supply of Catholic priests? Illustrate on a graph. It doesn't have to be a supply/demand graph because I'm not asking about demand.

B) In 2000, the last year for which I have data, the median salary of priests (including housing), set by the bishop of the diocese, was \$25,000. In contrast, full-time Protestant pastors earned \$40,000. Thus, we could say that Catholic priests earn a relatively low hourly wage. How does this affect labor supply? Illustrate on a graph.

C) Protestant pastors can marry, and their wages are determined by a fairly competitive market. Which labor market is more likely to have difficulty filling all the available positions—the market for Catholic priests, or the market for Protestant pastors? Why?

8. Labor Demand. Around 1820, with the invention of improvements in the milling of cotton, such as the cotton gin, cotton became much cheaper to raise and harvest, and cotton production exploded. In 1950, with the invention of the mechanical cotton harvester, fewer farm laborers (or sharecroppers) were needed to harvest the cotton.

A) Are cotton gins and cotton farm laborers complements or substitutes in production? Are mechanical harvesters and farm laborers complements or substitutes in production?

B) Consider the effect of the cotton gin on the demand for cotton farm laborers. Which is the primary reason demand increases: a scale effect or a substitution effect?

C) Consider the effect of the mechanical harvester on the demand for cotton farm laborers. Which is the primary reason demand decreases: a scale effect or a substitution effect?

Homework for Unit 2, ECON 3351, Darren Grant.

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1. Supply and Demand for Schooling. Below, from an academic study, is a table of the returns to education of white and black males in South Africa, showing the wage premia for being in the schooling category indicated vs. the next worse (less schooling) category. White males have many more years of schooling, on average, than do black males. We wish to explain the racial divergence in the *amount of* schooling and in the *returns to* schooling.

A) One potential explanation is that, because of discrimination, firms are reluctant to employ high skill blacks. Are the data consistent with that explanation? Illustrate on a pair of supply/demand graphs, one for whites and one for blacks. (No shifts, just different graphs.)

B) An alternative explanation is that blacks lack the financial resources needed to obtain more schooling. Are the data consistent with that explanation? Illustrate on a pair of supply/demand graphs.

	Blacks	Whites
Finished Grammar School	10%	0%
Finished High School	15%	10%
Finished College	30%	10%

2. General OJT. (Milgrom and Roberts, revised) Actuaries perform the crucial task of estimating the time paths and probability distributions of costs and revenues for different insurance contracts. Becoming an actuary takes several years, and involves passing a series of rigorous examinations given either by the Society of Actuaries (<http://www.soa.org/>) or by the Casualty Actuarial Society (<http://www.casact.org/>). Usually the individual works for an insurance company while studying for the exams, and the company gives the individual time off to study for the exams. Passing an exam usually results in a significant pay increase.

A) Actuaries have general human capital. Explain why.

B) Who “pays for” the worker’s time off to study for the exams? Choose one answer and explain.

- 1) the worker does, by accepting a lower salary
- 2) the firm does, to invest in the worker’s human capital

C) Why does the individual get a pay increase after passing each exam? Why not evaluate the employee once per year, like many companies do?

3. Specific OJT. (Milgrom and Roberts, revised) Workers who are laid off from their jobs generally receive lower wages once they find new jobs (*Fact 1*). Moreover, the wage reduction appears to be persistent--for many years, wages are lower than they would have been had the worker keep his/her old job (*Fact 2*). Moreover, the wage loss differs by the type of job--relatively unskilled laborers such as fast-food workers or retail clerks suffered a smaller wage decline than did certain kinds of skilled labor, such as production workers in automobile or airplane manufacturing plants (*Fact 3*). What key insight explains all three of these facts?

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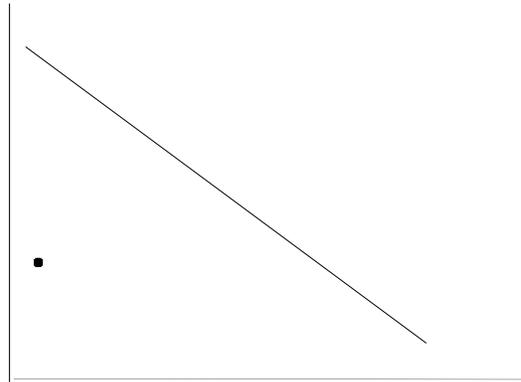
4. Investment in Human Capital. Work review question #9 in Chapter 9.

5. Schooling and On the Job Training. In Japan, entry into college is (essentially) limited to those who can pass certain standardized tests. In the United States entry is not so limited.

A) Illustrate the effect of the college entry limitations on the rate of return to schooling in Japan, using an appropriate supply/demand graph, with axes properly labeled.

B) Work review question #7 in Chapter 10, which is also about Japan.

6. OJT, Pay, and Turnover. Below is drawn a graph of pay at WeirdCo, a company with “innovative” pay practices. The vertical axis is in dollars, and the horizontal axis indicates years spent at this firm. The point indicates the value of the worker’s general human capital at the time they join the firm; this human capital never goes away. The downward sloping line is the worker’s pay. Each year you work at WeirdCo, your salary goes down. Initially, assume all human capital accumulated at WeirdCo is general.



A) If human capital acquisition follows theory, what would happen? Draw the path of human capital acquisition on the graph, beginning, of course, at the point provided.

B) How long would an individual joining this firm remain before leaving? Identify clearly on the graph, and briefly explain below.

C) Now let all human capital acquired at WeirdCo be firm-specific. How long would the individual remain at WeirdCo then? Choose one answer and explain.

- 1) they would stay just as long as in part B)
- 2) they would stay longer than in part B)
- 3) they would stay shorter than in part B)

D) Under what circumstances would this pay policy be effective? Choose one answer and explain.

- 1) none–this pay policy just makes no sense
- 2) it is a standard example of “backloaded compensation” used to incentivize effort
- 3) this is the way most internal labor markets pay people

7. Answer the following questions, based on the article “Vet Debt” and its accompanying graphs.

A) Draw out a S/D graph to explain and interpret the information in the graphs that accompany the article. What should happen to pay as a result of the changes in supply and/or demand?

B) If the market for veterinarians is perfectly competitive, how does the typical vet office decide what to pay its vets?

C) The excerpt indicates substantial unemployment among recent graduates from vet school. Interpret that in terms of the graph you just drew. At the time of this article, was the market for veterinarians in equilibrium, or not?

Homework for Unit 3, ECON 3351, Darren Grant.

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1. Compensating Wage Differentials. Work review question #7 in Chapter 8.
2. Compensating Wage Differentials. A study has shown that single parents are less likely to choose risky occupations (with a high injury or death risk) than married parents are, and that married women are much less likely to choose a risky occupation than are married men.
  - A) What do the results of this study tell us about worker attitudes regarding occupational safety and child rearing?
  - B) Draw a supply/demand graph for a “safe” occupation and one for a “risky” occupation. Locate, with a “little person,” the typical single parent on the supply curve for each occupation. Then do the same for the typical married man. Who ends up working where?
  - C) Describe, using the graphs you just drew, how market wages sort workers into jobs consistent with their preferences for occupational safety.
3. International Trade. During the 1980s the international community embargoed (refused to buy) South African products in an effort to eliminate apartheid. When the embargo was repealed, in the 1990s, after apartheid was eliminated, the industrialized nations and South Africa began trading again. Analyze the effects of the removal of the embargo on wages and employment in low-skill and high-skill labor markets in South Africa, using two supply/demand graphs. Be clear.

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4. Compensating Wage Differentials. Work review question #6 in Chapter 8. (The main idea in this question is similar to that in #5, which is answered in the back of your book.)
5. Compensating Wage Differentials. (Ehrenberg and Smith, modified) Some employers offer jobs for which overtime is mandatory. Others offer jobs for which overtime hours are usually available to workers if they wish to work them. Still other employers offer jobs for which overtime hours are not commonly worked. (By law, overtime pay for hourly workers is 50% greater than regular pay.) Suppose that a careful study of wages finds that, all else equal, jobs for which overtime hours are commonly available pay lower wages than jobs for which overtime is not usually worked. (The term “wage” refers to the normal wage, not the overtime wage.) Furthermore, the study finds that jobs for which overtime is not usually worked pay less than jobs in which overtime is mandatory.
  - A) What do the results of this study tell us about worker attitudes regarding overtime? Why?
  - B) What kinds of workers would be sorted into each kind of job? Why?
6. Discrimination. As a group, women now get slightly more schooling than men do. Upon graduating from college, they receive salary offers that are comparable to men’s offers, but as they age, women’s wage growth lags behind men’s, even when they have the same amount of education.
  - A) Offer an explanation for these facts, based on the theory of human capital.
  - B) Under one standard theory of labor market discrimination, “employer discrimination,” employers are willing to pay a fixed premium to hire members of a preferred group instead of members of a non-preferred group. What pattern of facts should you observe if women were discriminated against in this way?

C) Under another theory of discrimination, families are reluctant to invest in the education of their daughters. What pattern of facts should you observe if women were discriminated against in this way?

7. International Trade. Answer the following questions, based on the article, "In the Wake of NAFTA, A Family Firm Sees Business Go South."

A) Based on the information in the article, which country, Mexico or the U.S., has the comparative advantage in sewing apparel?

B) NAFTA eliminated quotas on the amount of clothing that Mexico can export to the U.S. Illustrate the effect of this on the wages and employment in the apparel industry in each country, on two separate supply and demand graphs.

C) The article indicates that NAFTA has created more jobs in the U.S. than it has destroyed. How can that be, if Mexico's labor costs are only 1/7th of what they are in the U.S.? What kinds of jobs will be created in the U.S.?

D) The article discusses the wages and the productivity at the Mehserjians' plants in California and Mexico. Which plant has lower per-unit costs (average costs)? Why?

8. International Trade. Nogales, Arizona, is right across the border from Nogales, Mexico. In the late 1990s, shortly after NAFTA was enacted, trade barriers between the two countries fell, and Nogales, Arizona's unemployment rate rose to 22.6%. At the same time, large numbers of new jobs went unfilled, with advertisements placed across the U.S. to attract workers.

A) Is 22.6% a low, medium, or high unemployment rate? Given the information in the question, is this unemployment best classified as frictional, structural, or cyclical? Why?

B) Illustrate, on two different supply/demand graphs, the effect of NAFTA on wages and employment in high-skill and low-skill labor markets in Nogales, Arizona.

C) Illustrate, on two different supply/demand graphs, the effect of NAFTA on wages and employment in high-skill and low-skill labor markets in Nogales, Mexico.

D) Putting together the answers to parts A, B, and C, describe in simple words what is going on here.

E) NAFTA also reduced trade barriers with Canada. Should there be similar effects in towns that split the U.S.-Canada border, such as Detroit and Windsor, Ontario? Why or why not?