Second Hour Exam
Public Finance - 180.365
Fall, 2004
Answers

# 1 Multiple Choice (3 pt each)

Correct answer indicated by $\Rightarrow$

1. When the average buyer of an insurance policy is likely to have higher risk than others in his class, this is known as

    (a) $\Rightarrow$adverse selection.
    (b) moral hazard.
    (c) asymmetric information.
    (d) a HMO.
    (e) none of the above

2. There are two forms of health care provided by the government: _____ is provided for the poor, and _____ is provided for the elderly.

    (a) HMO; Medicare
    (b) PMI; HMO
    (c) $\Rightarrow$Medicaid; Medicare
    (d) Medicare; Medicaid
    (e) SSI; Medicare

3. Health care markets may be inefficient because of

    (a) poor information.
    (b) adverse selection.
    (c) moral hazard.
    (d) $\Rightarrow$all of the above.
    (e) none of the above.

4. Most private insurance is provided by[1]

    (a) $\Rightarrow$employers as a benefit to their employees.
    (b) the federal government.
    (c) $\Rightarrow$HMOs.

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[1]There are two defensible answers to this question; credit was given for either answer.

(d) the Office of Health Insurance.

(e) all of the above.

5. When people behave in ways that involve increased risk because they have insurance, this is known as

(a) adverse selection.

(b) ⇒moral hazard.

(c) asymmetric information.

(d) a HMO.

6. How many elderly people are covered by Medicare?

(a) one third

(b) one half

(c) ⇒almost all

(d) almost none

7. Generally, managed care means

(a) health care is provided by teams, not by an individual doctor.

(b) ⇒limits are placed on utilization of health care services.

(c) health care is provided by the government to all citizens.

(d) doctors pick which patients they want to see.

8. Public finance theory says government policy toward inequality should be governed by considerations of

(a) Efficiency

(b) Distributive Justice

(c) Procedural Justice

(d) ⇒Some combination of a)-c)

(e) None of a)-c)

9. If everyone agreed that Donald Trump would derive more pleasure from an extra dollar of wealth than you would suffer pain from having the dollar taken away from you, utilitarian distributive justice would say:

(a) ⇒The government should take money from you and give it to Trump

(b) How money should be transferred between you and Trump depends on your weights in the social welfare function

(c) The government should not redistribute income among citizens

(d) Trump should be taxed at a higher rate because he is richer

(e) Trump's TV show should be banned because it contributes to bad taste

10. The standard additive utilitarian utility function with equal weights assumes that

    (a) No person is more important than any other in determining overall social well being
    (b) My happiness or unhappiness has no effect on you
    (c) Utility can be measured easily enough to base policy on it
    (d) Pareto improvements are unambiguously good
    (e) ⇒All of the above

11. Which of the following is *not* an assumption used in class for reaching the conclusion, using utilitarian reasoning, that income should be divided equally:

    (a) Everybody has the same utility function
    (b) There is a fixed amount of income to be divided
    (c) Marginal utility is a diminishing function of income
    (d) ⇒Some people are more productive than others
    (e) Income is the only thing that matters for happiness

12. Who among the following philosophers cannot be interpreted as advocating some form of utilitarianism?

    (a) ⇒Robert Nozick
    (b) Jeremy Bentham
    (c) Karl Marx
    (d) Robin Hood
    (e) John Rawls

13. Which of the following statements about income inequality is not true?

    (a) The fraction of income received by the middle 3 quintiles has declined since the late 60s
    (b) ⇒The poverty rate has increased sharply since the late 60s
    (c) After tax income is distributed more unequally in the U.S. than in Europe
    (d) High income individuals pay a much larger proportion of their incomes in taxes than do low income individuals
    (e) The bulk of the Bush tax cuts has gone to high-income households

14. According to the *Economist*, which of the following is *not* true of globalization

    (a) It is good for individuals
    (b) It is good for poor countries
    (c) ⇒Governments have little power to stop or interfere with it
    (d) Business interests often fight it
    (e) Corporations' main interest is in making profits, whatever they might say

15. According to the arguments presented in lecture, globalization

(a) Enhances distributive justice

(b) Enhances procedural justice

(c) Hurts the incomes of low-income workers in rich countries

(d) Improves the purchasing power of low-income workers in rich countries

(e) $\Rightarrow$All of the above

## 2    Short Discussion Questions (25 pt)

6 pt    1. In communist countries the saying "They pretend to pay us, we pretend to work" was invented to describe the combination of low wages and low output from Soviet enterprises. How does this reality change the prescription from utilitarian theory that everyone should have an equal income? Discuss which big flaw or flaws in the argument for equality of income lead to the bad outcome captured by the saying.

> *Answer:*
> There was a discussion of this point in lecture. The biggest problem is that if everyone is paid the same wage no matter how well or badly they do their job, many people will not do their a good job. What's the point of working hard if you don't get paid any more than the lazy slob in the office next to you who does nothing?

10 pt    2. Suppose that the demand for medical services can be characterized by the equation $X = 500 - P/3$. Suppose further that the supply of health services can be characterized by the equation $X = P - 100$.

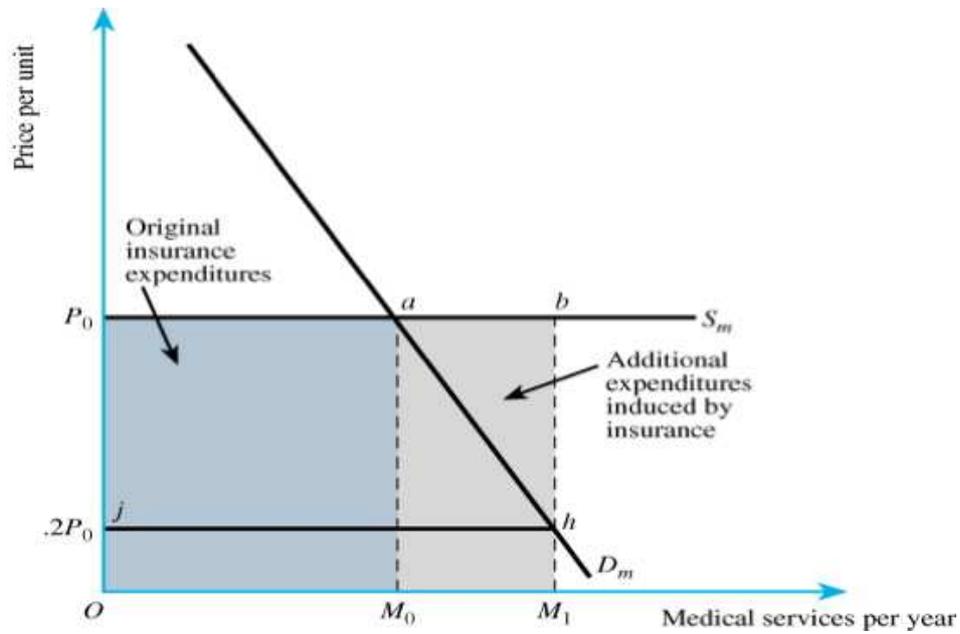5 pt    (a) What are the equilibrium quantity and price in the market for health services?

> *Answer:*
> Set $1,500 - 3X = 100 + X$ to get that $X^* = 350$ and $P^* = \$450$.

5 pt    (b) In an effort to make health services more affordable, the government restricts the price of health services to be no greater than $250. What will happen to the quantity of health services in the market?

> *Answer:*
> At a price of $250, a shortage of health services will occur. Demand will be 500-250/3 or a bit below 420 while supply will be only 150. Thus there will be a shortage of health care services. Rationing of some kind will occur.

9 pt  3. Refer to the figure above. Suppose that the demand curve $D_m$ can be characterized by the equation $M = 2000 - P$, where $M$ is the amount of medical services received per year and $P$ is the price. Suppose further that $P_0$ is constant at 800.

(a) Find $M_0$

(b) Find $M_1$

(c) How much additional expenditures induced by insurance are created?

*Answers:*

(a) At a price of \$800, M0 = 2,000 - 800 = 1,200.

(b) To find M1, we need 0.2(800) = 160. Therefore, M1 = 2,000 - 160 = 1,840.

(c) The area we want is abM1M0, which is 800(1,840 - 1,200) = 512,000

# 3 Longer Question (30 pt)

Consider a world economy in which there are two countries, $A$ and $B$ with equal populations, and figs are the only good produced or consumed in the world. Country $A$ happens to have good geography for fig trees, so it produces 6 figs per capita per day, while country $B$ is mostly desert so it produces only 2 figs per capita per day.

The utility functions of these countries depend only on figs consumed per capita per day; $F_A$ is the daily per capita fig consumption of people in country $A$, and similarly for $F_B$.

Suppose the world is ruled by a benevolent dictator named K who can redistribute figs from one country to another however he wishes.

10 pt   1. Assume that utility functions for fig consumption are identical in the two countries. Explain how K will allocate fig consumption across countries under two scenarios: 1) K is a libertarian; or 2) K has an equal-weighted additive utilitarian world social welfare function $W = U_A + U_B$. *Explain why* your answers are right - you will not get full credit if you only give the correct numbers for $F_A$ and $F_B$ with no explanation.

   *Answer:*

   Libertarian  If he is a libertarian, he will not interfere with the distribution of goods, so $F_A = 6$ and $F_B = 2$, each country's consumption equals its production.

   Utilitarian  These countries satisfy all the assumptions under which we showed that equal division of resources is optimal. So $F_A = F_B = 4$.

   Now assume the different countries have different utility functions,

   $$U_A = 40F_A - 3F_A^2 \tag{1}$$
   $$U_B = 40F_B - F_B^2 \tag{2}$$

   This implies that marginal social welfare functions of these countries can be written

   $$MU_A = 40 - 6F_A$$
   $$MU_B = 40 - 2F_B$$

12 pt   2. Discuss how K will allocate figs across countries now, if he is 1) a libertarian; 2) he has an equal-weighted additive utilitarian world social welfare function.

   *Answer:*

   If he is a libertarian, he will not interfere with the distribution of goods, so $F_A = 6$ and $F_B = 2$, each country's consumption equals its production.

   For the utilitiarian, this problem is identical to the Bart-Lisa-Marge problem on problem set 3, except that Lisa has been relabeled as country $A$, Bart as country $B$, and Marge as dictator $K$.

   See the solution to that problem for an explanation of why the solution is for K to set $F_B = 6$ and $F_A = 2$, which is the exact inverse of the two countries' production of figs.

8 pt    3. Now suppose there is a revolution against the world dictator and countries start behaving in their own national interest (defined by their different utility functions). Explain what consumption of figs will be now in the two countries. Discuss whether world welfare goes up or down, and discuss whether the new situation can be ranked as Pareto superior, Pareto inferior, or neither compared to the old situation.

*Answer:*

Under the dictatorial rule of $K$, country $A$ was producing 6 figs but only being allowed to consume 2. Obviously they will start consuming all their figs. Country $B$ will therefore have its consumption reduced back to its production of 2, from the 6 that K had allocated it. World social welfare is reduced because $A$ doesn't like figs as much as $B$ but is consuming much more figs. However, the new situation cannot be called "Pareto inferior" to the original situation; for that to be true, it would have to be the case that somebody was worse off and *nobody* better off; but clearly country $A$ is better off in the new situation.