**Midterm Solutions**

Question A.

1.   To answer whether pC is less than or more than the value of health care depends on your position on two positive issues. The first positive issue relates to the failure of the individual insurance market. If poor people are unable to obtain health insurance outside of Medicaid at a full-information, competitive price (pC) (perhaps due to market failure from adverse selection), they may value the in kind transfer of health insurance to its dollar value (pC). This reasoning leads to the conclusion that pC is an underestimate of the value of Medicaid.

The second positive issue relates to the valuation of in-kind vs. cash benefits directly. If people can buy the equivalent health insurance with pC, some may prefer to buy less generous coverage with the dollar transfer than is provided by Medicaid, while others may prefer to buy more generous coverage. For the former group, the in kind benefit is less valuable than an equivalent cash benefit (since they would be able to buy stuff that they like better than health insurance with the cash benefit). The latter group is indifferent between the in-kind and cash benefits (since they could simply augment the in-kind provision of health insurance with other income). This reasoning leads to the conclusion that pC is an overestimate of the value of Medicaid.

Full credit was given for either of the above answers.
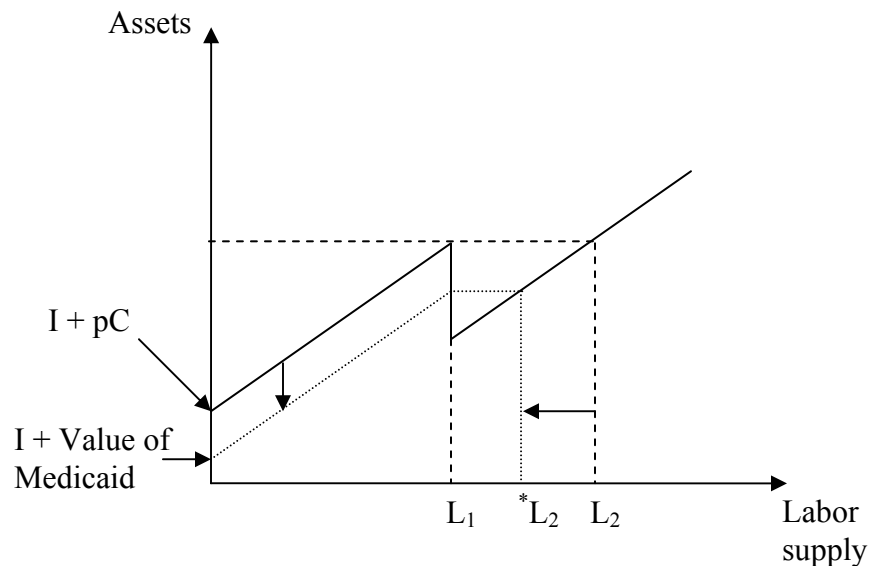
The graph on the previous page shows that the region with no incentive to work shrinks if pC overestimates the value of Medicaid; L_2 moves left and L_1 does not change. If your answer to the first part of this question was that pC underestimates the value of Medicaid, then you should have produced an analogous graph where the region grows, L_1 stays put and L_2 shifts to the right.

2.   The easiest way to answer to this question is to ask what indifference curves will look like the Asset-Labor Supply coordinate axis. Since labor supply is a bad while assets are a good, indifference curves must be upward sloping. As long as utility is concave, indifference curves will be convex. Given this information, we can draw the indifference curve that runs through the kink at the top point of the $I + pC$ line. There three different possible cases:

Case I:
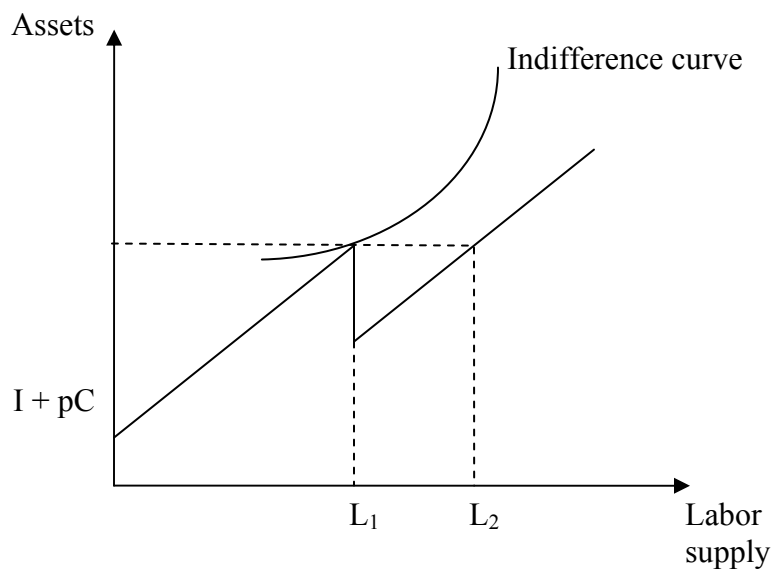
In this case, the indifference curve never hits the income line to the right of L_2. Consequently, the region is infinitely sized: $[L_1, \infty)$. L_2 shifts to the right, all the way to ∞. This person will never work more than L_1 hours.

Case II:
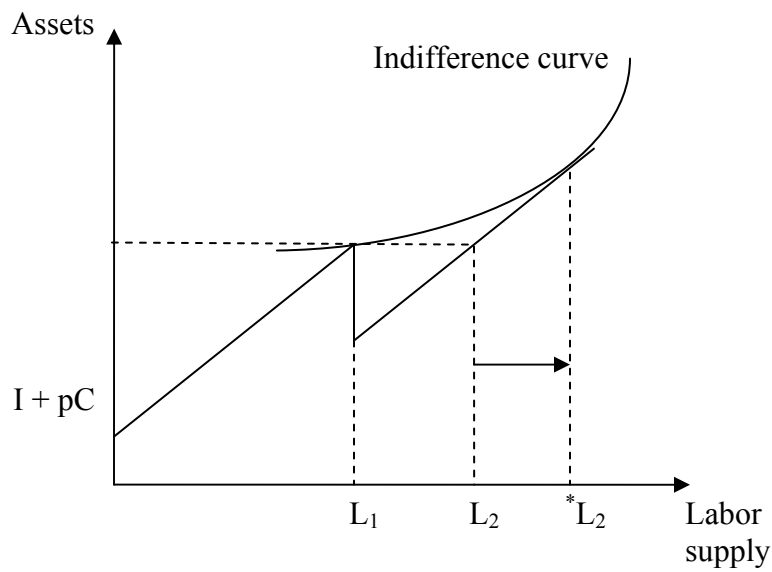
In this case, the indifference curve that runs through the kink is tangent to the income line on the right. This individual is indifferent between L_1 and $^*L_2$. Consequently, the region expands from $[L_1, L_2]$ to $[L_1, ^*L_2]$, with L_1 remaining fixed and L_2 moving to the right. This person will work either L_1 or $^*L_2$ hours, but never more than that.

Case III:
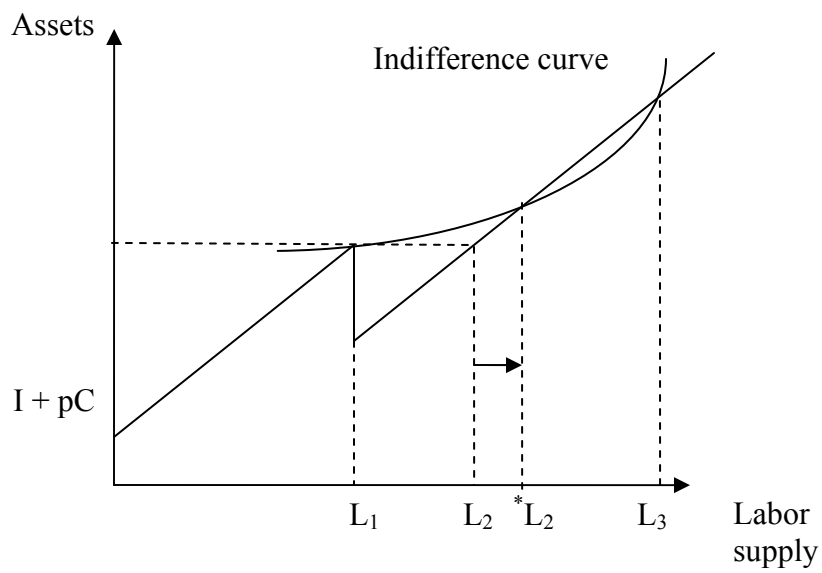
In this case, the individual will never work between L_1 and $^*L_2$ hours; that is, the region expands from $[L_1, L_2]$ to $[L_1, ^*L_2]$. However, this individual actually prefers working anywhere between $^*L_2$ and L_3 to working L_1 hours (or less). So despite the disincentive to work created by Medicaid, this individual will choose to work quite a bit.

3.   This question is straightforward if you use the graph correctly. An increase in the wage rate will increase the slope of both income lines (before and after the slope):
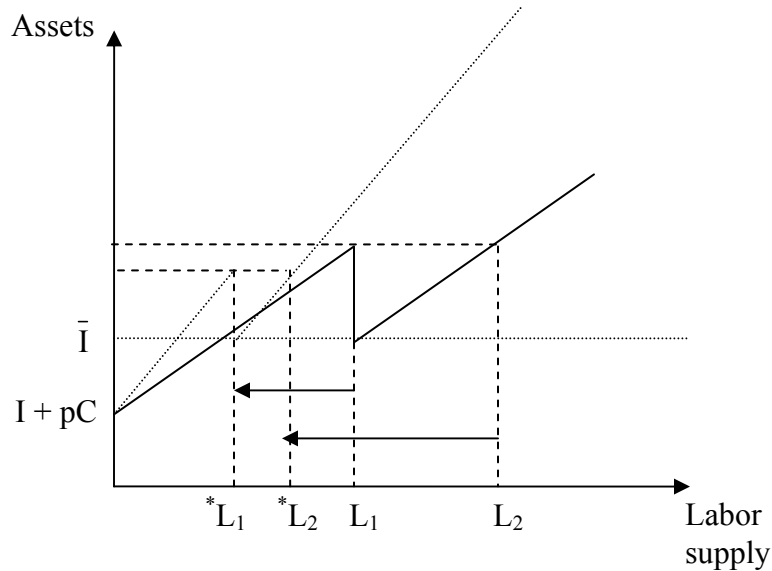
The increased slope means that this individual will hit the Medicaid income threshold earlier, so L_1 will shift to the left to $^*L_1$. Similarly, since the slope of the income line after the kink also increases, this individual will regain the $^*L_1$ level of income with Medicaid quicker, so L_2 will similarly shift to the left to $^*L_2$. Overall, the size of the region will shrink.

Question B.

1. False - While it is true that expenditures on health care have increased substantially, it is misleading to simply say that the price of health care has risen. The main reasons for rising expenditures are new treatments and quality improvements, which are better interpreted as a drop in price. (However, official price indices for health care have risen because they do a poor job of taking quality improvements into account.)

2. True - Moral hazard occurs when quantity used increases in response to a decline in price. If demand elasticity is zero, then quantity does not respond to price changes, and there is no moral hazard.

3. True/False - Under the simple model shown in class, the expected utility under risk is always lower than receiving the equivalent expected income with certainty. (Many of you pointed out that the utility goes away when the probability of getting sick is zero or one, which is fine, but then there is no risk either!)

4. False - Loading fees are much higher for smaller groups, as was discussed in Kate Bundorf's lecture and elsewhere.

5. False - The shorter life expectancy of the poor appears to be about equally offset by their higher usage of benefits while alive. Furthermore, the rich pay far more in Medicare taxes during their lives. So on the whole, the program distributes from the rich to the poor, not vise versa.

6. True - There was a modest decline in Medicare enrollment during the 90's boom, as shown in the graph from the lecture on the uninsured. (If you said it held steady, this was also acceptable). This decline occurred despite an expansion in Medicaid eligibility in many states, including the CHIPS program expanding benefits to many children. (FYI: Contrary to what many of you answered, the economic expansion in the 1990s DID help those on the low end of the income spectrum quite a lot, especially as compared with previous expansions. For example, the poverty rate as measured by the census bureau fell from a high of 15.1% in 1993, to 11.3% in 2000, its lowest level since 1974.)

7. False - Admission rates have dropped all over, but especially at SMALL hospitals.

8. False - Phase III drug trials are large scale randomized trials conducted on volunteers who have the condition the drug is designed to treat.

9. False - The simple existence of MCOs which spend less does not imply that enrollees welfare has gone down. Enrollees may prefer the lower premiums that go along with lower expenditures. (Noting that health outcomes in MCOs appear equally good strengthens the argument, but it is not necessary...even if health outcomes in MCOs were worse, enrollees might be happier because of the lower premiums. Remember, welfare includes more than just health care!)

10. False - Physicians are typically not employees of the hospital.

Question C:

Points on this question were awarded based upon three criteria: clarity, completeness, and the lack of internal contradictions in the answer.

The best answers made clear the author's position on positive issues, and then traced out what implications these positions have on the predicted effects of the maternity mandate.

Here is a set of positions on positive questions that seem reasonable to me (though none of them have a rock solid evidentiary base, in my view, some are quite likely to be correct):

(1) Net compensation from employment remains fixed at marginal value product regardless of the regulation. The increase in the value of health insurance to women of child-bearing age is offset by a decrease in wages.

(2) Employers cannot discriminate groups in making wage-setting decisions.

(3) Insurance is actuarially fairly priced (or rather, insurance premiums rise with expected costs of coverage). The latter seems more defensible to me.

(4) Prenatal health insurance coverage improves health outcomes for moms and kids (even among those who wouldn't choose such coverage in the absence of a maternity coverage mandate).

(5) People in the same insurance pool pay the same premium as everyone else in the pool.

(6) All else equal, women and their spouses who want children value health insurance coverage of maternity benefits more than people from other demographic groups.

The following table lays out my predictions for four different demographic groups based upon my positions on these positive issues.

Women of child-bearing age	
Probability of insurance coverage	This is likely to decrease for at least two reasons. First, since the price of insurance is higher (see below), fewer companies (acting as agents of their employees) will offer insurance. Second, because of (6), women of child-bearing age and their spouses will be more preferentially attracted to employers offering insurance, which will be mandated to cover maternity benefits. This may induce an adverse selection problem if insurers imperfectly observe who plans to have children. This in turn will restrict coverage offers by insurance companies.
Price of insurance	(3) implies that the price of insurance must increase.
Probability of employment	Because of (1), there will be no direct effect on employment because of changes in the demand for labor. Because of (6), the supply of labor by women of child-bearing age shift out, which will increase employment, and further reduce wages.
Wages	Because of (1) and (2), and the fact that the price of insurance will rise, wages must necessarily fall. (6) may reinforce this effect by increasing the supply of labor by women of child-bearing age.
Health status	Because of (4), mothers' health status will improve for those who gain maternity coverage as a result of the mandate, but will decline for those who lose insurance (to the extent insurance coverage improves health).

Other adults	
Probability of insurance coverage	For the same reasons given above for children of child-bearing age, insurance coverage will decline among other adults.
Price of insurance	Because of (5), other adults will face the same price increase in their insurance as women of child-bearing age.
Probability of employment	For most groups, there will be no effect on employment because of (1). However, for men who are considering having more children, the supply of labor might shift out, increasing employment, and decreasing wages.
Wages	Wages will decline for this group because of (1), (2), and (5). To the extent the supply of labor shifts out, this will reinforce the wage decline.
Health status	No effect.
Newborns	
Health status	Because of (4), health status will improve for those who gain maternity coverage as a result of the mandate, but will decline for those who lose insurance.

Clearly, a different set of assumptions on positive issues would produce a different set of predictions. As long as the answer was internally consistent, there was no penalty for starting with a different set of positive assumptions than the ones listed above.