| Student Number | % |
|---|---|
| 990360220 | 68.75 |
| 990816355 | 65 |
| 990823043 | 65 |
| 990869618 | 66.25 |
| 990908292 | 65 |
| 990957167 | 65 |
| 991034439 | 73.75 |
| 991143632 | 35 |
| 991402335 | 52.5 |
| 991442961 | 65 |
| 991528030 | 66.25 |
| 991594814 | 70 |
| 991656249 | 52.5 |
| 991668888 | 70 |
| 991671981 | 51.25 |
| 991730613 | 48.75 |
| 991732906 | 85 |
| 991780667 | 70 |
| 991846348 | 78.75 |
| 992044827 | 67.5 |
| 992129558 | 58.75 |
| 992186923 | 60 |
| 992190133 | 77.5 |
| 992207599 | 57.5 |
| 992262975 | 61.25 |
| 992296911 | 77.5 |
| 992321796 | 52.5 |
| 992329397 | 83.75 |
| 992369726 | 85 |
| 992376656 | 61.25 |
| 992403074 | 73.75 |
| 992475807 | 75 |
| 992482318 | 56.25 |
| 992490078 | 72.5 |
| 992500691 | 72.5 |
| 992528500 | 45 |
| 992798914 | 82.5 |
| 992915351 | 86.25 |
| 993108025 | 70 |
| 993123384 | 77.5 |
| 993222053 | 66.25 |
| 993237877 | 76.25 |
| 993280463 | 80 |
| 993308265 | 56.25 |
| 993326281 | 68.75 |
| 993496944 | 82.5 |
| 994052519 | 65 |
| 994232692 | 82.5 |
| 994260492 | 71.25 |
| 994367564 | 63.75 |

| | |
|---|---|
| 994399575 | 71.25 |
| 995047872 | 32.5 |
| 995050180 | 87.5 |
| 995059421 | 80 |
| | **67.61574** |

20s
30s
40s
50s
60s
70s
80s
90s

332F: Mid Term

NAME:_____

STUDENT NO:_____

OPEN BOOK: ALL AIDS ALLOWED, 2 HOURS
ANSWER ALL QUESTIONS.

1. Consider the investment in public good discussed in the text. Let the mother's utility be:

$$U(c, q) = q \ln c$$

Let the father's utility be:

$$V(g, q) = q \ln g$$

Let mother's endowment and father's endowment be:

$$e = h = 2$$

Note that mother's marginal utility of own consumption is:

$$U_c = \frac{q}{c}$$

Father's marginal utility of own consumption is

$$V_g = \frac{q}{g}$$

Mother's marginal utility of child's consumption and the father's marginal utility of child's consumption are equal to:

$$U_q = \ln c$$
$$V_q = \ln g$$

(a) Find the equilibrium level of child's consumption if the mother is a single parent. Father is missing and his endowment is not available to the mother. (10)

(b) Both parents are present. Find the equilibrium level of child's consumption if both parents act non-cooperatively. (10)

(a) As a single parent, mother equates her marginal utility of own consumption to her marginal utility of child's consumption.

$$U_c = U_q \tag{1}$$
$$\frac{q}{c} = \ln c \tag{2}$$

Using her budget constraint:

$$\frac{q}{2-q} = \ln(2-q) \tag{3}$$

Let $q^*$ be the solution to the above equation.

(b) Taking father's contribution, $q^f$, as given, mother's best response, satisfy

$$U_c = U_q \tag{4}$$
$$\frac{q^m + q^f}{2-q^m} = \ln(2-q^m) \tag{5}$$

Similarly, taking the mother's contribution as given, the father's best response satisfy:

$$\frac{q^m + q^f}{2-q^f} = \ln(2-q^f) \tag{6}$$

Solve (5) and (6) for $q^m$ and $q^f$.

2. Consider a society with $M$ men where $M$ is large. All men have the same utility from being single, 0. There are two types of men with respect to marriage, $h$ and $l$ types. $\frac{1}{2}$ of the men are $h$ types and the other half are $l$ types. There are $\frac{3}{4}M$ number of women in this society. All women have the same utility from being single, 0. There are also two types of women, $H$ and $L$ types, equally divided among the female population.

The total marital output generated by an $l, L$ marriage is 2. The total marital output generated by an $\{l, H\}$, or $\{h, L\}$ marriage is 4. The total marital output generated by an $\{h, H\}$ marriage is 5.

For a marriage between type $m$ male and type $f$ female, the male will transfer $\tau_{mf}$ to the female as her share of the marital output. He will keep $Z_{mf} - \tau_{mf}$ for himself where $Z_{mf}$ is the total marital output produced by that pair.

The marriage market clears when given $\tau_{mf}$ for every type of marriage, every individual can find a spouse of his or her choice if he or she wants to.

(a) Is there complementarity in marital output production in this society? How can you motivate this kind of marital output production function? (5)

(b) What kind of marriage pattern do you expect to see in this society? Who do you expect to be unmarried? Which type of individuals, if any, do you expect to be married to multiple types of spouses? Explain your answers. (5)

(c) Find the equilibrium types of marriages, number of marriages of each type and transfers which clear the marriage market. (10)

(a)

$$\pi_{lH} + \pi_{hL} = 8 \tag{7}$$

$$\pi_{lL} + \pi_{hH} = 7 \tag{8}$$

$$\pi_{lH} + \pi_{hL} > \pi_{lL} + \pi_{hH} \tag{9}$$

No complimentarity. We can have such marital production functions if there is specialization within the household.

(b) Negative assortative matching by ability. Since women are scarce, lowest ability men are unmarried. $h$ type men should be married to two types of women. $H$ type women should be married to two types of men.

(c) $l$ men indifferent between marrying $H$ type women or remaining single imply

$$4 - \tau_{lH} = 0 \tag{10}$$

$$\tau_{lH} = 4 \tag{11}$$

$H$ women indifferent between marrying $h$ and $l$ men

$$\tau_{hH} = \tau_{lH} \tag{12}$$

$$\tau_{hH} = 4 \tag{13}$$

$h$ men indifferent between marrying $H$ and $L$ women

$$5 - \tau_{hH} = 4 - \tau_{hL} \tag{14}$$
$$5 - 4 = 4 - \tau_{hL} \tag{15}$$
$$\tau_{hL} = 3 \tag{16}$$

All women marry and its efficient to have negative assortative matching. So all $L$ type women, $\frac{1}{2}(\frac{3}{4}) = \frac{3}{8}$, marry $h$ type men. This means $\frac{1}{2} - \frac{3}{8} = \frac{1}{8}$ $h$ type men marry $H$ type women. Then $\frac{3}{8} - \frac{1}{8} = \frac{1}{4}$ $H$ women marry $l$ type men. So $\frac{1}{4}$ $L$ type men remain unmarried.

3. (a) Explain why making divorce easier may increase the marriage rate. (4)

(b) Do you have any empirical evidence for or against the hypothesis in (a)? (4)

(c) Holding male wages constant, will an increase in the wage offered to women lead to an increase or decrease of the marriage rate of women? (4)

(d) In rural county A, a new fruit pie making factory arrived in 2004. This factory primarily employed women to make fruit pies and it led to a 25% increase in the wage rate of women in county A. Male wages were unaffected. County A has two neighboring counties B and C. County B is separated from A by a road. County C is separated from A by a river. You have to cross a bridge twenty miles away and it takes half an hour to go from C to A.

Let $m_i^t$ be the marriage rate of women of age 18-20 in year $t$ and county $i$. You have marriage rate data for the years 2000 and 2005 for all three counties.

Explain how you will use the data to study how an increase in the wage rate of women will affect the marriage rate of women. (8)

(a) The individual does not give up the option of returning to the market with low divorce cost and so am willing to have a lower reservation match value for marriage. This will increase the marriage rate.

(b) Gruber found that there is NO systematic evidence that adults who reside in unilateral states have higher marriage rates than those who live in consent states.

(c) One gain from marriage is specialization within the household. The gains from specialization is based on comparative advantage which means that it is larger when the returns to market work versus housework are different between spouses. Assuming that males have higher wages than females, if the wages of women increase, this reduces the difference in returns to market work versus housework between the spouses lowering the gains to marriage.

(d) As a first pass, we can use the first difference estimate

$$m_A^{05} - m_A^{00} \tag{17}$$

to estimate the change in marriage rates due to an increase in the wage. But other factors which affect the marriage rate may also have changed between 00 and 05. So we want a control group. County B is not a good control group because it is separated by a road from county A. We expect women to commute from B to A to work in the factory. So wages of women in county B is likely also to have gone up. County C is a better control because it is further from A and so women are less likely to commute from C to A. In this case, it is less likely that wages of women in C are affected. So we can use a difference in difference estimator:

$$m_A^{05} - m_A^{00} - \{m_C^{05} - m_C^{00}\} \tag{18}$$

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4. Stevenson wanted to study the effect of the change from consent to unilateral divorce regimes on investment in marriage specific capital.

(a) Explain the two selection problems that she is worried about and how she dealt with them. (10)

(b) How does the selection problems that she is concerned about affects your interpretation of how the change in law affected female sucide behavior? (10)

(a) She is worried about the change in law and selection into and out of marriage. She uses a sample of newly weds arguing that selection out of marriage should be small in this case. The second sample consists fo individuals who marry under fault but spent their marriage life under a unilateral regime. She argues that this second sample should not be contaminated by selection into marriage.

(b) Stevenson and Wolfers are studying overall female sucide rate, married and unmarried. Thus they are interested in how unilateral divorce affected the overall suicide rate. The selection issues into and out of marriage would not affect her estimate of how unilateral divorce affected the overal suicide rate of females. It does affect estimates of the mechanisms by which the suicide rate was affected. Thus based on their estimates, we do not know how the suicide rate of the wife in a randomly chosen married couple in a consent state would have changed if the state changed to an unilateral state.