

Problem Set V
Economics 791

The marriage market is made up of three types of individuals. Young females (y_f) young males (y_m) and old males (o_m). Let $U(y_f, y_m)$ describe the utility of a young female who is married to a young male and so forth. Assume that $U(y_f, y_m) = 4 - D(y_f, y_m)$, $U(y_m, o_m) = -2 - D(y_m, o_m)$, $U(y_m, y_f) = -2 + D(y_m, y_f)$, and $U(o_m, y_f) = 3 + D(o_m, y_f)$ where $D(y_m, y_f)$ denote the dowry that a young male receives if he marries a young female and so forth. The utility of nonmarriage is zero for all individuals.

I. Assume that there are 50 young females, 100 young males and 100 old males.

a) At what dowries would a young female be just indifferent between marrying an old male and a young male?

b) At what dowry would a young male be just indifferent between marrying a young female and not marrying at all?

c) At what dowry would an old male be just indifferent between marrying a young female and not marrying at all?

d) Competition in the marriage market will ensure that members of a given type must all achieve the same utility, even if those members end up choosing more than one outcome in equilibrium. For example, young women will marry both old and young males in equilibrium only if, given the dowries, they are indifferent between these two outcomes. Using this fact, characterize this marriage market in equilibrium (i.e. who marries whom and what dowries are paid)? (Hint: The best way to solve this problem is by trial and error: assume a given outcome is an equilibrium and then see if the above condition is met for each type of individual).

II. Assume now that there are 150 young females but that the number of young and old males does not change.

a) Now characterize the marriage market in equilibrium.

b) Find the average dowry that is paid.

c) Why does an increase in the number of young females not necessarily lead to an increase in the average dowry?