

Marriage and Divorce

Lecture notes

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1 Introduction

- Some stylized facts:
 1. Increasing female labour force participation rates (Fig 1. and Table 2)
 2. Changes in and cross-country differences in divorce rates (Tab 2)
 3. Assortative mating
 4. Fertility rates (Tab 3.)

Fig 9.1

Tab 9.2

Tab 9.3

Question: Why should we care?

- Declining fertility.
 - Implies population aging
 - Sustainability of pension systems, health care etc.
- Assortative mating
 - Impact on inequality of disposable income;
 - Impact on the inequality among children.
- Divorce rates
 - Effect on children (Mayer, 1997)
 - Effect on savings (Cubeddu and Rios-Rull, 2002)
- Female labour force participation rates
 - Has made women's earnings more equal to men's.
 - Importance for e.g. tax design, anti-discrimination legislation etc.

2 Why Marry?

Question: What do economists have to say about marriage?

- Try to apply our theoretical toolbox to make predictions about
 - Economic benefits from marriage;
 - Who marries whom.
- Look at three broad economic benefits from marriage.
 1. Household production and specialization
 2. Sharing household public goods
 3. Risk-sharing

2.1 Household Production and Specialization

- Two individuals can do better by specializing according to comparative advantages.

Table 9.4 (a,b)

Example: (From Borjas p. 87-92, but with different numbers).

- Two individuals: Jack and Jill
- Enjoy “market goods” and “domestically produced goods” (cooking, cleaning, child rearing etc).
- Buying market goods requires cash obtained from working (in the labour market).
- Domestic goods produced using time as input.
- Suppose
 - Jack’s wage is £20/hour; he can produce £10 worth of domestic good/hour.
 - Jill’s wage is £10/hour; she can produce £20 worth of domestic good/hour.
- 10 hours each to allocate.

Question: What do their budget constraints look like individually?

- Jack’s budget constraint:

Fig 9.5 upper

- Jill’s budget constraint:

Fig 9.5 lower

- Suppose that Jack and Jill both consider market goods and domestic goods to be *perfect complements*.

- Before forming a household:
 - Jill consumes 66.67 units of each type of good.
 - Jack consumes 66.67 unit of each type of good.
- Suppose now that they form a “household”.

Question: What do their household budget constraint look like?

- Combining their two budget constraint gives:

Fig 9.6

Question: How much can they each consume by specializing fully?

- Total market income is £200; total value of domestic production is £200.
- Thus they can each enjoy £100 of each type of good!

Conclusion: Forming a household and specializing has made them both better off.

- In general we expect one partner to fully specialize.

Note: The gain is larger the more different are their productivities.

- Specialization requires that the spouses are *different*.
- Exploits comparative advantages.

2.2 Sharing Household Public Goods

- Many goods that are consumed have a public good feature *between family members*.
- Examples include expenditures on
 - housing;
 - children etc.

Example: Jack and Jill share a house.

- Consume a private good x and housing h .
- Each good costs £1 per unit.
- Jack and Jill each have £10 to spend.
- Consider x and h to be perfect complements.

Question: What do they each consume before forming a partnership?

- Each consumer 5 units of x and 5 units of h .

Fig 9.7 upper

- Suppose they can share housing without getting in each other’s way: h is a *public good* between them.

Question: What do they each consume after forming a partnership?

- Figure 9.6 (lower) illustrate what they can *each consume* after forming a partnership.

Fig 9.7 lower

- Will each consume $20/3 = 6.67$ units of x and 6.67 units of h .
- Jack contributes 3.33 to housing and spends the rest on x ; Jill does exactly the same.

Conclusion: Due to the sharing of a household public good, both Jack and Jill are better off.

- This does *not* require specialization.

2.3 Risk-Sharing

Example: Ben’s and Betty’s Promise

- Ben’s income is uncertain:
 - It is “high” (£100) with probability $1/2$;
 - It is “low” (£50) with probability $1/2$.
- Betty’s income is also uncertain (and independent of Ben’s income):
 - It is “high” (£100) with probability $1/2$;
 - It is “low” (£50) with probability $1/2$.
- Ben and Betty each have an *expected income* of £75.
- But they are both risk-averse.
- Suppose that they agree to “pool their incomes” and share the total equally.
- There are four possible outcomes; if they agree to share their incomes each get the following consumption:

		Betty’s income	
		High	Low
Ben’s Income	High	£100	£75
	Low	£75	£50

- The probability of each outcome is $1/4$.

Question: Does risk-sharing increase their expected utilities?

- Without risk-sharing each of them has the following expected utility:

$$U_0 = \frac{1}{2} \cdot u(\pounds 100) + \frac{1}{2} \cdot u(\pounds 50).$$

- With risk-sharing each of them has the following expected utility:

$$\begin{aligned} U_1 &= \frac{1}{4} \cdot u(\pounds 100) + \frac{1}{4} \cdot u(\pounds 50) + \frac{1}{2} \cdot u(\pounds 75) \\ &= \frac{1}{2} \cdot U_0 + \frac{1}{2} \cdot u(\pounds 75) \end{aligned}$$

- Risk-sharing increases Ben's and Betty's expected utilities by "smoothing" their consumption plans:

$$U_1 - U_0 = \frac{1}{2} \cdot (u(\pounds 75) - U_0) > 0.$$

Fig 9.8

Conclusion: By agreeing to share risk, Ben and Betty are both better off!

NOTE 1 *This is a very general result. Risk-averse consumers can increase their expected utilities by sharing (independent) risks.*

3 The Marriage Market

3.1 Stable Matching

- Consider a group of individuals consisting of males and females.
- Marriage can be viewed as a voluntary assignment of males to females.

Definition. An assignment is stable if

1. There is no married person who would rather be single;
2. There are no two persons (married or unmarried) who prefer to form a new union.

- Suppose there are two men and two women
 - Man 1 and Man 2;
 - Woman 1 and Woman 2.
- Suppose that they differ in one characteristic (income, education, beauty...) which we can rank.
- Suppose that $m_1 > m_2$ and $f_1 > f_2$.

Fig 9.9

Definition. Assortative mating

- *Positive assortative mating:* When marriages are by rank in terms of the characteristic.
- *Negative assortative mating:* When marriages are by *reverse* rank in terms of the characteristic.

3.2 Positive or Negative Assortative Mating

Example: Sharing a household good.

- Suppose that *all* income is used to purchase goods that are commonly used in the household.
- Hence the objective of each individual is to be part of a family with the highest possible total earnings.
- Suppose that
 - Woman 1 earns £25; Woman 2 earns £10;
 - Man 1 earns £25; Man 2 earns £10.

Question: What marriage pattern is stable?

- The only stable matching is

Man 1 marries Woman 1
Man 2 marries Woman 2

- The reason is obvious:
 - Man 1 prefers Woman 1 to Woman 2;
 - Woman 1 prefers Man 1 to Man 2;
 - Hence they are both each other most preferred choices!
- Man 2 cannot attract Woman 1 away from Man 1...

Conclusion: Sharing household goods should generate *positive* assortative mating!

- But what if the justification for marriage was specialization?

Example: Specialization

- Suppose each individual is good at one activity – market work or domestic work.
 - Man 1 earns wage £20 by working in market and £10 by working at home.
 - Man 2 earns wage £10 by working in market and £20 by working at home.
 - Woman 1 earns wage £20 by working in market and £10 by working at home.
 - Woman 2 earns wage £10 by working in market and £20 by working at home.
- Always consume market and domestic goods in the same proportion.
- Each has 10 hours to allocate.

Question: What marriage pattern is stable?

- The only stable matching is

Man 1 marries Woman 2
Man 2 marries Woman 1

Question: Why is this assignment stable?

- If Man 1 marries Woman 1 they cannot exploit comparative advantages; he will still consume 66.67 units of each good.
- If he instead marries Woman 2 they can specialize; he can then consume 100 units of each good.
- Similarly, Woman 2 prefers Man 1 to Man 2; Man 2 prefers Woman 1 to Woman 2; Woman 1 prefers Man 2 to Man 1.

Conclusion: Specialization should generate *negative* assortative mating!

3.3 The Empirical Evidence

Question: So what does the empirical evidence tell us?

- Overwhelming support for positive assortative mating.
 - On income, wages, education etc.
- Education - See Mare (1991). Table 9.10

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