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 10.1
Tab 10.2
Tab 10.3

Question: Why should we care?

- Declining fertility.
  - Implies population aging
  - Sustainability of pension systems, health care etc. (Guardian, Thursday August 30, 2001)

- 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 10.4**

**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 10.5 upper

- Jill’s budget constraint:
  
  Fig 10.5 lower

- Suppose that Jack and Jill both consider market goods and domestic goods to be *perfect comple-
  ments.*
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 10.6

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 $h$. 

3
• 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 10.6 (lower) illustrate what they can *each consume* after forming a partnership.

**Fig 10.7 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:

<table>
<thead>
<tr>
<th>Betty’s income</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben’s Income</td>
<td>High</td>
<td>£100</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>£75</td>
</tr>
</tbody>
</table>

• 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:
\[ U_0 = \frac{1}{2} \cdot u(£100) + \frac{1}{2} \cdot u(£50). \]

• With risk-sharing each of them has the following expected utility:
\[ U_1 = \frac{1}{4} \cdot u(£100) + \frac{1}{4} \cdot u(£50) + \frac{1}{2} \cdot u(£75) \]
\[ = \frac{1}{2} \cdot U_0 + \frac{1}{2} \cdot u(£75) \]

• Risk-sharing increases Ben’s and Betty’s expected utilities by “smoothing” their consumption plans:
\[ U_1 - U_0 = \frac{1}{2} \cdot (u(£75) - U_0) > 0. \]

**Fig 10.8**

**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 the differ in one characteristics (income, education, beauty...) which we can rank.

• Suppose that \( m_1 > m_2 \) and \( f_1 > f_2 \).

**Fig 10.9**

**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.

**Fig 10.?**
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 10.10

**References**


