

## Introduction

Population change is often an unspoken driver of many social, economic and environmental problems and opportunities amongst others. Population change is inevitable, and it greatly influences social, economic, environmental and political systems in countries and in the world. The emergence of population issues in various parts of the world creates challenges for nations, societies and for the world in general.

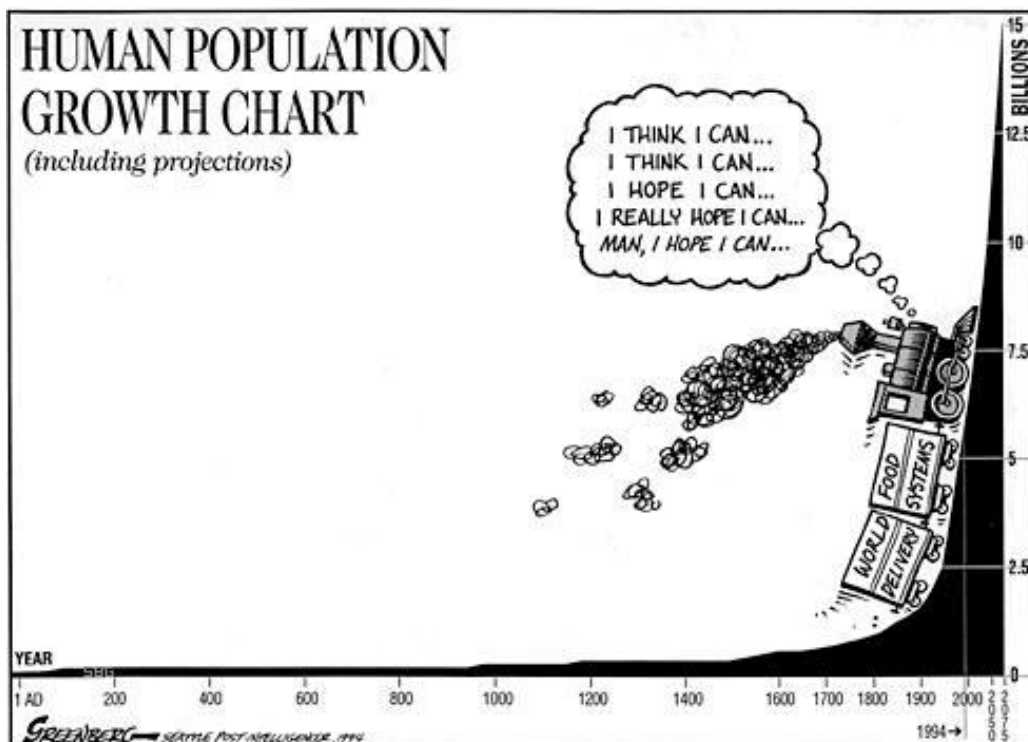


## Geographical Perspective on Population Issues and Challenges

In the study of Geography, a *spatial lens* is adopted to view population issues and challenges. What this means is that we will look at population trends in various parts of the world (spatial patterns of population) and ask ourselves why certain trends occur in some parts of the world and not others. We will be looking at how population changes differently in different parts of the world, probing into why these changes occur, and discovering what all these changes mean for the various countries/societies.

We are interested to find out **'The Why of the Where'** – Where do trends occur, why do they occur there and not somewhere else? We will also ask ourselves, **'So What'** if that trend occurs there? What does it mean for that country/region or the world in general?

For this topic, look out for spatial differences or variations in population trends especially between Developed Countries (DCs) and Less Developed Countries (LDCs). Ask yourself why there are differences or variations in population trends, and think about what all these mean for those countries or societies.



## LECTURE 1: Population Dynamics – Fertility

### Scaffolding Questions:

- How does fertility influence population change or population dynamics?
- How are the fertility trends in DCs and LDCs different? What are the spatial differences/variations in fertility? Why are there spatial variations in fertility around the world?
- What are the variables which affect fertility? How influential or significant are these variables in affecting fertility trends in DCs and LDCs?

### Population Dynamics – Fertility

1. General World Population Trends
2. Fertility and its influence on population change
3. Contemporary Fertility Differentials at Global and National Levels
4. Variables which affect fertility
  - A. Proximate Determinants (direct variables)
    - i. Marriage Patterns
    - ii. Patterns of Sexual Activity
    - iii. Use of Contraception
    - iv. Induced Abortion
    - v. Sterility
  - B. Intermediate Determinants (indirect variables)
    - i. Socio-economic variables
    - ii. Institutional variables

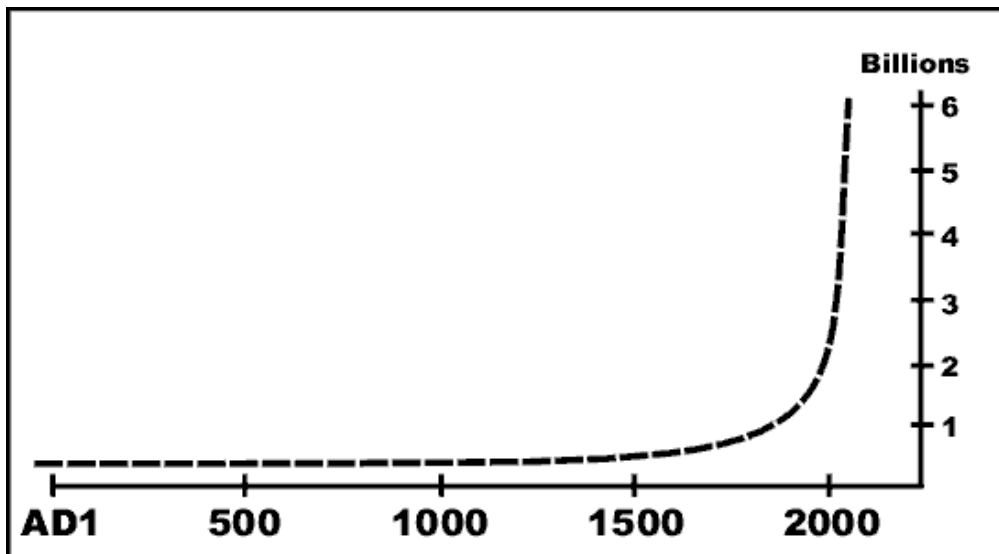
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The dynamics of a population is dependent on three main factors – **fertility**, **mortality** and **migration**. This lecture will focus on how fertility can affect the dynamics of a population and cause **population change**.

#### 1. General World Population Trends

- Human Population Growth Over Time:  
For many years, human population grew minimally. It was only in the 20<sup>th</sup> century when there was a phenomenal increase in population – the biggest in human history.
- In 1800, world population reached 1 billion; 2 billion in 1927, 3 billion in 1960, 4 billion in 1974, 5 billion in 1987 and 6 billion in 1999. The global population has risen from two billion in 1930 to 6.9 billion now (2010), with 9 billion projected by 2050. Whilst most of this growth has been contributed by Less Developed Countries (LDCs), the world's Developed Countries (DCs), totalling 1.2 billion people, see their populations continue to age as the numbers of those of working age dwindle.

### Population Growth over Time



- The burgeoning human population is acknowledged as one of the underlying causes of environmental issues such as climate change, deforestation, depletion of water resources and loss of biodiversity. However, some economists and policymakers consider population growth a good thing, as it produces a swelling workforce capable of producing more goods and continued economic growth.
- There are two major trends in world population today. In developed countries (DCs), chronically low birth rates are beginning to challenge the health and financial security of their elderly. On the other hand, in less developed countries (LDCs), over 80 billion people are added to the population every year, with the poorest of those countries having 20 million people added, exacerbating poverty and threatening the environment.
- In addition, people are living longer than ever and are being more mobile. These population trends are “likely to have a greater impact on the future of humanity than some of the other issues we talk a lot about” (Jonathon Porritt, *Forum for the Future*).

## 2. Fertility and its influence on population change

- **Fecundity** is the *biological capacity or ability* of females to produce offspring. All women are fecund. A good measure of fecundity is the number of women of **childbearing age (15-49 years)** in a population. The greater the population’s fecundity, the faster the population will increase in size. While all women are fecund, not all of them are fertile.
- **Fertility** is the *actual capability* that females have to produce offspring. So if a woman can produce children, she is fertile; if she cannot, she is infertile, but biologically, she is fecund.

→ Fertility refers to the *actual production* of live offspring, while fecundity refers to the *potential production* of offspring. Fecundity cannot be measured, but it can be assessed clinically, while fertility can be measured.

- **Fertility** is one of the three components of **population change**. The fertility of the population a country determines the rate at which its population can grow and multiply. The other two components of population change are **Mortality** and **Migration**. These two will be discussed in the next two lectures. Together, these three components influence the dynamics of population change.

$$\text{Population Change} = + \text{Fertility Rate (FR)} - \text{Mortality Rate (MR)} \pm \text{Migration}$$

- Three main types of fertility rates affect a country's population size and growth rate (i.e. population change):
  - (a) General Fertility Rate (FR)
  - (b) Total Fertility Rate (TFR)
  - (c) Replacement Level Fertility (2.1)

**(a) General Fertility Rate (FR)**

Number of live births per 1000 woman aged 15-49 in a given year

→ **Age-specific Fertility Rate** – Number of live births of women in a 5-year age group per 1000 woman in a given year

→ How is Fertility Rate different from Crude Birth Rate (CBR)?

**Crude Birth Rate (CBR)** is the simplest measure of fertility. It is the ratio of live births to the total population, in a given year, and is expressed as births per 1000 people. For e.g. A CBR of 20 means that for every 1000 people in a country, 20 babies are born over a period of one year.

$$\text{CBR} = \frac{\text{Live Births per year}}{\text{Total Population}} \times 1000$$

$$\text{E.g. CBR} = \frac{15,000}{1 \text{ million}} \times 1000 = 15 \text{ (live births) per 1000 people}$$

The difference between FR and CBR is that while FR measures number of live births per 1000 *women* (only) in their reproductive years, CBR measures number of live births per 1000 *people* (both men and women who may or may not be in their reproductive years).

CBR is *crude* because it does not take into account the **age and sex structure** of the population. For e.g. a country may have 15 births for every 1000 people, but the likelihood is that not all these 1000 people are capable of giving birth in that year, as some of them are men, or women who are not in their childbearing years.

Despite its limitations, CBR is still an important and widely used index of fertility as it is easy to compute and easily understood by those who have little demographic knowledge (knowledge on population issues). CBR is also quite effective in detecting both general difference and changes in population growth.

CBR in the developed world are mostly <10 while in the LDCs, it is >10. Many European countries have a CBR below 10 while many sub-Saharan African countries have a CBR of over 30. Singapore's CBR is 9 per 1000 people.

### **(b) Total Fertility Rate (TFR)**

TFR is the average number of children a woman will have in her childbearing (fertile or reproductive) years, normally taken to be between 15-49 years of age.

→ **Childbearing years** is the reproductive age span of women, assumed for statistical purposes, to be 15-49 years of age.

TFR is different from CBR in the same ways as CBR is different from FR. In addition, CBR provides a picture of a society's population in *a given year only*, while TFR provides an indicator of *future* population growth or decline for a country or for a population within a country.

TFR exceeds 5 in many countries of sub-Saharan Africa, compared to less than 2 in nearly every European country. Singapore's TFR is 1.2. What does this mean for the future of Singapore's population?

Total Fertility Rate is associated with national economic development and consequent attitudes to family size. Women tend to bear fewer children in urbanized and industrialised societies. The money economy replaces rural attitudes where the family is the basic unit of security. The urban environment helps to limit family size causing CBR and FR to fall.

Fertility tends to vary according to these factors (amongst others):

- City size (bigger city size, lower fertility level and vice versa – inverse/indirect relationship)
- Poverty and level of economic development (Higher GNP per capita, lower fertility level and vice versa – inversely proportional)
- Proportion of population in reproductive age range
- Age of marriage
- Occupations (accountants, pharmacists, coal miners, farm laborers)
- Socio-economic groups (poor vs the wealthy)
- Ethnic groups – different cultural groups within a country can exhibit different TFRs. In the United States for e.g., when the country's TFR was 2.1, the TFR was 3.0 for Hispanics, 2.2. for African Americans and below the replacement for Asian and Pacific Islanders at 1.9.

These factors or variables which affect fertility will be discussed later in greater detail.

### **(c) Replacement Level Fertility (2.1)**

Number of children a couple must have to replace themselves. This value is almost always higher than two children per couple (i.e. extra 0.1) because of potential for death. Female children do die before they reach reproductive years and some females or couples choose to or are unable to have children.

This value of 2.1 children is called the replacement fertility rate. If this fertility rate is attained, then the population is stable and replacing itself. In the LDCs, replacement level is higher (2.3) because of higher childhood and adult death rates and female deaths.

*NOTE: It is very important to familiarise yourself with the terminology related to fertility (and later mortality in Lecture 2).*

### 3. Contemporary Fertility Differentials at Global and National Levels

#### Fertility Differentials on a Global Scale

- On a **global scale** and in the last few decades, a global **fertility transition** has been occurring. Worldwide, the TFR fell from 5.0 (1950) to 2.5 (2010). Fertility rates have fallen in every major world region. The following table reflects the increasing number of countries having a fertility rate below replacement level (2.1).

Year	No. of DCs below TFR 2.1	No. of LDCs below TFR 2.1
1970-1975	19	0
2000-2005	46	19

- On a **global scale**, there are stark spatial differences in fertility trends between DCs and LDCs. The following table highlights these fertility differentials.

#### Fertility Rates 2011

World Regions	Average no. of children per woman (Total Fertility Rate)
World	2.5
DCs	1.7
LDCs (excluding China)	3.0
Least Developed	4.5
Africa	4.7
Asia	2.2
Latin America	2.2
Europe	1.6
North America	1.9

- There is a **demographic divide** in the world - a vast difference in birth/fertility rates among countries. Most poor countries have relatively high birth/fertility rates, while most wealthy countries have low birth/fertility rates, causing their populations to decline.

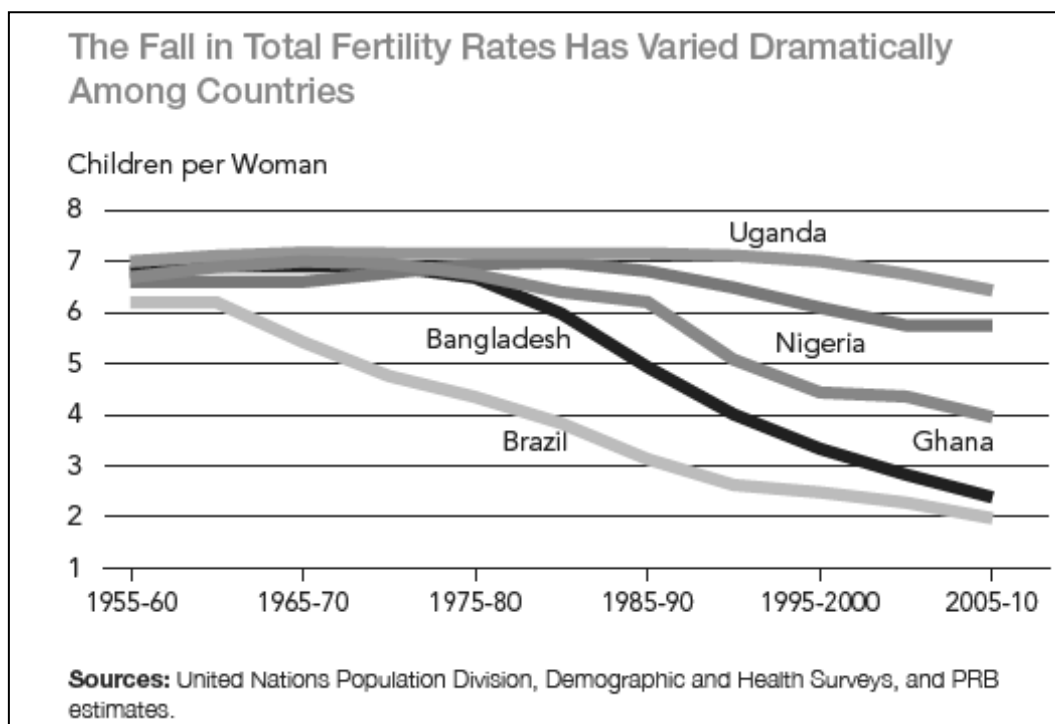
For e.g. even though Ethiopia (LDC) and Germany (DC) have almost the same population size today, Ethiopia is projected to more than double its population from 85 million today to 174 million in 2050. Germany's population will likely decline from 82 million to 72 million over that same time. The cause of these enormous differences is the large divide in fertility rates. Ethiopia's TFR is 5.3, four times greater than Germany's 1.4.

#### Fertility Differentials on a National Scale

- Not only does fertility vary at a global scale, it also differs at a **national scale**. Not all DCs have low or declining FR and not all LDCs have high or increasing FR - there are variations and trends in TFR do not usually adhere to such a tidy pattern.
- Fertility Differentials within LDCs
  - In LDCs such as Middle Eastern and sub-Saharan African countries, population growth remains high due to the little or no decline in fertility over the years. There is persistent high fertility in these largely rural and poor

countries such as Afghanistan, Yemen, Burkina Faso, Mali, Niger, Mozambique and Uganda.

- In countries such as South Korea and Singapore (were once LDCs, but now are called Newly Industrialising Economies, NIEs), fertility rates have declined dramatically and are still falling. Other areas which have shown substantial decline in fertility are China, Costa Rica, Sri Lanka, Thailand, Iran and Tunisia.
- In some other LDCs, there are big declines, but fertility persists or stagnates at a moderate rate (does not increase or decrease) i.e. **Fertility Stalls**. These countries include Bangladesh, Egypt, India, Kenya, Indonesia and the Philippines. After falling, fertility rates level off in what some demographers call a 'stall'.



Source: Population Reference Bureau, World Population Highlights 2010

- Fertility Differentials within DCs
  - There are less variations amongst DCs, as compared to the LDCs. Fertility levels in DCs are currently low. They have been declining since the 1970s. All except Iceland and Ireland have fertility below replacement level (2.1).
  - 15 countries, mostly located in Southern and Eastern Europe have reached levels of fertility unprecedented in human history (below 1.3 children per woman).
  - The few increases recorded, such as those in Belgium, France, Germany, Netherlands and the United States, have been small.

*Why does fertility vary at a global and national scale? The following section will shed some light on the reasons for these fertility differentials*

#### 4. Variables which affect fertility

Two types of variables affect fertility rates:

##### A. Proximate Determinants (direct variables)

- i. Marriage Patterns
- ii. Patterns of Sexual Activity
- iii. Use of Contraception
- iv. Induced Abortion
- v. Sterility

##### B. Intermediate Determinants (indirect variables)

- i. Socio-economic variables
- ii. Institutional variables

##### A. Proximate Determinants (direct variables)

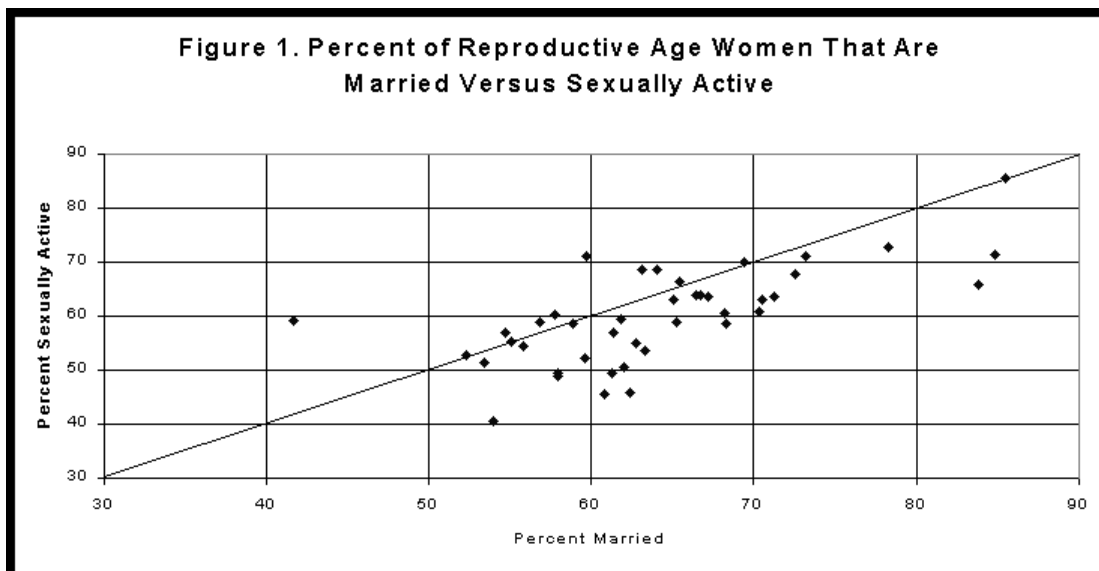
Proximate determinates are immediate and direct variables of fertility. They are usually *biological* and *behavioural* factors that influence fertility directly. These are the immediate causes of conception and childbirth. For e.g. whether a woman is biologically fertile, capable of conception, incidence of miscarriage, spontaneous abortion, sterility due to sexually transmitted diseases all directly affects fertility. Behaviour-wise, the use of contraceptive, induced abortions can have an immediate and direct impact on the number of children a woman can conceive children.

All other factors (e.g. social, economic, cultural and political factors) have an intermediate influence on fertility because they have to work through these proximate determinants to affect fertility. Examples include education levels, income, socio-economic status of women, urbanisation, improved health services and government policies.

##### i. Marriage Patterns

- Marriage is the main indicator of the exposure of women of reproductive age to the risk of conceiving (pregnancy).
- More married women means likelihood of childbirth and thus higher fertility. For e.g. In Bangladesh where universal marriage is customary, FR is high.
- In contrast, the increasing trend of celibacy (singlehood) in the industrialized DCs will reduce the potential fertility of a population.

#### Correlation between % of married women (at reproductive age) and % who are sexually active



- Thus, there is a general trend that the more the percentage of married woman (in their childbearing years), the higher the FR, assuming all married women are sexually active – **Direct Correlation** (Positive Relationship)
- However, it is possible that some women who are not married are also sexually active. For e.g. in sub-Saharan Africa, many women are sexually active and some bear children before they are married.
- There are also married women who are not sexually active. For instance, women whose marriages are interrupted by the death of a spouse, divorce or separation for reasons such as frequent travel, tend to have fewer children than those who remain continuously in a marriage.
- Two aspects of marriage need to be considered to fully understand how marriage patterns can influence fertility – Age and Other factors.
  - Age
    - Age of the female at marriage identifies the onset of exposure to the risk of childbearing and, as such, age at which a woman marries is a principal determinant of the number of offspring she can have.
    - Populations in which age at marriage is low tend to be populations with early childbearing and high fertility.
    - The longer the woman delays marriage, the fewer children she will likely have because her *biological clock is ticking* i.e. her childbearing years will be shortened if she marries late.
    - The average age at which women marry varies widely among societies i.e. lower in LDCs than in DCs.
  - Early Marriages  
Early marriages mean earlier exposure to sexual intercourse and longer reproductive period once the couple starts living together, thus raising FR. In societies with many women married at young ages, a high rate of teenage childbearing would not be surprising.

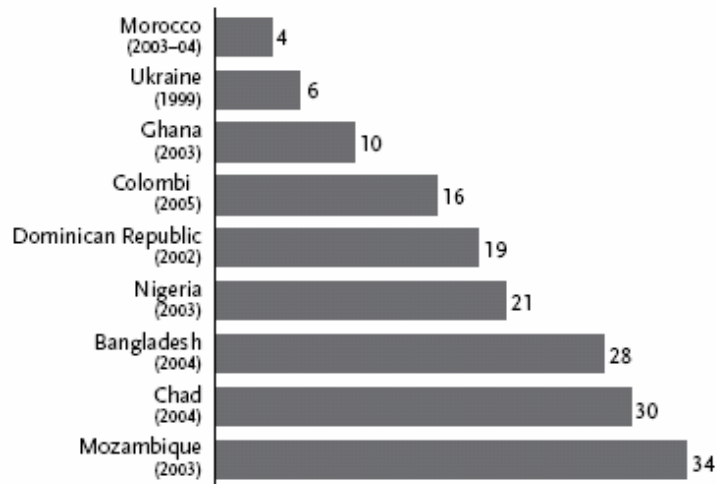
Although the practice has decreased globally over the last 30 years, child marriage is still common in rural areas and amongst the poorest of the poor. Impoverished parents often believe that child marriage will protect their daughters. The practice of girls marrying young is most common in sub-Saharan Africa and Southern Asia (India, Sri Lanka, Bangladesh etc), the Middle East and North Africa. Often these marriages take place shortly after puberty.

In Ethiopia and some areas of West Africa, some girls get married as early as age 7. In Niger, early marriage is the norm. Half of the girls in the country are married by age 16.

### In Some Poor Countries, More Than One-Fourth of Adolescent Girls Have Given Birth.

Fertility among women ages 15 to 19 presents a special concern, as these young women may lack the physical development and social support needed to carry a pregnancy to full term. Early childbearing can also curtail a young woman's education and reduce her potential earnings. Adolescents in the poorest countries—particularly in sub-Saharan Africa—are more likely to have given birth than adolescents in other countries.

Percent of women ages 15–19 who have given birth

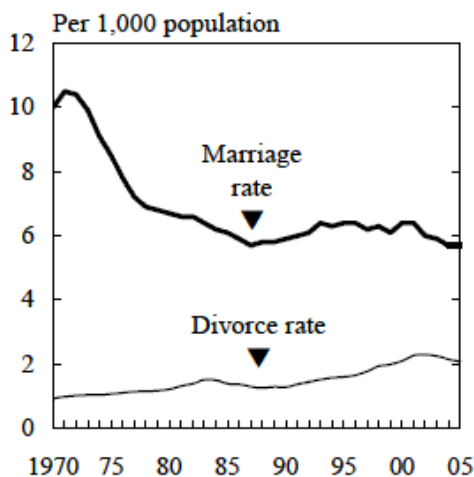


Source: ORC Macro

- Late Marriages

The effect of late marriage on reproduction is the shortening of the reproductive life span of the woman. In Japan, the average age at first marriage in 2005 was 28 for females. This growing trend to marry late or not at all is the major reason for the falling birth and fertility rate. In Japan, marriage fell to 5.7 per 1000 people, the lowest on record.

#### Changes in Marriage Rate and Divorce Rate



Source: Ministry of Health, Labour and Welfare.

#### Mean Age of First Marriage

Year	Groom	Bride
1950	25.9	23.0
1955	26.6	23.8
1960	27.2	24.4
1965	27.2	24.5
1970	26.9	24.2
1975	27.0	24.7
1980	27.8	25.2
1985	28.2	25.5
1990	28.4	25.9
1995	28.5	26.3
2000	28.8	27.0
2003	29.4	27.6
2004	29.6	27.8
2005 *	29.8	28.0

Source: Ministry of Health, Labour and Welfare.

- Main reasons for later marriages and fewer marriages in Japan:
  - Rise in women's educational status has caused later and fewer marriages in Japan. The proportion of women enrolled into tertiary education rose from 5% in 1955 to 50% in 2005. Most Japanese women enter tertiary education at the age of 17 or 18, and require 3-4 years to complete their education. This deters them from early marriage and adversely affects Japan's FR.
  - Increases in proportion of women in the labour force see many women becoming financially independent. At present, about 99% of women work before marriage and almost all of them are paid in employment, so that they have no financial reason for getting married and finding spouses to be the male breadwinner.
  - Fall in proportion of arranged marriages from 63% in 1955 to 2% in 2002. People have to find their own spouses now as traditions and cultures change, and thus factors such as time, personal preferences amongst others, delays marriage.
  - Decline in proportion of young couples who co-reside with their parents when they marry from 64% in 1955 to 29% in 2001 is another reason for later or fewer marriages. Young people increasingly do not want to live with their parents and move out of their homes early, thus making it financially more difficult to get married and set up a household due to financial constraints (lack of savings).
  - Increase in premarital sex implies that one does not have to be married to be in a sexual relationship. Between 1990 and 2004, the proportion of single women aged 20 and over who reported that they were currently using contraception rose from 39-57%.
  - Less egalitarian marriage is a traditional attitude that Japanese men still embrace where child rearing and housework should be done by women. As such, many Japanese women who have modernized mindsets do not want to be tied down by tradition, and decide not to marry at all.
- Other factors (divorce, remarriage, widowhood, cohabitation and social acceptability of illegitimate children, same-sex marriage)
  - Divorce and Remarriage

A couple's 'divorce inclination' may influence their decision to begin a family and their willingness to add children to the existing family. The presence of children may not only make the marriage more stable, but may also help delay divorce because of the financial, legal, emotional and psychological costs.

As such, couples who face a high likelihood that they will not stay together may delay their decision to have children because of the higher costs of ending a marriage with children as compared to one without – e.g. problems of child custody, visitation plans, single parents issues etc.

In societies where dissolution of marriages is made easy, fertility levels tend to decline. According to Echard (2006), shorter and less stable partnerships as well as increasing 'partnerlessness' may partly explain declining fertility in Germany. But according to Vikat & Thomson (1999),

women and men entering their second union have a stronger motivation to have a shared child with their new partner (remarriage).

- Widowhood: Death of spouse can also influence fertility.
- Cohabitation and social acceptability of illegitimate children: In societies where a stigma is attached to informal or non-marital types of relationships (e.g. cohabitation), any increase in the number and proportion of such unstable unions is likely to affect fertility negatively. In most societies, cohabiting unions are typically childless. Cohabiting couples delay having children until they are married, and this affects fertility negatively.

Cohabitations are often associated with changes in the status of women and their gained independence. Studies have shown that those who cohabit tend to be more liberal, less religious and more favourable to egalitarian, more gender equity relations and less favourable towards traditional family roles. This results in a negative impact of fertility.

However, in societies where such cohabiting unions are established and well accepted, this will not necessarily affect FR negatively. For e.g. in Sweden today, marriage is no longer a prerequisite for childbearing. There is widespread social acceptance of cohabitation and childbearing outside marriage. The social norm is to start a family by cohabiting, have children, and then, maybe, get married. Low marriage rates and high cohabitation rates have not caused fertility decline. About half of Swedish babies are illegitimate and are born to cohabiting, unmarried parents (born out of wedlock) and its TFR is 2.0, one of the highest in Europe.

In Norway in 2009, there were 27,288 births to married mothers, 27,217 to cohabiting mothers, and 7,302 births to single mothers. Births to cohabiting mothers have been rising rapidly in Norway and could outnumber marital births. Norway's TFR stands at 1.9, one of the highest in Europe, like Sweden.

With increasing popularity of non-marital cohabitation in the developed world, there has been a blurring of the distinctions between married and unmarried couples and between legitimate and illegitimate children.

- Same-sex marriage occurs where two people of the same sex live together as a family. It is also known as gay marriage, gender-neutral marriage, equal marriage, lesbian marriage, homosexual marriage, single-sex marriage and same-gender marriage.

Full marriage is presently available to same-sex couples in certain countries such as the Netherlands, Belgium, Canada, South Africa, Spain, Norway, Sweden and some states in USA.

The last two trends of cohabitation and same-sex marriage are gaining importance, particularly in the developed world. Such unstable unions have a depressing effect on fertility.

**ii. Patterns of Sexual Activity**

- Patterns of sexual activity directly affect the probability of conceiving among ovulating (egg producing) women, and influences fertility. Patterns of sexual activity are affected by frequency of intercourse, spousal separation and breastfeeding.
- Frequency of Intercourse

- The frequency at which a couple has intercourse is influenced by marriage forms. For e.g. women in polygamous marriage (union of one man and several women which is common in Islamic societies) in general have a lower fertility than monogamously married women. Although at the aggregate level, polygamy certainly contributes to large family sizes, women in polygamous unions have on average a lower number of children than their counterparts in monogamous marriage.

This is because women in polygamous marriages tend to spend less time and have a lower frequency of intercourse with their husband, as the husband's time has to be shared amongst the wives. E.g. among the Serer of central Senegal, polygamous husbands have to distribute his sexual activity between his wives. Also, they are on average older and thus less fertile than monogamous men.

In Senegal (West Africa), about half of the women are married to polygamous husbands. Reasons for such a trend are the Islamic law which allows men to marry up to 4 wives, pronatalism, high mortality, levirate (brother of a deceased man is obligated to marry his brother's widow), the need for child labour in farms, and old age security.

- There are other reasons why fertility in polygamous unions may be lower apart from those highlighted in the example of Senegal. Men may take a second wife if their first wife is infertile. In such a case, the polygamy facilitates the practice of prolonged abstinence from sexual relations while a newborn baby is breastfeeding. Prolonged abstinence from sexual relations during breastfeeding is common in sub-Saharan African societies where extended abstinence of more than 1 year is practiced in order to space births, which they recognize as increasing the chance of a child's survival.

- Spousal Separation

- Long periods of separation between couples can reduce a woman's overall exposure to conception. Such separations are mainly the result of seasonal male migration for agricultural work and as a result women's conception rates fluctuate from one month to another e.g. Peru and Bangladesh.
- The effect on fertility levels, however, depends on the timing of the move. In some areas, husbands leave to find work once their wives become pregnant, and remain away during the early years of the child's life, therefore reinforcing the custom of postpartum (post-conception) abstinence. In other areas, the movement of young unmarried people in search of work may well delay the age of first marriage and thus depress fertility levels.

- **Breastfeeding**
  - Breastfeeding affects fertility by delaying the onset of ovulation and menstruation after birth. Breastfeeding lengthens a woman's period of natural infertility after a birth by effectively blocking ovulation, and can therefore increase the interval; before the woman can conceive again.
  - Breastfeeding is a natural contraception designed to protect the health and well being of both mother and child. Breastfeeding is most effective in decreasing fertility when infants are breastfed on demand and are provided no other sources of food or water. It is a common practice in LDCs especially Southern Asia and sub-Saharan Africa and has thus depressed FR in these areas.
  - Over the past decades, there has been concern that women in LDCs were abandoning breastfeeding in favour of bottle feeding. A decline in such practice would increase fertility by spacing children closer to one another. Closer spacing poses a threat to the health of both mothers and child, and bottle feeding is also likely to raise infant mortality rate, since in developing countries, bottle feeding is often accompanied by watered-down formulae that are less nutritious than a mother's milk. Bacteria growing in unsterilized bottles can also lead to disease, especially diarrhoea, which is often fatal to infants.
  - With modernization, the % of women who breastfeed their babies tended to decline, creating a situation where breastfeeding declines as fertility declines. Bottle feeding may be preferred because it gives the mother more flexibility to work and have someone to care for her child.
  - Ironically, it is the more educated women, whose fertility is kept low by other contraceptive usage, who are breastfeeding more. In the USA, in 1995, 81% of the women with a college degree breastfed their most recent baby, compared with less than half of the mothers with only a high school

### iii. Use of Contraception

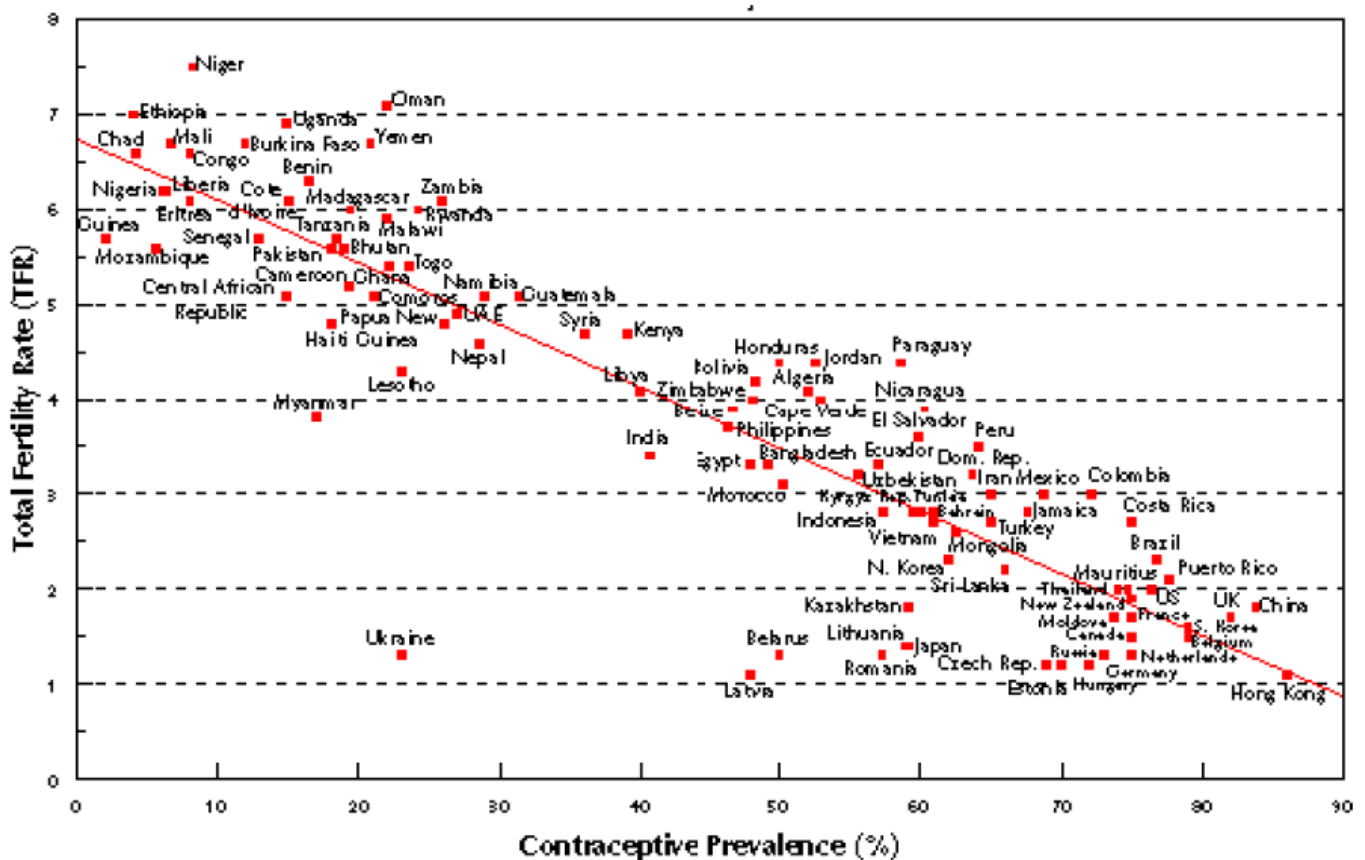
- Contraception is any practice that is used to *deliberately* keep a woman from conceiving. Of all proximate determinants of fertility conception is by far one of the most significant. Without modern contraception, fertility can be maintained at levels below the biological maximum largely through abstinence, perhaps as low as 3 children per woman. Without the use of modern contraception, it is very difficult for majority of the reproductive-aged couples to achieve low levels of fertility. The opposite is true if couples use modern contraception – contraception has adversely depressed FR.
- Examples of contraceptive devices:
  - Barrier methods – the diaphragm, cervical cap, intrauterine devices (IUD), female/male condom
  - Chemical methods – the pill
  - Natural methods – breastfeeding (natural infertility), withdrawal
  - Surgical methods - tubal ligation (female sterilisation) and vasectomy (male sterilisation)

## Methods of Contraception



- Modern contraceptive revolution began in the 1960s, with the widespread acceptance of 2 new methods – the oral contraceptive (the pill) and the intrauterine device (IUD). Because of their low cost and reliability, they became widely used in the developed world first and then in the developing world.
- Since then, the dramatic decline in fertility in many LDCs has been attributed to this technology. For e.g. in Kenya, the number of births a woman has during her reproductive lifetime has fallen dramatically over the past few decades. In the late 1970s, a Kenyan woman could expect to have 8 births, but today, the number is down to 4.

**Relationship between FR and Contraceptive Prevalence surveyed 1997**



- There is a strong indirect correlation (or strongly negative relationship) between contraceptive prevalence and TFR. Countries with higher contraceptive use are likely to have lower fertility, and this is more likely in DCs. Virtually all married women resort to contraception at some time in their reproductive period. In contrast, the proportion reporting such use in LDCs is much lower.
- Contraceptive use is higher among women with more education.
- On a regional scale, use of contraception among married women in less developed regions varies widely, from a low of 8% in Western Africa to a high of 83% in Eastern Asia. In the more developed regions, regional variations in contraception usage falls within a relatively narrow range, from 69% in Eastern and Southern Europe to 78% in Northern Europe.
- Some countries have very high fertility even though they seem to have high levels of contraceptive prevalence as couples there use less effective methods of contraception or have not been using contraception long enough for it to have a huge impact on the birth rate.
- Elsewhere, other countries have quite low levels of fertility even though the rate of contraceptive prevalence seems quite modest. The reason for this could be due to induced legal abortion rather than contraception which cause the low FR.
- In some orthodox Muslim societies, contraception is prohibited but breastfeeding is encouraged (natural contraception). More about how religious institutions influence fertility in Muslim societies will be elaborated later in this lecture.

#### iv. Induced Abortion

- Induced Abortion is *voluntary*, involving any practice which *deliberately* expels or removes the developing foetus from a woman's uterus. This is normally done in the first 12 weeks of pregnancy. This is unlike spontaneous abortion which takes the form of a miscarriage or stillbirth.
- Induced abortion is the single most often used form of birth control in the world, and worldwide, the demand for abortion has been rising. It has a direct impact on fertility and has played a major role in fertility declines around the world.
- Induced abortion is practised in almost every country even if it is illegal. In Brazil, about an estimated half of all pregnancies end in abortion, despite the country's highly restrictive abortion law. Overall, women in DCs and LDCs have strikingly similar abortion levels – 19 procedures per 1000 women and 34 per 1000 women respectively. However in LDCs, there is widespread use of clandestine abortion (done in secret) and these are not documented.
- Women choose to abort for various reasons:
  - Already have the desired number of children
  - To delay the next birth
  - Perceived immaturity, too young to raise a child, parental objection
  - Prohibitive cost of parenthood – financially incapable of raising a child

#### v. Sterility

- Sterility is the inability to conceive or carry a child.
  - Natural Sterility  
Natural infertility of women in most populations is approximately 3% at the age of 20 and increases with age, until at the age of about 50. Natural sterility in developed societies is on the rise with the increasing trend of later marriage and childbearing.

However, with modern technologies, male or female infertility can be overcome by In Vitro Fertilisation (IVF), which is a process by which egg cells can be fertilised by a sperm outside the woman's body (in vitro). IVF, if chosen by an infertile couple, can affect fertility.

- Pathological Sterility

A result of infections from sexually transmitted diseases such as gonorrhoea, syphilis and infections due to illegal abortion practices. In Central African societies, widespread untreated diseases have resulted in relatively low fertility levels and high rates of childlessness.

- Voluntary Sterility

Occurs when males or females voluntarily choose to undergo surgical sterilization (vasectomy for males or tubal ligation for females) for various reasons such as attaining the desired amount of children etc.

## B. Intermediate Determinants (indirect variables)

### Relative Importance of Each Proximate Determinant:

Globally, the transition from high to low fertility (**Fertility Transition**) is usually found to be accomplished with a combination of declines in breastfeeding, late marriages, increased use of contraception and increased incidence of abortion.

Although each of these proximate variables plays a role in determining the overall level of fertility in society, the relative importance or influence on fertility that each variable has differs considerably in different societies. For some societies, early marriages has a greater influence over fertility while for others, use of contraception has a more dramatic influence. Such variation can be traced back to and reflects the varying cultural realms, religious practices and policies in different places or ethnic groups.

Therefore, to fully understand spatial variations in fertility trends and changes around the world requires comprehension of the socio-economic and institutional background of societies.

In the next section, the intermediate (socio-economic and institutional) determinants of fertility will be discussed. It is important to think about the following questions:

- How do intermediate variables influence or work through proximate variables to impact fertility?
- How influential or significant are proximate and intermediate variables in affecting fertility trends in DCs and LDCs? Which of these variables are most impactful in influencing fertility in DCs and in LDCs?

- Intermediate determinants of fertility (socio-economic and institutional variables) such as social, economic, cultural and political factors have an indirect influence on fertility because they have to work through proximate/direct determinants to affect fertility. Examples include education levels, income, socio-economic status of women, urbanisation, improved health services, religion and government policies.

#### i. Socio-economic variables

Socio-economic variables such as the changing socio-economic value of children and changing socio-economic status of women in different societies have secondary influences on fertility. These socio-economic trends influence marriage patterns, and subsequently affect fertility.

##### ➤ Economic and Social value of children

- The economic and social value of children varies from society to society and is also changing over time. In J.C. Caldwell's theory of *Wealth Flows* (1976), he analyzes the economic value of children to parents and their households.
- In primitive and traditional societies of the developing world, parents have large number of children in the medium and long term because it is an economically rational choice.

This is because in such societies, children make an economic contribution to their households at an early age, through either wage employment, helping on the family farm or freeing adults (especially women) from domestic tasks such as collecting water and fuel wood, tending after cattle, looking after

siblings. As such, the economic value of children in such primitive societies is high – children have a utilitarian or economic value.

Furthermore, children provide security for parents in their old age, especially in LDCs where there are no social security provisions in the form of pensions for elderly people. As such, since wealth flows from the children to the household, fertility is high as having more children means more sources of labour, income and security for parents throughout life.

- However in modern societies, when education withdraws children from household production and imposes direct costs on the parents for school fees, uniforms and books, then the wealth flows in the reverse direction, from parents/household to the child. Parents incur high direct and indirect costs in having and rearing children – providing and paying for food, shelter, clothing, medical care, education for the child. In addition, the amount of time parents put into caring for the children translates into loss of income, especially that of the mother.

In this instance, the household will gain economically from restricting family size, this lowering fertility. In addition, old age social security provisions are made available in DCs, thus reducing the need for children as old age security.

- In sum, as the importance of children to the domestic and formal sector labour force declines, and the costs of raising and educating children increase, people no longer derive any economic advantage from children. As a result, fertility will automatically decline as it is economically rational to have zero children.
- Studies have shown that wealth flows are a consideration in many households. Example:
  - An average urban South Korean (DC) household spends 12% of their income on education of children. Private tutoring expenditures are the highest in the world, and these contribute to the low TFR (only 1.2 in 2010).
  - In Japan (DC), the cost of raising a child till college is 23.7 million yen (US\$208,000), about half of which is educational expenses. The average annual household income is currently 5 million yen and the costs of education have often been cited as a reason for not having many children.
  - In contrast, in Bangladesh (LDC), boys produce more than they consume by the age of 10 and have repaid their parents' investment in them by the time they are 15 years old.
- However, not all parents explicitly make such cold economic calculations when deciding on family size. The theory of wealth flows takes into account only the economic costs and benefits of children. There are the social and psychological values attached to children which are also considered (see table), and which affect fertility.

**Social, Economic, Psychological value of children (Benefits and Costs)**

	<b>Benefits</b>	<b>Costs</b>
<b>Economic</b>	Help with domestic chores Financial contribution to household Security in Old age	Cost of Education Cost of food, clothing and shelter etc. Loss of parental wage earnings
<b>Social</b>	Companionship, love, happiness Strengthening of marital bonds Continuation of family name	Mental strains Overcrowding of family residence
<b>Psychological</b>	Fulfilment Living through children Incentive to succeed	Parents feeling tied down Emotional strain Disciplinary problem

➤ Economic and Social status of women

- Two indicators have been used to measure the status of women – **female education** and **female participation in the formal economy**. The socio-economic status of women gained from education and employment have significant impacts on fertility

- **Female Education**

*Read: "Is Education the Best Contraceptive?" for Tutorial 1.*

→ Women with more education tend to marry later and have fewer children. Providing female with educational opportunities delays their first child birth thereby reducing the number of childbearing years.

→ Female education **emancipates** women and it gives them an opportunity to compete with males for a place in the formal economy. Educated women are freed from the traditional reproductive roles that society has placed on them, and can now participate in the formal economy given the educational training they have. This allows them to climb the socio-economic ladder and opens up a broad spectrum of career opportunities for them.

As such, in order to pursue educational goals and eventually career goals, educated women tend to enter the labour force before they marry or begin childbearing and ultimately have smaller families. For e.g. in Singapore and Japan, a woman who pursues primary, secondary, undergraduate and post-graduate education will be about 28 years old when she finally finishes her post-graduate studies, and is usually single when she enters the workforce.

Also, education promises access to a job and this is an alternative to early marriage and childbearing which educated women prefer to take up.

→ Educated females are also more aware of health and nutrition issues that usually plague uneducated women and their newborns. As such, an educated woman knows where and how to seek medical attention and better nutrition sooner for herself and her children, thus reducing the need for **insurance births** - births undertaken in traditional societies where there is high infant mortality rate, in order to ensure that even if one or more infants die, there will still be other children who survive and insure death of those children. As a result, with better knowledge of healthcare and nutrition, the probability of newborns surviving through adulthood increases and this reduces fertility.

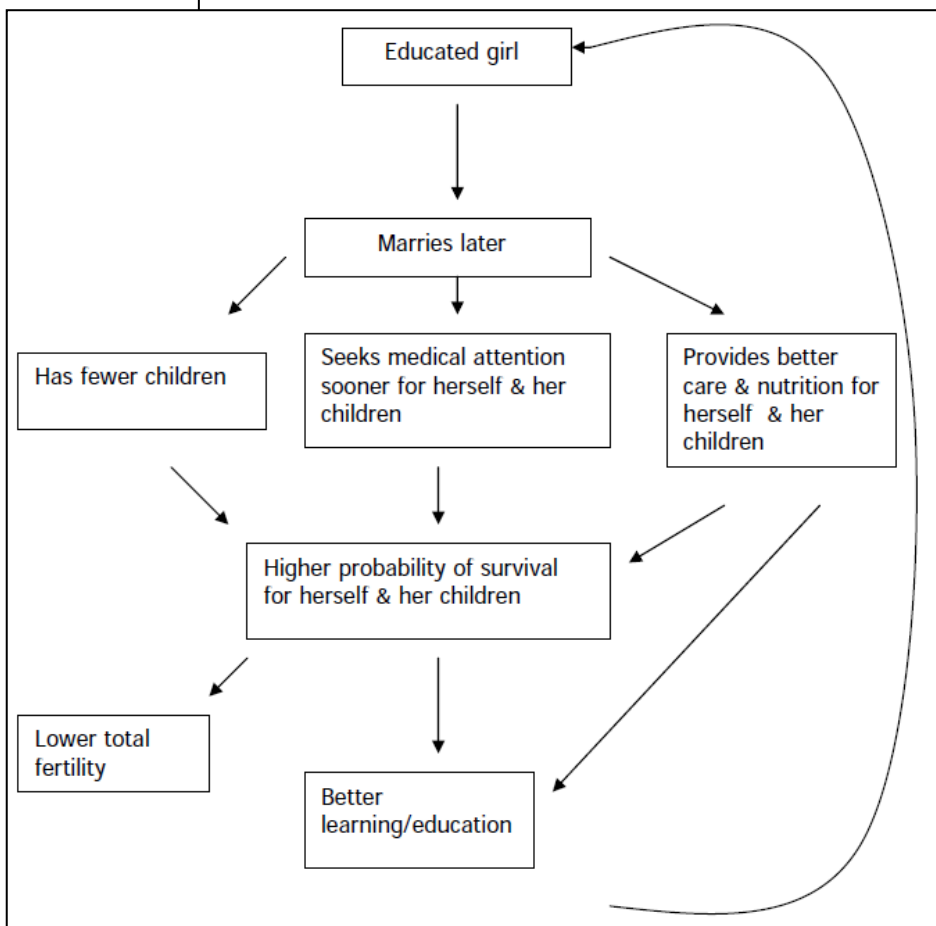
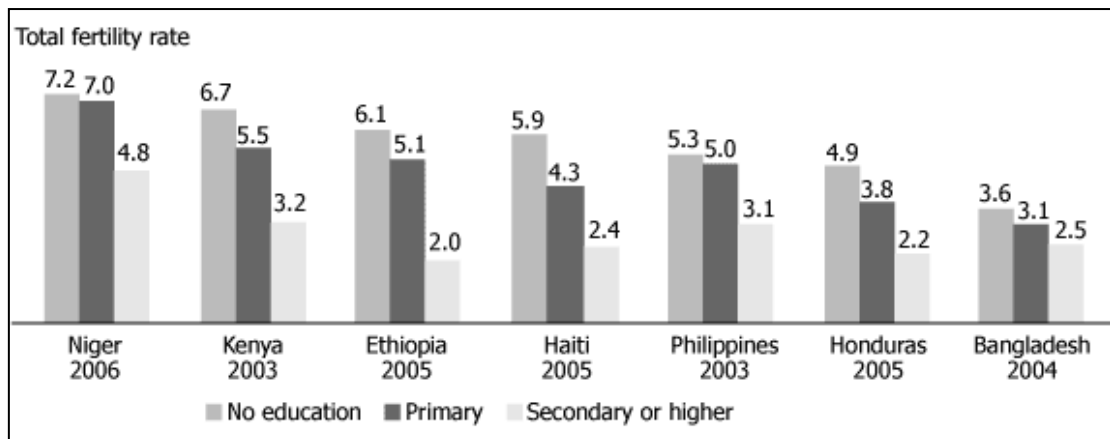
This cycle is perpetuated in the following generations and continually depresses fertility for many generations to come.

→ Educated females have greater awareness of financial issues and costs of having children, and do not need to be dependent on a male breadwinner as their education becomes their *passport* to financial independence. Therefore, they are less likely to marry and have more children, thus lowering fertility.

→ Educated women are also more likely to know what social, community, and health services, including family planning (use of contraception etc.) are available and have more confidence in using them. As such, they know how to limit their family size and this reduces fertility.

→ The following bar charts reflect the indirect relationship between education and TFR – the more highly educated women are in a country, the lower the TFR.

**Women’s Education and Total Fertility Rate in Selected countries in 2000s**



**Demographic Impacts of Education on Girls**  
 (Unicef, 1999)

→ The following is an example of how female education in India can have an impact on fertility.

<b>An Example From India</b>																															
<p>Women in the southern Indian state of Kerala demonstrate the role of a woman's status in lowering birth rates and improving child and maternal health.</p> <p>Kerala is primarily rural and agricultural, as is most of India. The residents have low incomes. Yet, in the early 1990s, women in Kerala were bearing about two children, on average. That is the same as the average in the United States today, and less than the average for India (2.9). Between 1970 and 1992, Kerala's TFR dropped from 4.1 to 2.0 children per woman, the largest decline of any Indian state. By the mid 2000s, the total fertility rate was down to about 1.7 children per woman. The infant mortality rate is also low, 12 infant deaths per 1,000 live births.</p> <p>Why are the women in Kerala different? One obvious difference is their higher educational level. While many Indian women cannot read and write, 88% of women in Kerala are literate. The state government has assigned a high priority to ensuring that all residents have access to education.</p> <p>But today's high literacy rates and good maternal health are only two indicators of the higher status women in Kerala have enjoyed for a long time. In traditional Keralese culture, women can inherit land and wield some political power—a sharp contrast with other parts of India. And, while in most of India girls are considered a drain on family finances because their parents must pay a dowry to marry them off, Keralese women bring their families a brideprice. In Kerala, girls are considered an asset.</p>	<p><b>Demographic and Socioeconomic Indicators in India and the United States, 2000s</b></p> <table border="1"> <thead> <tr> <th></th> <th><b>United States</b></th> <th><b>India</b></th> <th><b>Kerala</b></th> </tr> </thead> <tbody> <tr> <td>Total fertility rate</td> <td>2.1</td> <td>2.9</td> <td>1.7</td> </tr> <tr> <td>Infant mortality rate</td> <td>6.5</td> <td>58</td> <td>12</td> </tr> <tr> <td>Life expectancy (male)</td> <td>75</td> <td>62</td> <td>71</td> </tr> <tr> <td>Life expectancy (female)</td> <td>80</td> <td>64</td> <td>76</td> </tr> <tr> <td>Female literacy</td> <td>99</td> <td>54</td> <td>88</td> </tr> <tr> <td>Contraceptive prevalence (all methods)</td> <td>73</td> <td>56</td> <td>69</td> </tr> </tbody> </table> <p>Sources: Carl Haub, 2007 World Population Data Sheet (Washington, DC: PRB, 2007); Sample Registration System, Registrar General of India; and National Family Health Survey 2005–2006 (NFHS-3).</p>				<b>United States</b>	<b>India</b>	<b>Kerala</b>	Total fertility rate	2.1	2.9	1.7	Infant mortality rate	6.5	58	12	Life expectancy (male)	75	62	71	Life expectancy (female)	80	64	76	Female literacy	99	54	88	Contraceptive prevalence (all methods)	73	56	69
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- **Female Participation in the Formal Economy (employment)**

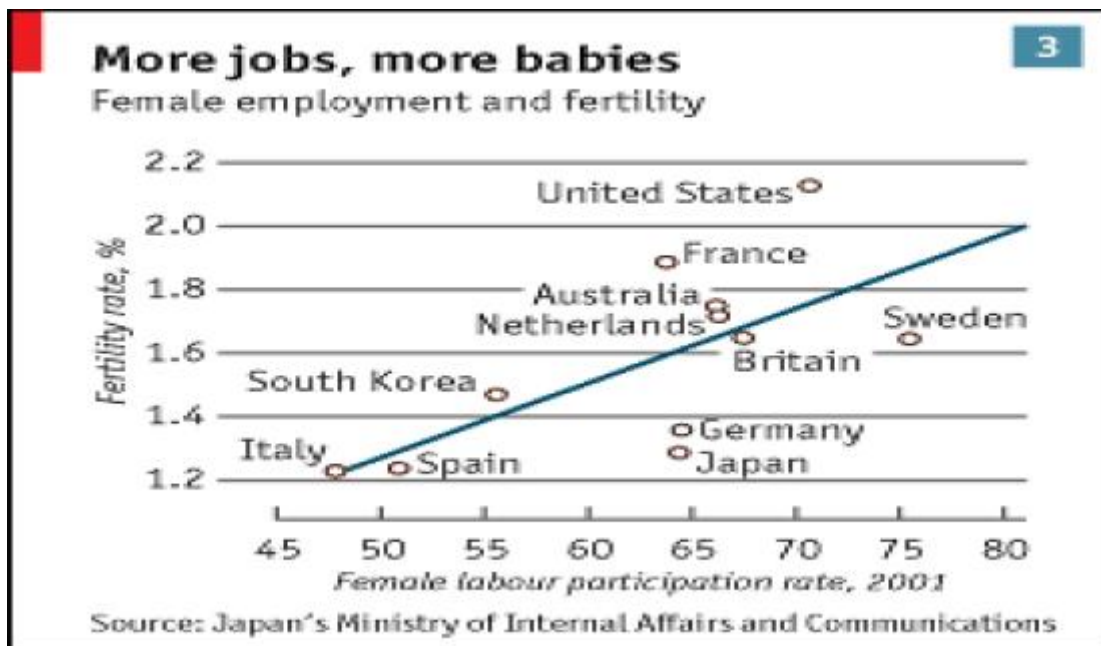
→ When women have limited access to paid employment (and education), and their primary task is unpaid family labour, their fertility rates are high. There are strong correlations between increased employment opportunities for women and declining fertility rates. This is because career structures and working hours in most countries assume that the worker has no domestic responsibilities.

→ Many women who want to participate fully and equitably in the formal labour market see children as a disadvantage. The economic costs (lost earnings) of having children when she drops out of the labour force temporarily to have children can be high for women. For e.g. in Japan, a female university graduate who works full-time for 6 years, drops out for 6 years to have and to bring up children, and then comes back to a full-time job would have lost an income of US\$993,600 by age 60. This deters many working women from having many or any children at all.

→ The woes of a working mother also lead to lower fertility rates. Japanese working mothers have to shoulder double burden of balancing job and family (as an employee and a mother). At work, they are expected to perform like a male employee, while at home in the nucleated family, they are expected to act like an involved, traditional mother. To add to the woes, the less than egalitarian husband-wife relationship means that Japanese husbands take minimal responsibility for child rearing and housework. Women often perform a larger proportion of the housework and parenting. It is this little support for working mothers than partly explains Japanese women's reluctance to have children.

→ EXCEPTION: **Fertility Paradox**

- Countries that support high numbers of working women, like Sweden, France, Norway and USA have high birth rates than countries with fewer working women such as Germany and Japan. These countries are the exception wherein there is a positive or direct relationship between the number of working women and fertility.



- The reason for the fertility paradox lies mainly in the government policies which support working mothers (e.g. parental and childcare leave, more flexible working hours etc.)
- In France:
  - Liberal maternity leave and part-time work laws for women
  - During a year-long leave after birth of the third child, mothers will receive US\$960 a month from the government, twice the allowance for the second child.
  - Under French law, a woman can opt not to work or to work part time until her child is 3 years old. Her full-time job will also be guaranteed when she returns. In other countries, maternity is seen as a handicap for mothers who want to have a career.
  - The French system also fosters different attitudes about working mothers. French working moms say they feel far less guilt than many other developed societies because of the well-organised child-care system.
  - Working mothers are also given 36 days of paid holidays.

The socio-economic status of women has a marked impact on fertility levels. With status gained from education and employment, women are able to make and enforce a decision to have smaller families. When the economic value of a woman exceeds her value as a mother, family size is controlled so as to allow her to pursue a career path. Where the economic income is low, the need to control births may not be as great.

**Pause and Think:**

- How do these socio-economic determinants or socio-cultural institutions work through the proximate determinants to affect fertility?
- How do these socio-economic determinants affect fertility differently in different parts of the world (DCs and LDCs)?

In the following section, the impact of institutional factors (religious and political institutions) on fertility will be discussed.

**ii. Institutional variables**

- Institutional determinants can affect fertility by manipulating socio-economic determinants, which in turn affect proximate determinants. There are 3 major institutions that influence fertility decisions – government policies, religious philosophy and cultural norms.

***THINK: Are social/cultural/religious institutions (socio-economic factors and cultural/religious factors) more influential than government intervention in influencing fertility?***

**▪ Government Policies**

- Government policies are influential in determining fertility patterns. Both proximate and socio-economic determinants of fertility can and often are influenced by government policies such as family planning programmes, health care facilities and financial incentives or disincentives. Such policies reflect any government's political position on desired family size and population growth rates.

**Think about the following questions as you examine these case studies:**

- To what extent are governments able to influence its people to achieve the desired fertility rate?
- How influential is the government in affecting the proximate variables of fertility (e.g. marriage patterns, use of contraception, sterilization, patterns of sexual activity) in its attempt to achieve the desired fertility rate?
- How effective are population policies in altering fertility trends in DCs and in LDCs (comparatively)? Why are some policies successful while others fail in DCs and LDCs?
- What are the implications of population policies on population change and growth in DCs and LDCs (comparatively)? What are the problems and opportunities resulting from population change and policies in LDCs and DCs (comparatively)?

- Governments can influence fertility levels either by adopting **pro-natalist** or **anti-natalist** approaches. Countries with below-replacement level fertility tend to adopt pro-natalist policies in order to promote higher births. Measures range from financial incentives, tax breaks, provision of child care services for working mothers to coercive methods as used in Romania. Countries with extremely high fertility levels tend to adopt anti-natalist policies to lower birth rates. Measures can range of financial disincentives, punitive laws on childbearing etc, such as the one-child policy in China.
- The following are *brief* examples of pro-natalist and anti-natalist policies adopted by several governments in their attempt to *alter* (raise or lower) fertility rates to a desired one. \**Detailed case studies of some of these government initiatives will be discussed in **Lecture 1A** and during tutorials.*
- France (pro-natalist)
- France has currently one of the highest fertility rates (2.0) in Europe (Average TFR = 1.6) as it has one of the most interventionist set of policies aimed at encouraging families to have children.
- France's pro-natalist policies began with drafting of the Family Code in 1939. Family policy has been high on the political agenda ever since, resulting in relatively high fertility rates.
- The state favors childbearing by putting an infrastructure in place that encourages women to work and have babies. E.g. Municipal child-care facilities, liberal family allowances that rise with each subsequent child.
- The government also covers some child-care costs of toddlers up to 3 years old and offers free child-care centers from age 3 to kindergarten.
- The government-owned French train system offered 40% discounts off transport tickers for the parents and children until they reach their 18<sup>th</sup> birthdays.
- A non-judgemental attitude about having babies out of wedlock is also adopted (Recall: Cohabitation and social acceptability of illegitimate children). France banned the term 'illegitimate' from its administrative lexicon in 2005, there was a baby boom in 2006 amid the continuing drop in marriage rates. Almost half the babies born in 2006 were born to unwed mothers.
- Romania (pro-natalist)
- Adopted coercive measures: In 1996, Romania severely restricted abortion and divorce, restricted access to contraception and even screened working women for pregnancy to prevent abortion.

- Singapore (pro-natalist)
  - While national population policies have been studied to be effective in reducing fertility in many countries, they have not been successful in reversing fertility declines. Singapore is one such country; as an interventionist state, its numerous initiatives (e.g. Have 3 or more if you can afford it) to boost fertility levels have been largely regarded as unsuccessful.
  - WHY?
  
  - Indonesia (anti-natalist)
  - Family planning program has long been touted as a model of success in family planning. In the three decades of the program's existence, it has managed to lower Indonesia's TFR from 5.5 to 3.5 in 1990 and further to 2.4 in 2006. It has also resulted in 55% of women using contraceptives.
  - Nation-wide family planning campaigns have been promoted in all sectors of life. Posters with messages such as '*Dua anak cukup*' (two children are enough) are found in billboards and storefront windows while TV and radio programmes also carry family planning ideas.
  - The highly successful village-based distribution programme has brought effective family planning services down to the smallest and most remote village in Indonesia.
  
  - China (anti-natalist)
  - China's one-child population policy has had positive effects on its fertility levels and have raised the standard of living, social development regarding the family and status of women, improved quality of life and increased social assistance of Chinese people.
  - However, this anti-natalist policy does come with negative effects such as psychosocial pressures on only children and their families, unbalanced sex ratios (more males than females), higher levels of divorce and demographic aging.
  
  - Singapore 1966-1982 (anti-natalist)
  - Singapore's government implemented a family planning programme in an attempt to slow the trend of population expansion. Families were encouraged to 'Stop at Two' children.
  - Hosts of financial incentives and disincentives were implemented and abortion was liberalized and allowed to be carried out both in government and private clinics. Voluntary sterilization was legalized and with it came a cache of benefits for sterilized parents, including priority in primary school registration and the reimbursement of delivery fees. Disincentives penalized married couples for having more than two children. These measures included delivery fee increases and no paid maternity leave for women on the birth of their third or subsequent child.
- **Religious Philosophy**
- Religion can affect proximate determinants of fertility (e.g. divorce, cohabitation, same-sex marriage, use of contraception, abortion). Most of the world's main religions (Buddhism, Christianity, Hinduism, Islam and Judaism) favour fertility and encourage parents to have large families. Throughout the world, the religious tend to have more children, irrespective of age, education or wealth. They tend to be more pro-marriage and pro-motherhood.
  - Religious doctrine can affect proximate determinants of fertility for e.g. scriptural injunction to multiply, acceptability of contraception and abortion,

sexual relations, non-marital childbearing etc. Some religions spell out desired family size and religious roles for sons as in South Asia.

- Religion sends broad socio-cultural messages which support families and parenthood such as praise of large families, emphasis on the importance of family, social duty and status from parenthood, and gender role pressure supporting motherhood.
- Religion provides a source of identity - when men and women have a strong sense of attachment to a religious community, they feel more supported to have children and large families. Religion also provides a means of communicating values which promote compliance and punish nonconformity.
- Hinduism
- Hindus are encouraged to enter married life.
- Hinduism requires sons to kindle the funeral pyre of their deceased parents. Daughters are not allowed to perform the last rite. Consequently, there is a strong preference for sons over daughters. Many Hindu couples continue to have children even after achieving their desired family if they do not bear at least a son.
- The side effects of such a religious philosophy are sex-selective abortion and female infanticide.
- Islam
- Demographically, the Islamic populations of the world stand out in contrast to other nations of similar economic development, having higher birth rates. For e.g. Albania, Europe's only Muslim majority nation, has one of the highest fertility rates.
- In multi-religious societies, Muslim residents tend to have higher TFRs compared with other ethnic groups as in Britain, Canada and Singapore.
- Muslim males are encouraged to marry and polygamy is allowed. Men may take up to 4 wives. Early marriage and universal remarriage of widowed and divorced women is also highly encouraged.
- There is tight control of parents and guardians over the selection of marriage partners.
- Islamic law does not require a husband to obtain permission from a court to undertake another marriage (interpretation of the law however varies with countries). Also Islamic law permits a man to divorce his wife, in some situations, unilaterally (involving one side only).
- There are strict laws forbidding abortion.
- Muslim women gain respect and status within their own kin group and community when they have children. This is because children represent a form of social insurance against the threat of divorce or polygamy since women derive status from motherhood even when divorced or rejected for a second wife.
- Although Islam is not opposed to population planning policies, religious conservatism often results in population policies not being given a high priority. This means that some of the richest countries in the world, which also happen to be Islamic, such as Saudi Arabia (GNI per capita = US\$22,950) has a high TFR of 2.9.
- Christianity
- Within the Christian faith, there are many denominations which display different demographic behaviour and exhibit fertility differentials. For e.g. Catholics tend to have higher fertility than Protestants and this is due to the

official stand of the Catholic Church on birth control (contraception and abortion), while there is a lack of explicit position on this by most Protestant religions.

- In the USA, Catholics tended to want and to have more children than Protestants. However, the gap is narrowing.
- Of all the Christian denominations in the USA, the Mormons (cult) have the highest fertility rate. They have higher than average level of religiosity which seems to contribute to higher than average level of fertility. They are found predominantly in the state of Utah, which has the highest birth rate amongst all the states, twice the national average.
- In multi-religious societies or communities, fertility trends tend to differ due to the following reasons:
  - Fertility varies in multi-religious societies due to differences in socio-economic characteristics of individual members, reflecting differences in income, education levels or minority group status
  - Minority groups in multi-religious communities tend to have higher fertility due to the political and social insecurity of minority religious groups compared to the majority groups
  - Discrimination of certain or minority religious groups can also affect fertility levels of various minority groups as some groups have less access to healthcare and family planning services etc.

Modernisation (economic development) has brought about secularisation as increased wealth and security has lowered religiosity (e.g. falling church attendance and religion no longer guiding daily life in Europe) and fertility.

Increasing secularisation erodes the religious base of moral absolutes associated with family issues and behaviours like divorce, adultery, homosexuality, cohabitation and abortion.

Secular men and women are less willing to sacrifice career and lifestyle aspirations to have children and have them early. Priorities are now focused on the pursuit of post-materialist values such as self-fulfilment, individual autonomy and recognition for individual achievement. Families and countries with no or weak religious association tend to exhibit sub-replacement fertility levels.

In the Western world, religion used to have a much more dominant role in telling people what to do, dictating how they lived their lives etc. With secularisation, some established religious organisations (e.g. the Catholic church) are losing their ability to tell people how to lead their lives concerning abortion, divorce and birth control etc. However, secularisation is not a global phenomenon; some societies (such as Islamic societies) are relatively *untouched* by secularisation.

▪ **Cultural Norms**

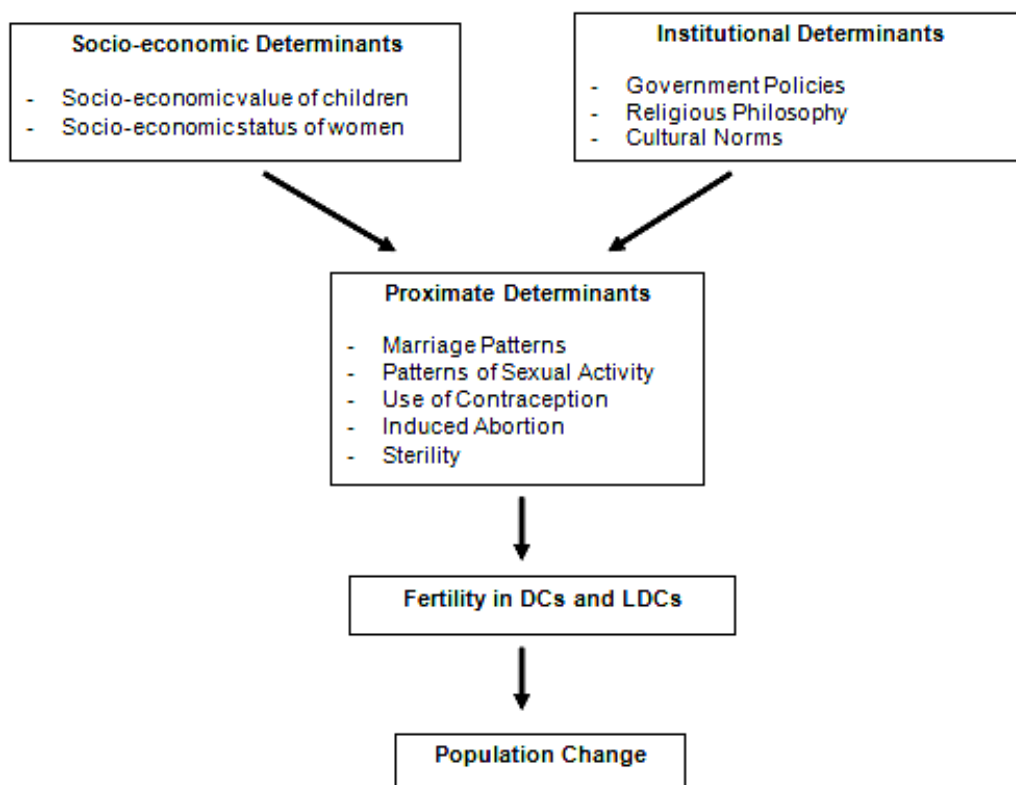
- Like religious and government institutions, cultural institutions have significant impacts on fertility. For eg, the need to have sons to continue generations and clans has been central in family value in Chinese society for centuries. In the past, this cultural value influenced the fertility behavior of the Chinese, where they bore a number of children to ensure that at least one son would survive to adulthood (Tang, 2001).

- Fertility of many Chinese societies today is also unquestionably influenced (in the short-term) by Chinese zodiacal preferences. In Hong Kong, the dragon years of 1988 and 2000 saw temporary fertility increases, a deviation from a long-term decline that Hong Kong had been facing. In Taiwan and Singapore, there were also similar unusually large increases in fertility in the dragon years of 1976, 1988 and 2000. This is because the traditional folklore people believe that their personal traits and fortunes come under the mysterious influence of animals of the years in which they are born, and for the Chinese the dragon is a symbol of divinity and good fortune. Hence, there is a strong cultural preference for dragon babies among the Chinese population (Yip et. al, 2002).
- In Thailand, various cultural factors and norms that manifest in marriage systems, family systems, religious systems, regional subcultures, together with cultural norms related to astrology and breastfeeding, have had influences on Thailand's fertility.
- In India, the cultural and socio-economic importance of sons has had marked impact on fertility. Sons are required to perform the last funeral rites ('sradha') for their parents. Upon marriage, sons attract dowries for the parents – in fact having a boy or a girl can make or break a family financially. Sons also bring prestige and local political power to the household, the kinship group and cast (Blaikie, 1975: 17).

Motherhood, in Indian culture, also enables a woman to gain a status that is otherwise not attainable if she bore no children. Motherhood is extolled in Indian culture, while barrenness is held as a curse. Sterility in women spells social and emotional doom for Indian women as they are considered an ill omen for both the household and the larger society. These cultural norms, amongst others, have marked impact on fertility in India.

- Of course, it is important to note that cultural institutions may evolve alongside socio-economic changes and government policies; they do not stand alone in their influence on fertility.

### Summary: Variables/Factors Affecting Fertility Pattern



**LECTURE 1A: Population Policies**  
*Institutional determinant of Fertility*

**NOTE:** You must know at least one pro-natalist and one anti-natalist case study of population policies that have been implemented in countries by the government. Preferably, study one successful case and another unsuccessful case. That being said, knowing more successful and failed cases would provide you with greater scope.

**Think about the following questions as you examine these case studies:**

- To what extent are governments (through population policies) able to influence its people to achieve the desired fertility rate?
- How influential is the government in affecting the proximate variables of fertility (e.g. marriage patterns, use of contraception, sterilization, patterns of sexual activity) in its attempt to achieve the desired fertility rate?
- How effective are population policies in altering fertility trends in DCs and in LDCs (comparatively)? Why are some policies successful while others fail in DCs and LDCs?
- What are the implications of population policies on population change and growth in DCs and LDCs (comparatively)? What are the problems and opportunities resulting from population change and policies in LDCs and DCs (comparatively)?

Case (A) – Japan’s “Angel Plan”

Case (B) – Singapore’s “Have three or more if you can afford it”

Case (C) – France’s Pro-natalist policy

Case (D) – Singapore’s “Stop at Two”

Case (E) – China’s “One-child policy”

Case (F) – Nigeria’s Anti-natalist policy

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**CASE (A) JAPAN – Pro-natalist policy “Angel Plan” (1994, 1999)**

The phrase "1.57 Shock" was widely used in Japan 20 years ago in reaction to the lowest fertility rate in the country's history. Recorded in 1989, this rate was even lower than the previous record of 1966. Japan has been on a mission to raise its birth rate. After 1989, however, the country's total fertility rate (TFR) continued its decline, reaching an all-time low of 1.26 lifetime births per woman in 2005. The decline in Japan's birth rate is so severe they have invented a word for it - 'shoshika', meaning a society without children.

Hoping to encourage more births, the government instituted the "**Angel Plan**" in 1994 to assist couples in raising children. The program tried to make raising children less stressful by offering counselling to couples and encouraging fathers to take an equal role in childrearing. Later, in the New Angel Plan, more convenient daycare centers were envisioned but a lack of funds impeded progress.

As part of the New Angel Plan (1999), payments from the government to support childrearing are limited to 26,000 yen per child per month (about US\$280). There has been a small increase in the TFR, reaching 1.37 in 2008. Birth rates have risen slightly for all in the childbearing ages, although somewhat faster for women ages 35

to 39. Preliminary birth figures just released for 2009 show that the number of births fell to 1,087,000 from 1,108,000 the year before. Since the number of deaths in 2009 was 1,146,000, the country had a natural decrease of 183,000. However, many industrialized countries experienced a dip in the number of births in 2009, likely due to the effects of the nearly worldwide recession.

### **A More Friendly Environment for Marriage and Childrearing**

In 2009, Japan introduced a much broader version of the Angel Plan, recognizing that its past attempts to encourage childbearing had shown few results. This latest version was passed unanimously by the Japanese Diet. Provisions of different laws provided for the well-being of the elderly as well as easing childbearing burdens for families.

The Ministry of Health, Labour, and Welfare has noted that "the key is breaking the situation forcing people to choose between work or marriage/child." In surveys, the ministry reported that over 90% of couples did want to marry and want at least two children when they do marry. Fulfilling those two desires would raise the TFR to about 1.8, the ministry estimates.

The new program intends to remove "workaholic" aspects of Japanese society that are often blamed for its very low fertility by making society more conducive to the sharing of childrearing and household duties, encouraging men to spend more time at home, and allowing mothers with young children to remain in the work force. Among its many goals is raising the percentage of women who remain in the labor force from the current 38% to 55% in 10 years. The current law has other goals:

- To encourage workers to use 100% of their paid annual leave as opposed to the current 47%.
- To halve the proportion of employees who work 60 hours per week or more from the current 11%.
- To increase the amount of time husbands spend on child care and housework from the present 1 hour per day to 2.5 hours per day.
- To increase the proportion of those ages 60 to 64 who are working from 53% currently to 60%.
- To reduce the number of "freeters", or youth who skip from one part-time/temporary job to another, from the current 1.9 million to 1.5 million or less by helping them find permanent employment.

Critics point out that the government's measures taken to date have been almost useless and claim that the government has not been serious enough about the problem, citing the fact that 70% of the social-welfare budget goes to programs for the aged, such as pensions and medical services, with only 4% set aside for services for children, such as child benefits and child-care services. The government's education-related spending is also the lowest among industrialized countries in terms of its ratio to gross domestic product (GDP).

The biggest obstacle to having families could be social attitudes. Men are still expected to spend long hours at the office and little time at home, while there is pressure on women to give up work when they have children. It is attitudes like that, and not policies - which Japanese women say are putting them off getting married.

Sources: Population Reference Bureau, BBC News Online

**CASE (B) SINGAPORE – Pro-natalist policy: “Have three or more if you can afford it” (1987, 1995)**

*The policy has succeeded in increasing the annual number of births, but fertility remains below the replacement level*

Mr. Goh Chok Tong, then First Deputy Prime Minister, announced in March 1987 the slogan "have three, or more (children) if you can afford it" as Singapore's new population policy. The policy, which may be described as "selectively pro-natalist", represented a fundamental change in direction from the blanket "stop at two" policy which had been in effect for about two decades until the mid-1980s.

**Goals and Strategies of the Policy**

The overall goal of the new population policy may be characterized as "population rejuvenation" in the broadest sense of the term. The policy is intended to address three anticipated trends concerning the future quantity and quality of the population arising from current marriage and reproductive patterns, namely:

- Diminution of the population owing to the failure of parental generations to adequately replace themselves with equally large numbers of children (sub-replacement fertility);
- Rapid increase in the proportion of the elderly, and decline in the proportions of the young and the working-age adults, as fewer children are born to replace the parental generation (the ageing of the population); and
- Decline in the proportion of talented persons as the less educated marry and reproduce themselves at higher rates of fertility than the better educated (the "lopsided" pattern of procreation).

The policy attempts to redress these potentially disruptive trends by encouraging single persons to get married and by promoting a larger family size of three or more children among the married couples who can afford them. The latter effort is to compensate for those who do not marry and those who do not have any children, in order to attain the two-child average necessary for generational replacement. It is expected that, by raising fertility to the replacement level, i.e. about 2.1 children per woman, and then maintaining this level of fertility indefinitely, the population will be maintained at a constant size with a balanced age structure, i.e. with neither too many of the elderly nor too many very young to be supported.

**Policy Measures and Incentives (1987)**

A series of policy measures or incentives have been introduced to support the "three or more" policy. These policy measures may be classified as follows:

(a) Incentives to ease the financial burden of child-rearing (tax rebates for third and fourth children, and income tax relief for up to four children),

(b) Incentives to ease the conflict between women's work and child-rearing roles (child-care subsidy, rebates on maid levies; child-care leave, no-pay leave and part-time work in the public sector) and

(c) Modification of the earlier, two-child incentives in line with the new policy (priority in allocation of housing and primary school registration for families with three instead of two children).

The following is a list of measures introduced at the time of the announcement of the population policy in 1987.

o Tax incentives

No increase in child relief for first and second child but third child relief raised to S\$750 effective Fiscal Year 1988. Mother needs only three GCE "O" level passes taken in one sitting, instead of five, to qualify for enhanced child relief. Fourth child also qualifies for enhanced child relief, which is S\$750 plus 15% of mothers earned income up to a maximum of S\$10,000. Special tax rebate of S\$20,000 to be offset against either or both the husbands and wives income tax liabilities for newborn third child. Another rebate -- only for the working wife -- equal to 15% of her earned income. Any excess of both rebates can be carried forward for up to four years.

o School registration

All disincentives against the third child will be removed. Children from three-child families will have the same priority as those from one and two-child families. Where there is competition for admission, priority will be given to children from three-child families.

o Child-care centres

The Government will pay a S\$100 subsidy on all children, regardless of parents income, in government-run or government-approved centres, including those privately operated.

o Medisave

Medisave can be used, with immediate effect, for the hospital costs of a third child, whether delivered in a government or private hospital. But no overdraft of Medisave account is allowed.

o Accouchement fees

No change in the fee for the first, second and third child. Fee for fourth child raised, from 1 January 1988, to S\$1,000 for all ward classes, and to S\$1,300 for fifth and other children. But delivery and hospital costs for fourth child, with a S\$3,000 maximum, can be offset against parents earned income.

o Housing allocation

Families in three-room or larger (public) flats who want to upgrade their flats on the birth of their third child will get priority allocation.

o Employers attitudes to working mothers

Employers to be asked to be more understanding and flexible towards working mothers with young children. They should offer part-time and flexi-time work,

extended no-pay maternity leave, and retrain women who rejoin the workforce. The civil service will lead the way.

o Abortion and sterilization counselling

There will be compulsory counselling before and after abortions to discourage abortions of convenience, and women with fewer than three children will be counselled before sterilization.

o Getting singles to mingle

The infrastructure of the Social Development Unit and the Social Development Section<sup>4</sup> will be strengthened, and their activities and programmes widened.

**Changes to the policy over time: Social policies related to family formation (1995)**

o Income tax relief

- Normal child relief: S\$1,500 each for first three children and fourth child born after 1 January 1988.

- Enhanced child relief: A working mother with at least three "O" level passes at one sitting or equivalent qualifications eligible for enhanced child relief of S\$1,500 and 5-15 per cent of her earned income if the children are above age 12, and 5-25 per cent if the children are below age 12. The maximum relief for each child in each age category is S\$10,000 and S\$15,000, respectively.

- Special nine-year tax rebate: Parents who have a second, third or fourth child qualify for special tax rebates which can be used to offset against either or both the parents income tax liabilities within nine years from the child's year of birth (the maximum period within which the rebates can be claimed is 27 years). Second child rebate varies from S\$20,000 if the mother's age at delivery is below 28 to S\$5,000 if the mother is below 31. For a third child born on or after 1 August 1987 or a fourth child born on or after 1 January 1988, a rebate of S\$20,000 and 15 per cent of mother's earned income in the year of the birth in lieu of maternity leave (can be offset only against mother's income tax liabilities).

o Child-care subsidy

With effect from 1 April 1995, a monthly subsidy of S\$150 per child is granted to the first four children attending approved child-care centres for full-day care and S\$75 per child for half-day care.

o Public housing scheme

Priority in housing allocation given to families having three or more children with the third child born on or after 1 January 1987 if they are existing public flat owners who want to upgrade to bigger flats, or tenants of rental public flats, or occupiers of purchased or rental public flats who want to purchase public flats, or residents of non-public premises/properties who want to purchase public flats.

o Medical fees

Medisave can be used for the hospital and delivery charges incurred for the first, second and third children. The delivery and hospital expenses for the fourth child, subject to a maximum of S\$3,000 are tax deductible against the parents earned income.

### **Success or Failure?**

At the press conference to announce the new population policy in 1987, the then First Deputy Prime Minister announced that if the "three or more" policy worked, Singaporeans would be replacing themselves by 1995. The Government was hoping that the quarter of a million women aged 25-34 would respond to the new policy and prevent the shrinking of the population and the prospect of having only two young people to support one elderly person in the year 2030. It was expected that, by returning fertility to the replacement level by 1995, the population would peak in 2030 and then stabilize. The Government also rejected reliance on immigration as a means to increase the size of the population.

The population policy succeeded in increasing the number of annual births. The relative proportions of third and fourth order births have also increased since 1987. Fertility in the age groups comprising women 25 years and older has increased and more of the better-educated women are also having three or more children.

However, the increase in third order births seems to have stalled since 1990 and the better-educated women continue to be under-represented among the higher order births. Perhaps more significantly, the TFR appears to have stabilized at about 1.8 children per woman, and even under the especially favourable cultural circumstances that existed in 1988, the TFR remained below two children per woman.

"This is a matter of values, not of incentives," the new prime minister, Lee Hsien Loong, said in a recent National Day speech. "We want people to have babies because you want them and you love them. It's part of a happy family life. "

To succeed, the government must remake the social attitudes that come with greater affluence, as well as the resistance to having children that the state itself fostered a generation ago.

To find out more about pro-natalist population policies in Singapore, read "*Fertility and the Family: An Overview of Pro-natalist Population Policies in Singapore*" by Theresa Wong and Brenda S.A. Yeoh.

### **CASE (C) FRANCE – Pro-natalist policy**

In a Europe facing serious demographic decline, France's buoyant birth rate of 2.0 children a woman is well above the average of 1.6 and surpassed only by Ireland (2.1) and Iceland (2.2). France can also boast one of the EU's highest rates of female employment: 81% of women between 25 and 49 are in work, including 75% of those with two children (and 51% of those with more than two).

France's pride in population growth dates back to the end of the 18th century, when it had fewer people than Britain or Russia. Pro-natalist policies, designed to encourage women to have more babies, have been part of the French political tradition ever since.

By 1940, France's population, hit hard by war, was 40 million, roughly where it had been in 1840. By 2000, it had jumped to 60 million, the largest increase in Europe.

France's family policy, launched in the 1970s, aims to improve the country's birth rate and keep as many women in work as possible. "The main point is that women here no longer stop working when they have children: the majority work, even those with three kids," said Ms Meda. In addition to financial incentives, government policies encourage working women to take time off to have babies. State-supported day care centers and nursery schools are available for infants starting at the age of 3 months, with parents paying a sliding scale according to income.

The French state aims to make it easy for working women to have children - either by allowing them to take time off from their jobs without too much of a financial loss, or by providing cheap, high-quality childcare.

Maternity leave, on near full pay, ranges from 20 weeks for the first child to 40 or more for a third. A whole gamut of grants, allowances and tax breaks is available, increasing substantially once a family has three children: all French "familles nombreuses" get some €300 in monthly allowances and travel as good as free on public transport.

At the same time, the network of state-run or state-approved crèches - for children from two months old - has been expanded over the past decade or so, as has the number of state-registered childminders. Depending on the family's income, childcare costs from virtually nothing to around €500 a month for the most well-off. Nursery school from 8.30am to 4.30pm is free for every child from the age of three. "We plainly have a very good system compared with many countries," said Sylvie Clarke, 37, a mother of three from Lille. "It's true that, in France, you can have babies without it being a major financial blow, and without worrying whether you'll be able to go back to work afterwards."

Ms Clarke, a bank executive, said she had been able to take up to a year off work for each of her three children because of the generous maternity leave offered by her employer, and so had never considered taking extended parental leave.

### **Recent policy developments**

More recently (in 2005), middle-class mothers in France could be paid up to €1,000 (£675) a month - almost the minimum wage (€1,200) - to stop work for a year and have a third child under a government scheme to boost the birth rate, already among the highest in Europe.

Such an addition to France's already successful pro-natalist policy was in response to a report that warned that even France's high birth rate would not prevent the population shrinking. One of the problems is that middle-class and professional women are postponing the age at which they start a family (the 2004 average was 29.6), and spacing out their pregnancies (now nearly four years between the first and second child). As a result, fewer women will have more than two children. The government hopes to reverse the downtrend by raising an existing €512 monthly grant, the allowance paid to mothers (or, in theory but rarely in practice, fathers) who put their jobs on hold to raise a second or third child.

The grant will be available only for a third baby, and limited to one year. But it will be tied to the parent's salary, with an expected ceiling of €1,000. The French minimum wage is €1,200 a month.

"The old deal only really attracted women in poorly paid work, not those with qualifications and competitive career jobs," said Dominique Meda, a leading social policy specialist. "This one could be that extra encouragement they need to take the plunge. It may even encourage some fathers to take a year off."

In 2006, France pushed past Ireland to become the most fecund nation in the European Union, with an average of two babies per woman. The state has favoured childbearing by putting an infrastructure in place that encourages women to work and have babies: municipal child-care facilities, liberal family allowances that rise with each subsequent child, and a nonjudgmental attitude about having babies out of wedlock. France banned the term illegitimate from its administrative lexicon in 2005, and the baby boom in 2005 came amid a continuing drop in marriage rates. Almost half of 2006 babies were born to unwed mothers.

### **CASE (D) SINGAPORE – Anti-natalist policy: “Stop at Two” (1966 -1982)**

In the 1960s, when Singapore had just gained its independence from Britain, having six children was common. In the 1970s, worried that the population was growing too fast with the prospect of over population, the government began a "Stop at Two" policy, using tax and other incentives to curb family growth. Other slogans which had similar rhetoric are “Girl or Boy – Two is enough”.

Couples who had more than two children were deprived of certain benefits. For example, they could not get priority when applying for primary schools and had to pay higher hospital fees to have the third child.

Couples who had three or more children could be fined or threatened with losing their jobs. This affected mainly poorer families, who sometimes gave away the third child for fear of being fined or retrenched.

The birth rate started to drop, mainly among educated women.

The TFRs for Chinese, Malays and Indians were 3.03, 3.33 and 3.16, respectively. By 1978, they had fallen to 1.78, 1.84 and 1.80, respectively.

The policy, which practically capped the number of kids to two in each family, was so successful that some wonder if it was one of the causes of Singapore’s declining population below replacement level after the implementation of the policy



The policy nipped the problem in the bud, but was it too successful? Why was the policy so successful? What was the socio-economic context of Singapore in that time period? Could it have facilitated the policy's success?

The following are some of the many posters that were used to advocate for smaller families, on top of the incentives or disincentives.



### CASE (E) CHINA – Anti-natalist policy: “One-child policy” (1970s - present)

*“China is a country in the primary stage of socialism, being populous and underdeveloped. People use limited rustic ideas and traditional concepts and customs of childbirth inherited from the old society, such as “the bigger the family the more prosperous, and the more children the greater the happiness.”*

- Piz Population, *Family Planning* 1990 Beijing

This was the mindset of the Chinese before the 1960s. In the 1960s however, rapid population growth hindered economic progress causing the government to encourage couples to have only one child. This policy was implemented through a number of measures. The policy was implemented in urban areas first and was expanded to the rural areas in the 1970s.

#### Measures:

- Birth control – Measures for birth control by methods such as contraceptives, sterilisation and abortion were made easily available to people and were promoted.

- Financial Disincentives – Fines were imposed to discourage couples from having more than one child. A couple with a second child had to pay a fine and an annual tax.
- Education – Public education in the form of advertisements on the one-child policy were posted to remind people of the policy as well as to change people's attitudes
- Incentives – Couples with only one child were given a 10% salary bonus. This child is given priority in education and the family is given priority in healthcare facilities, employment and better housing.
- Raised minimum marriage age – the legal age at marriage was increased to 25 for women and 27 for men.

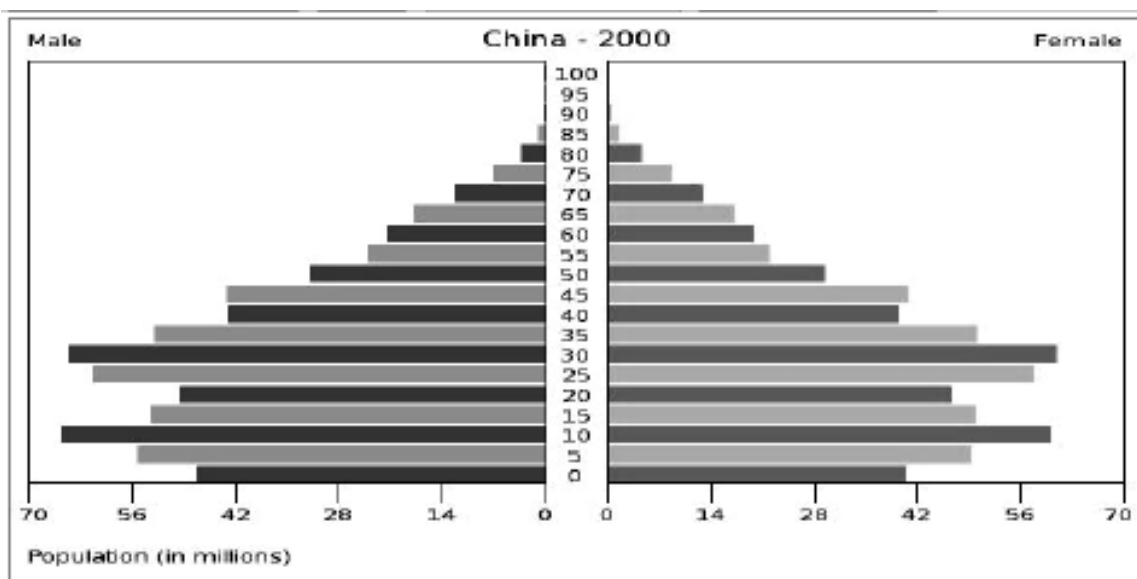
### Success or Failure?

From 1970 to 1979, TFR fell from 5.8 to 2.7, the greatest decline ever recorded in one decade. Although this policy was extremely successful, its coercive features sparked international objections. The one-child policy also met with strong objections in the rural areas of China where many people believe a son is necessary to care for elderly parents (Recall: Caldwell's Theory of Wealth Flows). During the 1980s, an imbalance in the sex ratio of boys to girls was documented. Using indirect methods, the U.S. Census Bureau estimated that the infant mortality rate for girls born in 1990 was 1.65 times that of boys, suggesting that female infanticide and sex-selective abortion was prominent in China.

In December 2001, The People's Congress approved the Population and Family Planning Law, which reinforced and standardized the one-child policy across all regions of the country. The law did permit some segments of the population, including rural couples, who first child is female, to have a second child. There are incentives for families that do not violate the policy, but fines were no longer imposed on those who have a second child.

The one-child policy greatly altered the sex structure of China in the 1980s – imbalanced sex ratio especially in the rural areas as girls were considered less useful for working in the fields.

**Population Pyramid of China – 2000**



The one-child policy was more successful in the urban areas and was easier to enforce. In the remote rural areas, however, it ran counter to the economic need for family labour and security. Where the policy was not enforced rigorously, there was a noticeable rise in births in the later 1980s.

However, the one-child policy was very successful despite the exceptions in certain rural areas. Was appropriate timing the key to China's success?

The policy came at a time where the desire for economic progress exceeded the desire for large families. It also came at a time where China's economy was modernizing and developing and people held less strongly to traditional concepts and customs of childbirth, and embraced improving socio-economic circumstances.

### **Article 1: Has China's one-child policy worked?**

Read the following articles and

- (a) Evaluate if the one-child policy has truly been a success or not, and
- (b) Think about the implications of the policy on the demographic future of China.

*In the first of a series of pieces on China's one-child policy, the BBC's Michael Bristow looks at whether the country's controversial regulations are working.*  
(20 September 2007)

China's family planning policy has prevented 400 million births, officials say. Since the regulations were introduced in 1978, China has kept its population in check using persuasion, coercion and encouragement.

And it looks likely that, nearly 30 years after the policy was first introduced, it will not be relaxed to allow couples to have more children.

Many Chinese and foreign academics believe this is a mistake and will result in a number of serious demographic problems in the future.

At a press conference earlier this year, Chinese officials were keen to declare the controversial policy a success.

"Because China has worked hard over the last 30 years, we have 400 million fewer people," said Zhang Weiqing, minister in charge of the National Population and Family Planning Commission.

"Compared with the world's other developing countries with large populations, we have realised this transformation half a century ahead of time."

A team of independent Chinese and foreign academics, who this year completed what they say is the first systematic examination of the policy, agree that China has managed to limit its population growth.

But team leader Wang Feng, of the University of California, Irvine, says this reduction is mainly due to a fall in the fertility rate in the 1970s, rather than any more recent initiatives.

During the 1970s, China began encouraging delayed marriages, longer intervals between births and fewer children.

"The total fertility rate - the number of children a woman is expected to have in her lifetime - was reduced from over five to slightly over two," Prof Wang says.

All this happened before the current family planning policy was introduced in 1978.

### **'Too busy'**

The fall in fertility rates is also, at least partly, due to improving social and economic circumstances.

In other East Asian countries, such as Thailand and South Korea, modernisation has led to women having fewer children, and yet these countries do not have strict family planning policies.

But Professor Wang does admit that China's family planning policies since 1978 have helped reduce the fertility rate further and contributed to a change in attitudes.

"A lot of people simply don't want that many children. People have accepted the policy," he says.

This is particularly true in urban areas, where most couples interviewed by the BBC say they are happy with just one child.

Beijing mother-of-one Zhao Hui, who has a four-year-old daughter called Zhang Jin'ao, says she has never wanted more than one child.

"One child is enough. I'm too busy at work to have any more," says the 38-year-old, who works in the housing sector.

"It wouldn't matter what my financial situation was or what the government regulations were, I'd still only want one child," she adds.  
Most of her friends, she says, think the same way.

### **Forced abortions**

But there is a more sinister aspect to this policy, which is sometimes employed to make women less willing than Ms Zhao accept the rules.

Activist Chen Guangcheng was sent to prison last year for exposing what he says were over-zealous health workers in Linyi city, Shandong Province.

He says they illegally forced women to have late-term abortions and be sterilised.

China also faces profound and widespread demographic problems because of its family planning rules, according to some.

Chinese officials say the current fertility rate is between 1.7 and 1.8 births per woman, well below the 2.1 births needed to keep the population at a stable level. Overseas experts dispute this figure; they say the fertility rate is even lower and stands at 1.5.

This will result in an increasing proportion of older people, a smaller workforce to look after them and a disproportionate number of boys to girls.

There are other problems too. China might have restricted its population growth, but this has not always helped solve wider problems, as was envisaged when the policy was first introduced in 1978.

Reducing the number of people, for example, does not automatically help the environment, as China has found.

Prof Wang says the policy needs to be relaxed if China is to solve some of these problems.

There are at least a few people inside China who agree with that assessment. During this year's parliamentary session in March, 29 members of the Chinese People's Political Consultative Conference, a government advisory body, suggested allowing couples to have two children.

But that suggestion will probably fall on deaf ears, at least until the end of the government's current five-year plan, which ends in 2010.

At the press conference earlier this year, Minister Zhang said there was not the "slightest doubt" about the need to continue with the policy.

China might face serious consequences because of that attitude in the not-too-distant future.

Source: <http://news.bbc.co.uk/2/hi/7000931.stm>

## Article 2: China to stick to one-child policy

# China to stick to one-child policy: Official

**BEIJING:** China will continue to limit most families to just one child in the coming decades, state media said yesterday, despite concerns about the policy's problematic side effects, such as too few girls and a rapidly ageing population.

China has the world's largest population and credits its 30-year-old family planning limits with preventing 400 million additional births and helping to break a traditional preference for large families that had left many trapped in cycles of poverty.

There has been growing speculation among Chinese media, experts and ordinary people about whether the government would relax the policy soon, allowing more people to have two children.

A family planning official in the southern province of Guangdong on Saturday predicted his province would loosen the restrictions by 2015, and possibly scrap the one-child limit by 2030.

But the China Daily newspaper yesterday quoted Ms Li Bin, head of the National Population and Family Planning Commission, as saying that there were no plans to change the policy any time soon.

"Historical change doesn't come easily, and I, on behalf of the National Population and Family Planning Commission, extend profound gratitude to all the people in particular, for their support of the national course," Ms Li was quoted as saying at an event on Saturday marking three decades since the policy was introduced.

"So, we will stick to the family planning policy in the coming decades," she said.

The strict family planning rules, which limit urban couples to one child and rural couples to two, have curbed China's population growth but have brought new problems, such as an expanding elderly population that demographers say will be increasingly hard to support as the young labour force begins shrinking over the next few years.

The policy is also blamed for the country's skewed sex ratio. The male-female ratio at birth in China is about 119 males to 100 females, with the gap as high as 130 males for every 100 females in some provinces.

In an interview with local media on Saturday, the director of Guangdong's family planning commission, Mr Zhang Feng, said he expected the policy there would loosen after the current national five-year plan is complete, or around 2015.

"I predict that if population control remains on course and meets its targets, Guangdong is likely to let couples in which one of the two parents is an only child have a second child," he said in an interview with the Yangcheng Evening News. "And after 2030, any Guangdong couple could have a second child. That's just my personal view."

Source: Straits Times, 28 September 2010

Article 3: China's labor crunch: End to one-child policy?

THE STRAITS TIMES, SATURDAY, MARCH 20 2010 PAGE A16

# China's labour crunch: End to one-child policy?

Country losing demographic dividend, which may hit growth unless things change

By SIM CHI YIN  
CHINA CORRESPONDENT

**BEIJING:** As the global financial crisis hit China over a year ago, shuttering shops and slashing exports, migrant worker Huang Mao left his electronics factory job in Shanghai.

Returning to his village of Tian Ping in a remote corner of south-western Yunnan province, he bought a pick-up truck with 50,000 yuan (\$\$10,215) borrowed from relatives and started a new job at home: Hauling coal and construction materials such as sand.

Today, the 22-year-old is still there, making almost as much as the 1,400 yuan a month he earned at the Shanghai factory.

"I would have to find a higher-paying job and one that is not dirty or noisy to make me leave my family again," Mr Huang said on his mobile phone from his village.

With many migrant workers like him still staying away from China's coastal and southern manufacturing belt after the massive layoffs there, factories have in recent weeks reported a "migrant worker famine".

Local media say the southern economic powerhouse of the Pearl River Delta is lacking as many as two million workers, while the eastern manufacturing hub of Wenzhou is short of up to a million.

This led the authorities in Guangzhou to raise the minimum wage there from 860 yuan to 1,030 yuan, surpassing even Beijing, the Guangzhou Daily reported on Thursday.

This "migrant worker famine" has been reported every year since 2004 - except during last year's financial crunch - but it appears to be getting worse.

While the fact that younger migrant workers like Mr Huang have higher aspirations and are more picky about their jobs contributes to the problem, scholars say the current shortage is, more fundamentally, a symptom of a deeper ill: China's diminishing surplus labour advantage.

This is lending weight to growing calls for Beijing to relax the controversial one-child policy introduced in the 1980s to rein in the country's surging population.

The policy helped to give China a "demographic dividend" as the number of children fell faster than the number of elderly grew. That meant the proportion of the population which was of working age rose, creating faster economic growth.

And for the past three decades, China has chalked up double-digit growth largely on the back of its army of cheap labour.

The impending depletion of that "dividend" and the dwindling workforce pose the largest threat to China's economic growth, said leading Chinese demographer Cai Fang, the most prominent proponent of this much-debated thesis.

He predicted that the country's working-age population will peak in the next few years, but dip after 2015.

The labour force might shrink by 23 per cent between 2015 and 2050 if current demographic trends continue, the Centre for Strategic and International Studies, a Washington-based think tank, said last year.

That looming reality, brought home by the "labour famine" and growing concerns over China's rapidly greying population, has given more ammunition to proponents of a two-child policy.

A delegate at the recently concluded annual parliamentary session proposed that China roll out a two-child policy in the next three to five years.

Even Communist Party mouthpiece People's Daily carried an article last December calling for more couples to be allowed to have two children. It was written by Mr Tian Xueyuan, head of a think-tank of the National Population and Family Planning Commission.

At a meeting with state population researchers in January, Vice-Premier Li Keqiang - the most senior official to have spoken on the issue of late - said China would "switch from population control to population development", sparking murmurs that Beijing might loosen the one-child policy.

In its front-page article this week, the Southern Weekend newspaper said the one-child policy was at a "historic juncture". It quoted influential economist Hu Angang as saying: "I think there is no need to debate anymore whether we should adjust our population policies. Now, it is a matter of how."

As for the current "famine", Professor Cai told a Shanghai newspaper that China will need to redouble efforts to move labour-intensive industries up the value chain and spur economic development in the more rural central and western regions.

"It is signal, but there is no need to fret," he said.

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### **CASE (F) NIGERIA– Anti-natalist policy (1988)**

Nigeria is the most populous nation on the continent of Africa, and the eighth in the world, with a population of over 140 million people. One in five sub-Saharan Africans is Nigerian.

By 1985, the Nigerian government recognized the need to control population growth and fertility. The government, with the support of numerous international governments and organizations, implemented its first population policy in 1988. The National Health Policy and Strategy to Achieve Health for all Nigerians was implemented. The government's objective, shared by donors, was to increase the use of modern contraceptives as a means of improving maternal and child health. The main thrust of the policy was the recommendation to young couples not to have more than four children per family (or per woman) and to attain a reduction of the population of women bearing more than four children by 80 per cent by the year 2000. The policy was reviewed again in 2004.

It seemed like the aim to reduce fertility levels was a secondary objective of the policy, and the primary objective was first to improve child and maternal health.

#### **Success or Failure?**

The government has actively supported and promoted the availability and distribution of family planning services through government facilities, as well as private and social marketing channels. However, the availability of family planning services is still felt to be limited and the use of modern methods of contraception is very low in Nigeria.

Whilst the policy was successful in improving maternal and child health, it did not seem as successful in reducing fertility levels. TFR remained high in the last 5 years at 5.7 and the current use of modern family planning methods among married women is only 10%.

The success of the policy was challenged by the following factors:

- Inadequate access to information and services about contraception and methods of birth control and family planning
- Cost of family planning – economic costs mainly
- Children are still regarded as a form of social, economic and marital security
- Unacceptability of modern contraception by many rural and illiterate communities