



# National Population Dynamics and Demographic Transition

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# Objectives



- Understand the current Saudi population pyramid
- Understand the Saudi demographic transition over the past 3 decades
- Discuss the implications and future health needs of Saudi Arabia, based on the current population and demographic transition of KSA

# Other important population distribution measures

## □ Dependency ratio (x 100)

The proportion of persons above 65 years of age and children below 15 years of age are considered to be dependant on the economically productive age group (15-64 years)

## □ Total dependency ratio (x 100)

The ratio of the combined age groups 0-14 years plus 65 years and above to the 15-65 years age group is referred to as the total dependency ratio.

# Population density

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- Total population in a certain region divided by the surface area of that same region

# How does a population grow?

## 1. **Natural increase**

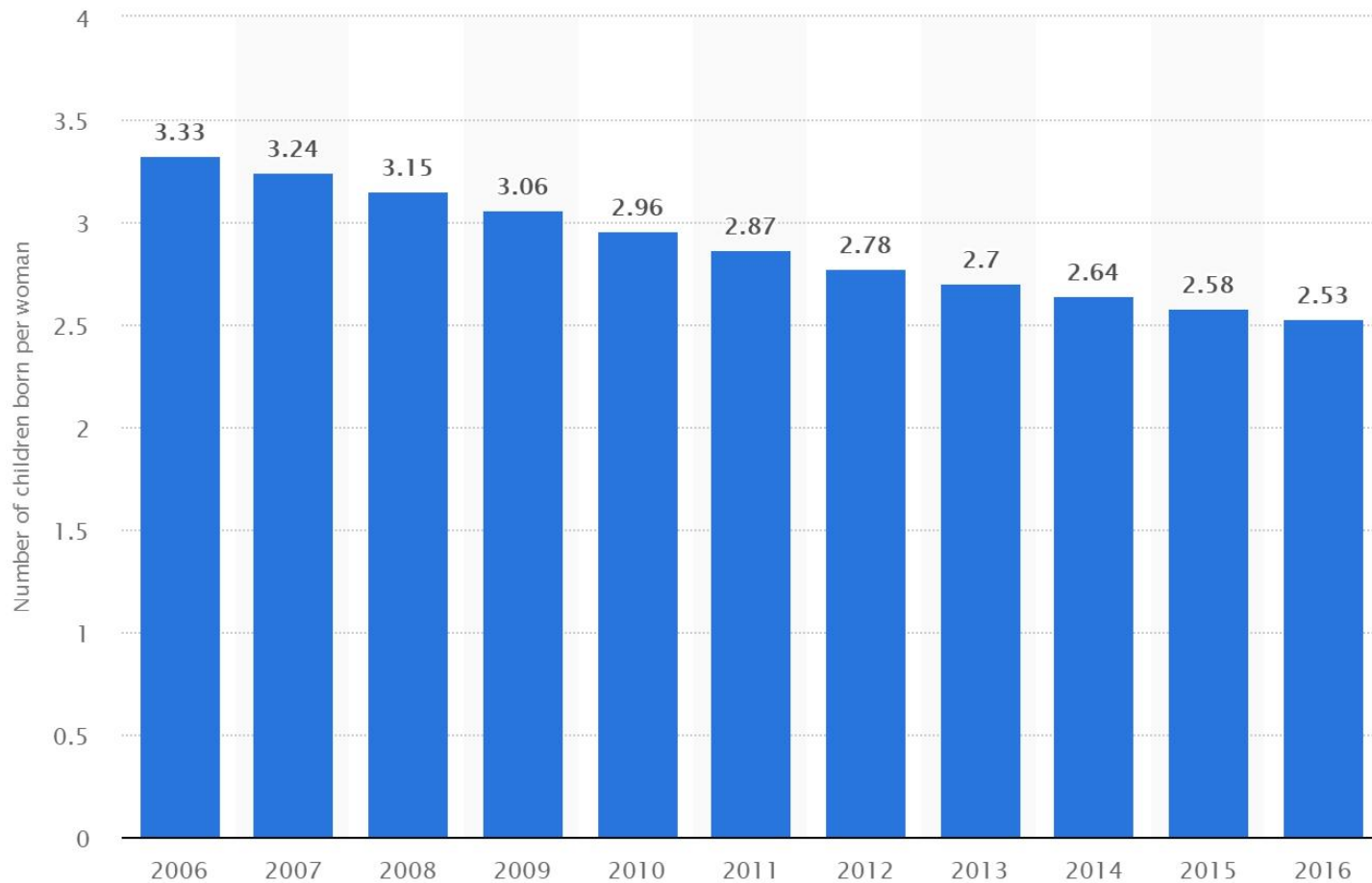
Difference between birth rates and death rates

## 2. **Net migration**

The difference between migrants coming into the country (immigrants) and leaving the country (emigrants)

# Saudi Arabia Fertility Rate

## Saudi Arabia: Fertility rate from 2006 to 2016



# History of demographic changes in KSA

## □ 1970s:

- Birth control socially unacceptable (Pronatal society)
- Polygamous culture
- Females marriage at early age
- Increasing birth rates, and reduced infant mortality
- decreasing death rates

# History of demographic changes in KSA

- 1990s:
  - studies showed -> low level of marriage before 18
  - education -> reduces parity and increases marital age
  - female education did not reduce fertility rates that much
  - (Demographic lag)
  - +ve association between father education and fertility
  - +ve association between income and fertility
  - High sex ratio (male to female ratio) why?



# History of demographic changes in KSA

- 2001: research suggested
  - ▣ reduction of fertility rates from 7 to 4.5 in 15 years
  - ▣ Mainly due to:
    - Shift in educational attainment for females
    - Delay in marriage
    - Change of household situation (urbanization)
  
- 2001 onwards:
  - ▣ Further reduction in birth rates
  - ▣ Urbanization (concentration of population in urban)

# Migration

- Ranking of countries that host migrants:

	Country	No. of migrants hosted
1	USA	49.8 million
2	Saudi Arabia	12 million
3	Germany	around 12 million
4	Russia	around 12 million
5	UK	9 million

- Saudi Arabia ranks the **second** worldwide in hosting migrants

Source: UN International Migration Report 2017. Available at:  
[https://www.un.org/development/desa/publications/international-migration-](https://www.un.org/development/desa/publications/international-migration-report-2017/)

# 5 Stages for Demographic Transition


- Stage 1: (High Stationary)
  - ▣ High birth rate
  - ▣ High death rate
  
- Stage 2: (Early expanding)
  - ▣ Birth rates remain the same
  - ▣ Death rates begin to decline
  - ▣ e.g. many of the countries in developing world

# 5 Stages for Demographic Transition

- Stage 3: (Late Expanding)
  - ▣ Death rates further decline
  - ▣ Birth rates begin to fall
  - ▣ Birth rates  $>$  death rates  $\Rightarrow$  population growth
  
- Stage 4: (Low stationary)
  - ▣ Low birth rate
  - ▣ Low death rate
  - ▣ Population becomes stationary; Zero population growth
  - ▣ Many developed countries

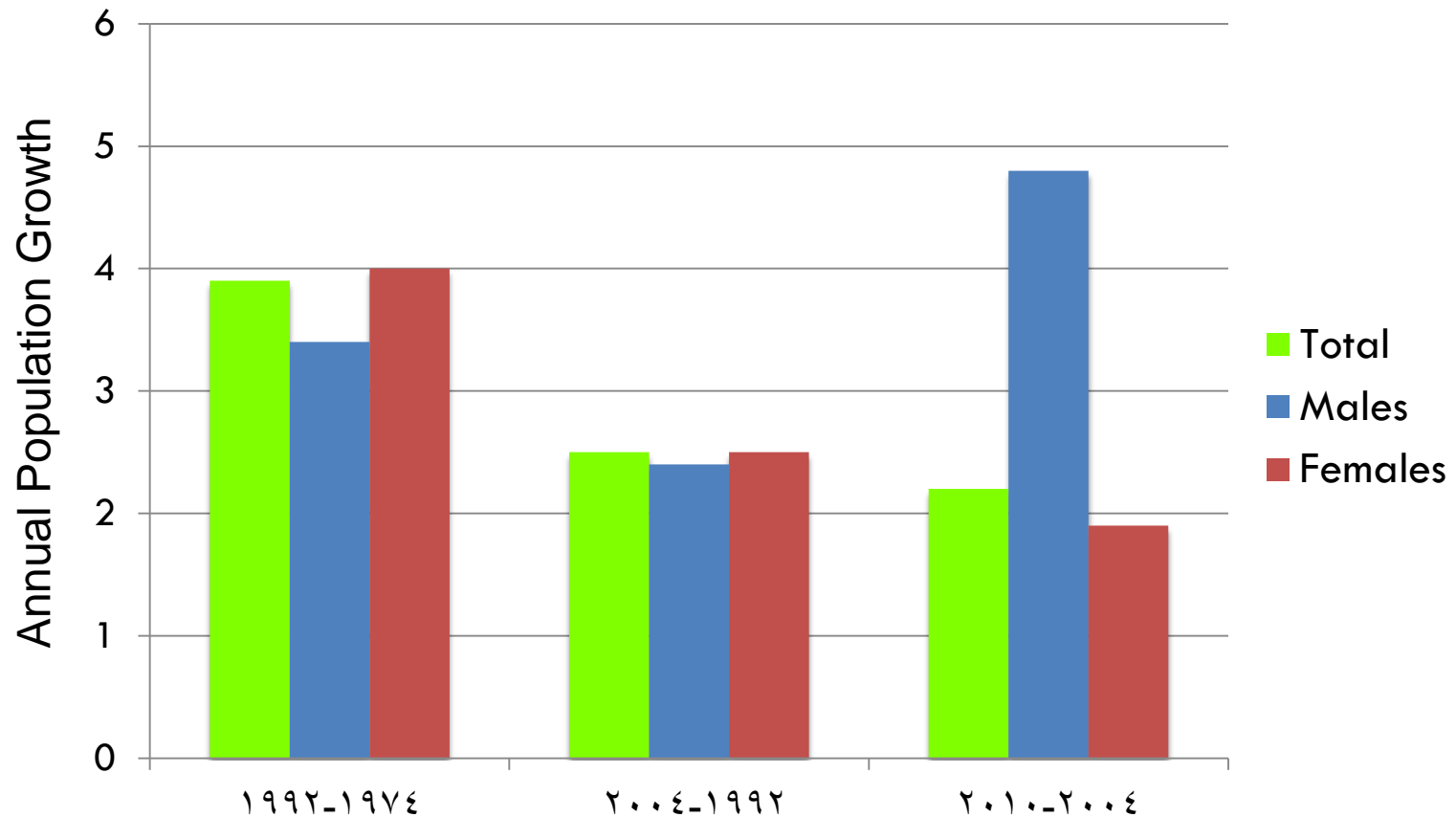
# 5 Stages for Demographic Transition

- Stage 5: (Declining)
  - ▣ Birth rates very low
  - ▣ Death rates very low
  - ▣ Birth rates < death rates
  - ▣ Population decline
  - ▣ e.g. Germany and Hungary



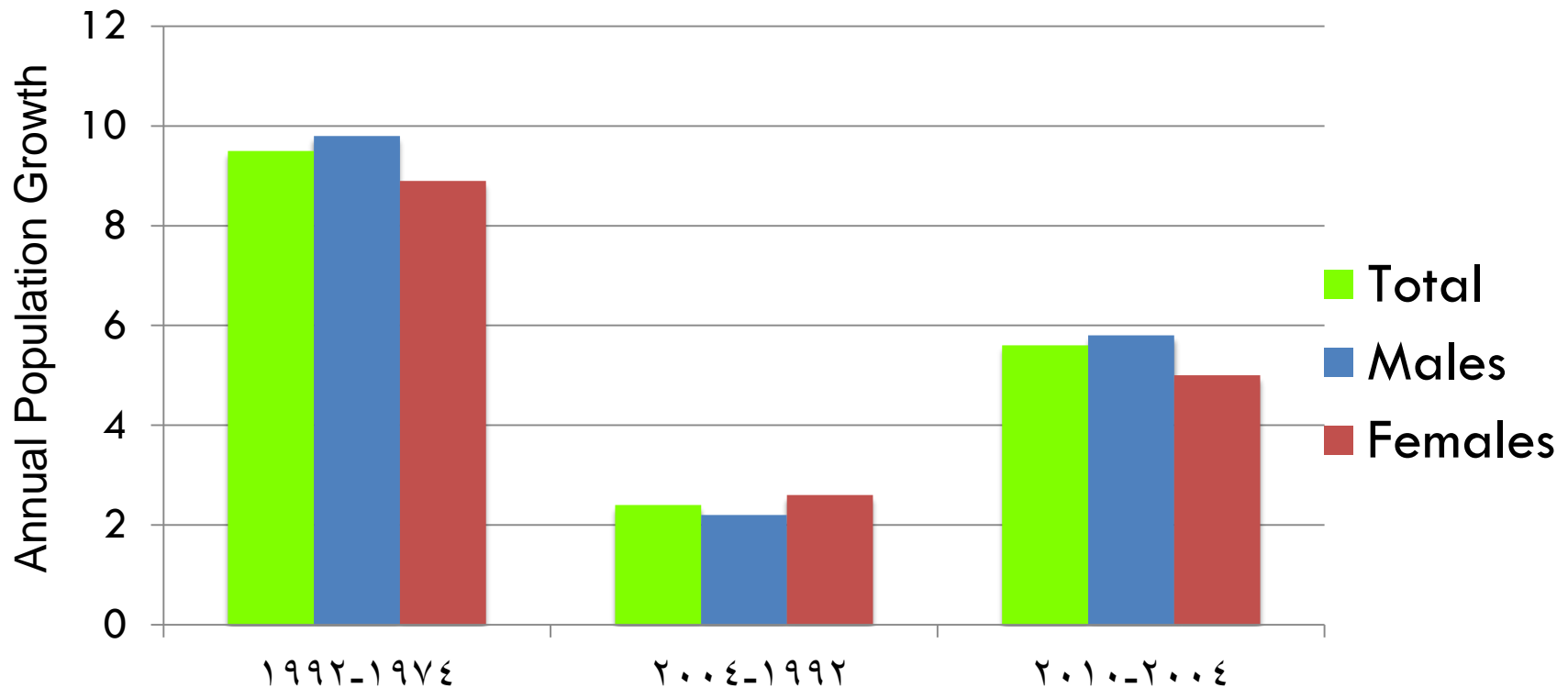
Which demographic  
transitional stage are we in?

# Population growth in Saudi Arabia 1974 – 2010 (Saudi Citizens)



Source: Abu Ashwan M, Abdul Salam A, Mouselhy MA. Population growth, structure and distribution in Saudi Arabia. *Humanities and Social Sciences Review* 2012; 1(4):33-46

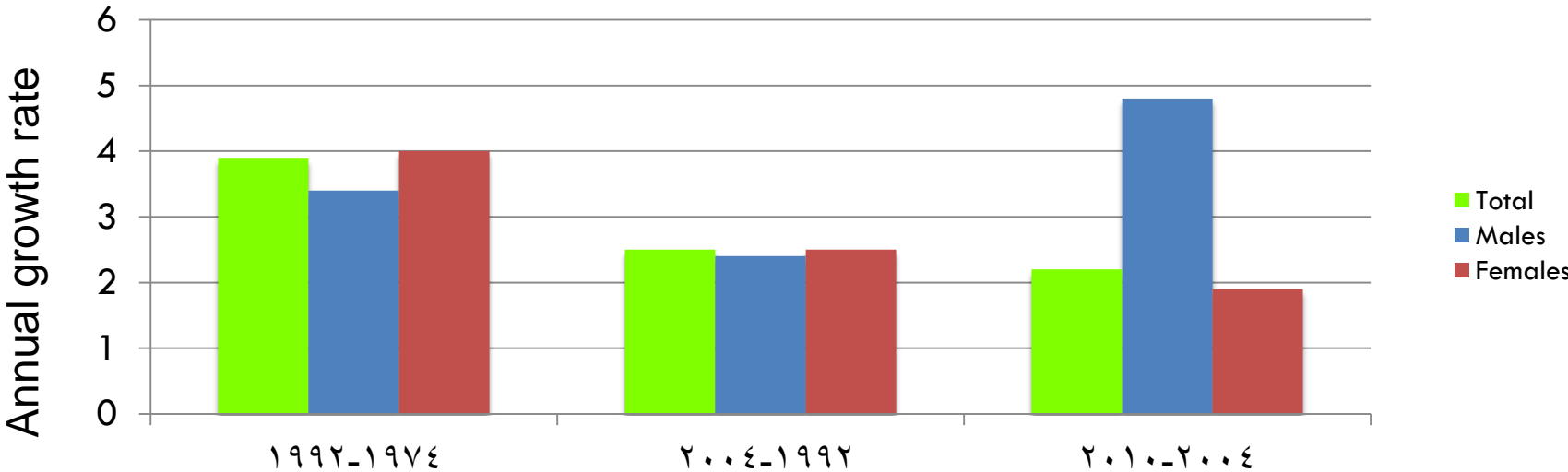
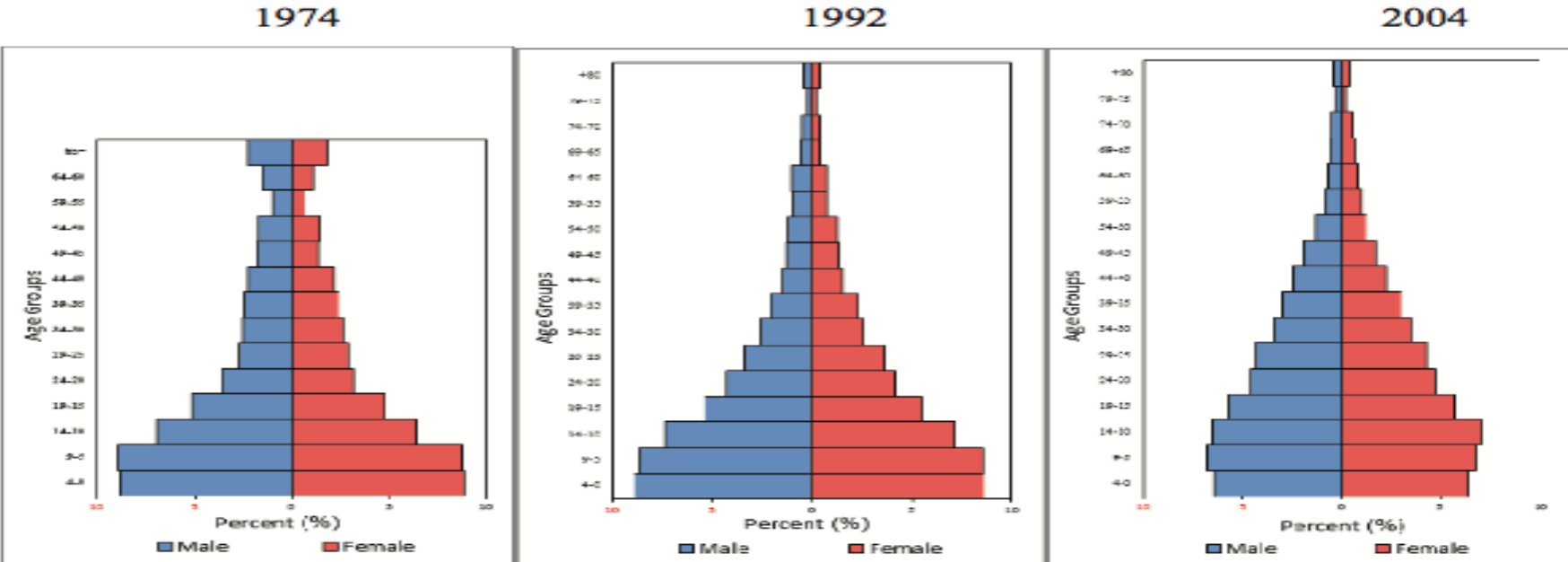
# Population growth in Saudi Arabia 1974 – 2010 (Expatriate Citizens)



Source: Abu Ashwan M, Abdul Salam A, Mouselhy MA. Population growth, structure and distribution in Saudi Arabia. *Humanities and Social Sciences Review* 2012; 1(4):33-46



# Saudi Nationals



Source: Abu Ashwan M, Abdul Salam A, Mouselhy MA. Population growth, structure and distribution in Saudi Arabia. Humanities and Social Sciences Review 2012; 1(4):33-46

# Expatriates

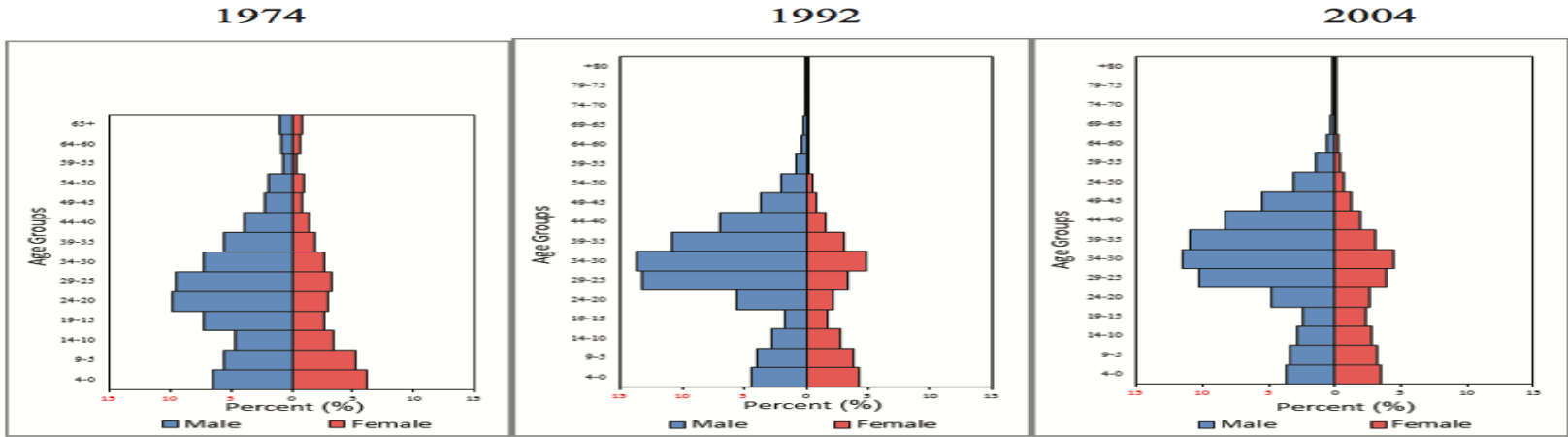
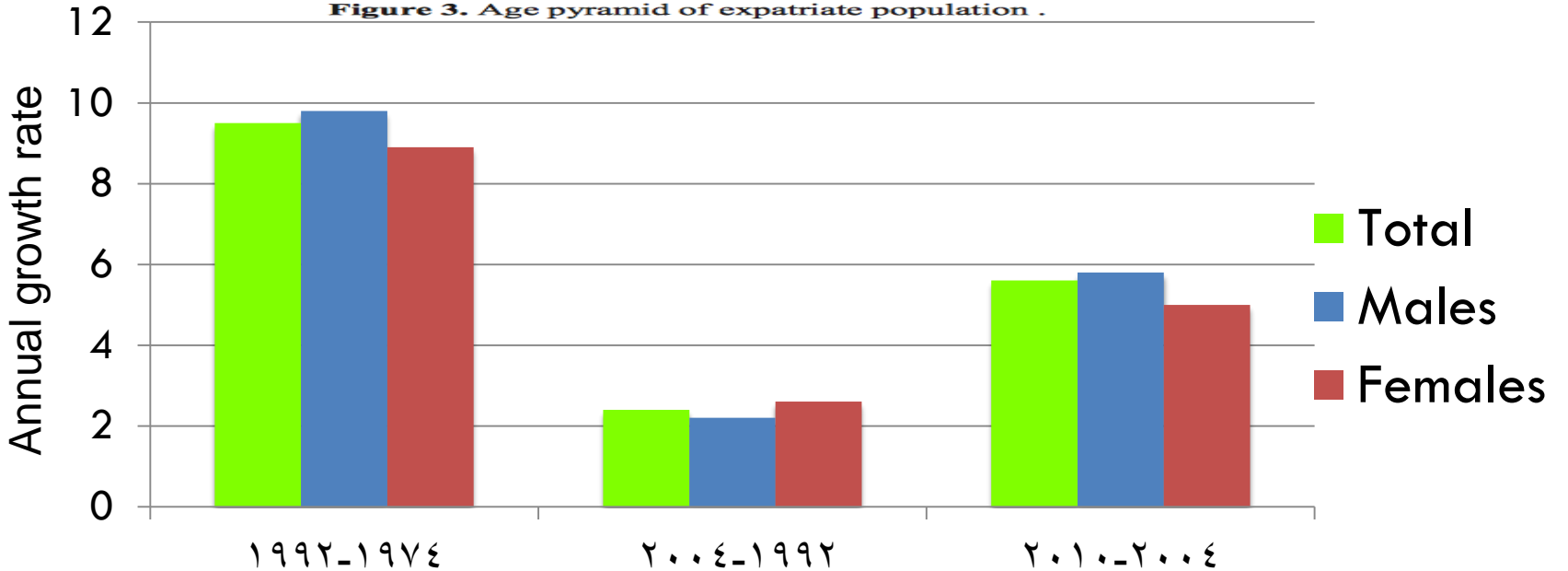


Figure 3. Age pyramid of expatriate population .



Source: Abu Ashwan M, Abdul Salam A, Mouselhy MA. Population growth, structure and distribution in Saudi Arabia. Humanities and Social Sciences Review 2012; 1(4):33-46

# Trend in Saudi Arabia 1974-2010

- Reduction in birth rates (slow reduction)
- Increase in the expatriate population in the later third of this period
- Sex ratio (higher males)  $\Rightarrow$  expatriate workforce

# Demographic transition stage in KSA

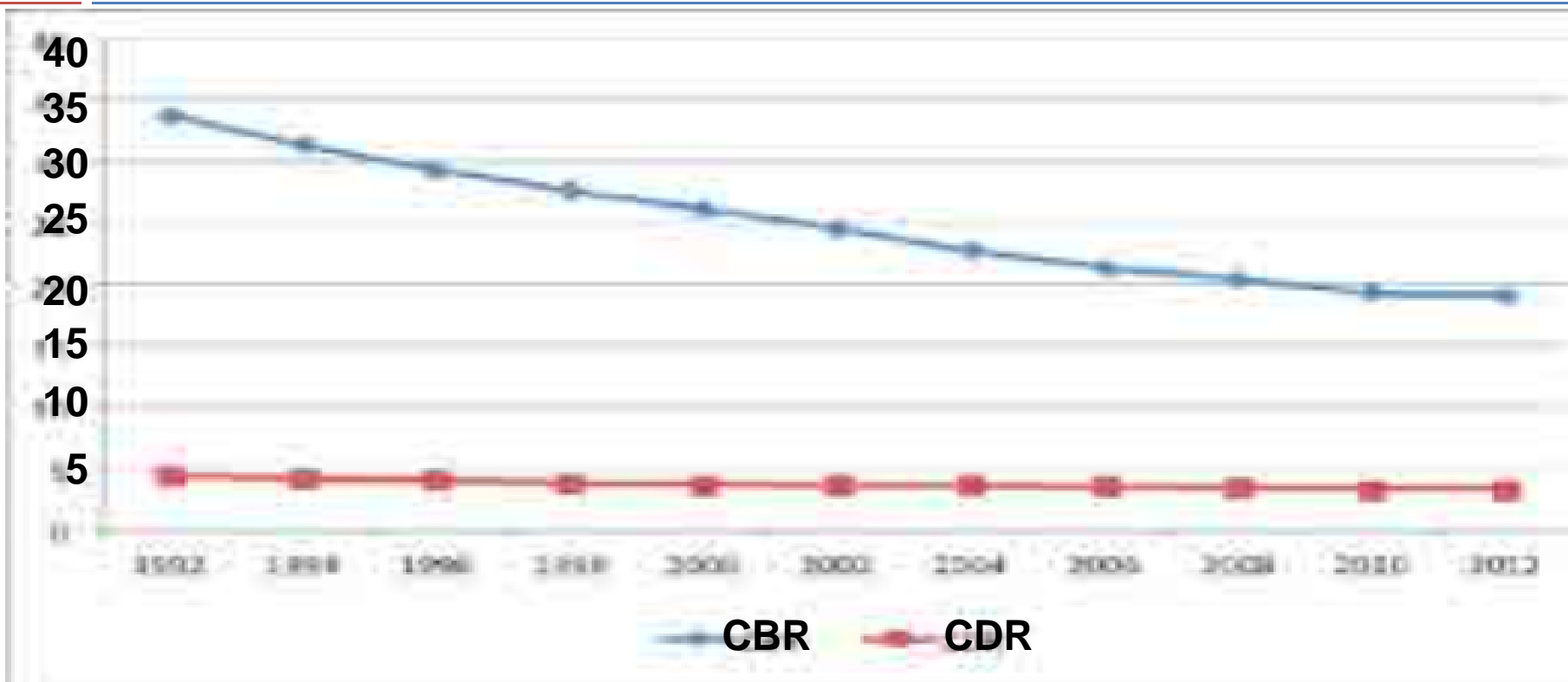
- Reduction in mortality rates
- Slowly reducing (but still high) fertility rate

Net result?

Growing population

**Demographic transitional stage: Late expanding**

# Demographic transition stage in KSA



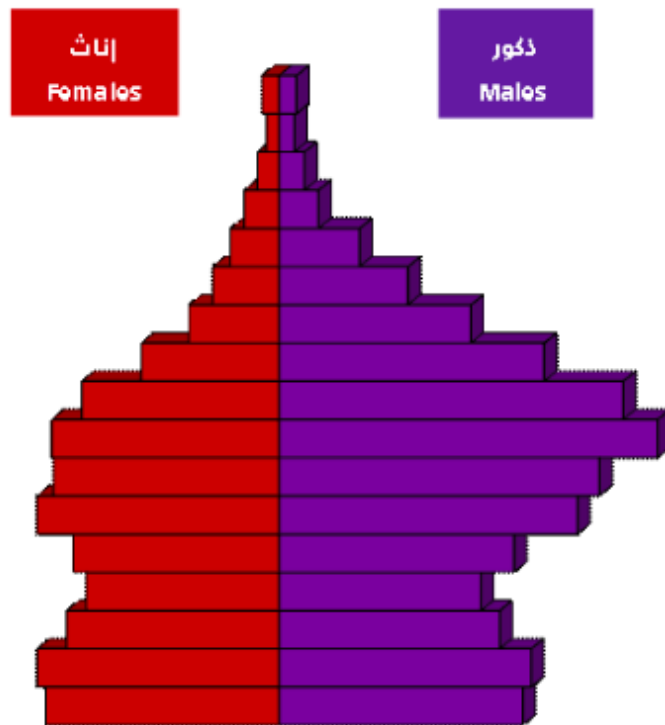
**Fig. 1. Demographic Transition in Saudi Arabia showing crude birth rate (CBR) and crude death rate (CDR).**

*Note: Drawn by using data from US Department of Censuses, United States Census Bureau, International Data Base. [www.census.gov/population/international/data/idb/regions.php](http://www.census.gov/population/international/data/idb/regions.php). Accessed on September, 2012.*

# Most recent KSA population pyramid (2016)

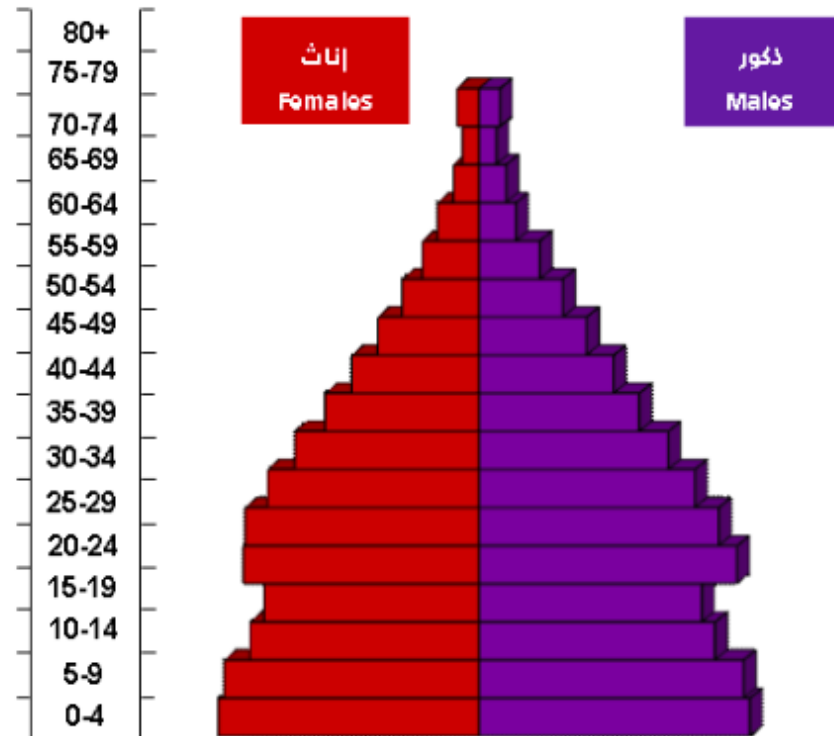
الهرم السكاني لإجمالي السكان

Kingdom's Total Population Pyramid



الهرم السكاني للسكان السعوديين

Saudi Population Pyramid



Source: General Authority for Statistics, 2016

# Implications for KSA demographic transition

- demographic lag causes growth because low mortality rates not compensated by reduction in fertility rate
- Measuring changes in demographic make-up (through crude death rate, infant mortality rate, fertility rates, crude birth rates..etc) reflects population growth
- Realizing this growth by the public raises awareness about population pressure in competing on resources, and may influence taking up healthier behavior

# Implications for KSA demographic transition

- Young age structure => burden on work market => increase unemployment ?
- Aging population will require availability of elderly healthcare services
- Health risks will be related to the age groups of highest proportion in that area
- Directing healthcare priorities by examining the needs of the age groups most condensed in that community





Any

Questions?

# References

- Abu Ashwan M, Abdul Salam A, Mouselhy MA. Population growth, structure and distribution in Saudi Arabia. *Humanities and Social Sciences Review* 2012; 1(4):33–46
- Asharaf AS, Mouselhy MA. Aging in Saudi Arabia: Impact of demographic transition. *Bold* 2013; 24(1): 13-27
- Abdul Salam Ashraf, Elsegaey I, Khraif R, Almutairi A, Aldosari A. Components and public health impact of population growth in the Arab world. *Plos ONE* 2015; 10(5): e0124944