

The Economics of Healthy Ageing in China

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Outline of Presentation

- Provide an introduction to healthy ageing
- Review of the literature on healthy ageing and its measurement.
- Review healthy ageing in selection of countries: Europe, China, India, USA
- Discuss urban healthy ageing and policy
- Investments in healthy ageing: diet and other factor supporting healthy ageing.
- Suggest an optimal healthy ageing policy in China and provide policy recommendations
- Conclusion

Ageing Population as a ticking time bomb

- **China's ageing population** is referred to as a ticking time bomb.
 - It is seen both as a challenge and also an opportunity to influence the ageing in desired direction.
 - The health of the older population determines its need for resources and care.
 - Health is considered an important determinant of economic growth, social well-being and competitiveness.
 - Investing in healthy ageing contributes positively to the labor supply and decreasing sick leave and the likelihood of costly early retirement.

The Objectives

- To review the literature on social and economics of healthy ageing.
- To summarize the identified approaches presented in the literature to ease the pressure.
- To focus on strategies, policy practices and measures, organization, finances and manpower resources.
- To use up-to-date theories and methods in quantification of the problem, resources requirements and benefits.
- To present the state of healthy ageing in Europe, USA, China and India.
- To discuss public investment programs and preventive factors.
- To present an optimal healthy ageing for China and provide policy recommendations.

Health and Healthy Ageing

- **Health** refers to physical, mental and social well-being as expressed in the WHO definition of health.
- **Healthy aging is defined** as the development and maintenance of optimal health and function in older adults in a society.
- **Healthy ageing is achieved** when communities are safe, actively promote health and well-being, and use health services and various community programs to prevent or minimize prevalence of various diseases.
- **Active ageing** is a policy that aims to extend healthy life expectancy and quality of life for all people as they age.

The evolution of healthy ageing

- The series of **International Alliance of Research Universities (IARU) congresses** on Ageing, Longevity and Health is held at Copenhagen.
- As a result of development in the area of technology and education, the average life expectancy is increasing continuously.
- It brings social, political, economic and biomedical challenges for the current and future generations.
- The meeting report illustrates evolution of population age structure over the last 50 years (Figure 1) and projections of future demographic changes (Figure 2).
- It is predicted that by 2050, 33% of developed countries and 22% of developing countries population are over 60 years old. This is representing a doubling of the elderly fraction.

Figure. 1: Population age demographics in rural and urban populations in 1975 and 2005. (Rasmussen et al., 2011)

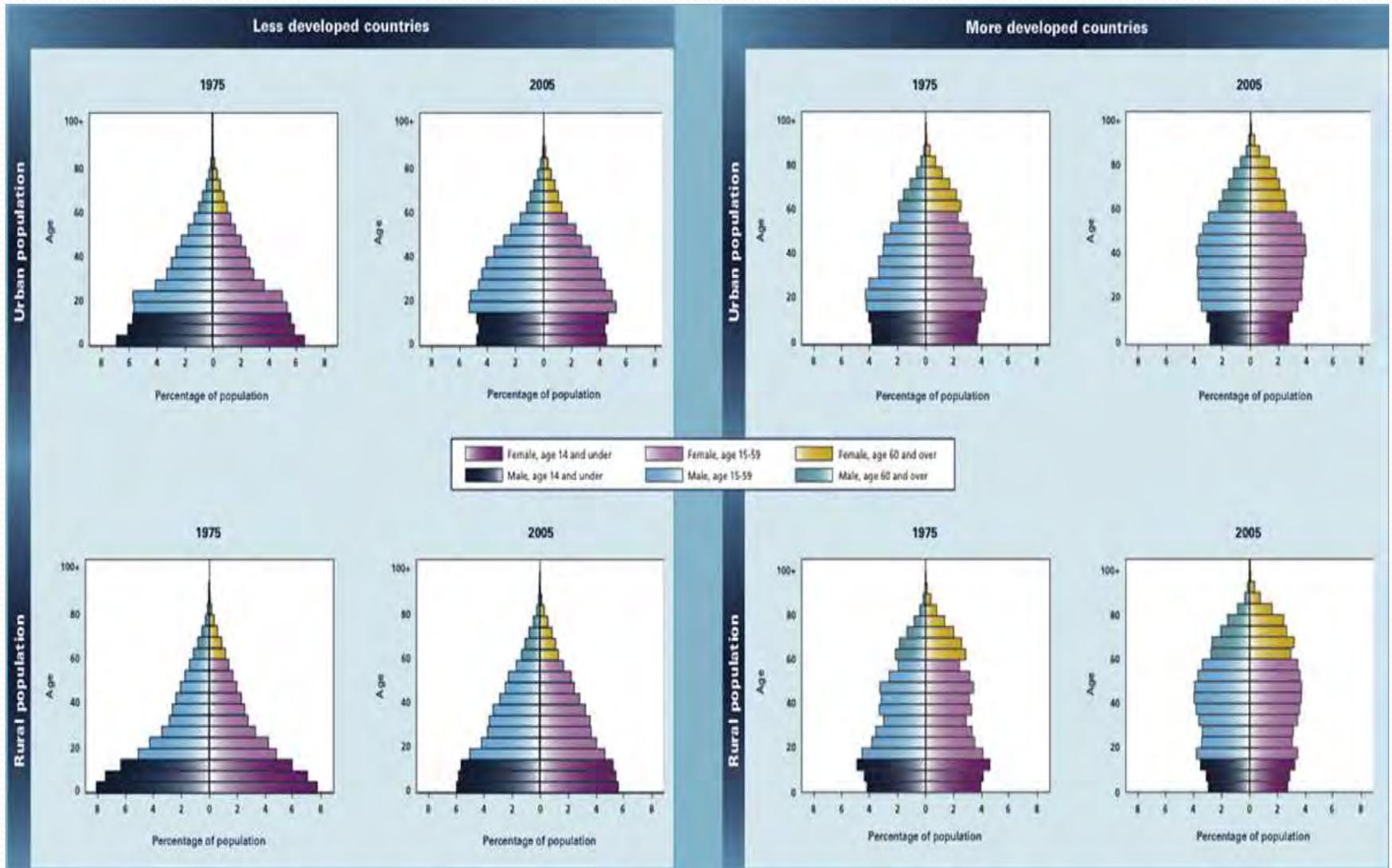
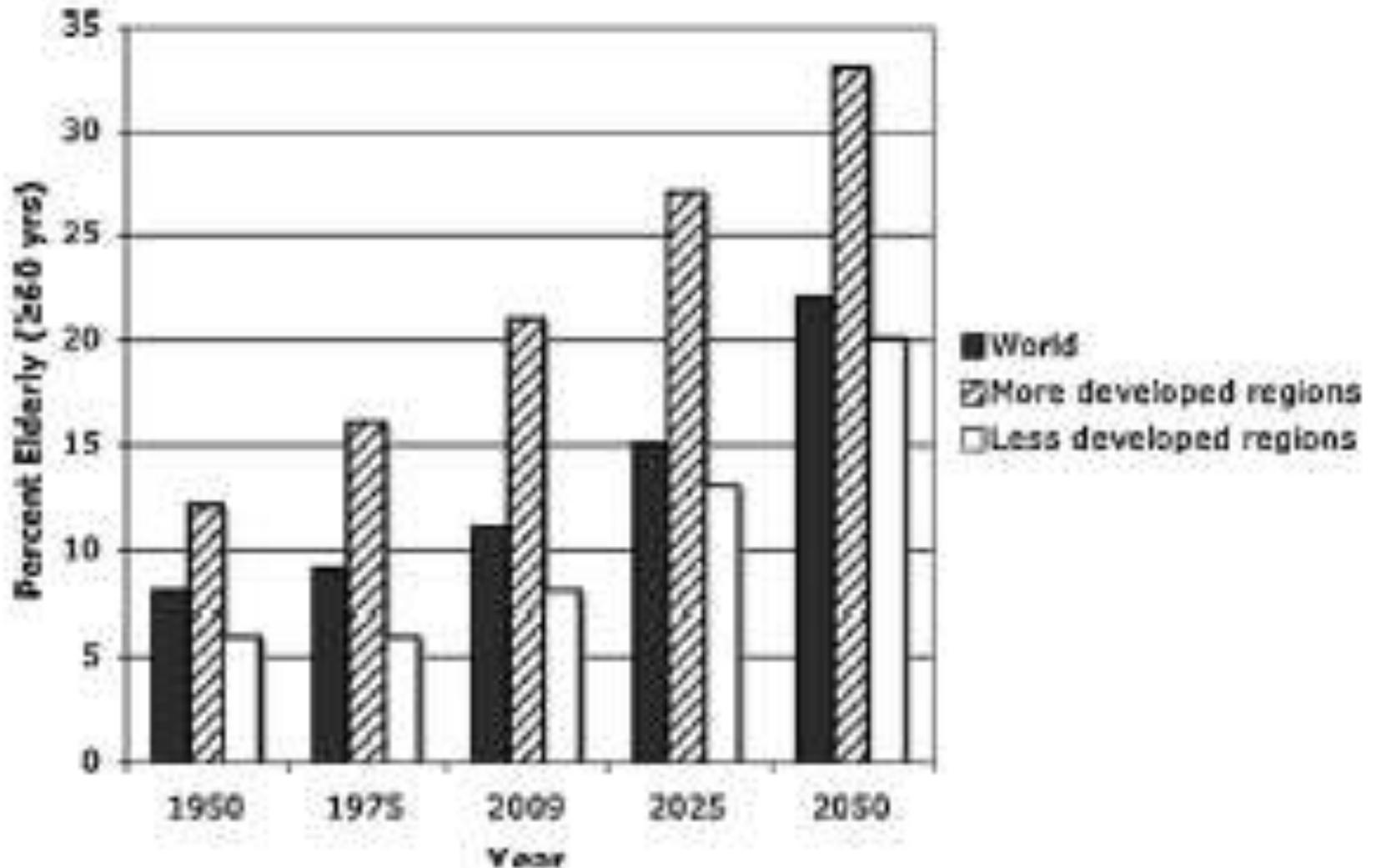


Figure 2: Past and projected percentage of the world population 60 years old. (Rasmussen et al., 2011)



Health inequalities and healthy ageing

- **Marmot Review** is a strategic review of health inequalities in England post-2010. The key findings are:
 - reducing inequalities is about fairness to increase extra years of life,
 - there is a social gradient in health requiring actions to reduce it,
 - actions should be universal and towards the disadvantaged,
 - actions will accompany economic benefits,
 - tackling health inequalities and climate changes must go together,
 - reducing health inequalities require preventive actions,
 - Public-private-communities partnership is required.

Measurement of Healthy Ageing

- Several techniques are developed to **measure healthy ageing**. The progress is along both single and multidimensional measures focusing on biological ageing, predictions of longevity and genetic healthy ageing.
- **A first approach** is by Lara et al. (2013) use the healthy ageing phenotype (HAP). The selected domains include physiological and metabolic health, physical capability, cognitive function, social well-being, and psychological and subjective well-being.
- **A second approach** is discussed by Vanhooren et al. (2009) uses N-glycan profiles as measurement tools. Alterations in glycan could be a suitable tool for monitoring the healthiness of ageing and for assessing the effectiveness of ageing interventions.
- **A third approach** to measure is the European Genetics of Healthy Ageing (GEHA) project. The aim of the project was to identify genes involved in healthy ageing and longevity.

Table 1. Tools to measure selected domains and sub-domains of the healthy ageing phenotypes. (Lara et al., 2013)

Domain	Subdomain	Tool/measure
Physiological and metabolic health	Cardiovascular function	Blood pressure Blood lipids
	Lung function	Forced expiratory volume (FEV1) Blood glucose
	Glucose metabolism	Glycated haemoglobin (HbA1C)
Physical capability	Body composition	Waist circumference Waist to hip ratio Body mass index (BMI)
		Strength
	Locomotion	Gait speed
	Endurance	Walk endurance test
	Dexterity	Pegboard dexterity test
Cognitive function	Balance	Standing balance test
		Processing speed
	Episodic memory	Word list recall Paired associate learning
	Executive function	Stroop Trail making tests A & B
Psychological wellbeing	Positive and negative affect	Positive and negative affect schedule (PANAS)
	Life satisfaction	Satisfaction with life scale (SWLS)
	Quality of life	Control, autonomy, pleasure and self-realization, quality of life scale (CASPI-19) WHO quality of life-BREF (WHOQOL-BREF)
	Mental health	Centre for epidemiological studies depression scale (CES-D) Warwick-Edinburgh mental wellbeing scale (WEMWBS)
	Resilience	Psychological resilience scale
Social Wellbeing	Social network	Lubben social network scale NIH Toolbox: friendship PROMIS: companionship Social isolation
		Social functioning
	Perceived emotional/social support	NIH Toolbox: emotional support Instrumental support Loneliness Perceived rejection scale
		Sense of purpose

Healthy Ageing in Europe

- Maintaining autonomy and independence for the older people is a key goal in the **European policy framework** for practices of active ageing.
- Europe is the most resource rich region with ageing problem that has a welfare system with large investment in elderly care and quality of life.
- By 2025 about 1/3 of Europe's population will be aged 60 years and over. The number of people above 80 years with greater health service needs will increase.
- The European Innovation Partnership (EIP) consider **active and healthy ageing (AHA)** to increase life expectancy, healthy life years and quality of life for people as they age.

Healthy ageing in China

- Demographic changes are due to lowered fertility and an increase in longevity.
- In 2010 the number of people aged 65+ was 119 million (8.9%). It will double in half of the time for Europe.
- **The ageing in China** has three distinctive features:
 - People by tradition rely on their family for old age support,
 - A large decrease in its proportion of children,
 - Rapid urbanization, migration from rural regions.
- **Positive and negative forces** for dynamics of healthy aging:
 - Economic development, growth in technology and education.
 - Increasing detection and treatment of disease, availability of health insurance and health services, research transparency.
 - Negative trends in personal health behaviors such as growing rates of smoking, obesity and pollution.
 - Rise in fertility rates, rise in migration leaving elderly parents geographically separated from their children.

Figure 1. Share of older persons in China 1950–2050. (Smith et al., 2014)

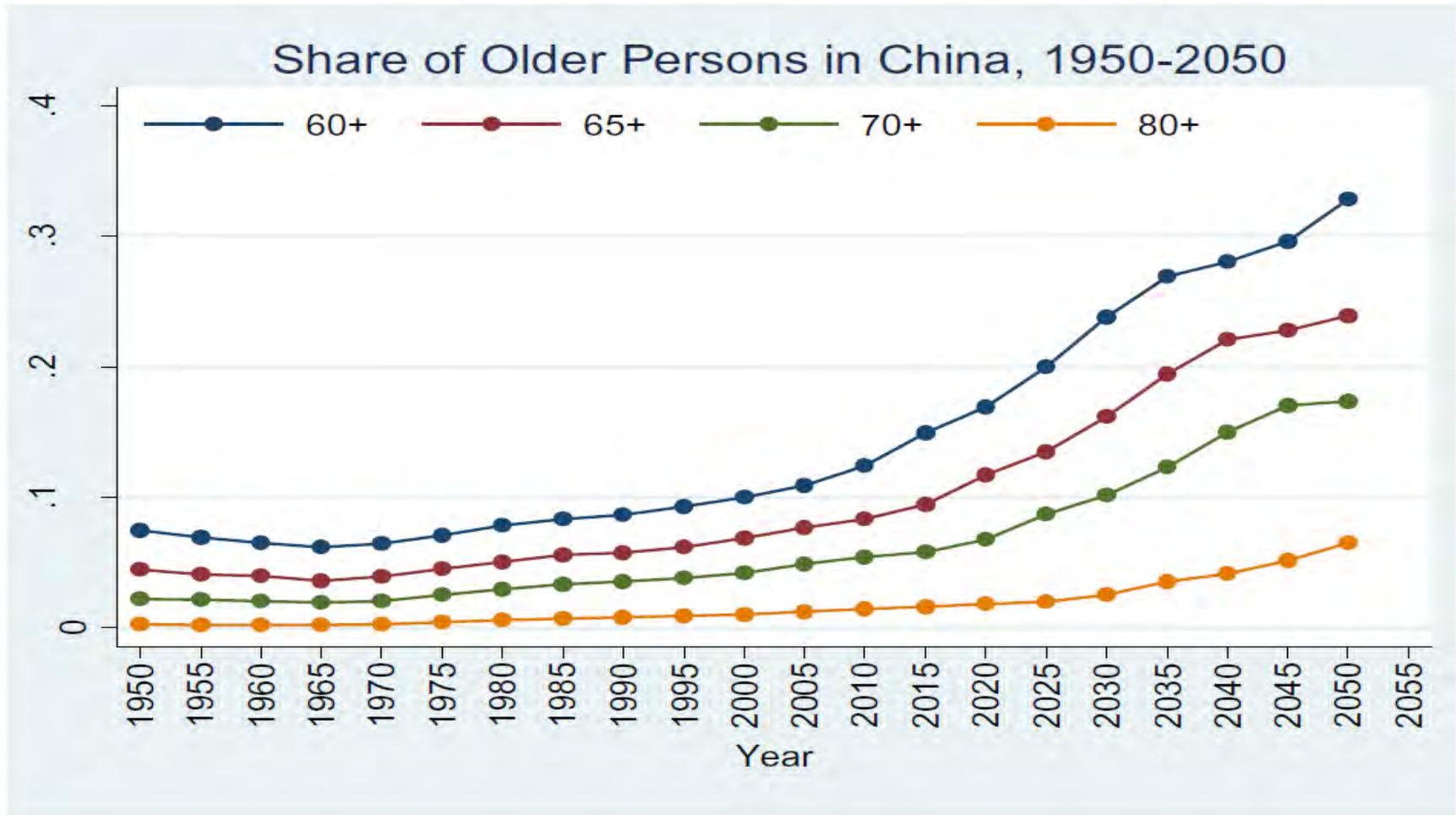


Fig. 1. Share of older persons in China 1950–2050. *Source:* United Nations, 2012, medium variant

Figure 1. China's population pyramid: past, present and the future

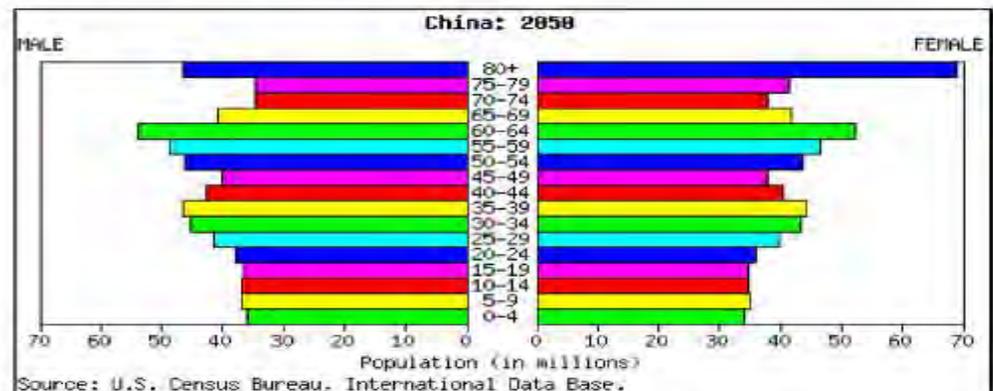
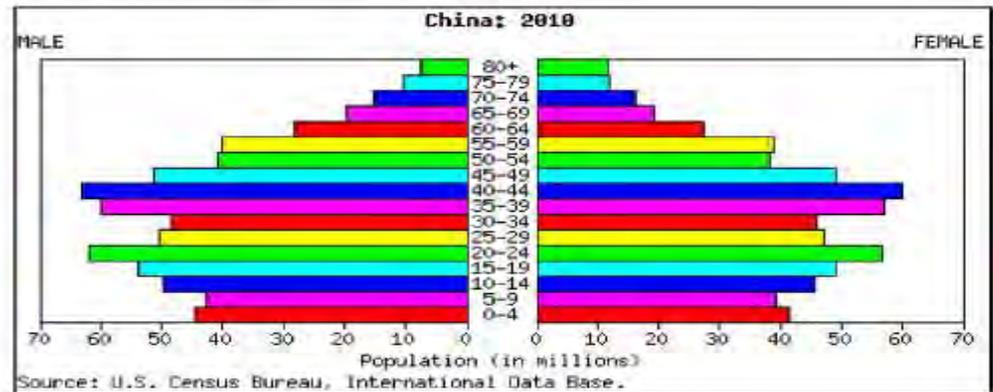
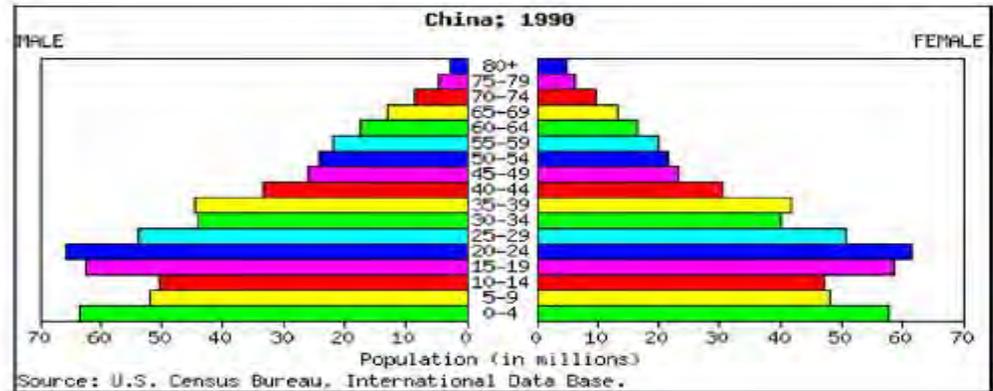


Fig. 1. China's population pyramid. Past, present, and the future.

Figure 3. Proximity to the elderly of nearest children. (Smith et al., 2014)

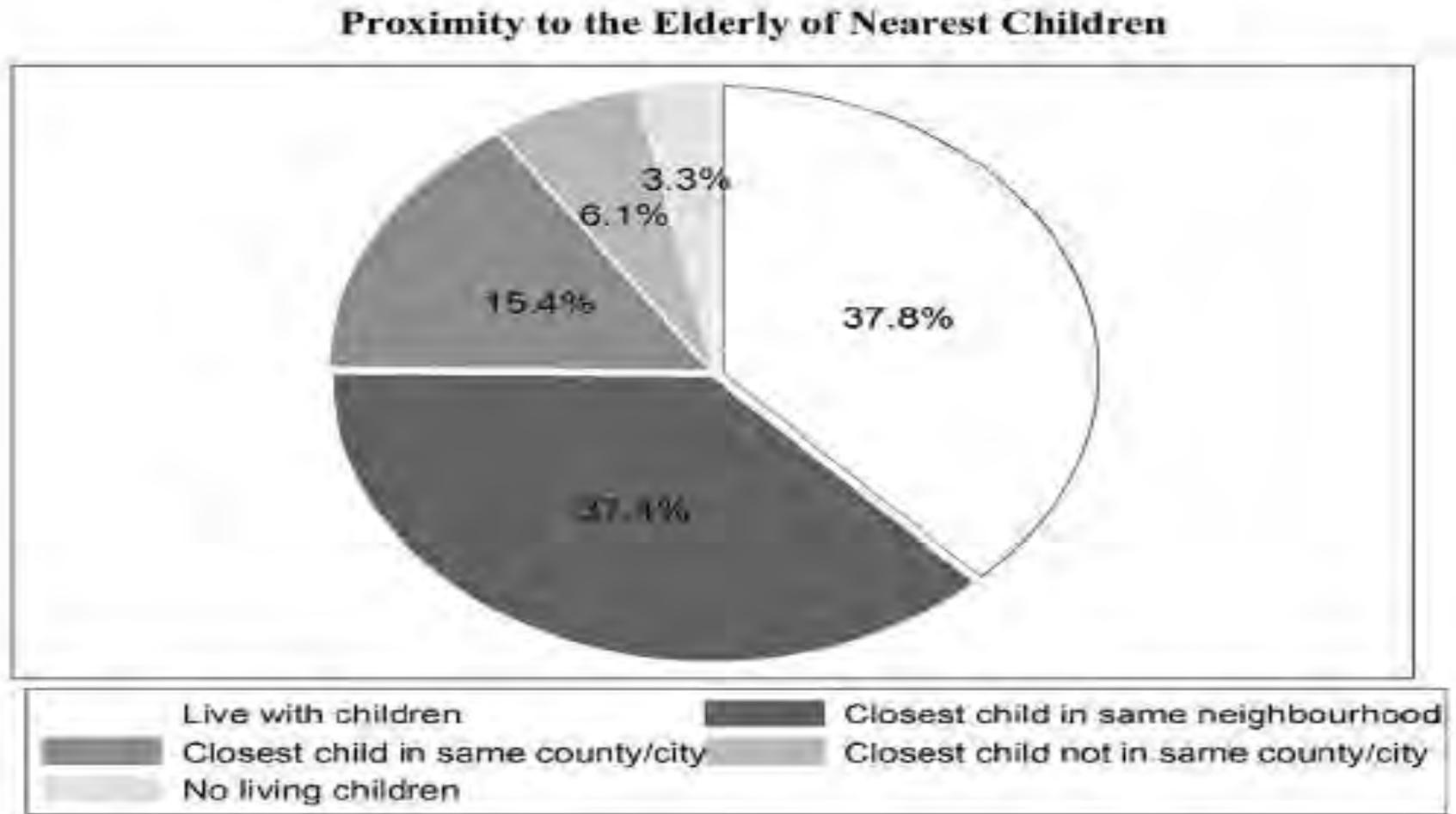


Fig. 3. Proximity to the elderly of nearest children.

The Economics and Policies of Healthy Ageing

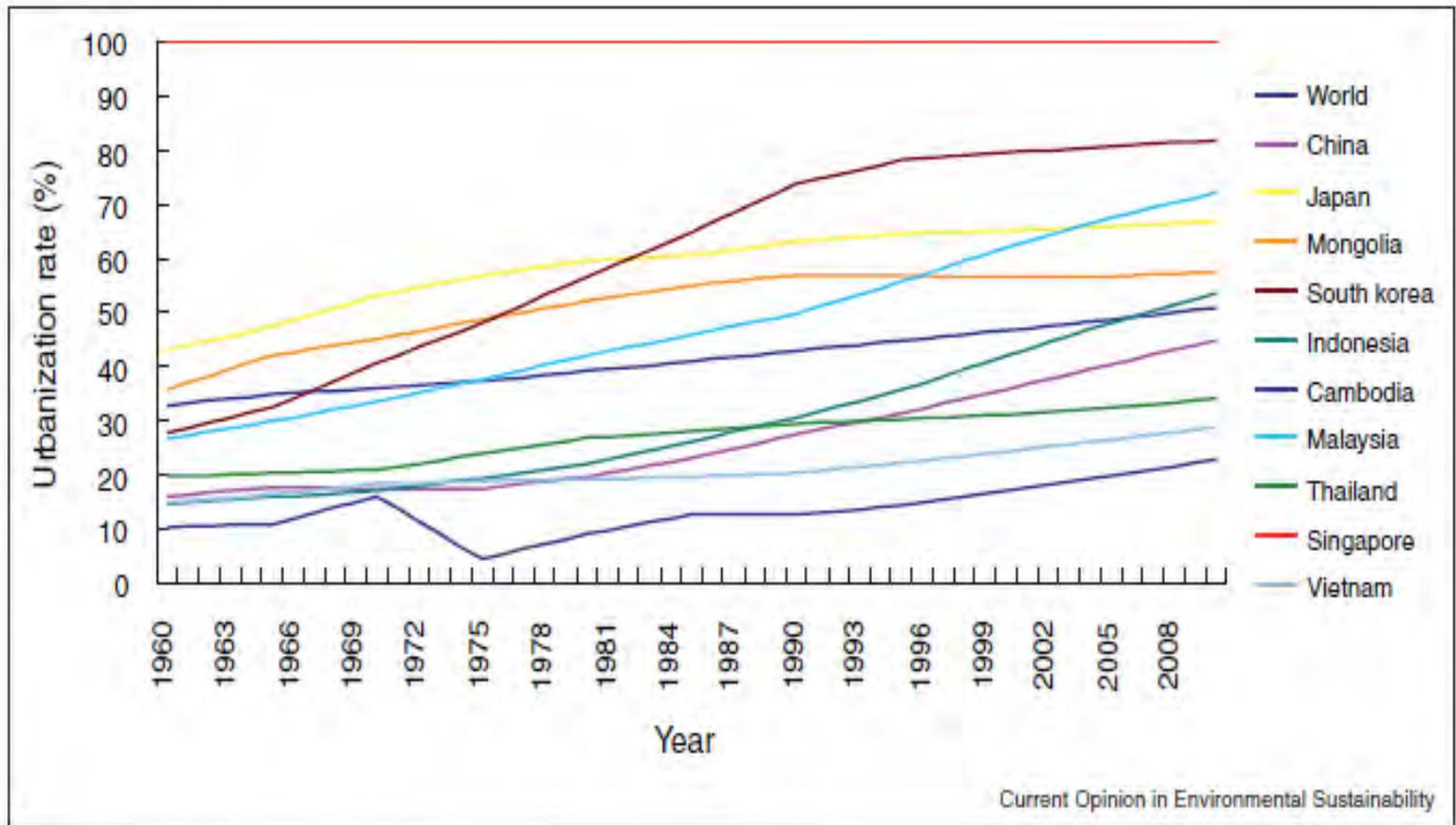
- **Economics helps to:**
 - determine resources requirements allocated to alternative policies to address healthy ageing.
 - identify different alternative care systems and their associated costs and benefits.
 - estimate program effects and to select cost effective care methods.
- **The research focus is increasingly on:**
 - measurement of the healthy ageing,
 - Ageing-longevity-health-labor market nexus,
 - urban migration, infrastructure investment, elderly care,
 - population ageing challenges for health care,
 - the cost of ageing health care,
 - the role of globalizing local knowledge system to diet,
 - healthy ageing at home and elderly community dwelling,
 - the role of urban design in healthy ageing,

Urban healthy ageing

- **Human migration:** has strong implications for public health services. The Chinese is the largest in history.
- **Major public health challenges are:** The growing city size and urban population lead to insufficient urban infrastructure, growing environmental problems, hazardous living environment, problems with public safety, public health, social equity, infectious disease burden.
- **Urban sustainability:** involve balancing culture, socio-economic, technical, environmental and ecological factors.
- Sixsmith et al. (2014) examine **home and healthy ageing in Europe**. They identified five ways to construct healthy ageing: home and keeping active, managing life styles, health and illness, balancing social life, and balancing material and financial circumstances.

Figure 1: Urbanization rate in China and other countries in Asia. (Li et al., 2012)

Figure 1



Urbanization rate in China and other countries in Asia.

Investments in Healthy Ageing

- **Investments in healthy ageing include:** assessment of the effects of therapy on quality of life, investment in child health to foster healthy ageing, promoting dietary pattern, exercise habits, the use of integrative approach to learning, community-based care.
- **Canning and Bowser (2010)** argue that a better goal is to improve health, income and socio-economic outcomes for the most disadvantaged in society.
- **A multi-dimensional view of well-being is suggested:** consumption, wealth, health, education, personal activity, political voice and governance, social connectedness, environmental conditions, personal and economic securities.
- **The five core dimensions of healthy ageing are:** absence of physical disease, absence of psychiatric disorders, optimal physical, mental, and social functioning, good quality of life or well-being, and adequate resilience. Felix et al. (2014)

Healthy ageing and diet

- Research shows that **diet and health are strongly linked**. Diet is an efficient way to allow for healthy ageing.
- A number of dietary patterns are associated with reduced risk for cardiovascular and age-related diseases:
 - The traditional diet of Okinawa, Mediterranean, DASH diet and Portfolio diet.
- The important **shared features of these healthy dietary** patterns include: high intake of unrefined carbohydrates, moderate protein intake with emphasis on vegetables, fish, and lean meats as sources, and a healthy fat profile.
- Together they reduce the socio-economic costs of chronic diseases burden and promote healthy ageing and longevity. **Effective public health policies and programs** can help individuals to remain healthy as they age.

Other factors supporting healthy ageing

- **ActiveBrain** is a social online cognitive training platform. It covers brain training, stress sharing and elderly support to maintain the elders' interpersonal communications by being socially connected with others.
- Dahnay et al. (2014) **investigate the association between** successful ageing and socio-demographic, psychological, physical and behavioral factors.
- **The results show that:** lower weight, regular physical activity and religious beliefs were positively influencing ageing, while psychological distress, comorbidities and obesity negatively influenced ageing.

Policy Recommendations for China

- The benefits of investments in healthy ageing and factors influencing health to be focused on.
- Planning is required to cope with the increasing demand for elderly care. A **balanced investment** in health is recommended to ease the burden of ageing population.
- The increasing number of **patients with dementia** require planning, policy measures and allocation of health and welfare resources for the future.
- **Improved geriatrics**, education, supporting elderly institutions and elderly health care, changing traditions are among measures by which the needs can be met efficiently.
- The **rural-to-urban migration** has strong implications for public safety, public health, health care services and social equity.
- The physical and social environment, individual characteristics and family support influence the elders' well-being.
- The relationship between **home and healthy ageing** within urban settings.
- The combination of **urban design**, policy and infrastructure initiative influence mobility and physical activities.

Policy Recommendations for China

- Focus on reducing health inequalities, improve health, income and socio-economic outcomes for the **most disadvantaged**.
- **Well-being is multidimensional**: consumption, wealth, health, education, personal activity, political voice and governance, social connectedness, environmental conditions, and insecurities.
- **Child health** and its core dimensions of physical disease, psychiatric disorders, physical, mental and social functioning, quality of life and adequate resilience, is an starting point for healthy ageing research.
- Other research discuss the link between health, **diet and physical activities**. Diets are associated with reduced obesity allowing reduced risk for cardiovascular and age-related diseases.
- Changes in food consumption and **chronic health outcome** is influenced by level of education and income.
- Other **factors supporting healthy ageing** include an integrative community-based approach involving patients and public in collaboration to support healthy ageing and links to social care.
- **ActiveBrain** - a social online cognitive platform promotes brain training, stress sharing and elderly support to maintain their interpersonal communications and socially connectedness.



Thank You for Your Attention!