



# 32<sup>nd</sup> ASEAN Social Security Association Board Meeting 2015

10 -11 September 2015 • Singapore

Hosted by



**Central  
Provident  
Fund Board**



# **Impact of Ageing on Economic Policies**

**Ngee-Choon CHIA**

**National University of Singapore**

**[ecscnc@nus.edu.sg](mailto:ecscnc@nus.edu.sg)**

**Presented at the 32<sup>nd</sup> Social Security Association (ASSA) Meeting, Singapore, 10 Sept 2015**

# DEMOGRAPHICS AND THE ECONOMY

# Demographics and the Economy

---

- Changes in population age structure will have profound implications for the macro economy
- It influences economic growth, generational equity, human capital, saving and investment and the sustainability of public and private transfer systems.

## [1] Fair and Dominguez (AER,1991) Effects of the Changing US Age Distribution on Macroeconomic Equations

→ significant effects of age structure in **the adult population** on all forms of **consumption demand** including housing demand and on the demand for money.

# Demographics and the Macro Economy

---

**[2] Manovich (J Popn Econs 2012)** “The role of demographics in **precipitating economic downturns**”

Significant effects of changing demographics on economic indicators

- Shifts in the share of the population aged 15 to 24 led to declines in GDP
- Eg. Japan’s lost decades
- The argument hinges on the notion that a significant portion of the growth in demand in the economy comes from **new household formation**.

# Demographics and the Macro Economy

---

## [3] Feyrer (2007, 2008)

- examines the effect of demographics on **productivity and output per worker** for the EU
- found strong positive effect of the 30 to 49 age group

## [4] Bloom and Finlay (2009)

- demonstrate a strong effect of the working age (15–64) population on economic growth, in terms of **income per capita**, in thirteen South and East Asian nations.

# Demographics and Entrepreneurship

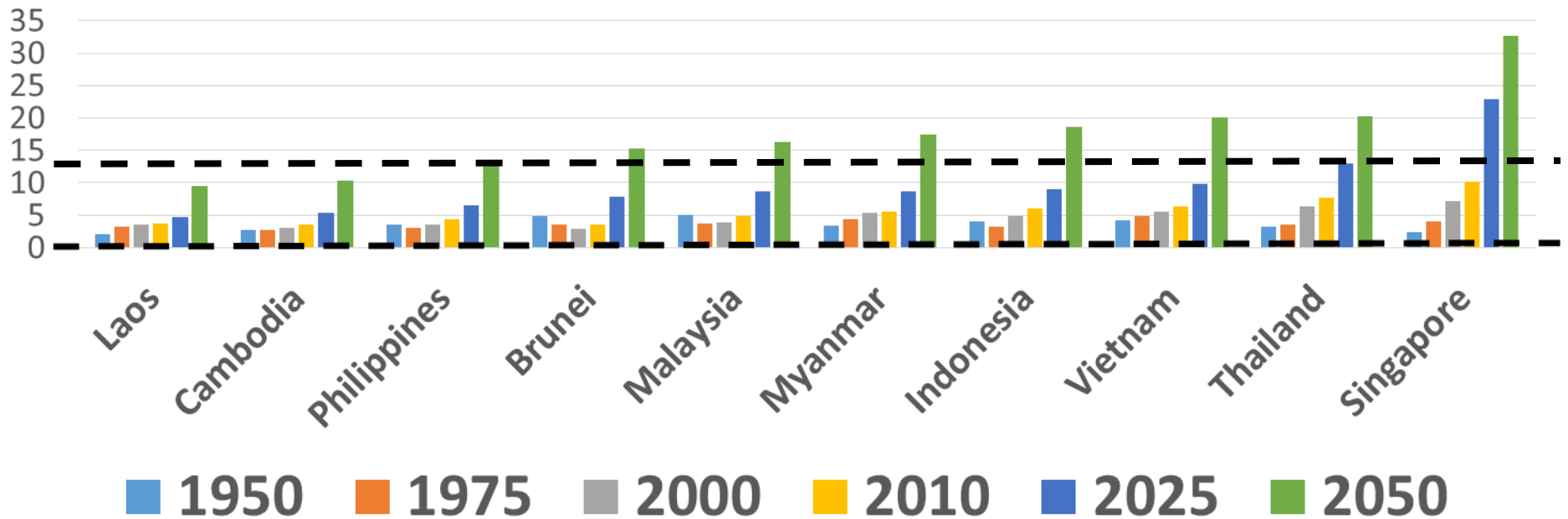
---

- Liang, Wang and Lazear (2014)
- Age structure of the workforce impact economic performance through the channel of **entrepreneurship**.
- Entrepreneurship requires creativity and acumen
- Creativity may decline with age
- Having more older workers in society slows entrepreneurship.
- Not only are older workers less innovative, they occupy key positions and block younger workers from acquiring business skills
- Japan's "lost decades" due to "entrepreneurship vacuum" since 1990s
- A worker in a country with a younger workforce, like the US will be more entrepreneurial than a worker in a country with an older workforce like Japan.

# **AGEING AND ECONOMIC LIFECYCLE**

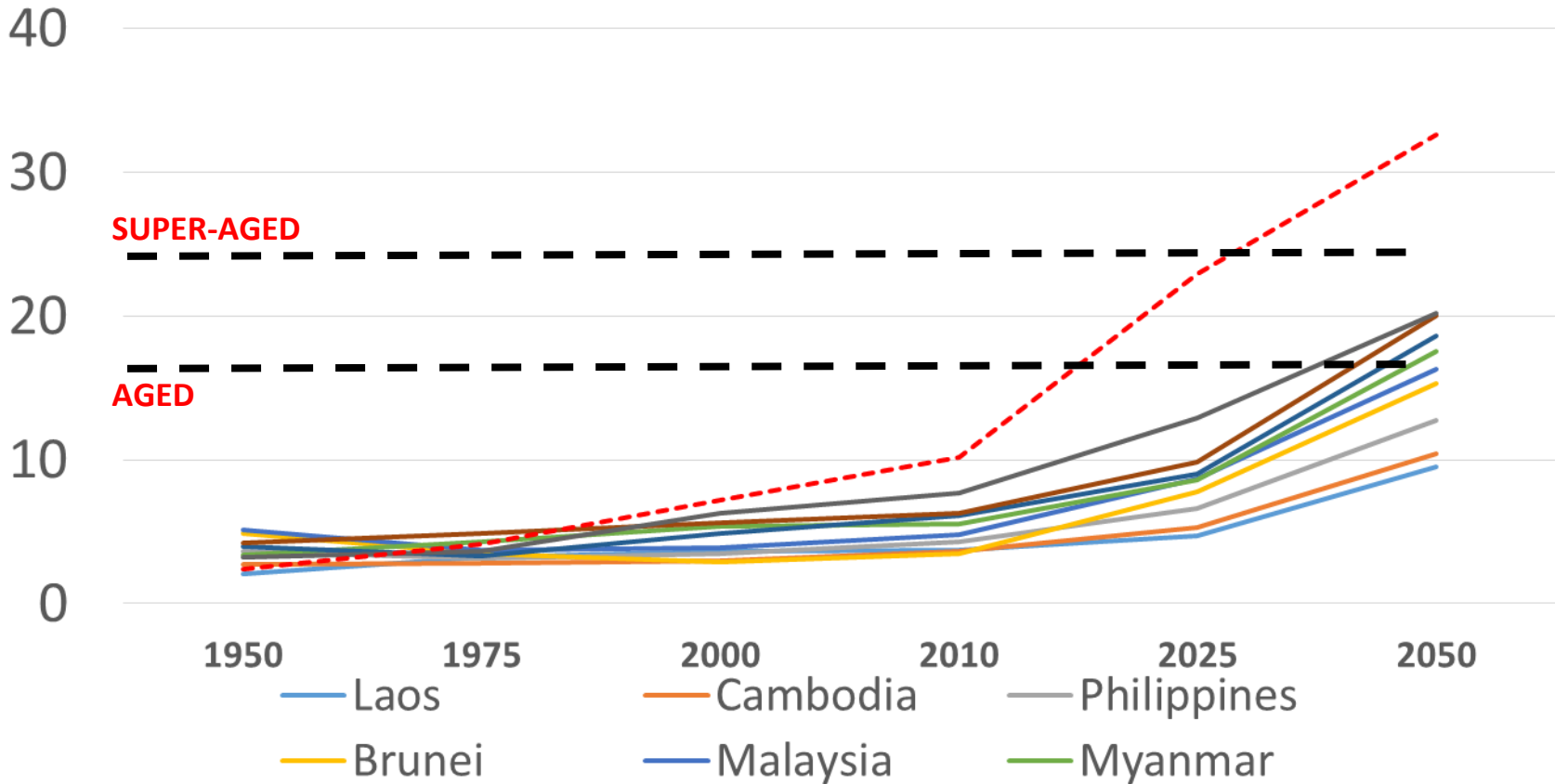


# Share of Population aged 65 and over



Source: United Nations (2009)

# Share of Population aged 65 and over

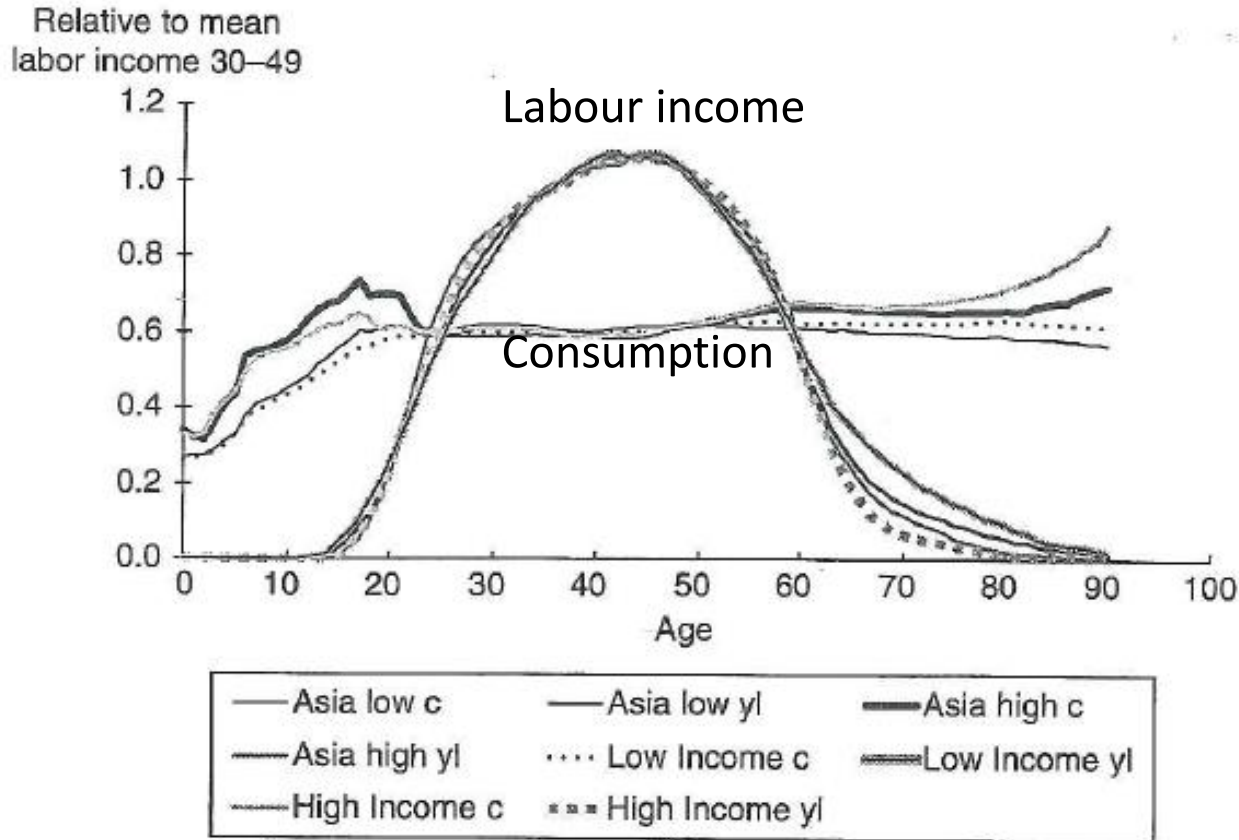


# Human Lifecycle and Economic Lifecycle

---

- Human lifecycle: childhood, adulthood and “next age” or “third age”
- Economic lifecycle
  - age profiles of labour income and consumption
  - Periods of dependency/decumulation: at the beginning and end of life
  - Period of productivity/ accumulation: working age
- With longer life expectancy, the “third age” happens at the period of dependency.
  - This presents unusual challenges for families and communities in various aspects including economic support, social support, living arrangements and health care.
  - Period of active engagement in the society and economy
  - Social security for these elderly

# Economic Lifecycle



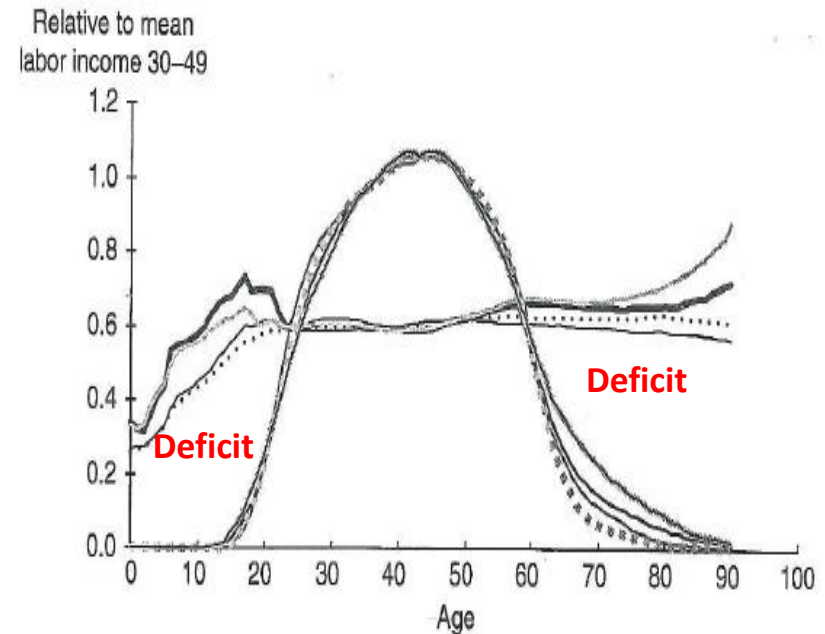
Sandwiched between the period of dependency is a period when consumption is less than labour income.

Note: c = consumption; yl = labor income.

Source: Mason and Lee (2012), National Income Accounts database

# Economic Lifecycle

- Periods of dependency/decumulation: at the beginning and end of life
  - Period of productivity/ accumulation: working age
  - Lifecycle deficit: gaps between consumption and labor income at the beginning of life and end of life
  - Deficit to be filled by reallocations from people of working age.
- need a system of institutions and economic mechanism to flow from surplus ages to deficit ages



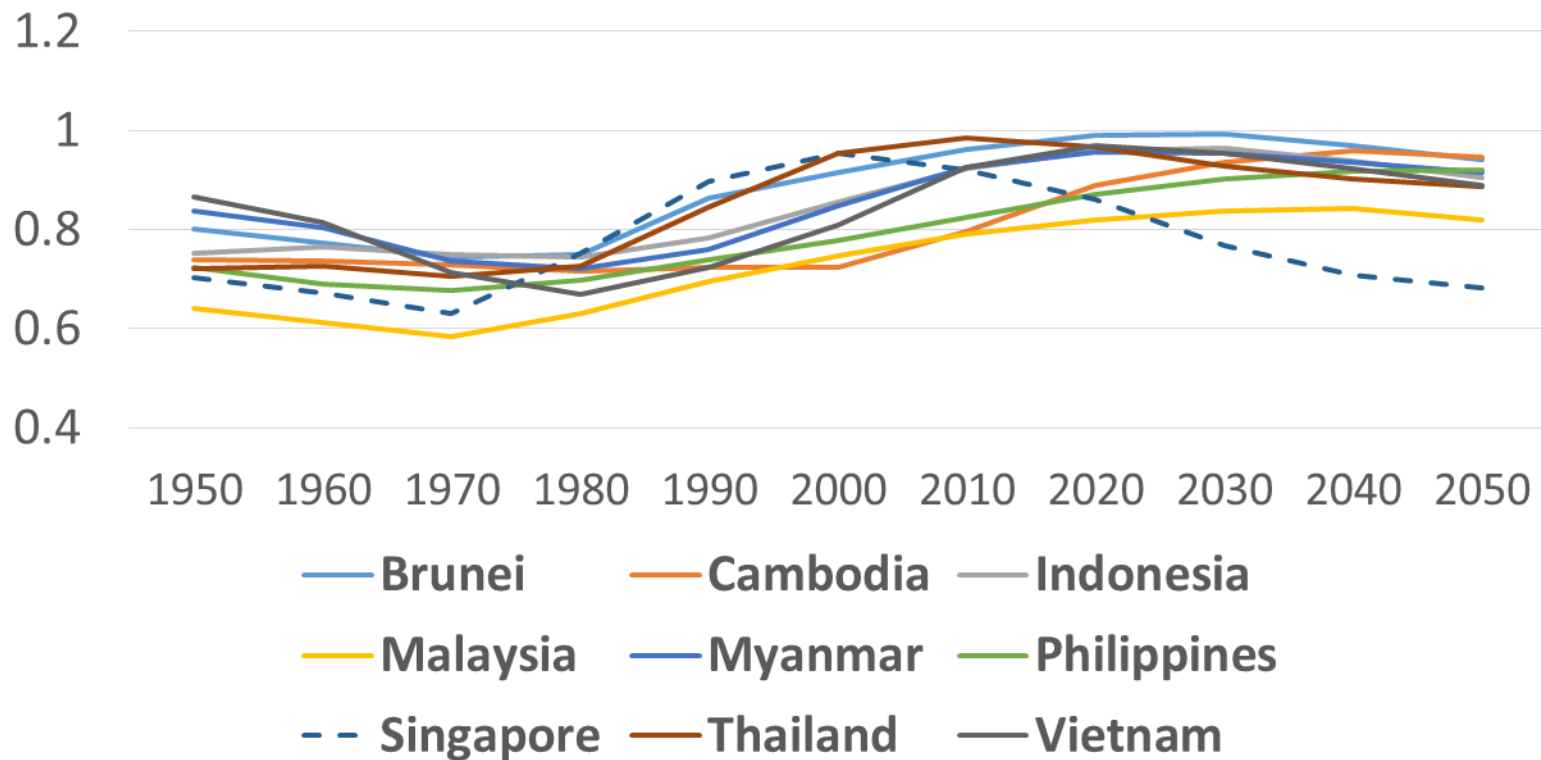
# Support Ratio

---

- Pure demographic measure:
  - the support ratio is population in the working age divided by the population.
- Economic lifecycle
  - labour income and consumption varies systematically with age
  - incorporate age variation in labour income and consumption at each age.
  - A change in population age structure has a very direct effect on income and consumption that does not depend on behavioral responses.

# Support Ratio

$$\frac{L_t}{N_t} = \frac{\sum_x y_0(x) P(x, t)}{\sum_x c_0(x) P(x, t)}$$



# Economic Lifecycle, Support ratio and Demographic Dividend

---

- The interaction between the economic lifecycle and population age structure determines the support ratio and the magnitude of the demographic dividend.
- Economic lifecycle affect the timing and magnitude of the dividend
  - ➔ lifecycle saving
  - ➔ Accumulating wealth for lifecycle needs



# **POLICY RESPONSES**

## Economic Responses to Population Ageing

---

- Smoothing of consumption over the lifecycle through savings and investment
- Old-age economic deficit is funded by asset-based allocations.
- Population aging will lead to increase in assets

[1] lower fertility implies fewer resources allocated to child rearing and higher savings

[2] longer life expectancy leads to longer retirement, the incentive to accumulate more during the working years will increase

# Economic Responses to Population Ageing

---

- Transfers

- [1] involuntary public transfers

- [2] voluntary private transfers e.g. familial transfers, elderly living with children

- Asset based reallocations

- Asset acquired in one period to support consumption in subsequent period either by using income from the asset or by disposing of it.

- E.g. Pension funds, personal savings

# Singapore's Policy Responses to Ageing

---

- Identify the source of ageing:
  - Falling fertility → policies to boost fertility
  - Rising longevity
  - Postponing retirement age / Re-employment Act
- Institutionalized the asset accumulation through the Central Provident Fund
  - Mandatory contributions
  - High rates of savings, investment and growth
  - In contrast to countries using the DB system
- prefunded system does well in terms of sustainability and inter-generational equity
- design to provide a basic retirement.

# Central Provident Fund (CPF)

## Evolution: risk-pooling and collectivity

---

- Exposes individuals to risks
  - Longevity risk → Mandatory Annuitization CPF-LIFE
  - Interest rate risk → Minimum guaranteed returns/ Enhanced return for first \$60,000
  - Inflation risk ??
  - Economic risk  
Macro economic and labour market conditions → Workfare / Silver Support Scheme
  - Adequacy → Design of the accumulation and the payout phase (monetization of housing asset)

## Design of the Accumulation Phase

---

- CPF Policy Parameters
  - Contribution rates (OA, SA, MA)
  - Contribution periods (raising retirement age)
  - Returns to savings
- Individuals and macroeconomic variables
  - Starting salary, salary growth, unemployment episodes
- Pre-retirement Withdrawals

# Building Fiscal Strength

---

- Small and lean government, prudent fiscal policy
- Unique financing scheme: setting up funds to reduce the need for higher taxation.
- Funds are established with capital injections by the government monies as principal.

[1] Endowment funds,

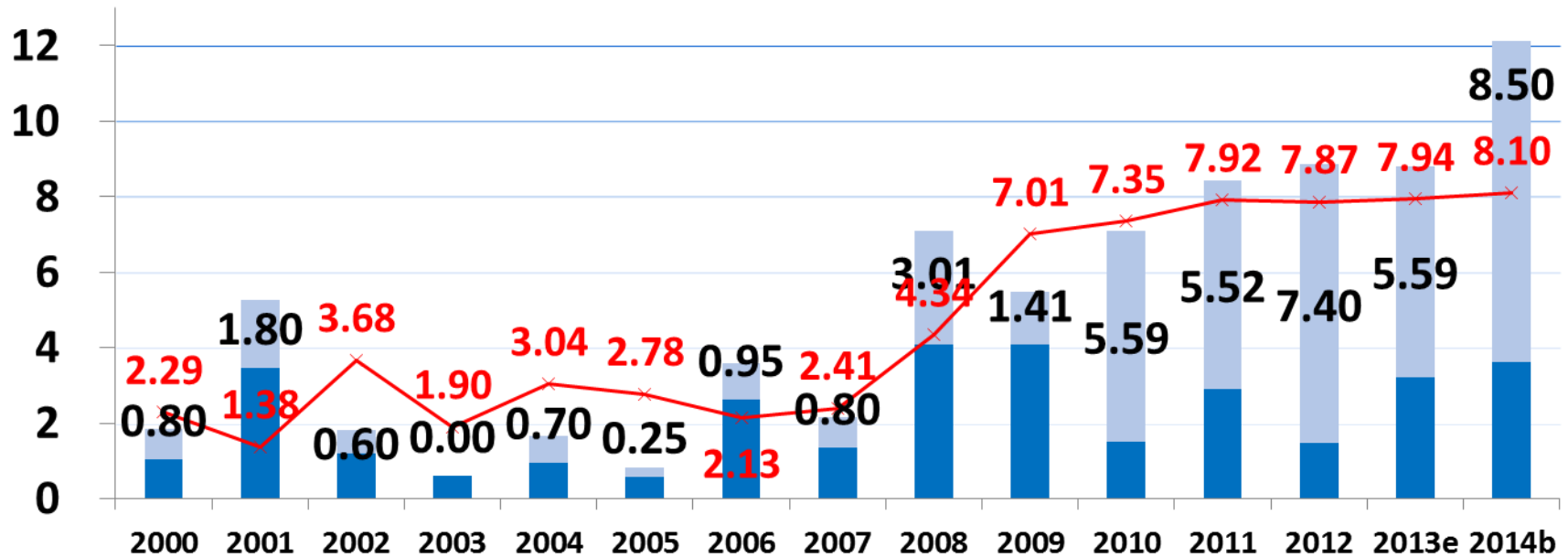
[2] Trust funds,

- Year by year, the returns from the fund and a portion of the fund will be withdrawn to meet these obligations.
- As long as the fund yields good returns, and if surplus returns are reinvested when returns exceed draw-downs, the fund will be able to support the subsidies.
- The Government will not have to draw on past reserves or future taxes to finance specific transfer programs which are prefunded.

# Building Fiscal Strength

S\$ Bn

■ Top-ups to Endowments/ Trust Funds



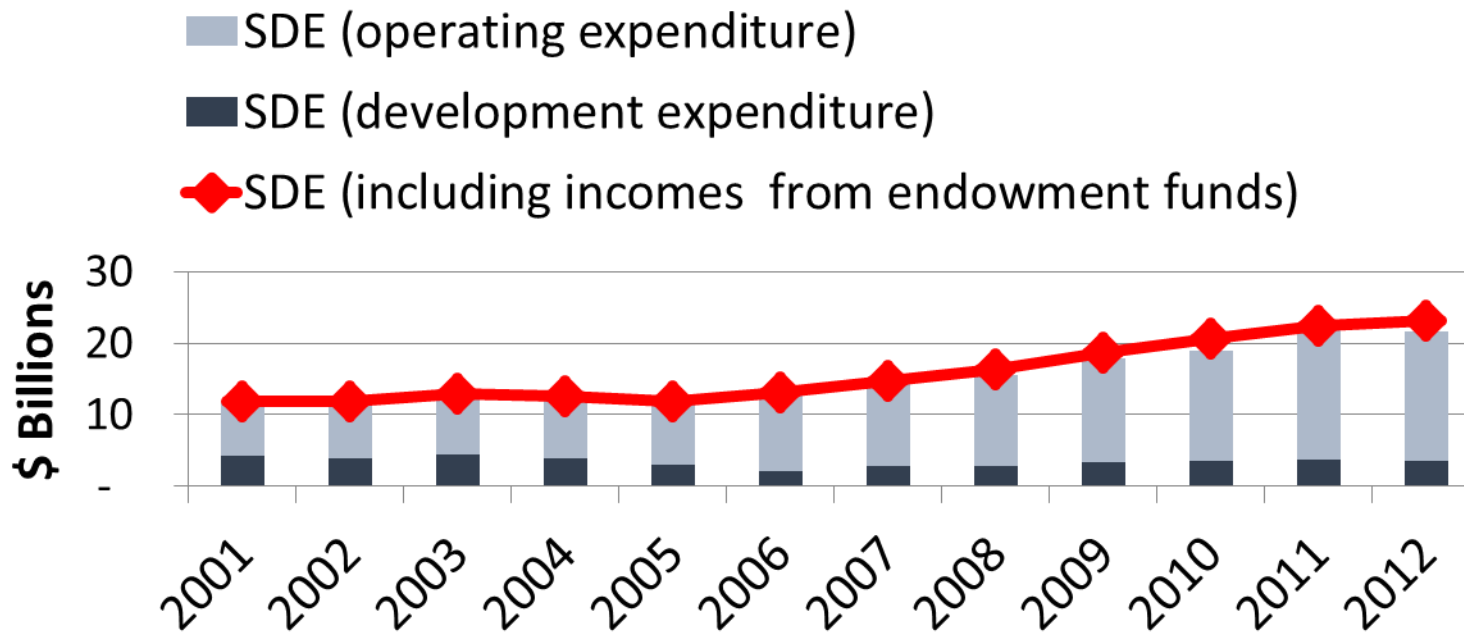


# Building Fiscal Strength

---

- **Medifund** is a social safety net to help needy Singaporeans who are unable to pay their medical expenses. It was set up about twenty years ago, in 1993 with a start-up capital of \$200 million. By FY2012, the capital sum has grown to \$3 billion.
- The **Medifund Silver Fund** was launched in 2007, in response to an ageing population, with an initial capital sum of \$500 million. Both Medifund and Medifund Silver are targeted assistance to the needy and a means-tested with other eligibility conditions.
- **Eldercare fund** was set up in 2000, to finance operating subsidies to nursing homes run by VWOs. Capital sum at \$3 billions in FY2011

# Building Fiscal Strength



Source: Data compiled from the Ministry of Finance, Budget Highlights, Various years

# Implications for ASEAN

---

- Different speed of ageing
  - Different income and social development levels
  - Some still reaping demographic dividend
  - Investment in education and human capital to capture demographic dividend
  - Labour market
- ➔ Labour mobility in the region

# Institutions

---

- Strengthen traditional informal family-based old-age support mechanism – adult children supporting their elderly parents
- Educating the public on the concept of saving for old age, to prepare for old age and to participate in pension systems.
- Strong Pension system
  - Long term fiscal sustainability
  - Fair – urban vs rural divides
  - Coverage
  - A social compact : promise of future benefit in exchange for current contribution

## Conclusion

---

- Aging involves multi-dimensional issues and requires a constellation of innovative solutions.
- As ASEAN ages, how the future unfolds for people entering the third age depend on the governments, families, financial institutions, and the pension institutions.
- Need to lay the foundation for effective policies to empower the delivery of old age security in the future
- Pension system reform is needed to ensure fairness and sustainability.

**THANK YOU**



# 32<sup>nd</sup> ASEAN Social Security Association Board Meeting 2015

10 -11 September 2015 • Singapore

Hosted by



**Central  
Provident  
Fund Board**

