

Overview of National Transfer Accounts and the Generational Economy

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Value of National Transfer Accounts

- Fundamental question: how do different age groups, including children and the elderly, acquire and use economic resources?
- How are access and use to resources influenced by changes in population age structure:
 - demographic dividends and economic growth?
 - generational equity?
 - financial markets and asset prices?
 - sustainability of public and private support systems?
- What policies should be considered to best prepare for coming demographic change?

Gap in National Statistical Systems

- System of National Accounts and other aggregate economic data provide little information about how different generations or age groups produce, consume, share, and accumulate economic resources.
- National Transfer Accounts fills this gap.

Global Age Transition

- Need for NTA is great because of rapid changes in population age structure.
- Low income countries: Share of children in decline and share in working ages is rising
- High income countries: Share in working-ages is in decline and share of elderly is rising.

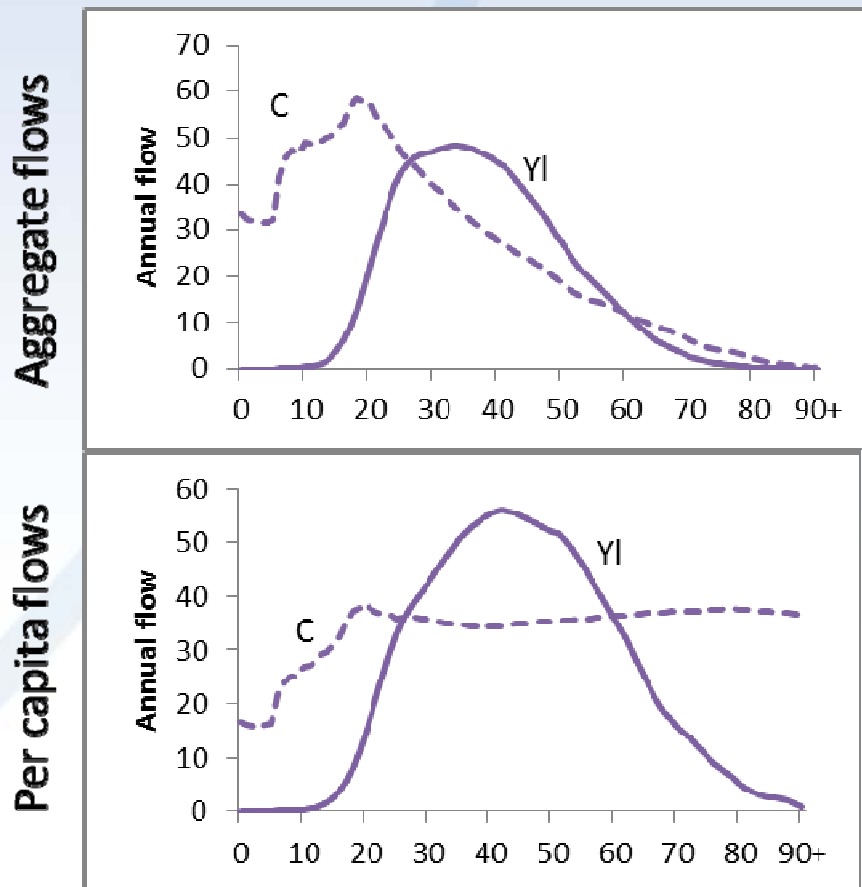
Major Elements of National Transfer Accounts

- Economic lifecycle defined
 - Quantified by age profiles of consumption and labor income
 - Extended periods at beginning and end of life during which people consume more than they produce through their labor.
 - Middle period during which people produce more through their labor than they consume
- Economic lifecycle varies because of
 - Differences in labor income reflecting age variation in labor force participation, hours worked, unemployment, and productivity
 - Differences in consumption at each age reflecting both private and public spending priorities.
 - Differences in population age structure

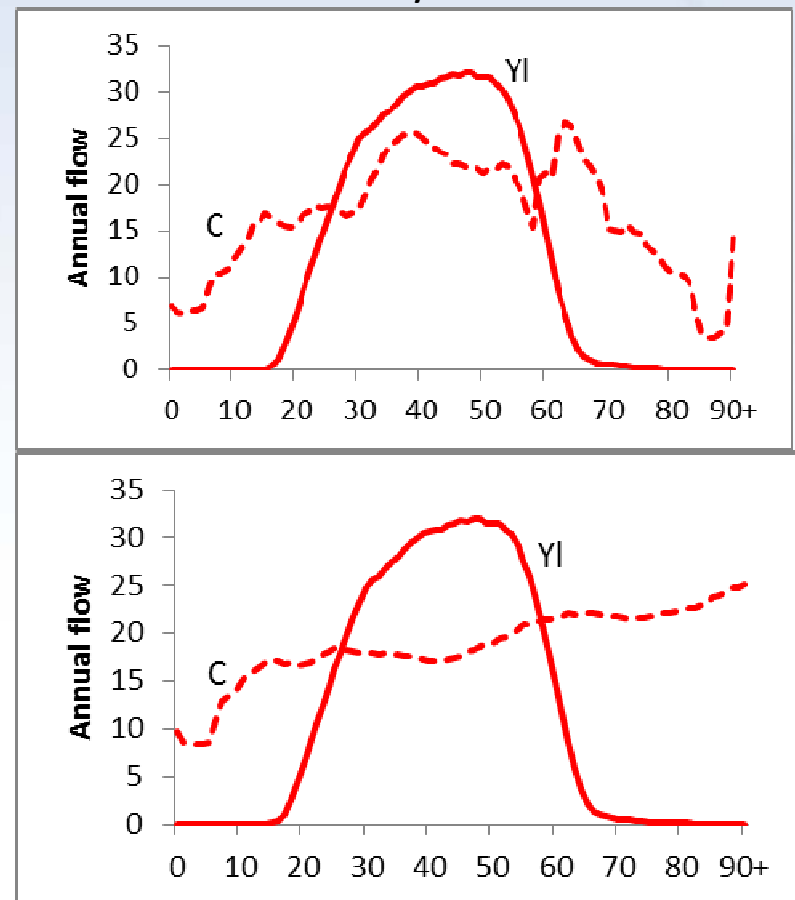
Figure 1.1 Economic lifecycle

Consumption (C) and Labor Income (YI)

Philippines 1999



Germany 2003



Notes for Figure 1.1

- Units for aggregate flows are billion of pesos (Philippines) and billions of euros (Germany)
- Units for per capita flows are 1000s of pesos (Philippines) and 1000s of euros (Germany)
- Source: www.ntaccounts.org accessed on July 23, 2012.

Major Elements of National Transfer Accounts II

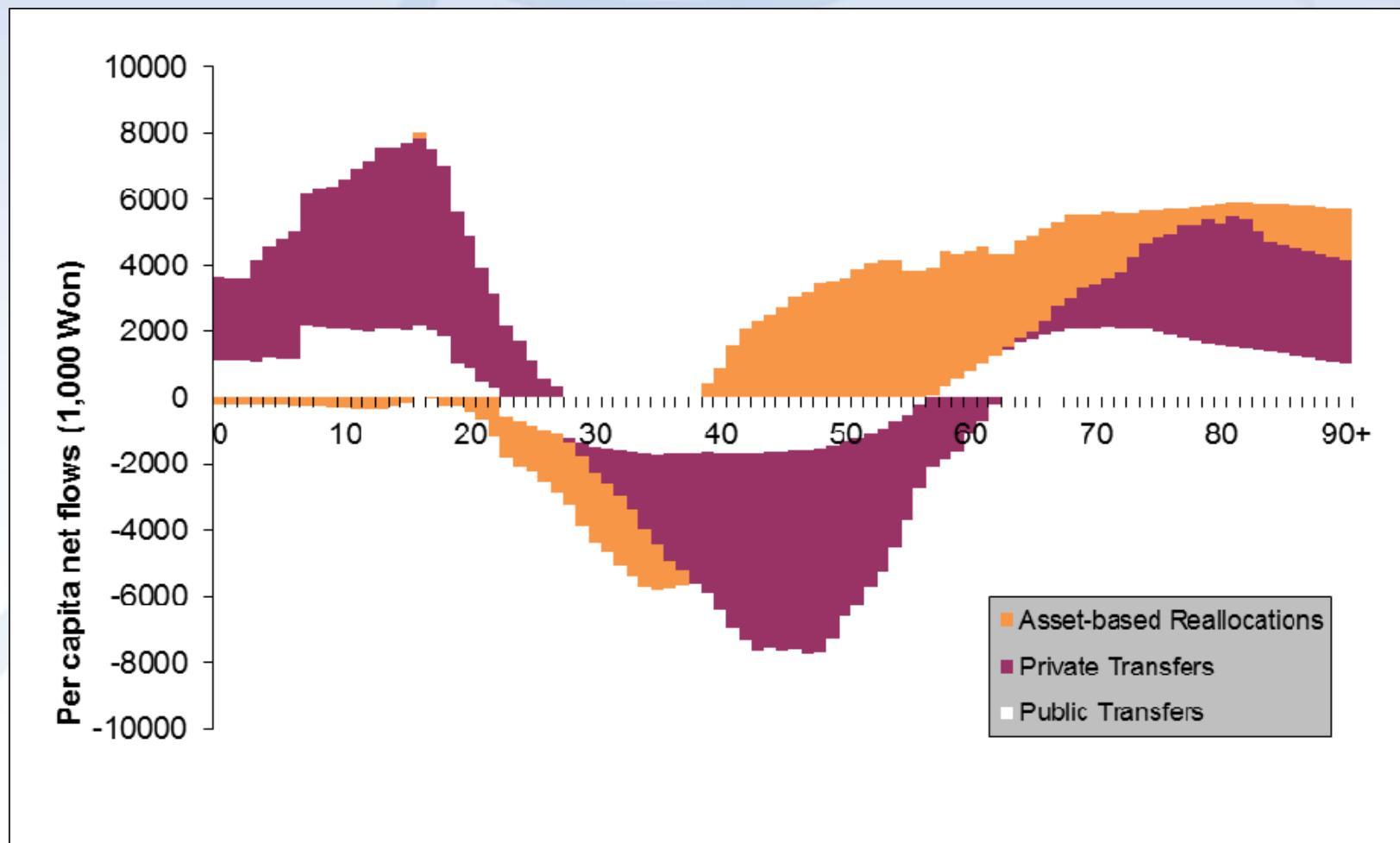
- Age Reallocation System
 - Economic mechanisms and institutions that shift resources across age
 - System for using surplus of labor income over consumption during the working ages and funding deficit for those who are young or old.
- Institutions in NTA
 - Private: family, firms, and non-profit institutions
 - Governments
- Economic mechanisms
 - Transfers
 - Asset-based reallocations
 - Asset income
 - Saving

Table 1.1 A Classification of National Transfer Account Age Reallocations

| | Asset-based reallocations | | Transfers |
|----------------|--|--|---|
| | Capital | Financial assets and natural resources | |
| Public | Negligible | Public debt Student loan programs Sovereign wealth funds Currency stabilization funds | Public education Public health care Unfunded pension plans Foreign aid |
| Private | Housing Consumer durables Corporate profits Partnerships and sole proprietorships | Consumer debt Land Sub-soil minerals | Familial support of children and parents Bequests Charitable contributions Remittances |

Source: Mason and Lee (2011) adapted from Lee (1994).

Figure 1.2 Age reallocations, per capita values, South Korea, 2000



Source: An, Chun et al. (2011).

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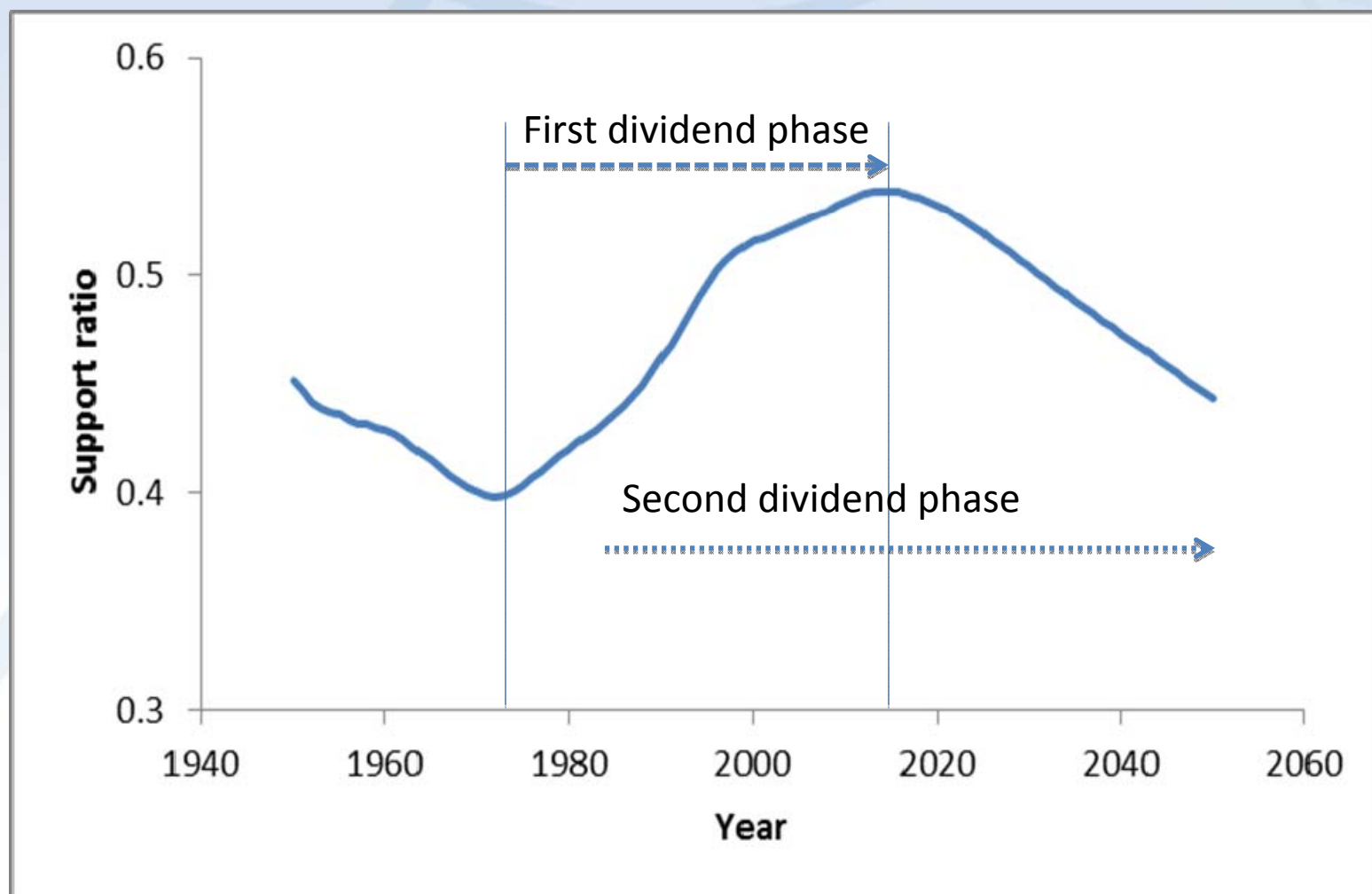
Applications of National Transfer Accounts

- Demographic dividend and the support ratio
- Human capital and fertility decline
- Aging and wealth
- Fiscal issues and public transfer wealth
- Wealth, golden rule growth, and maximizing consumption

Demographic Dividends

- First dividend: Long swings in the share of the population in the working-ages leads to swings in rate of economic growth
- Impact depends on age patterns of dependency captured by NTA estimates of the economic lifecycle.
- Changes in the support ratio – the effective number of producers relative to the effective number of consumers – has a one-to-one relationship with income per effective consumer.
- Useful for quantifying the effect of the first dividend and for evaluating how the magnitude of the dividend might be influenced by policy.

Figure 1.3 Support ratio for China, 1950-2050.



Source: See UN (2012) Manual on National Transfer Accounts.

Second Demographic Dividend

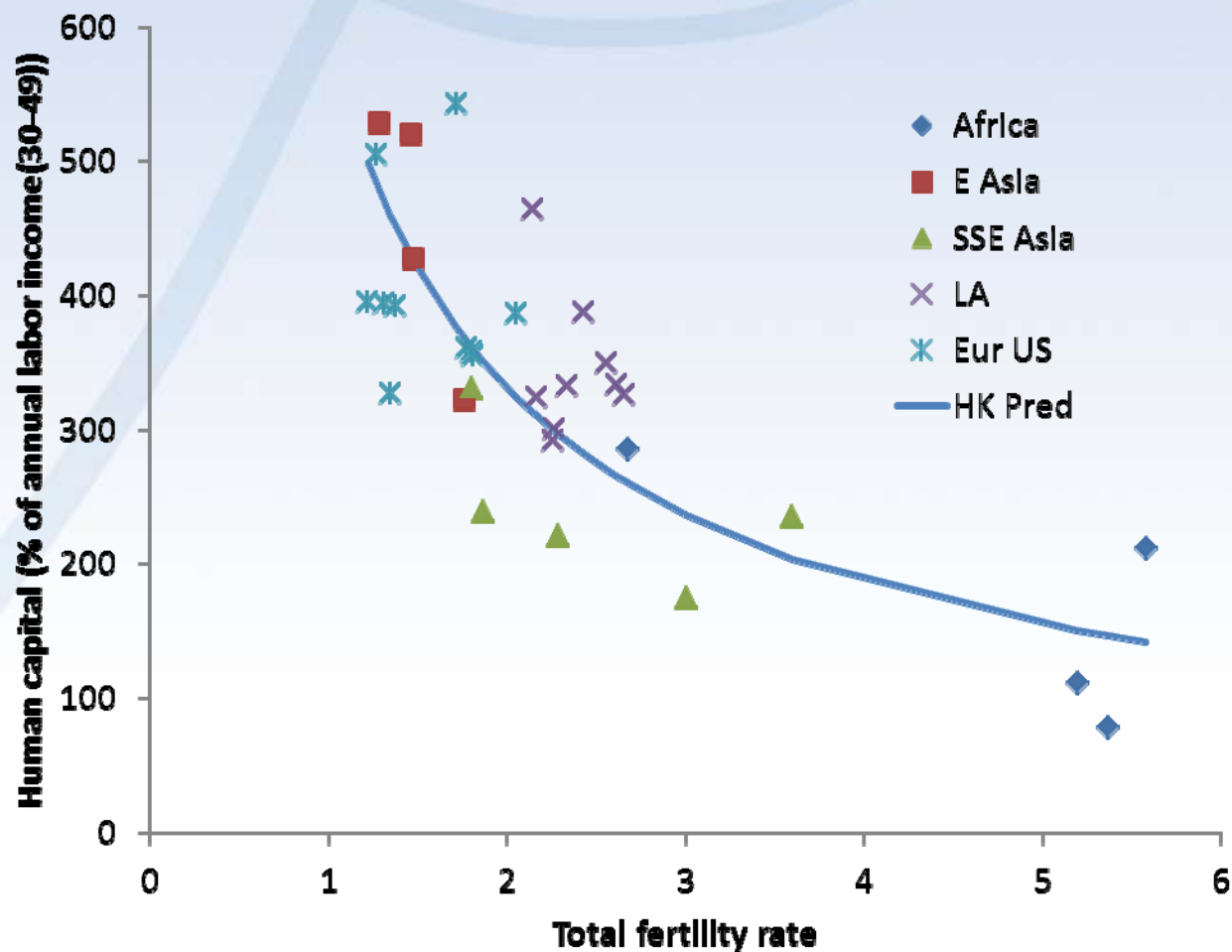
- First dividend is transitory
- Second dividend
 - Investment in human capital, i.e., substitution of quality for quantity.
 - Increase in investment in physical capital
- Either response provides a means through which the transitory first dividend can be transformed into a sustainable second dividend.

Fertility and human capital

- Fertility decline leads to fewer workers and a decline in the support ratio.
- However, the quantity-quality tradeoff implies that more will be invested in the human capital of each worker.
- If the tradeoff is strong enough, the workforce of the future may be more productive even if there are fewer workers.
- Productivity counts, not the numbers.

Source: Lee and Mason 2010.

Figure 1.4 Human capital and TFR, selected countries



Source: Updated from Lee and Mason (2010).

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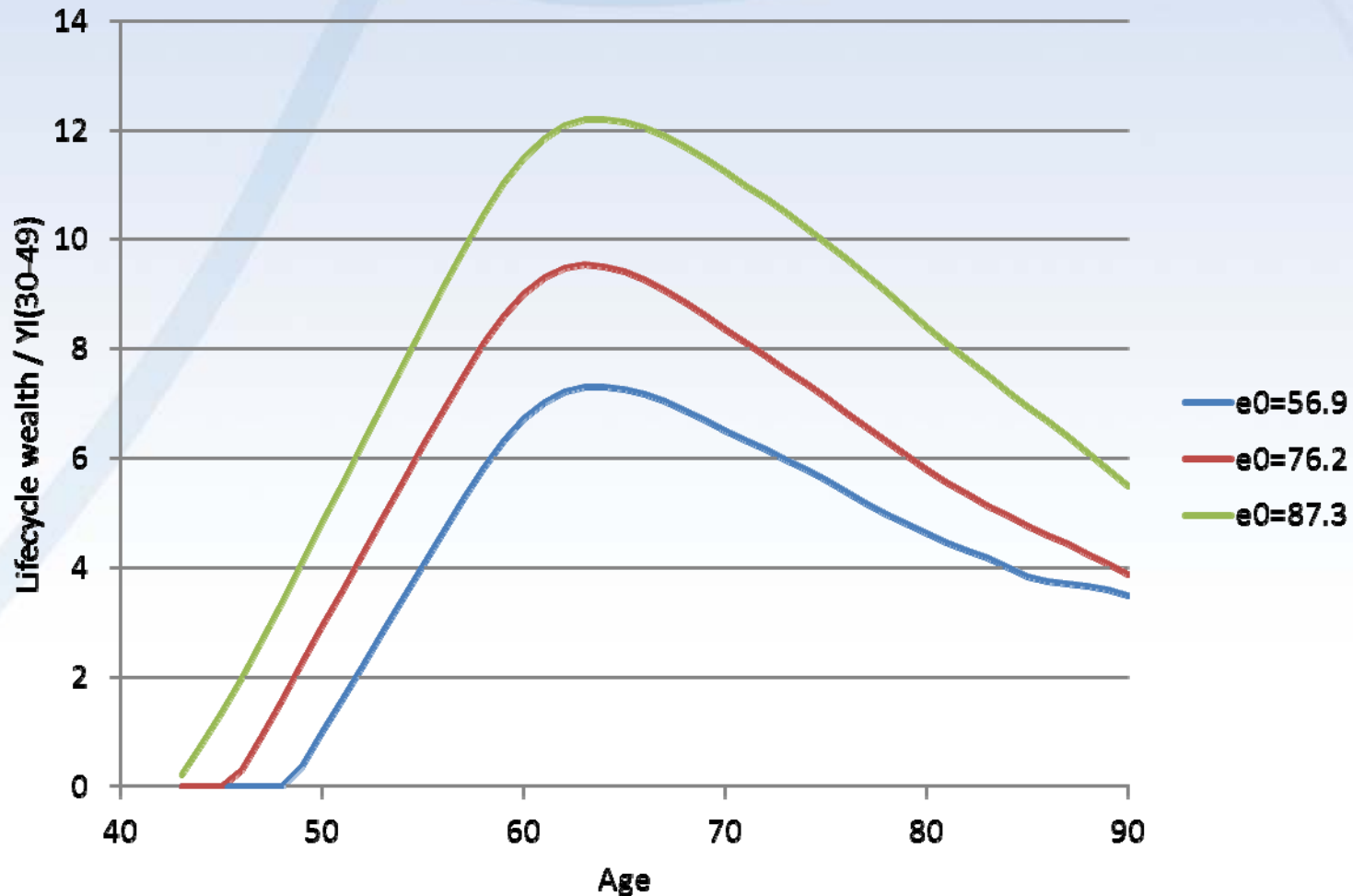
Notes on Figure 1.4

- Human capital is a synthetic cohort measure computed by summing public and private health care spending for single years of age.
- For health spending is summed over the 0-17 year age span and for education over the 3-26 year age span.
- Human capital values are expressed as a percentage of per capita labor income for those 30-49.
- Source: Lee and Mason (2010) updated from www.ntaccounts.org accessed on July 22, 2012.

Aging and Wealth

- Aging influences the demand for lifecycle wealth
 - Longer retirement means more must be accumulated during the working years
 - Age composition affects aggregate wealth because lifecycle wealth is concentrated at older ages
- Needs for lifecycle wealth can be met by
 - Accumulating assets
 - Accumulating public and private transfer wealth
 - Depends on the old-age support system

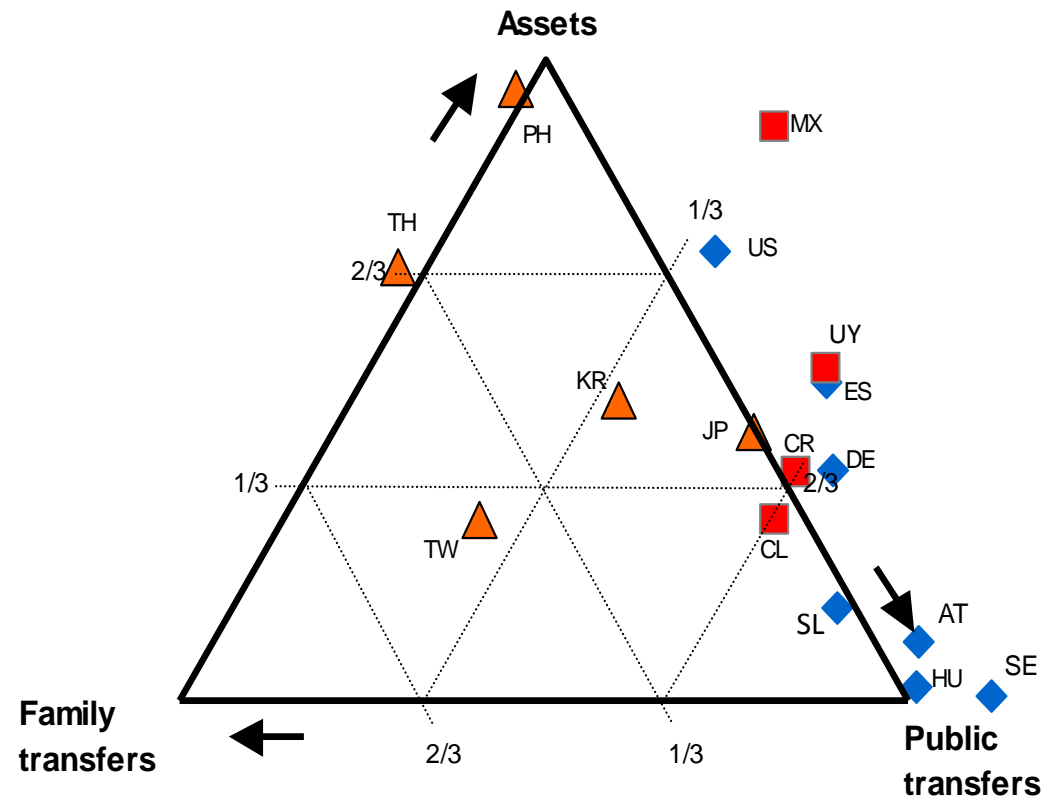
Figure 1.5 Lifecycle pension wealth by age, Japan



Source: Mason and Lee (forthcoming).

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Figure 1.6 Lifecycle deficit funding mechanisms, persons 65 and older.



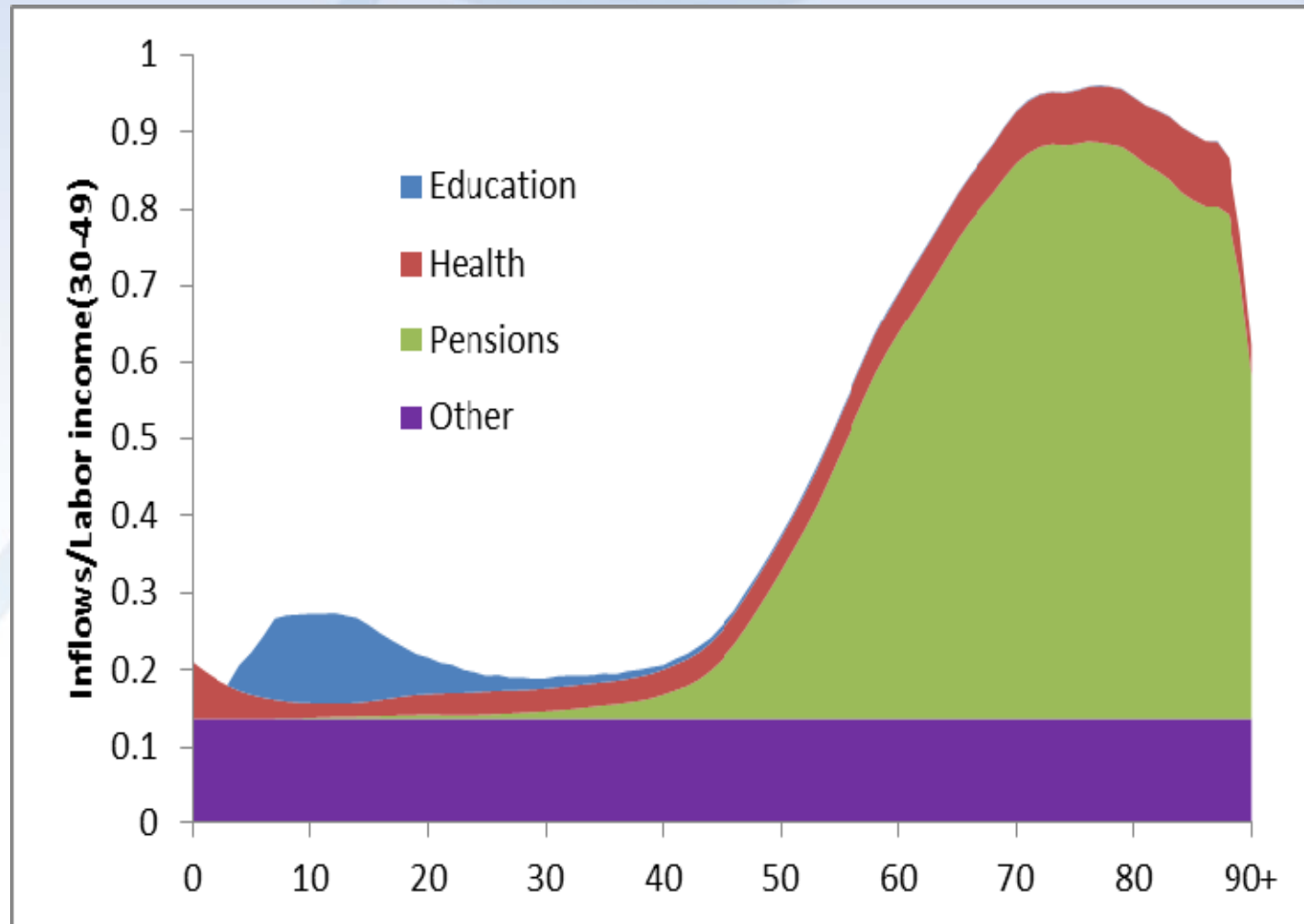
Source: Mason and Lee (2011).

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Fiscal issues

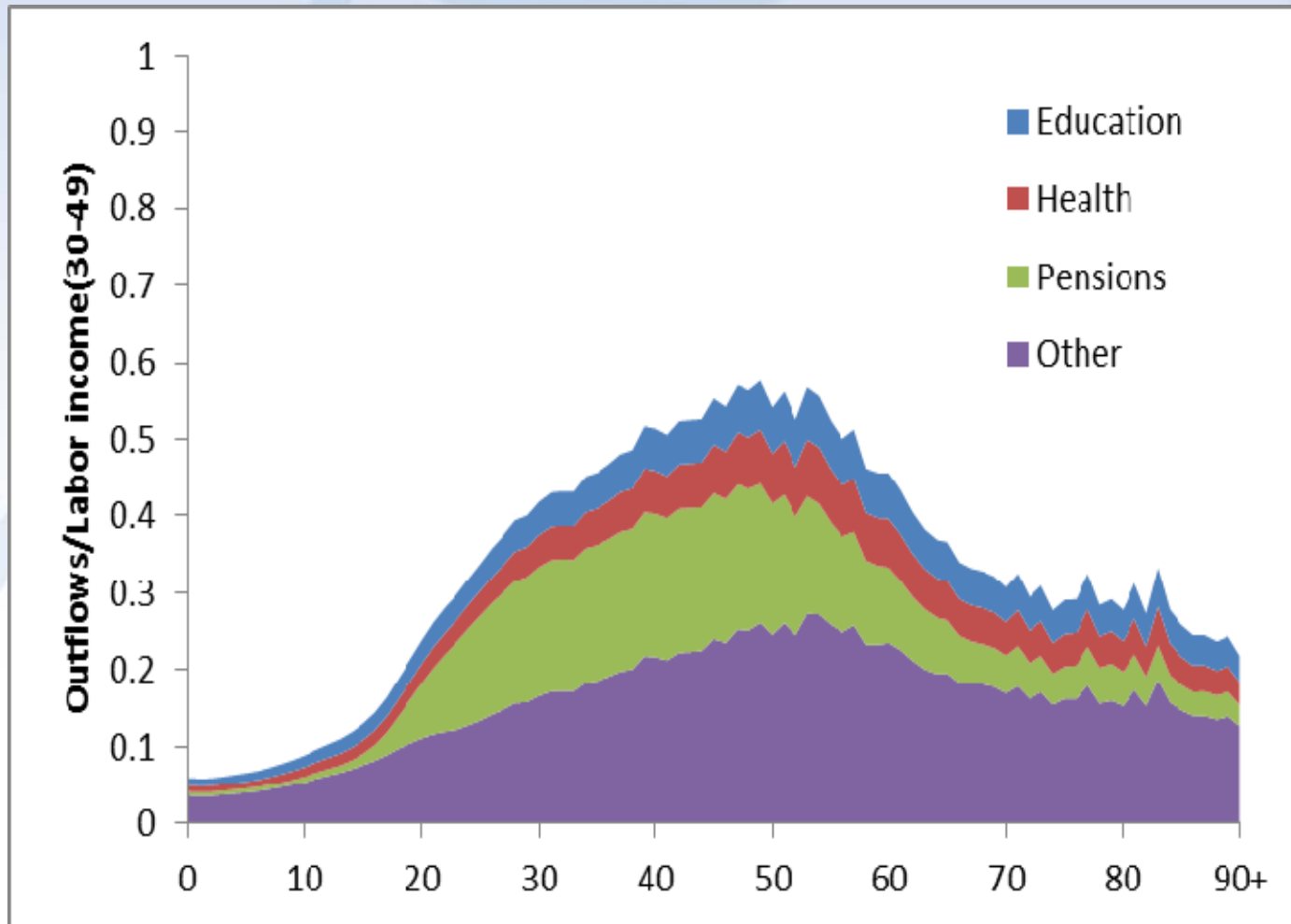
- Who benefits and who pays for public programs?
- Are the programs fair?
- Are the programs sustainable in the face of population aging?
- How will they have to adjust as populations age?

Figure 1.7 Public transfer inflows, Brazil 2002.



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Figure 1.7 Public transfer outflows, Brazil 2002.

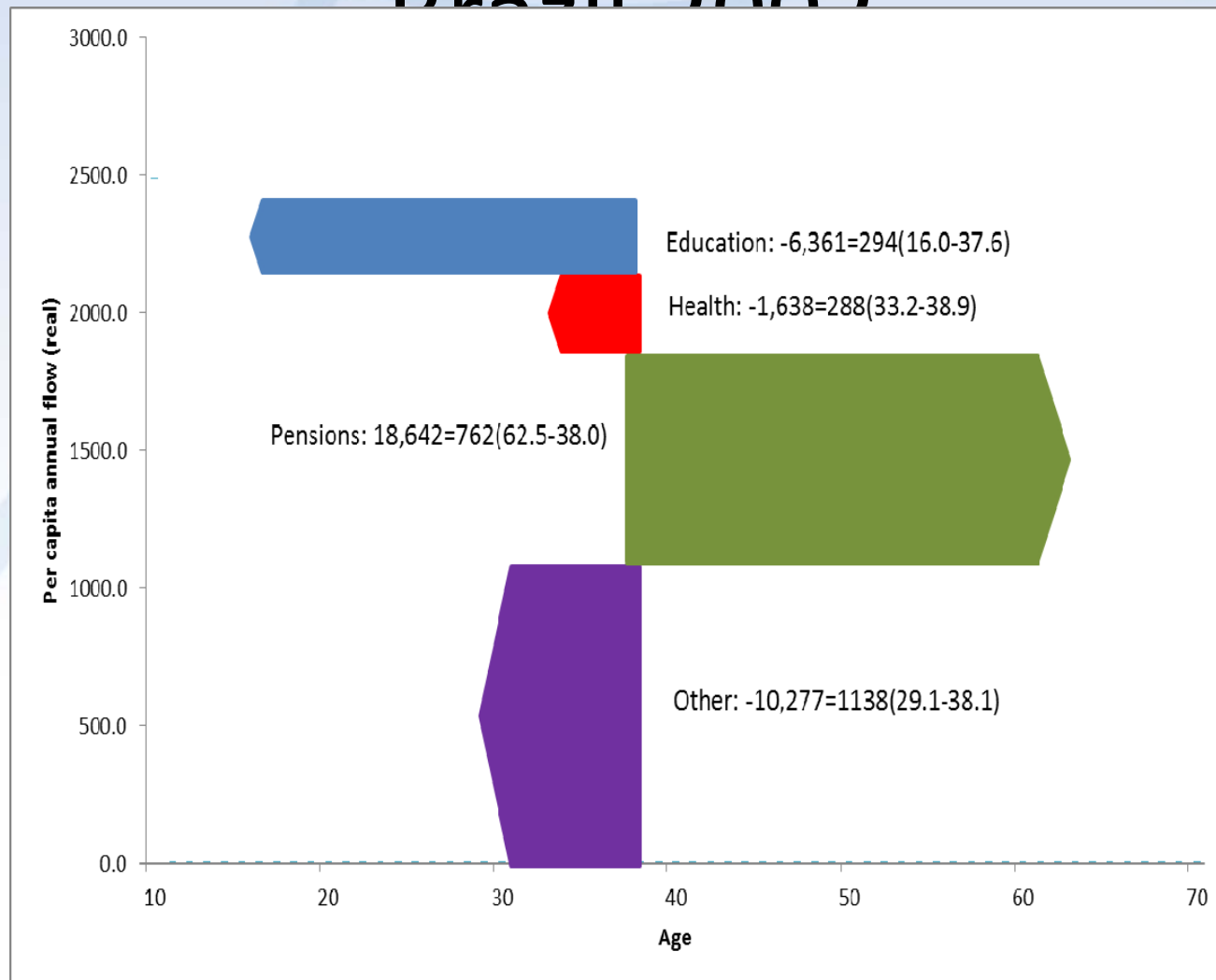


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Public Transfer Wealth

- Conventional measurement of public transfers: benefits/public spending or /GDP
- Incomplete
 - Direction of transfers
 - Pensions: upward
 - Education: downward
 - Health: depends
 - Time span between paying and receiving
- Arrow diagrams (developed by Lee)
 - More complete description
 - Interpretation of area as transfer wealth

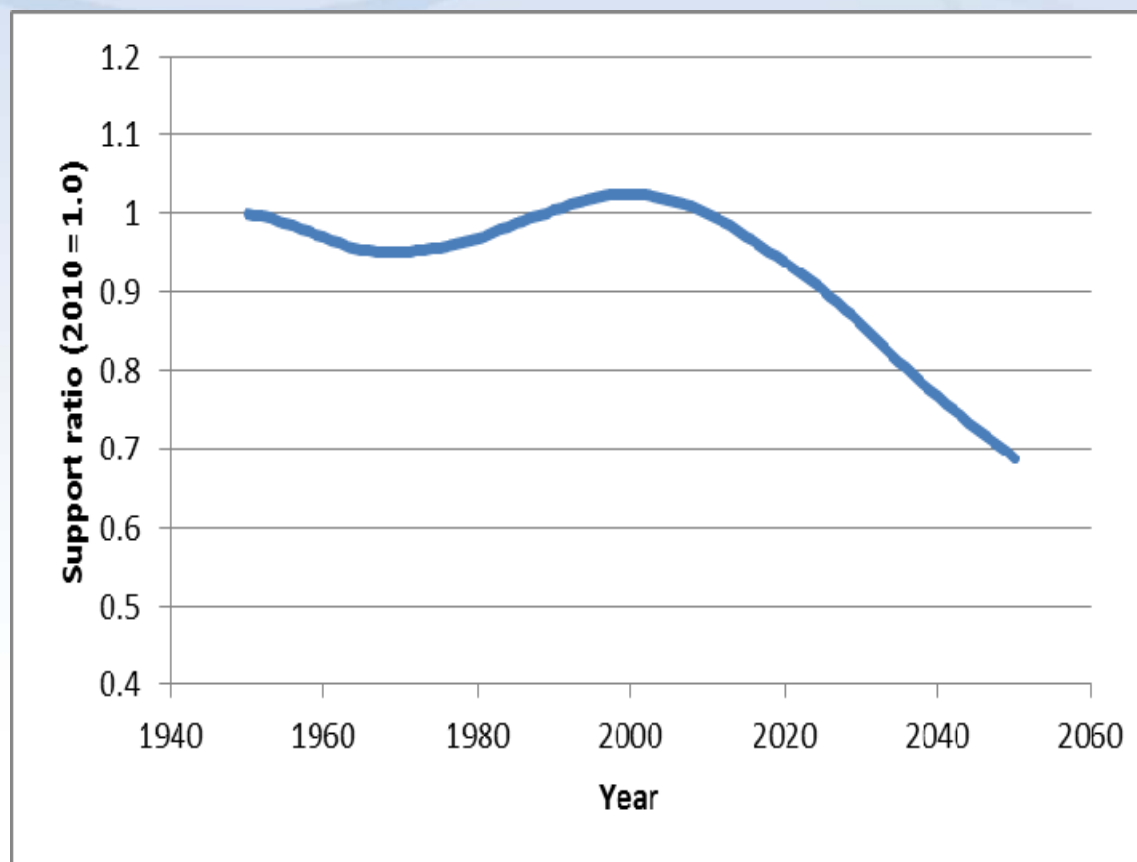
Figure 1.8 Per capita public transfer wealth, annual flows, Brazil 2002



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Fiscal support ratio, Brazil, 1950-2050

Shows that between 2010 and 2050 taxes will decline by 30% relative to benefits if age-specific transfer inflows and outflows do not change.



Source: NTA database (www.ntaccounts.org)
accessed June 23, 2012.

Lifecycle wealth

- Lifecycle wealth – the wealth required by a population to meet its material needs
 - Assets
 - Transfer wealth
- Depends on
 - Path of consumption
 - Path of labor income
 - Age distribution of population

Lifecycle wealth given golden rule growth

- Golden rule growth is special case in which saving rate is set to value that allows highest level of consumption possible
- In golden rule, lifecycle wealth is equal to

$$Yl (Ac - Ayl) \text{ or } C (Ac - Ayl)$$

These are equal given golden rule growth.

- Central to understanding whether population aging and low fertility lead to higher or lower standards of living.

Figure 1.10 Lifecycle wealth, golden rule, Germany

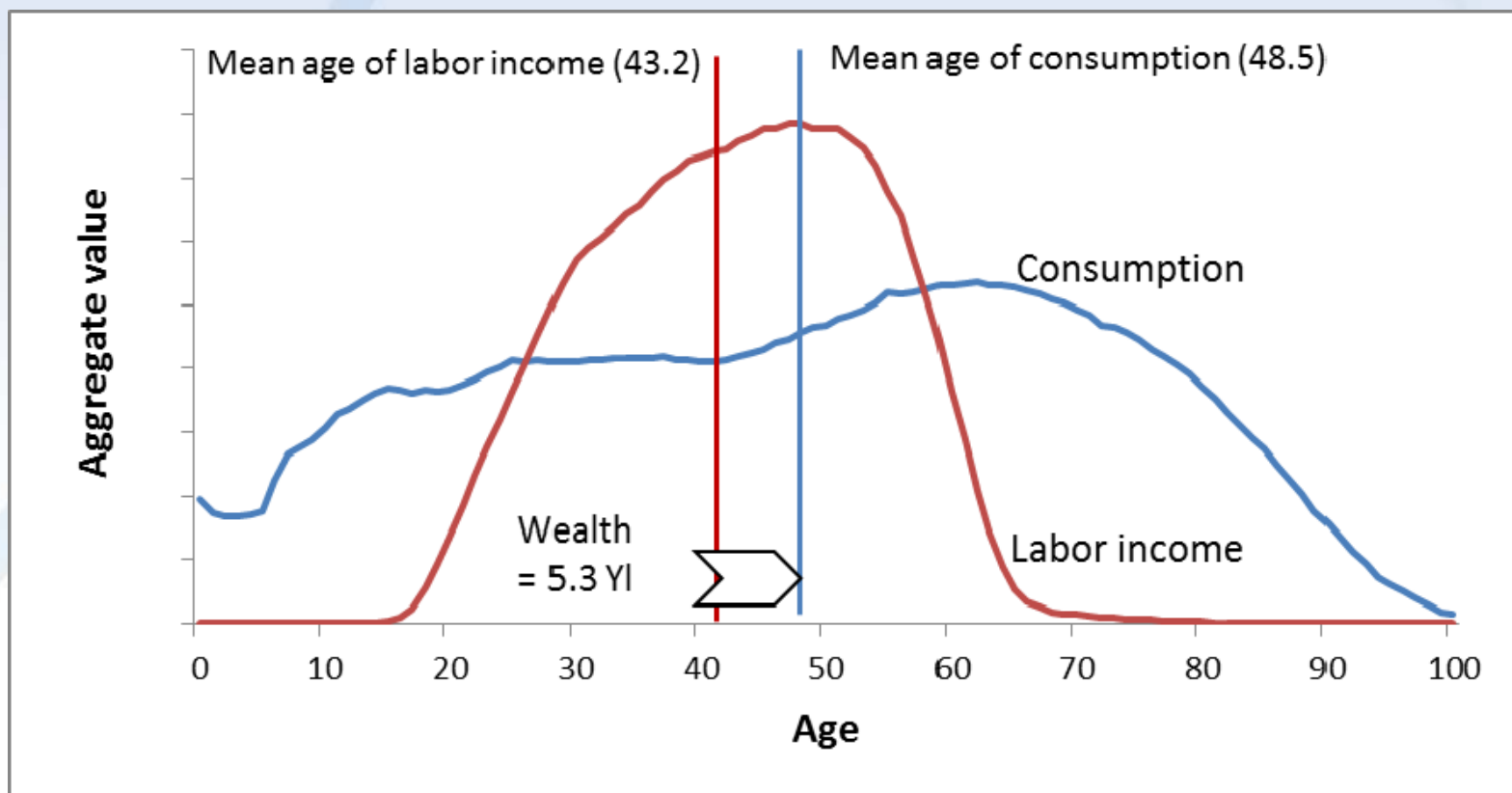
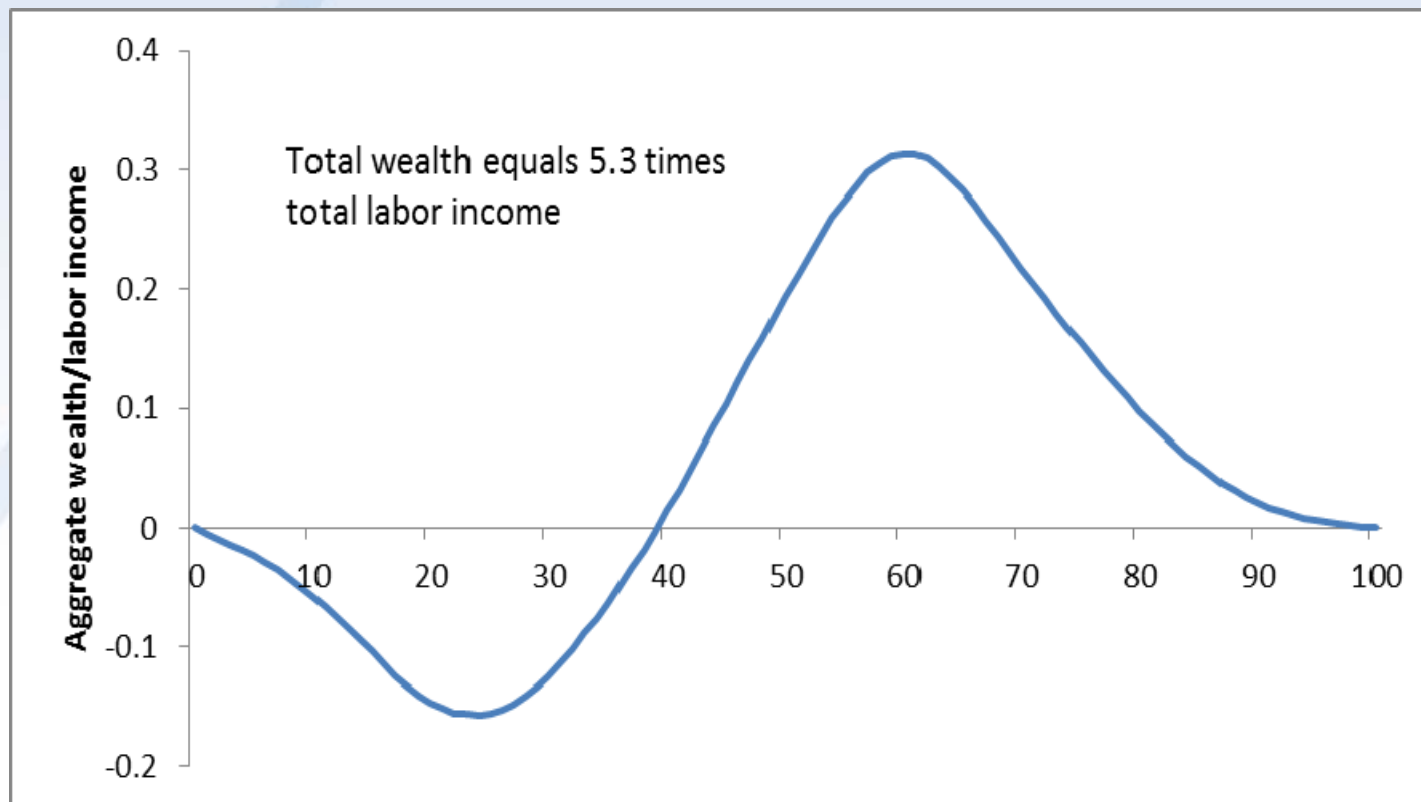


Figure 1.10 Lifecycle wealth by age, golden rule growth, Germany.



Maximizing consumption

- Given golden rule growth, the population growth rate that maximizes consumption is realized when $W = K$.
- This implies that transfer wealth must be zero.
- In other words, transfers to children and to the elderly are in balance when measured in terms of transfer wealth.

Conclusion

- NTA fills an important gap in our statistical system.
- NTA measures how individuals at each age acquire and use economic resources to meet their material needs.
- NTA creates many important opportunities for understanding how changes in population age structure are influencing economic growth, financial markets, generational equity, and the sustainability of public and private economic support systems.