ASSET-BASED REALLOCATION

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BASICS ABOUT ASSET-BASED REALLOCATIONS (ABR)

ABR consist of two different flows: asset (capital and property) income and savings

$$\underbrace{C(x) - Y^{l}(x)}_{Lifecycle\ deficit} = \underbrace{\tau^{+}(x) - \tau^{-}(x)}_{Net\ transfers} + \underbrace{Y^{A}(x) - S(x)}_{Asset-based\ reallocations}$$

ASSET INCOME

a) Capital income

- yield from owning a capital (e.g. equipment, inventories, commercial structures, homes)

b) Property income

- yield from owning financial assets (e.g. shares, bonds, deposits)
- yield from owning physical assets (e.g. royalties, land, natural resources)
- for the economy as whole (private, public, and ROW) property income always sums to zero (e.g. creditor and debtor relationship)

SAVING

- asset income is a result of past (dis)saving
- disposing/acquiring of an asset or debt

EXAMPLES OF ABR INFLOWS AND OUTFLOWS

EXAMPLES OF INFLOWS

a) owned capital yields an asset income (return on capital)
b) owned financial assets yield an asset income (interest, dividends, rents received)
c) dis-saving (disposing of an asset or acquiring debt)

EXAMPLES OF OUTFLOWS

a) acquired debt in the past yields property income outflow (interest paid)
b) dividends and rents paid yield property income outflow
c) losses
d) saving (acquiring an asset or disposing a debt)

WHY ARE ABR IMPORTANT?

- assets allow individuals to use resources available at one age to fund uses at the other age (for consumption, transfers, or savings)

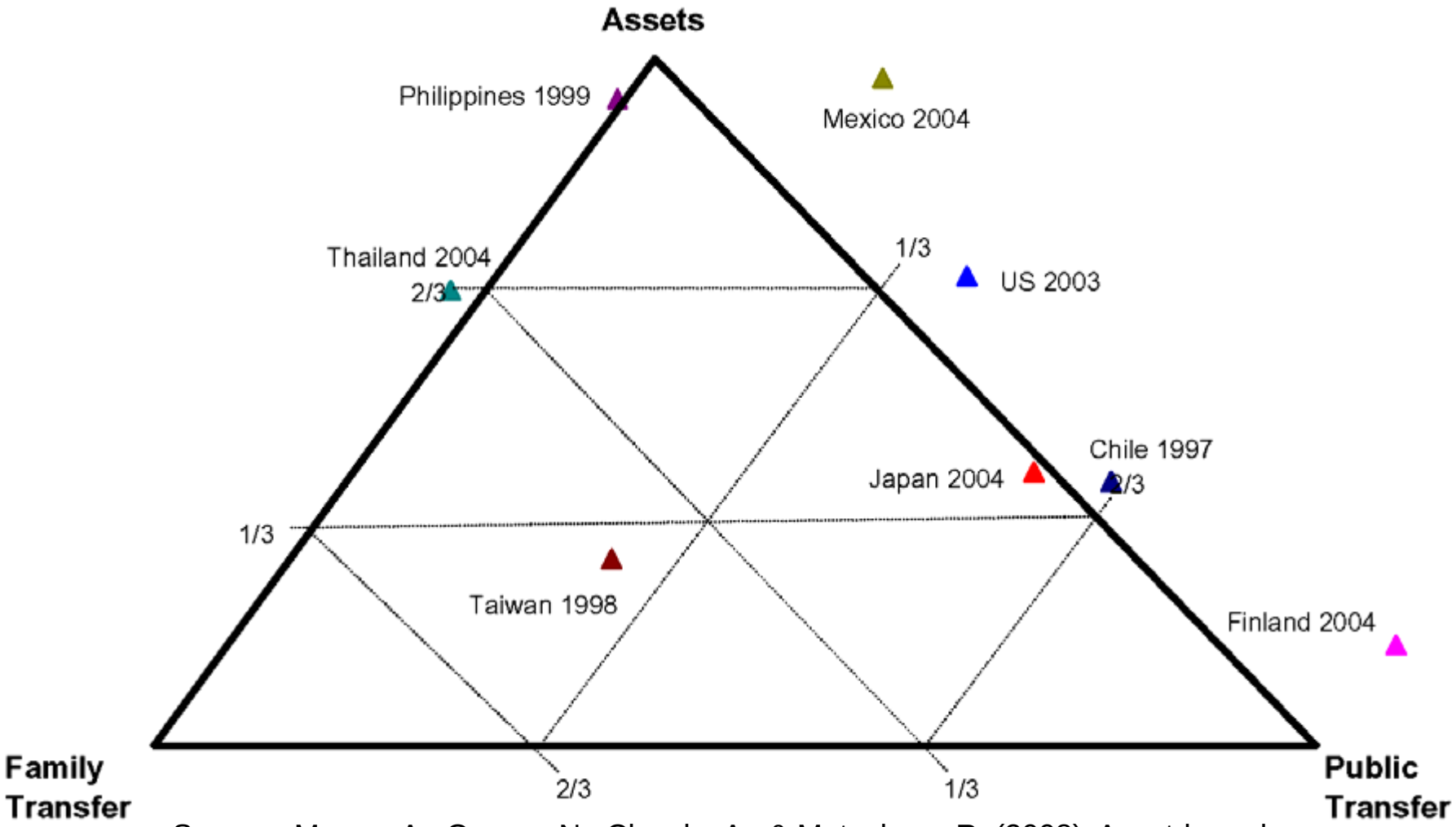
- physical assets (capital, land) can be used only in upward direction

- financial assets can be used to reallocate resources in upward (classical lifecycle motive for saving) or downward (parents credit the education of their children)

CROSS COUNTRY COMPARISON

- ABR are largest in US, Latin America, Africa
- ABR are smallest in Asia and Europe
- ABR are important especially in upper-middle income countries
- asset income is generally higher in high income countries; but savings vary a lot

Economic flows as a share of life-cycle deficit (age 65+)



Source: Mason, A., Ogawa, N., Chawla, A., & Matsukura, R. (2008). Asset-based reallocations: Concepts and Estimates for Selected Countries

PUBLIC ASSET-BASED REALLOCATIONS

Public asset-based reallocations = public asset income – public saving =
= public transfer deficit/surplus

Public transfer deficit:

- public transfer outflows (taxes and grants) are not enough to finance public transfer inflows (plus net public transfers to the ROW)
- the difference is covered through positive public ABR
- disposing of an asset or acquiring debt by general government

Public transfer surplus:

- public transfer outflows (taxes and grants) exceed public transfer inflows (plus net public transfers to the ROW)
- the difference is covered through negative public ABR
- surplus is accumulated as an asset

PUBLIC ASSET-BASED REALLOCATIONS II

ASSET INCOME

a) Capital income

– based on SNA it equals to zero; public sector does not accumulate profits (be careful: public enterprises are part of private sector)

b) Property income

- interest paid/received on public borrowing/lending (important as majority of countries run fiscal deficit)
- sovereign wealth funds (with significant age reallocation rationale; e.g. oil revenues in Norway and United Arab Emirates)

(be careful: general government can receive property income from public enterprises)

SAVING

- equals to the sum of public asset income and public transfer deficit/surplus

AGGREGATE CONTROLS (PUBLIC ABR)

ASSET INCOME

a) Capital income

- in NTA defined as net operating surplus

- for general government the following holds: gross operating surplus = consumption of fixed capital → net operating surplus is close to 0

b) Property income

includes five categories from the SNA:

- interests
- dividends
- reinvested earnings on foreign direct investment
- rent

SAVING

- equals to the net saving from SNA (= net fixed capital formation + net capital transfers + net non-produced non-financial assets + net lending)

EXAMPLE – AGGREGATE CONTROLS FOR PUBLIC REALLOCATIONS

Public transfers (net from the ROW)	-185
Public transfer inflows	13657
less: Public transfer outflows	13842
Taxes and grants	13345
Transfer surplus (-)/deficit (+)	497
Public asset-based reallocations	497
Asset income, net	-406
less: Saving, net	-903

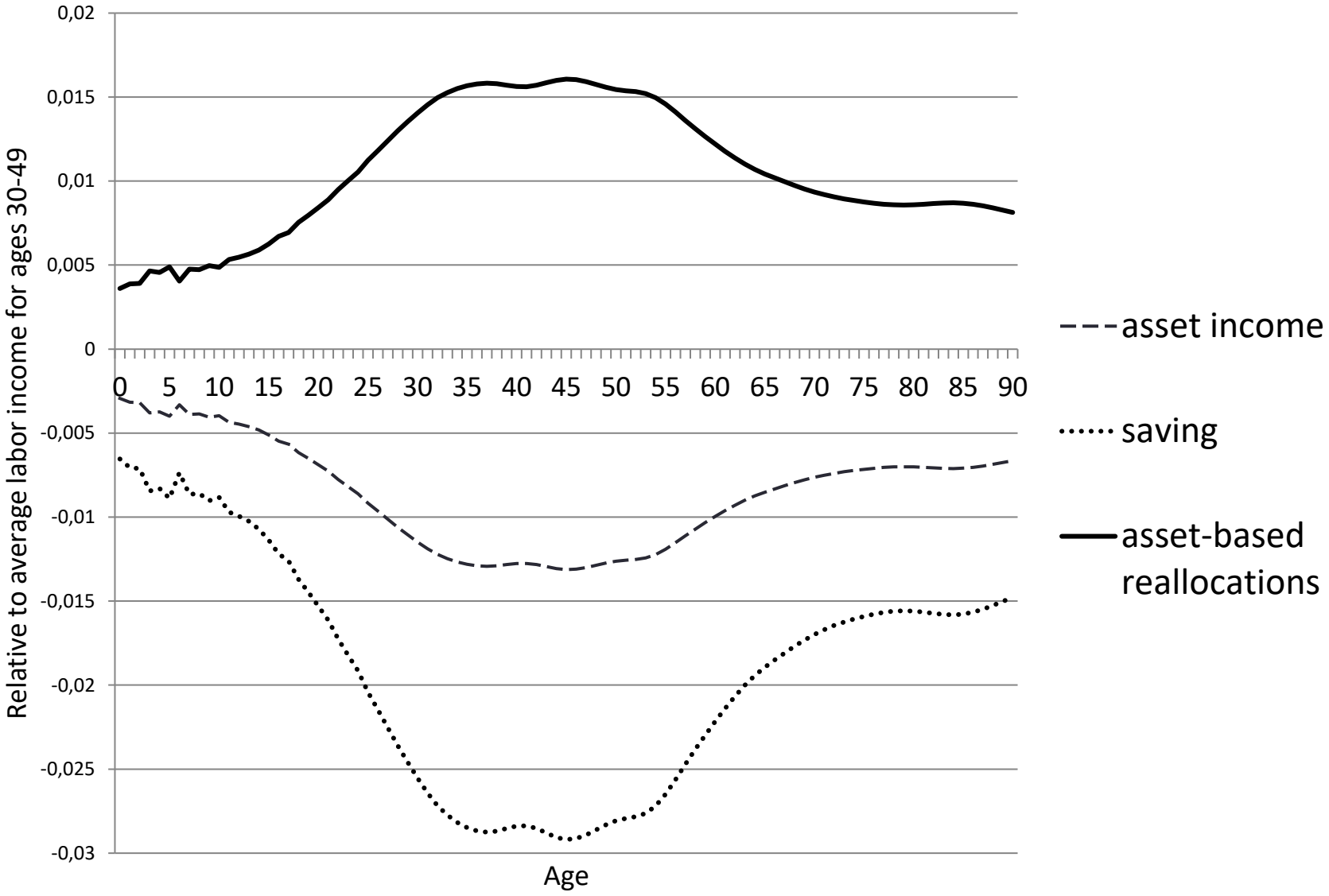
AGE PROFILES (PUBLIC ABR)

Age profiles of both public asset income and savings follow general tax profile.

Why?

NTA assumption that taxpayers own government assets and are responsible for all government debts.

Public asset-based reallocations, Slovenia, 2012



PRIVATE ASSET-BASED REALLOCATIONS

- private sector includes households, corporations, and non-profit institutions serving households (NPISH)
- but we should keep in mind that NTA attributes all the flows to individuals, while corporations and NPISH serve as intermediaries

ASSET INCOME

-private asset income is attributed to the household head (difficult to assign the owner)

a) Capital income

- is assigned to owners of corporations (shareholders) and households (imputed rents and 1/3 of mixed income)

b) Property income

- is assigned to the owners of assets (mainly interest, dividends, rents)
- in the absence of the ROW flow, public and private inflows and outflows must balance

PRIVATE ASSET-BASED REALLOCATIONS II

PRIVATE SAVING

- also attributed to the household head (a nice way to check consistency of age profiles; *S(x)* must equal to the net private saving)

- final balancing item

$$S^f(x) = Y^l(x) - C(x) + \tau^g(x) + \tau^{inter}(x) + \tau^{intra}(x) + Y^{Af}(x) + Y^{Ag}(x) - S^g(x)$$

Private saving at age a is the difference between disposable income (in the form of labour income, asset income and transfers) and consumption (less government savings)

AGGREGATE CONTROLS – PRIVATE ABR

ASSET INCOME

a) Capital income =

= net operating surplus + 1/3 of mixed income + capital share of indirect taxes less subsidies (share of asset income in total income) =

= corporate income + income from owner-occupied housing + income of unincorporated enterprise

b) Property income =

= private property income inflow - private property income outflow

SAVING

- net private saving from SNA (corporations, households, NPISH)
- actually no adjustment needed because it is created from macro adjusted age profiles

EXAMPLE – AGGREGATE CONTROLS FOR PRIVATE ABR

Private asset-based reallocations	1,307
Asset income, net	3,585
Capital income, net	4,091
Corporate income	1,470
Income from owner-occupied housing	1,503
Unincorporated income	1,118
Property income, net	-506
Private property income inflow	2,298
less: Interest outflows, households	385
less: Other property income outflow	2,419
Saving, net	2,278

AGE PROFILES – PRIVATE ABR

ASSET INCOME

a) Capital income

- corporate income (survey: property income – interest, dividends, rents)
- income from owner-occupied housing (survey: imputed rent)
- income of unincorporated enterprise (survey: self-employment labor income)

b) Property income

- property income inflow (survey: property income)
- household Interest outflow (survey: interest expense)
- property income outflow, excluding interest paid by household (survey: property income)

SAVING

- residual from accounting identity

„SURPRISING“ EMPIRICAL RESULTS (1)

- empirical results differ from classical theory behind accumulation of asset during the lifecycle
- Modigliani and Brumberg, 1954; Ando and Modigliani, 1963: assets and asset income increase during the working period to finance the consumption during retirement
- in working age period individuals save and when they become old they dis-save

- empirical results can be different because ABR is not the only source to finance old-age lifecycle deficit (there are also transfers) – there is not necessarily one-for-one trade-off between ABR and transfers (YL, C)

- but be careful: we use cross-sectional data rather then longitudinal; asset income results from past saving (therefore ABR can reflect changed behavior of individuals, financial crises, natural disasters, or other year-to-year changes)

„SURPRISING“ EMPIRICAL RESULTS (2)

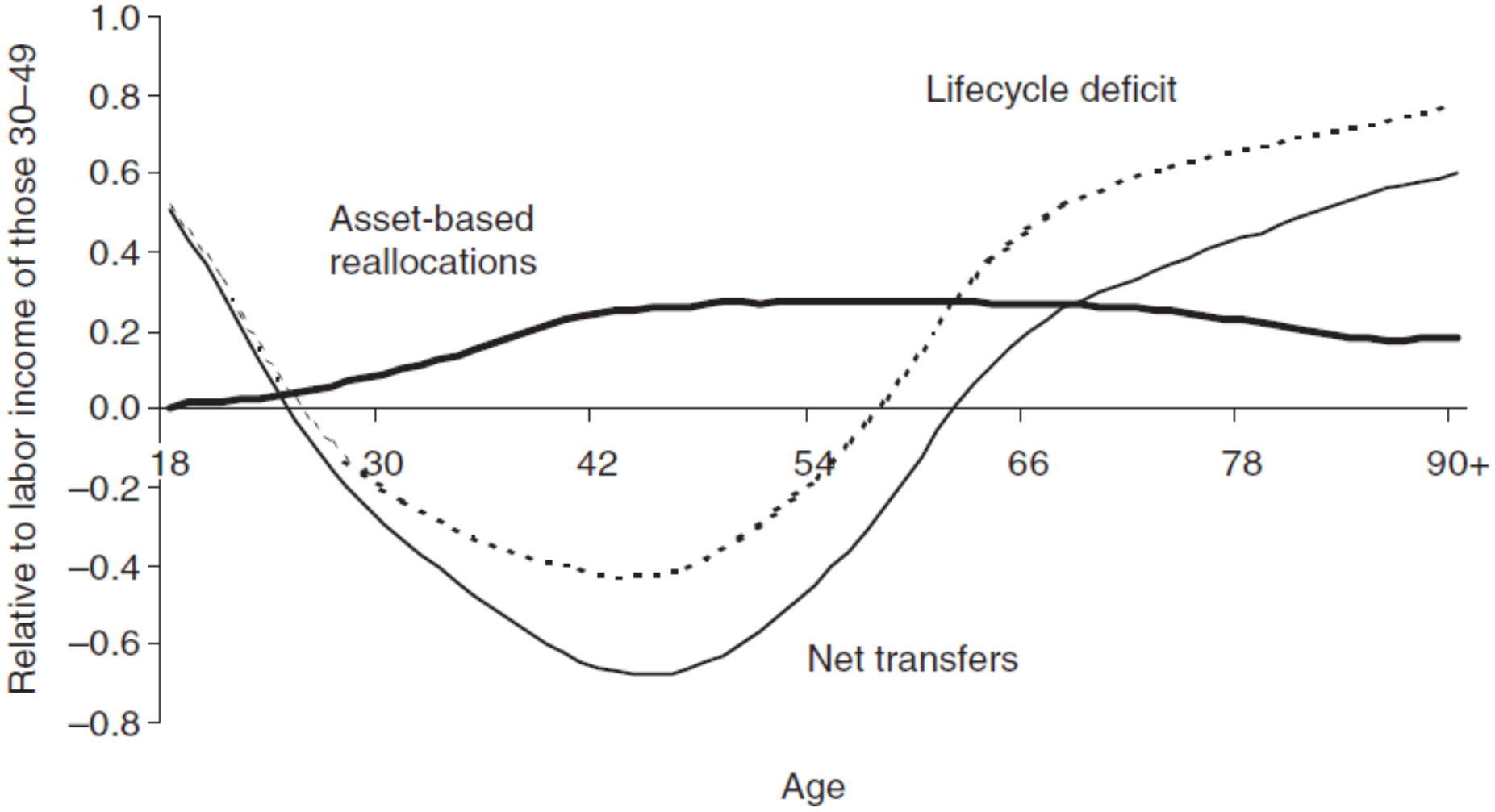
- empirical evidence from 17 NTA countries

- during working age ABR are positive, because people use some of their asset income for financing their own consumption and for transferring income to other age groups (YL is less then C and τ)
- not in line with classical life-cycle theory claiming that part of asset and labor income is saved for the future

- ABR decline gradually over age
- transition period: lifecycle surplus turns into deficit at age 58, transfers are not positive for another four years (gap is filled entirely by relying on assets)

- people in mid-60s rely almost equally on assets and transfers, but at older ages ABR flows decline (decline is according to the classical theory result of dis-saving)

Figure 3: Life-cycle deficit and reallocations, example of 17 NTA countries



Source: Lee, R., & Mason, A. (2011). Population Ageing and Generational Economy, p. 217

„SURPRISING“ EMPIRICAL RESULTS (3)

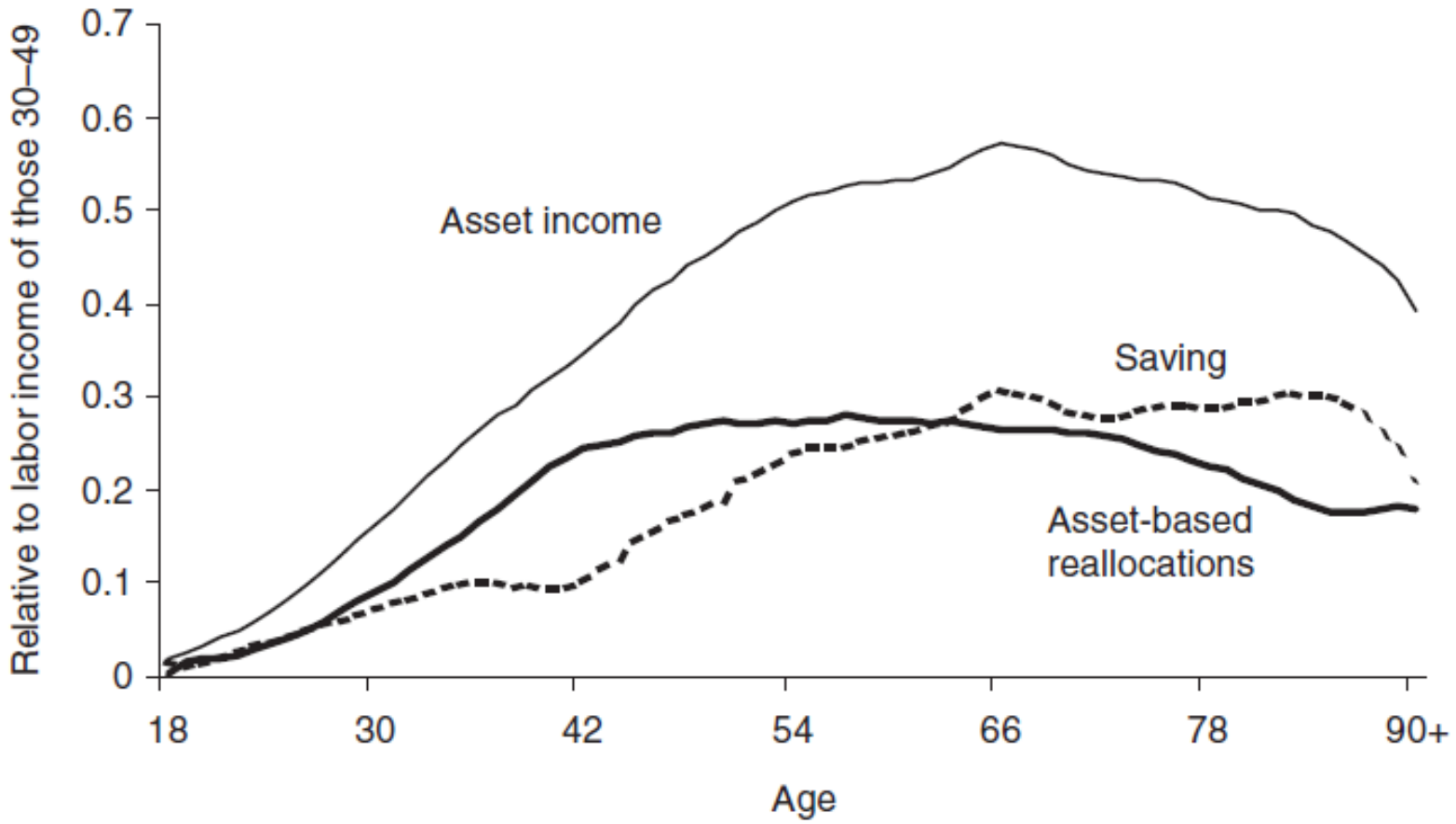
- private ABR usually dominates public ABR

- we assume that household head is the only one who owns private asset-based reallocations

- older generations save approximately as much as younger adults at the peak of their labor income; decline more likely reflects cohorts differences in wealth (older adults have fewer asset income because they earned lower wages then younger cohorts do)

- high ABR for ages 20-40: 1) high capital transfers from family members in the time of marriage, 2) cross-sectional, rather then longitudinal data; past savings were much higher then today (behavioral reasons or year of unusual macroeconomic conditions)

Figure 3: Asset-based reallocations, example of 17 NTA countries



Note: The 17 economies are Austria, Brazil, Chile, Costa Rica, Germany, Hungary, Indonesia, Japan, Mexico, Philippines, Slovenia, South Korea, Spain, Sweden, Taiwan, Uruguay, and US.

Source: Lee, R., & Mason, A. (2011). Population Ageing and Generational Economy, p. 217

„SURPRISING“ EMPIRICAL RESULTS (4)

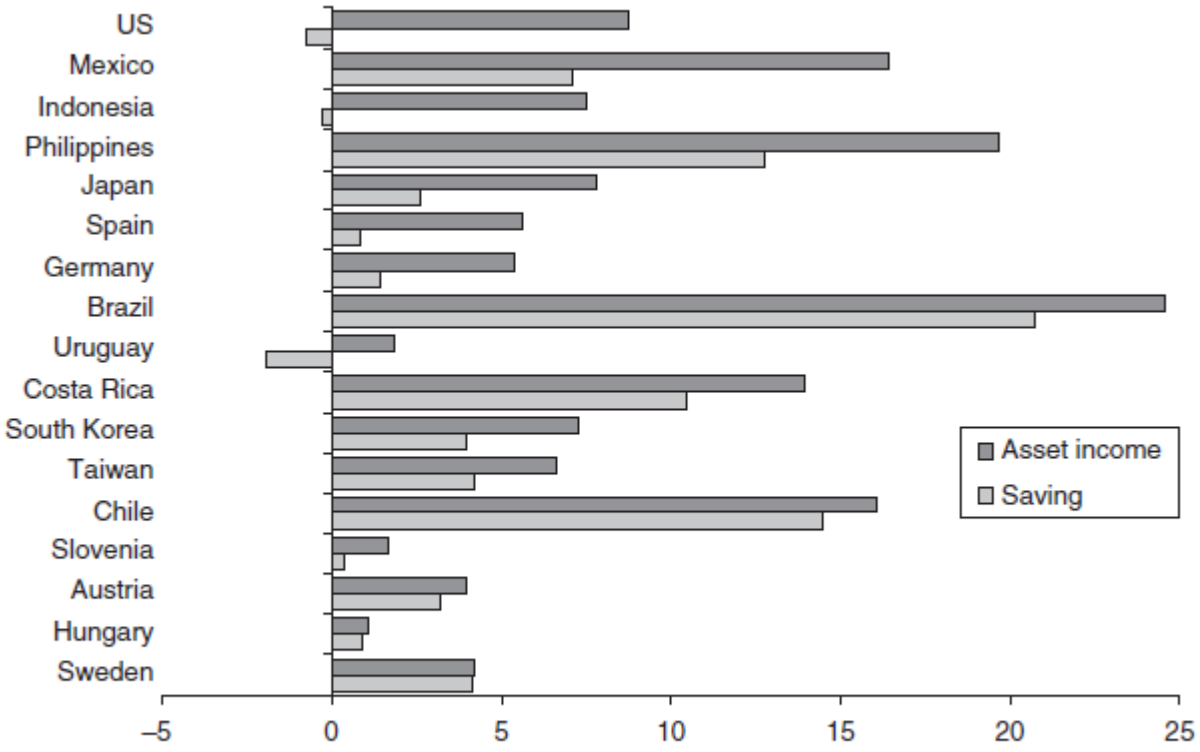
- there exists strong connection between ABR at working ages and child rearing costs; even more surprising is that connection is due to the asset income and not savings

- possible explanations: 1) in countries with higher child dependency, working age adults have higher asset income due to higher capital transfers received; 2) higher child dependency in lower income countries; the lower income countries have higher risk premium and therefore higher return on asset

- only in few countries old people dis-save; this means that they rather rely on asset income

- widely held view that population ageing will lead to a decline in wealth is not supported by empirical evidence

Figure 4: Asset income and saving for 65+ age group



Note: Values are normalized on mean labor income of those 30–49. Units are years of prime-age adult labor income.

Source: Lee, R., & Mason, A. (2011). Population Ageing and Generational Economy

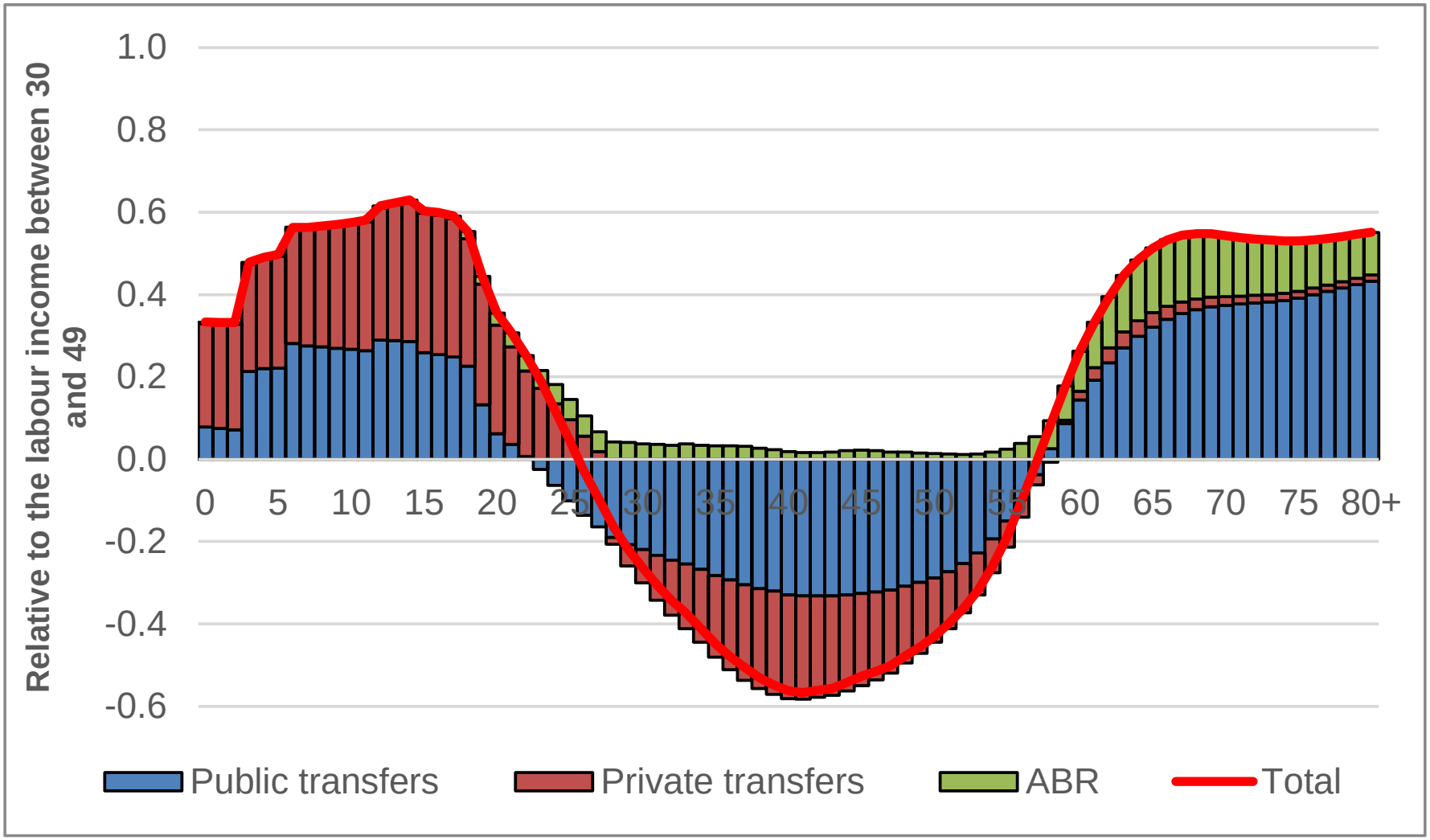
IMPORTANCE OF DEMOGRAHIC CHANGES ON ABR

- the change in fertility, mortality, and age structure may influence consumption, labor income, and, thereby saving and asset income

- changes in mortality rate increases demand for lifecycle wealth at all ages (or maybe not)

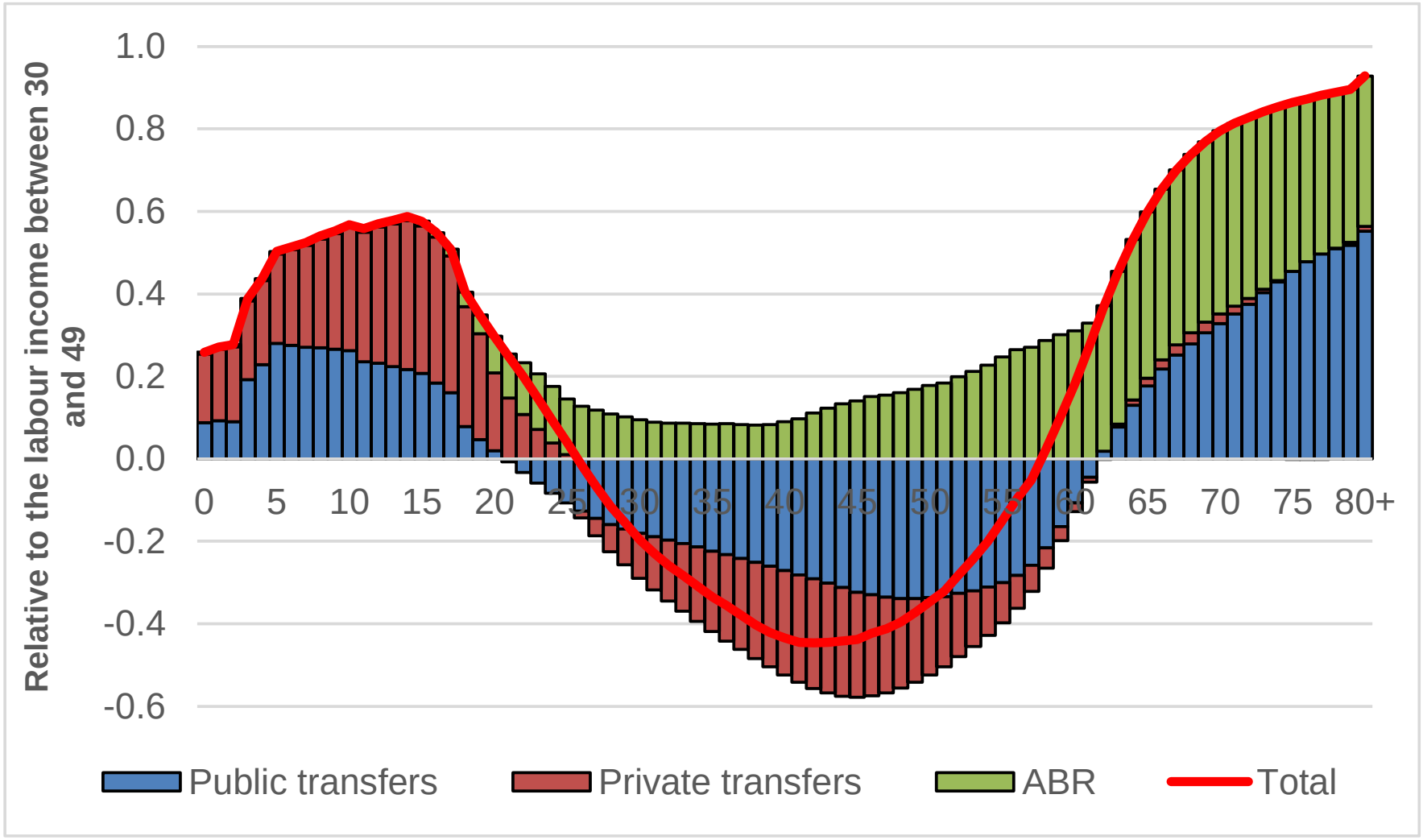
- changes in fertility: decline in number of children can be strongly accompanied by quality-quantity trade-off, increasing income spent per child; this will cause higher transfers (financed through YL or ABR) compared to the situation where quality-quantity trade-off is weak

Financing the LCD in 2010 in Slovenia



Source: *AGENTA Data Explorer*. (2021). http://www.agenta-project.eu/en/dataexplorer.htm

Financing the LCD in 2010 the UK



Source: *AGENTA Data Explorer*. (2021). http://www.agenta-project.eu/en/dataexplorer.htm

Country	Age of adulthood	Tau_f	Age of becoming dependant in old age	Tau	First DD	Second DD	Combined
Austria	25	59.5	59	74.6	-16	2	-15
Belgium	24	52.6	59	51.8	-14	7	-7
Bulgaria	26	80.5	56	53.7	-21	8	-15
Cyprus	30	72.4	60	56.2	5	8	14
Czechia	26	60.4	57	56.6	-21	7	-16
Denmark	26	56.2	62	53.7	-12	6	-6
Estonia	25	63.9	59	84.6	-15	1	-14
Finland	27	63.1	60	67.8	-12	3	-9
France	24	57.6	59	52.8	-15	6	-10
Germany	27	65.4	60	45.9	-19	7	-13
Greece	32	99.9	55	99.9	-20	0	-20
Hungary	25	60.1	58	64.1	-19	5	-15
Ireland	28	67.3	59	41.4	-16	27	7
Italy	27	65.8	59	58.1	-20	5	-16
Latvia	26	66.5	58	61.5	-17	4	-14
Lithuania	29	72.9	56	48.4	-15	10	-7
Luxembourg	25	43.0	59	38.7	-14	34	16
Poland	26	69.0	56	62.9	-23	6	-18
Portugal	27	72.2	58	51.2	-19	9	-11
Romania	26	79.7	54	49.9	-24	12	-14
Slovakia	26	72.5	56	55.7	-25	10	-18
Slovenia	26	63.4	58	73.2	-25	3	-23
Spain	27	64.7	60	57.3	-22	7	-16
Sweden	27	54.2	64	67.4	-6	3	-4
UK	26	63.1	58	40.7	-12	14	0

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Lee, R., & Mason, A. (2011). Population Ageing and Generational Economy. A Global Pespective.

Mason, A., Ogawa, N., Chawla, A., & Matsukura, R. (2008). Asset-based reallocations: Concepts and Estimates for Selected Countries

THE END

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