

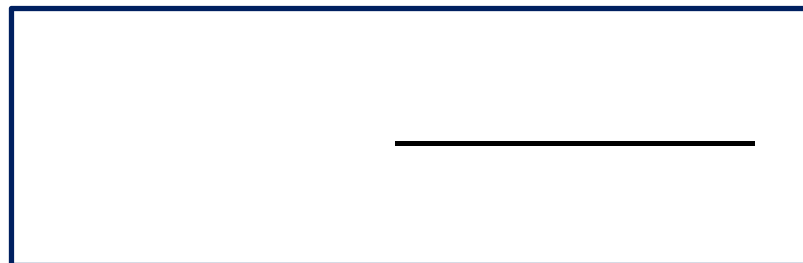
# Quantifying Economic Dependency



# Economic Dependency Measures

**Characteristic feature of the economic life course:**

# Definition and Calculation of Dependency Ratios



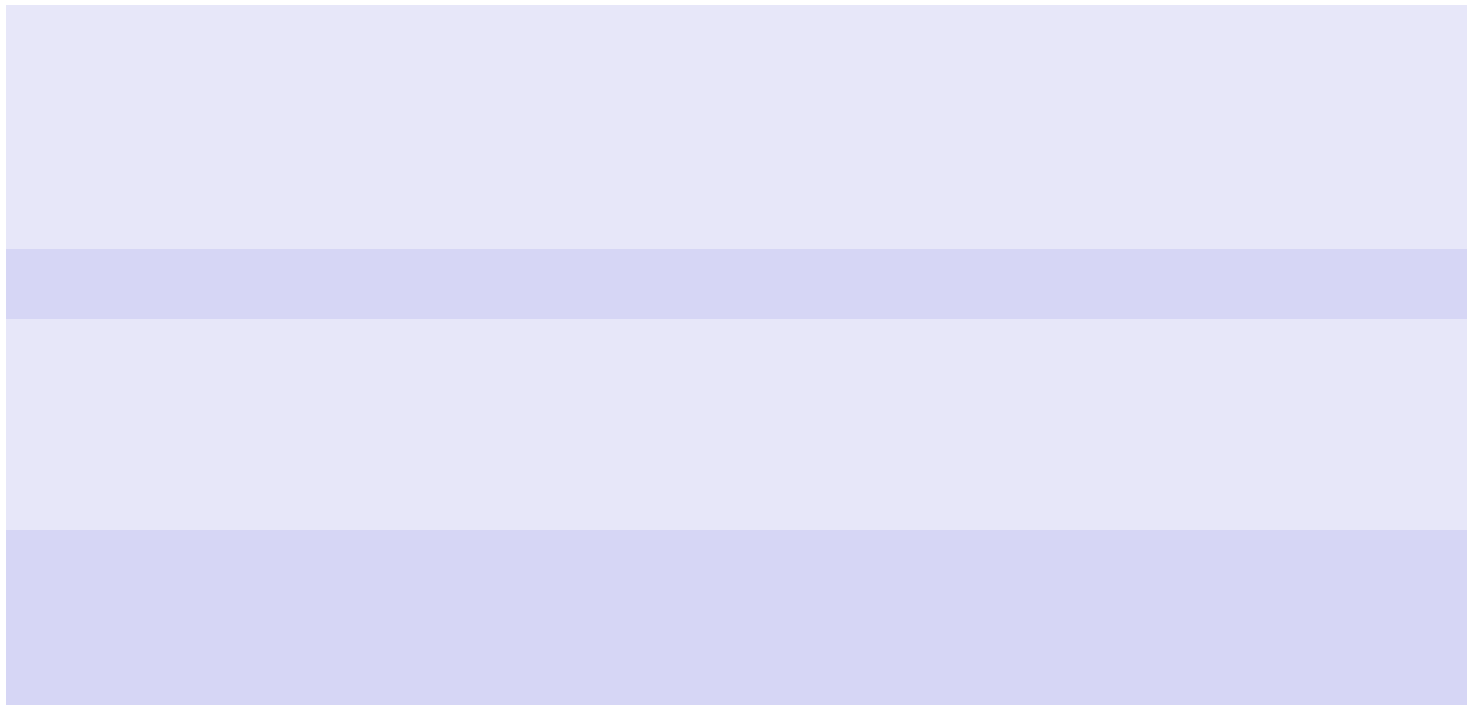
... **measure of dependency** as a function of the characteristics  $X_i$  of individual  $i$

( ) ... **measure of the ability to support** others as a function of the characteristics  $X_i$  of individual  $i$

## Examples:

	<b>Dep(.)</b>	<b>Sup(.)</b>	
<b>Demographic dependency</b>	1 if age<20 or age>59,	1 if age 20-59	Number of children and elderly per person in working age.
	0 otherwise	0 otherwise	
<b>Employment based dep.</b>	1 if non-employed,	1 if employed	Non-employed persons per employed person.
	0 otherwise	0 otherwise	

# Employment Based Dependency Ratio (2015)

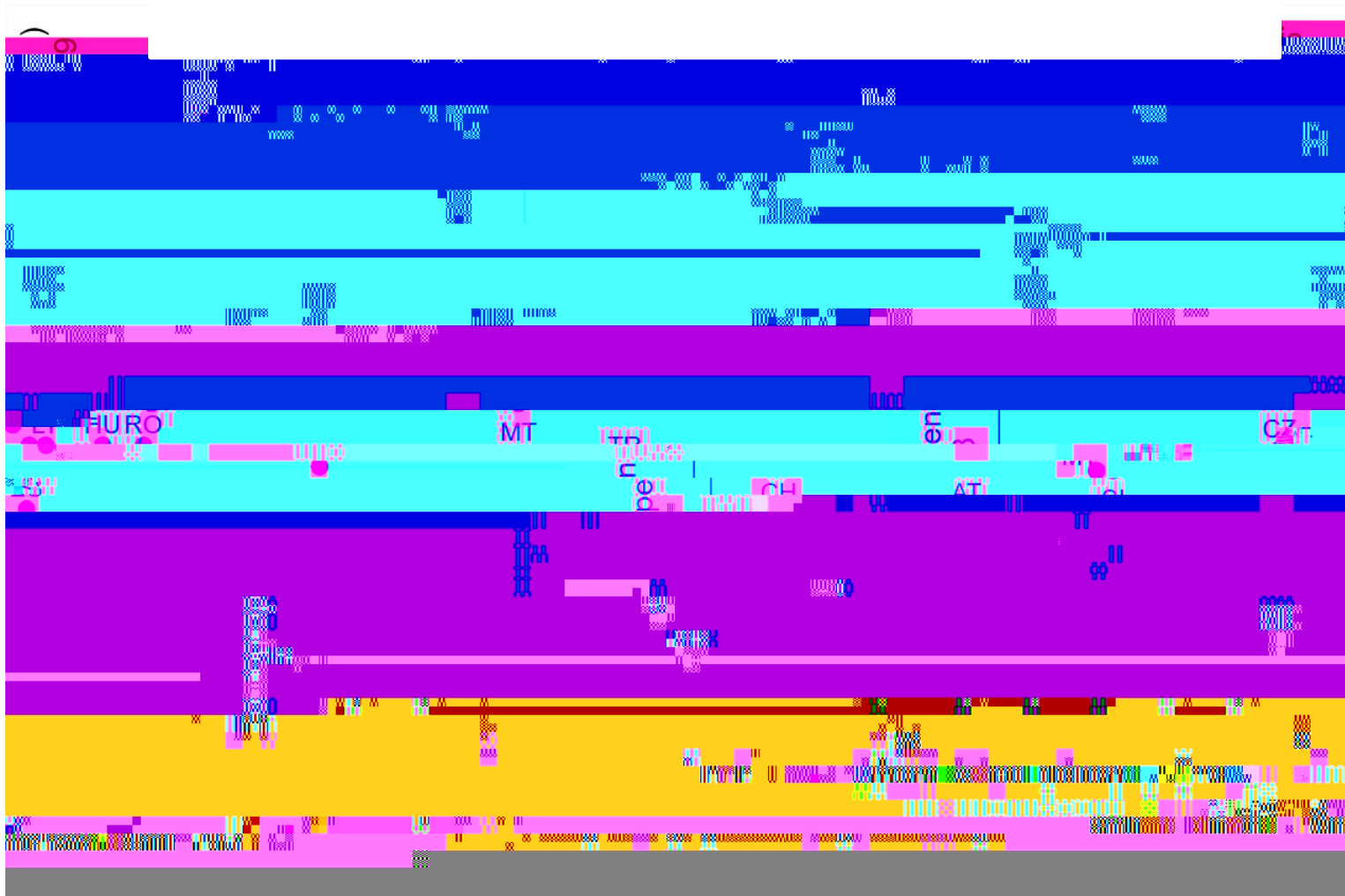


# Employment Based vs. Demographic DR (2015)

20                      59

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20    59



# National Transfer Accounts (NTA)

NTA introduce **demographic information** into National Accounts

National Transfer Accounts (NTA) measure by demographic groups:

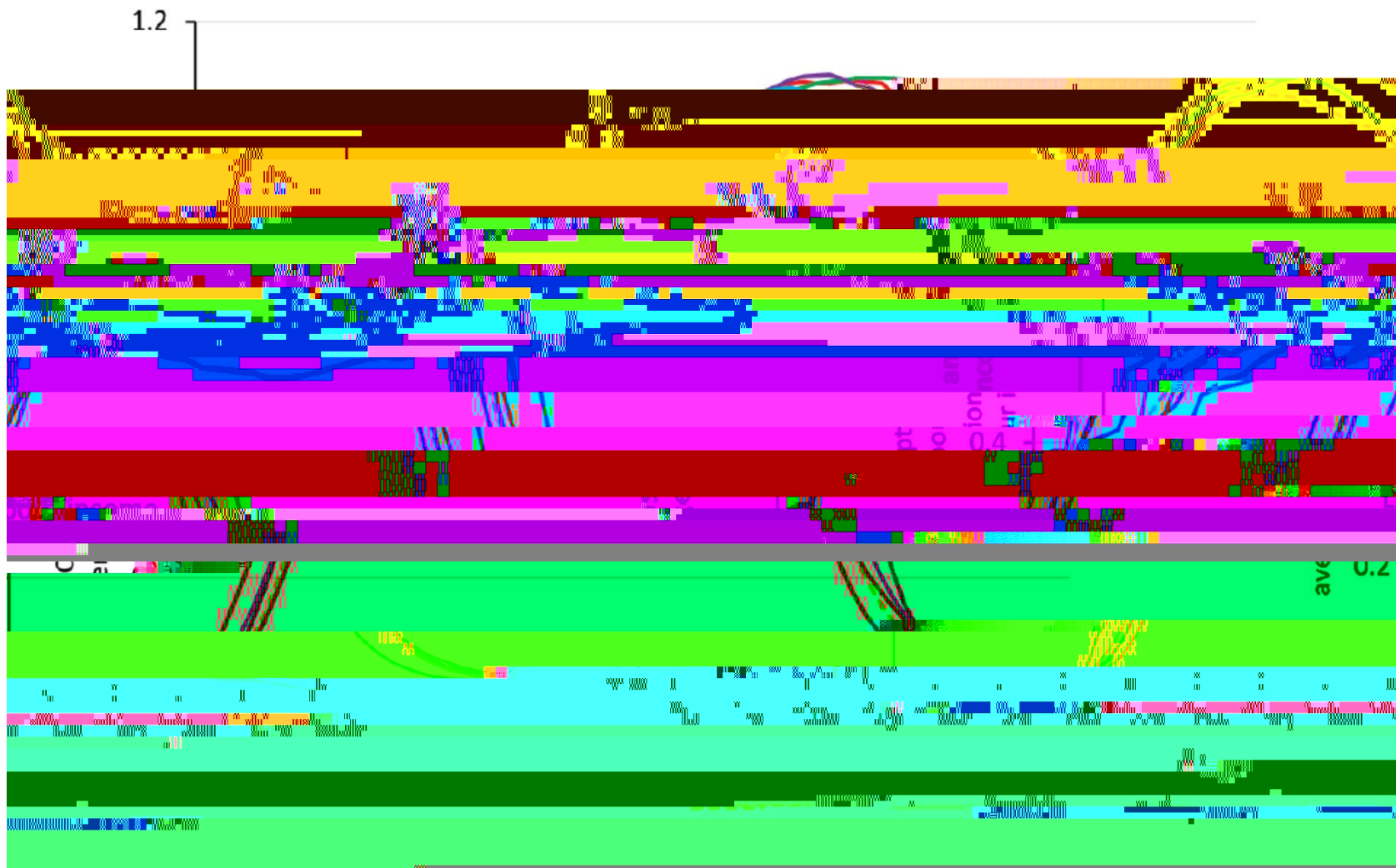
**Production and the generation of income**

**Distribution of income:** public and private transfers

**Use of income:** consumption and saving

The dataset contains **per-capita averages** of income, transfers contributions, transfer benefits, consumption and saving by demographic group => age-profiles of extent of economic activity

# Consumption and Income across age (~2010)



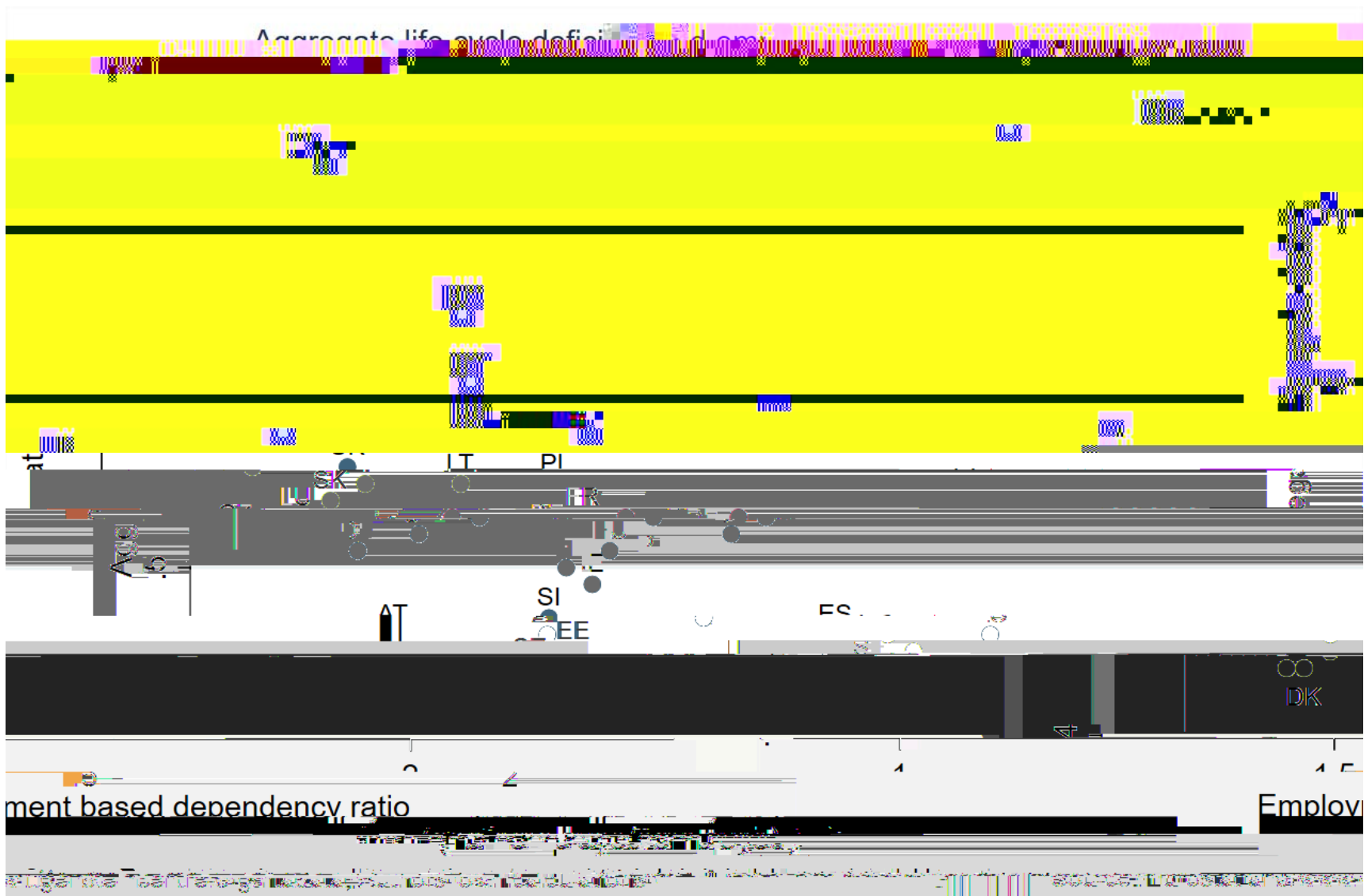
# Aggregate Life Cycle Deficit (LCD) (~2010)

Aggregate LCD	Dep(.) Consumption of children and elderly that is not financed by their own labour income	Sup(.) Labour income	Interpretation Amount of consumption of children and elderly relative to labour income
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Country	LCD positiv until	LCD negativ until	Aggregate LCD
AT	24	59	0.46
DE	26	60	0.51
ES	26	60	0.46
FI	26	60	0.50
FR	23	59	0.53
HU	24	58	0.51
IT	26	59	0.58
SE	26	64	0.43
SI	25	58	0.47
UK	25	58	0.56



# Aggregate LCD vs. Employment Based DR

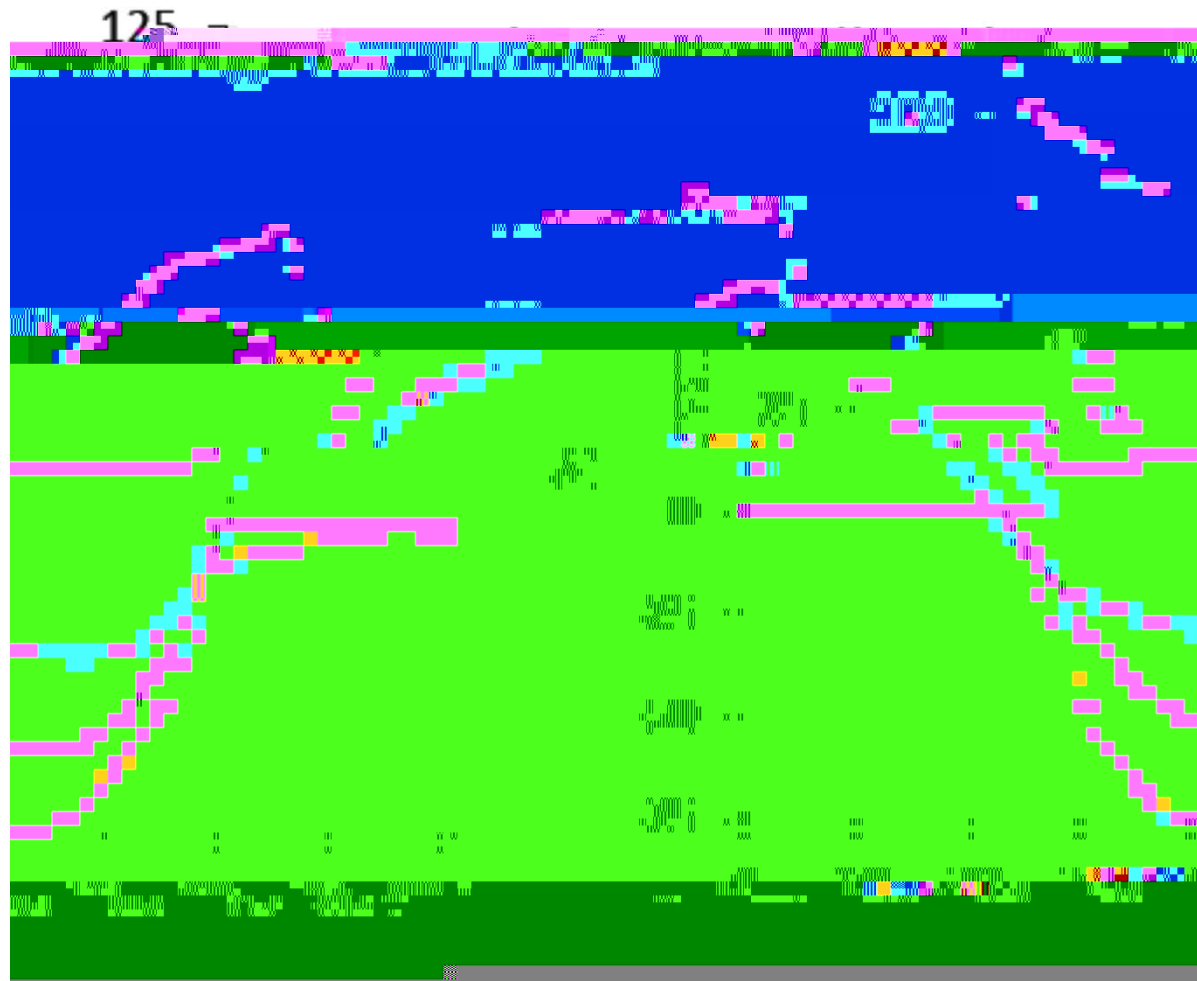


# Financing of life cycle deficit

**life cycle deficit** can be financed through:

- a) **public transfers** (health, pensions, education, ...)
- b) **private transfers** (parents financing the consumption of children)
- c) **asset-based reallocation** (during working age)  $q$   $I$   $r$   $e$   $o$   $n$   $e$   $t$   $-$

# Inter-age reallocations



not recent based reallocations   not time transfers   not private transfers

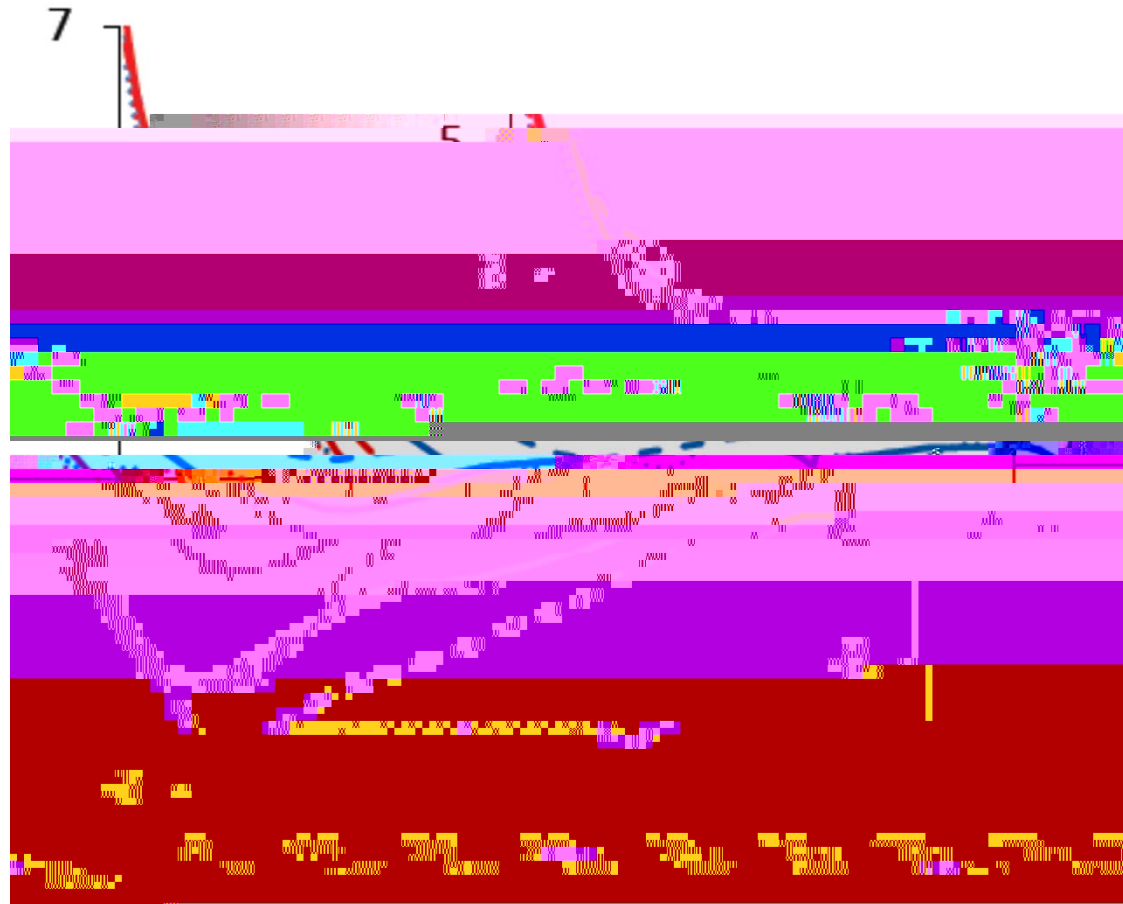
Source: Gal and Varga (2017)

# Inter-age reallocations by visibility in Europe



Source: Gal and Varga (2017)

# Net time transfers by gender



Source: Gal and Varga (2017)

# Conclusions

## Economic dependency determined by:

demography

age-specific type and intensity of economic activity

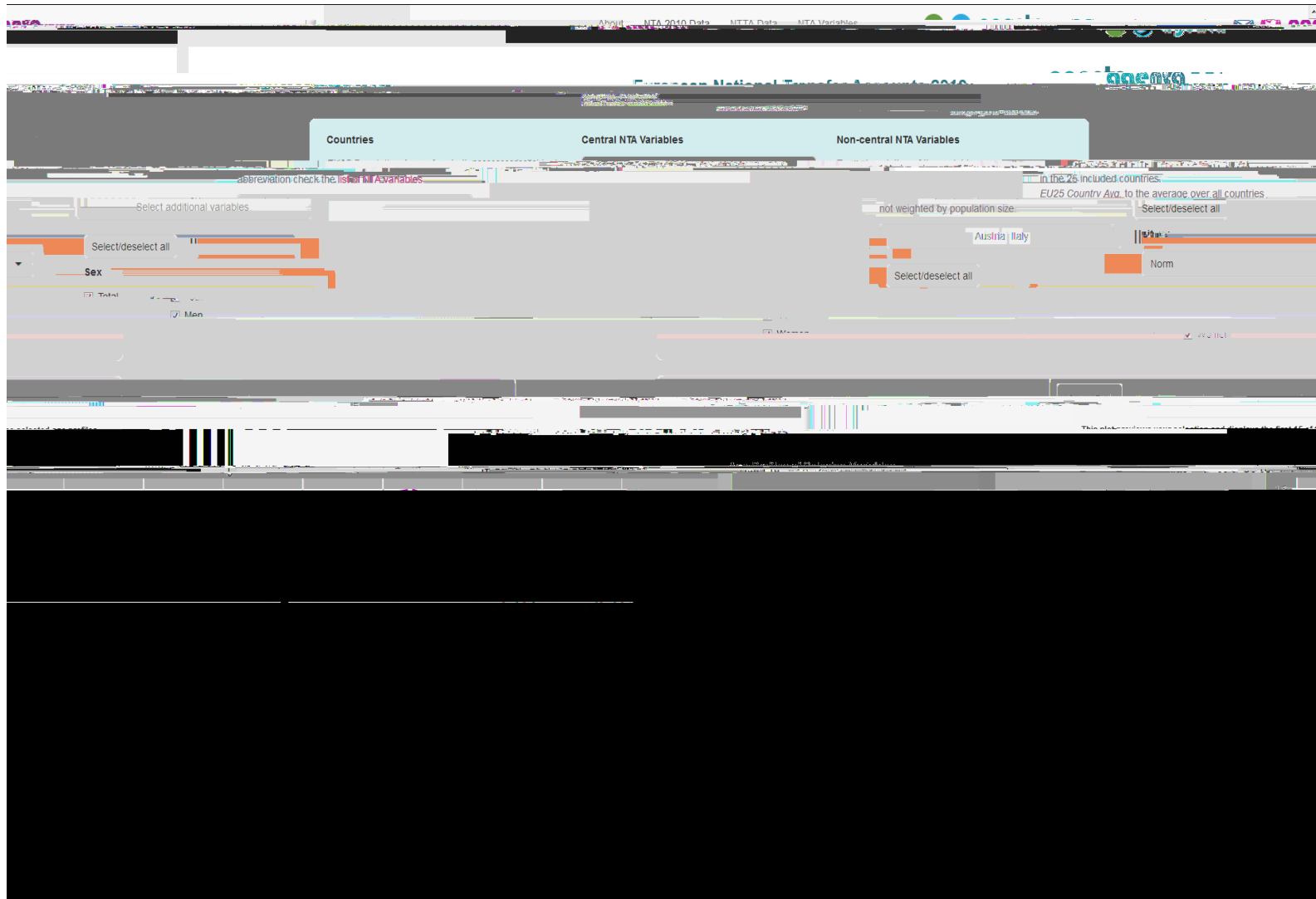
definition of dependency

## Effective ways to decrease economic dependency

- use of labour force potential in working age (including increase in retirement age)
- investment in human capital as the source of future benefits!
- use of assets for old age provision

How dependency rates are defined plays a crucial role in how we measure and think about the dependency.

# Data Explorer



[www.wittgensteincentre.org/ntadata](http://www.wittgensteincentre.org/ntadata)

# References

Loichinger, E., Hammer, B., Prskawetz, A., Freiberger, M. and J. Sambt (2017) **Quantifying Economic Dependency**, European Journal of Population 33, 351-380.

Prskawetz, A., and B. Hammer (2018) **Does education matter? – economic dependency ratios by education**, Vienna Yearbook of Population Research 16

Zanella, M., Hammer, B., Prskawetz, A. and J. Sambt (2018) **A Quantitative Assessment of the Rush Hour of Life in Austria, Italy and Slovenia**, European Journal of Population 33, 351-380.

<http://agewell.eu/> **AWA – Age Well Accounts**

<http://www.agenta-project.eu/en/index.htm> **AGENTA**



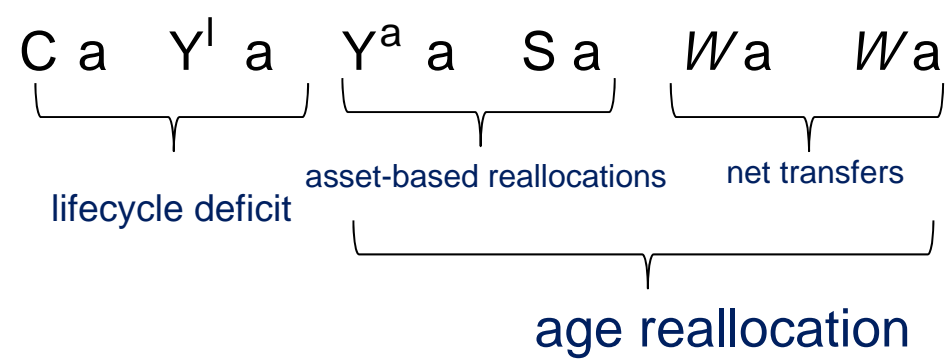
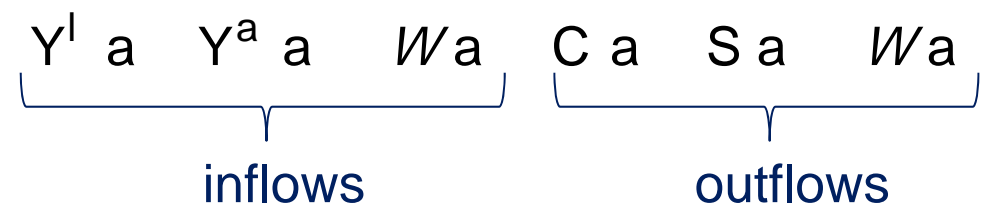
**Many thanks**





Inflows( 5

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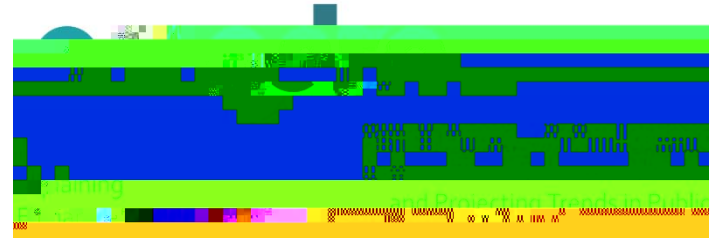


(Source: Mason 2007)

# AGENTA Project

AGENTA project:

[www.agenta-project.eu](http://www.agenta-project.eu)



Joint research project of 9 European partners funded by the European Union's FP7 framework programme (grant agreement no 613247.) 2014-2017

Explaining and forecasting public transfers in the light of demographic change

Important part of the project: **gender-specific NTA and NTTA for European countries**

Use of harmonized and publicly available data from Eurostat (ESA, EU-SILC, HBS...)

NTA for almost all EU countries

Using exactly the same methodology

NTA-Project: [www.ntaccounts.org](http://www.ntaccounts.org)

Founders and coordinators: Ronald D. Lee (University of Berkley), Andrew Mason (East West Center Hawaii)

Teams from 50 countries

Development of methodology and collection of data

Lee, R. and Mason, A., editors (2011). ~~Gap~~

~~Gap~~

UN (2013).