

Labor Income and Life Cycle Deficits of the Elderly in Taiwan, 1985 vs 2015

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Outline

Introduction

A. (data issue) What does new information on social insurance tell us about support for the elderly?

B. (institution/methodology issue) With deferred wages considered, do the elderly become less poor?

C. (policy issue) With pension reform (and population aging), what to expect?

Concluding remarks and work in progress

Apology: The study range was reduced from “1981 to 2015” to “1985 vs 2015”, with 1995 and 2005 also discussed; some longitudinal results will appear in the following session

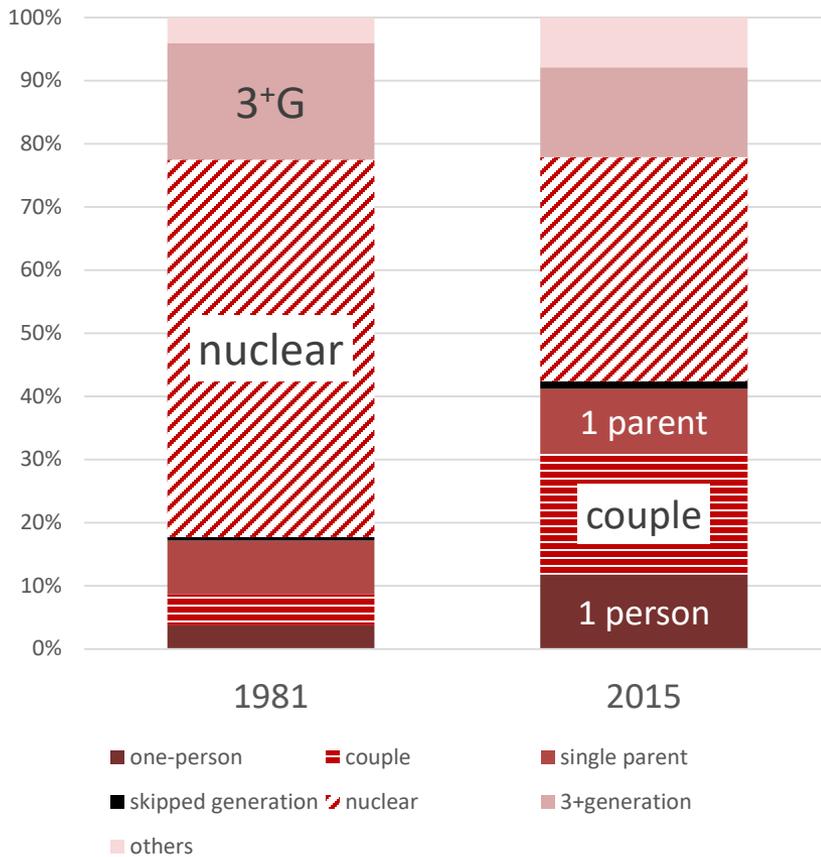
1. Introduction

About this study

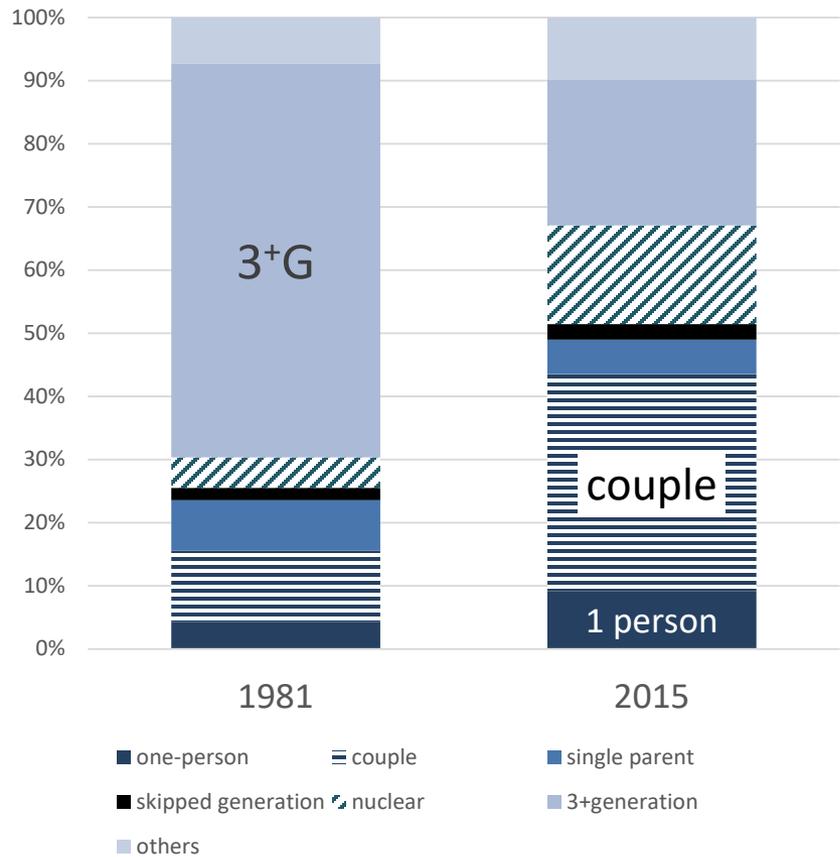
- Basic findings on elderly economic security
 - ✓ Taiwanese elderly relied mainly on YL and TF to finance C in 1985, but more on TG and RA in 2005 (Lai and Tung, JOEA, 2015)
- New developments
 - ✓ Policy changes after 2005:
 - New programs: National Pension (2008), Long-term Care (2019?), new Labor Pension Plan (2005)... [elderly TG inflow may increase]
 - Pension Reform (2018) for public employees (uncertain about private employees)
 - ✓ Other changes:
 - Population aging: TFR=1.125 in 2017 [impacts on YL, RA and TFW]
 - Family miniaturization: Although still quite a few 3+ generation families [less TFW inflows/outflows, but maybe more TFB flows]
 - Economic slowdown (real GDP growth = 8.24% in 1981~1990, 2.46% in 2011~2017, and likely to be lower in the future) [impacts on YL, TF...]

Households are becoming smaller

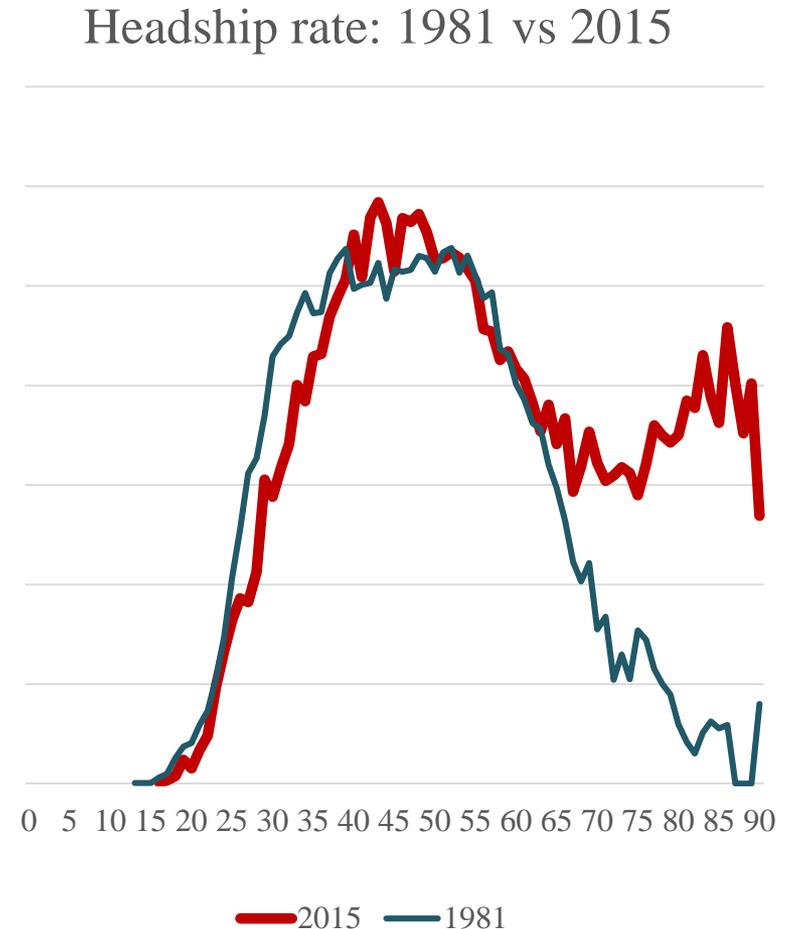
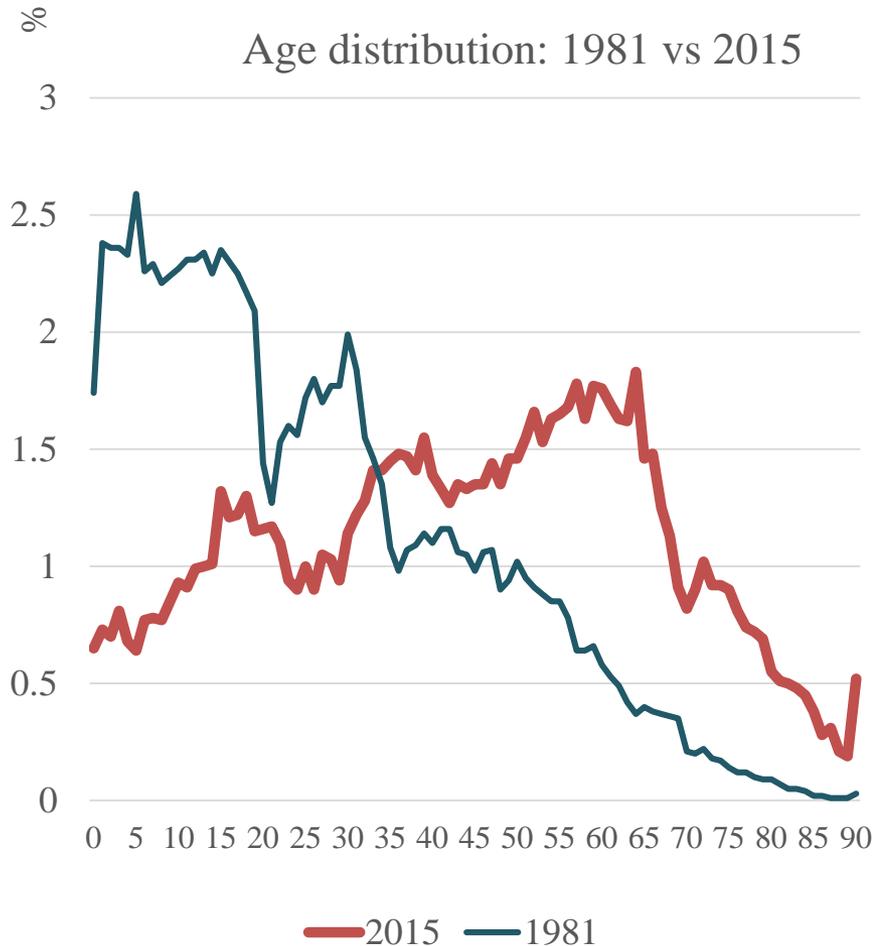
By number of households



By number of elderly persons



Population aging



About this study (2)

- Some data and methodology issues

- A. Data revision

- ✓ No social insurance data for 1981-92 (partial data for 1993-95)
 - TG inflow/outflow 1981-92 was underestimated in previous studies

- B. Deferred wage payments

- ✓ The occupation retirement system is always evolving, some cohorts get much better deals than others
 - Standard NTA: If allocated to current workers, elderly YL is low
 - “Taiwan” version: If allocated to the retired, per capita elderly YL becomes higher, but intra-familial transfers are lower

- C. What are the impacts on elderly economic security?

- ✓ Pension reform
 - ✓ Population aging (very crude now)

A. Who supports the elderly,
with revised social insurances data?

Including social insurance, 1981-1992

Problem

- ✓ TG was not measured correctly for 1981-1992 because no micro data for the following: Government Employee Insurance, Labor Insurance, Farmers' Insurance (since 1985), Servicemen Insurance

How to “recover” the missing data to make TG correct?

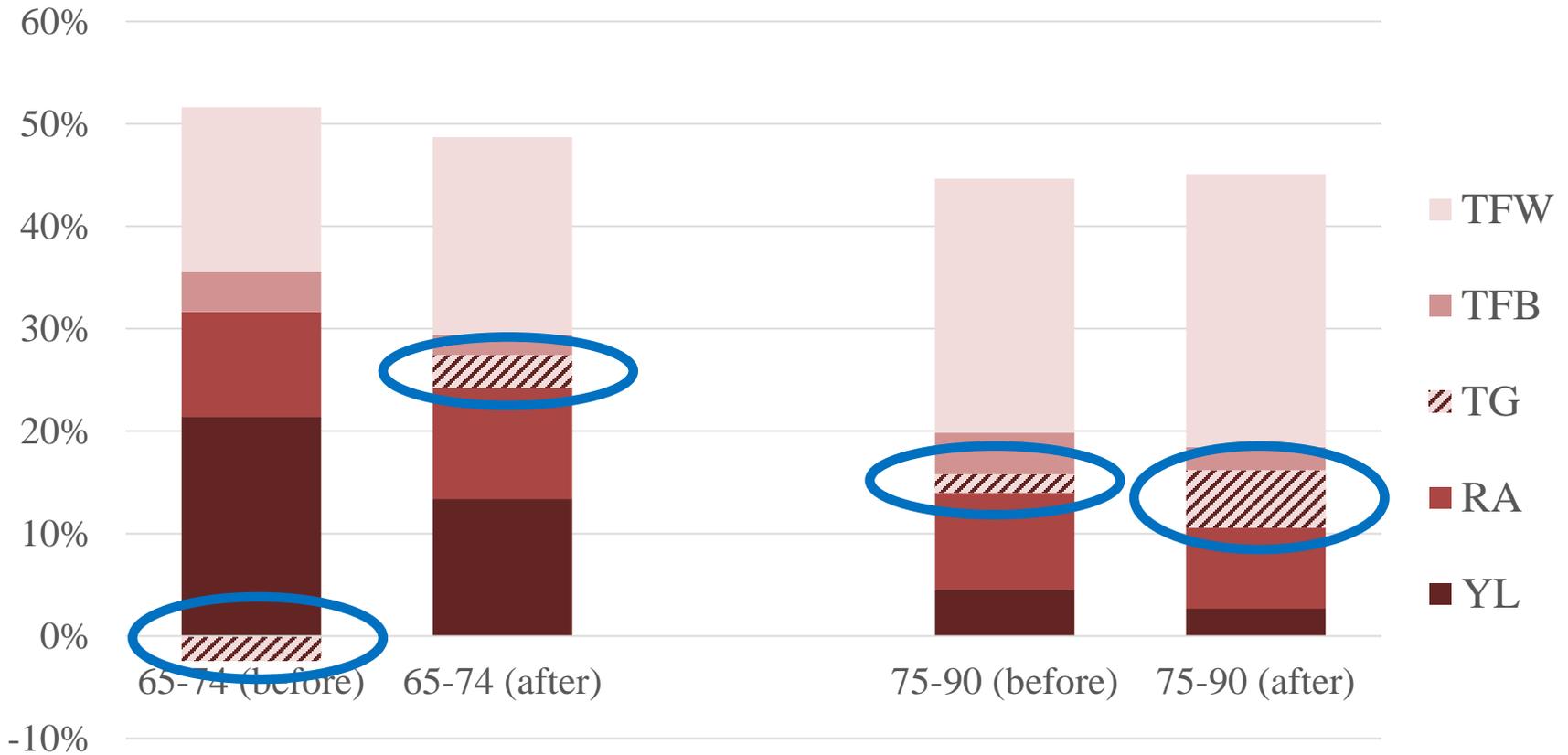
- ✓ We identify **who** should be subject to **which** social insurance by using individual characteristics, such as age, sector, industry, occupation and so on
- ✓ Then estimate using the unsmoothed **1993-1995 age profile** of the ratio of contribution or benefit over wages per insured person (as not every insured person gets a benefit every year, the latter result is less reliable)

Results

- ✓ Before 2005, almost same findings, but magnitude differs: YL↓, TF↓, TG↑, RA↑
- ✓ In 2015, somewhat different trend, probably due to greater increase in TG

Revised data result in large TG changes, 1985

Standardized by YL 30-49

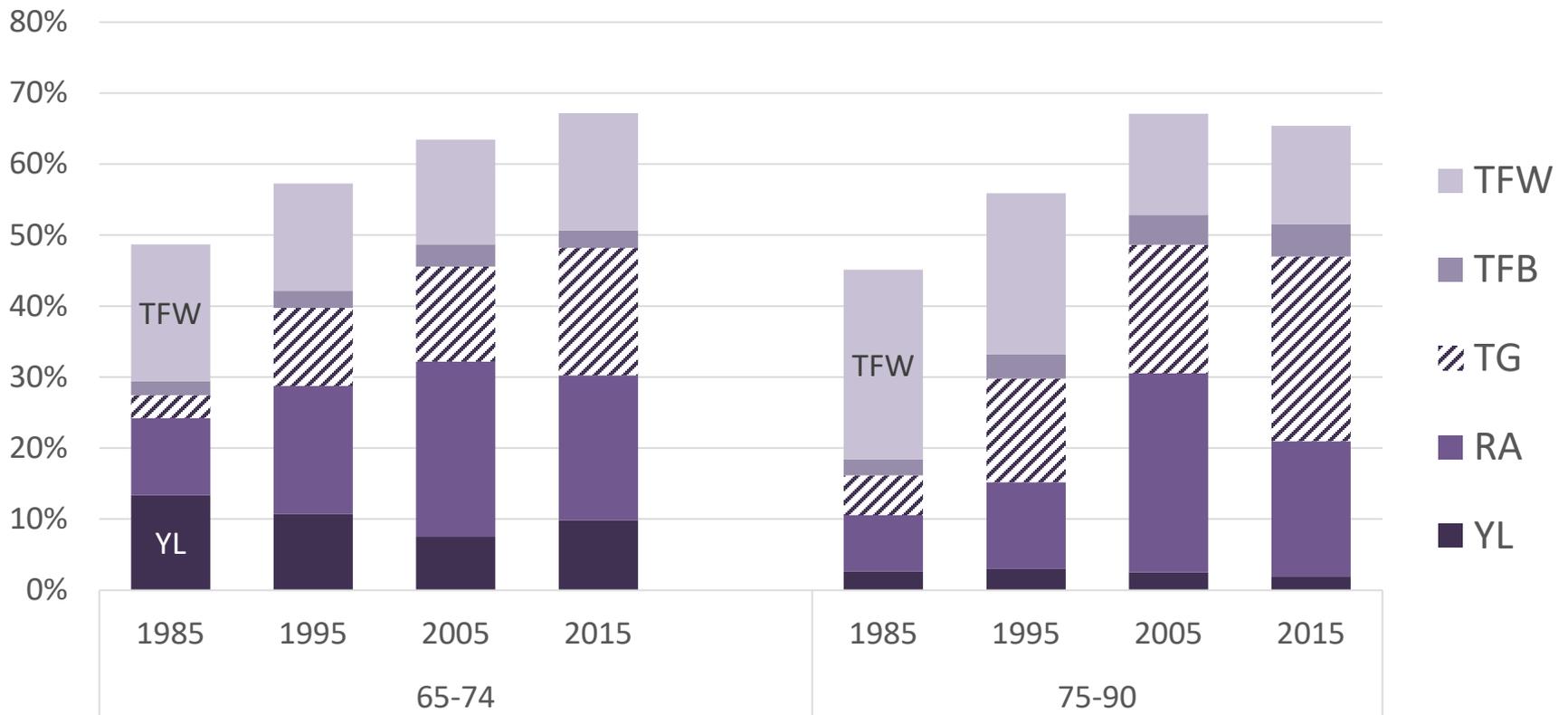


Comparing 1985, 1995, 2005, and 2015

(1) Before 2005: similar findings (YL↓,TFW↓, TG↑, RA↑), less dramatic

(2) In 2015: TG increases more, especially for older elderly (* to be explored)

Financing C, standard NTA, standardized by YL 30-49



B. With deferred wages considered,
are the elderly richer than we thought?

YL of elderly, recalculated

The pension system is complicated (see table on next slide)

1. Some are included in NTA as TG (e.g., old-age payments as part of LI)
2. Three programs are recorded in GDP as **wage compensation at time of payment**, called YLE2, YLE3 and YLE4, to distinguish from YLE1 of wages paid to current workers
 - ✓ YLE234 (=YLE2+YLE3+YLE4) is small (0.61%-4.23%) in total YLE of all ages, but is large (65.8% in 2015) for the elderly
 - ✓ The ratio may get lower in the future, when these programs phase out in 2 to 3 decades (the present Pension Reform will speed up the process)
3. Some programs are not considered in NTA (e.g., fully funded Labor Pension Plans), which are implemented to replace the YLE2~4, mainly for fiscal considerations (*shall be explored in the future)

A complicated occupational pension system

Program	Benefit	Contribution	In NTA	In GDP
OA benefit of GEI and Servicemen Insurance	Lump sum at retirement	during working years	TG	TG
OA benefit of LI	Lump sum at retirement until 2008	during working years	TG	TG
YLE2: old Public Servant Pension Fund	Annuity	~	~	YLE
YLE3: high yield deposit linked with old PSPF	Annuity	~	~	YLE
YLE4: old Labor Pension Plan	Lump sum at retirement	~	~	YLE
new Public Servant Pension Fund, since 1995	Annuity	during working years	~	~
new Labor Pension Plan, since 2005	Annuity	during working years	~	~

Notes

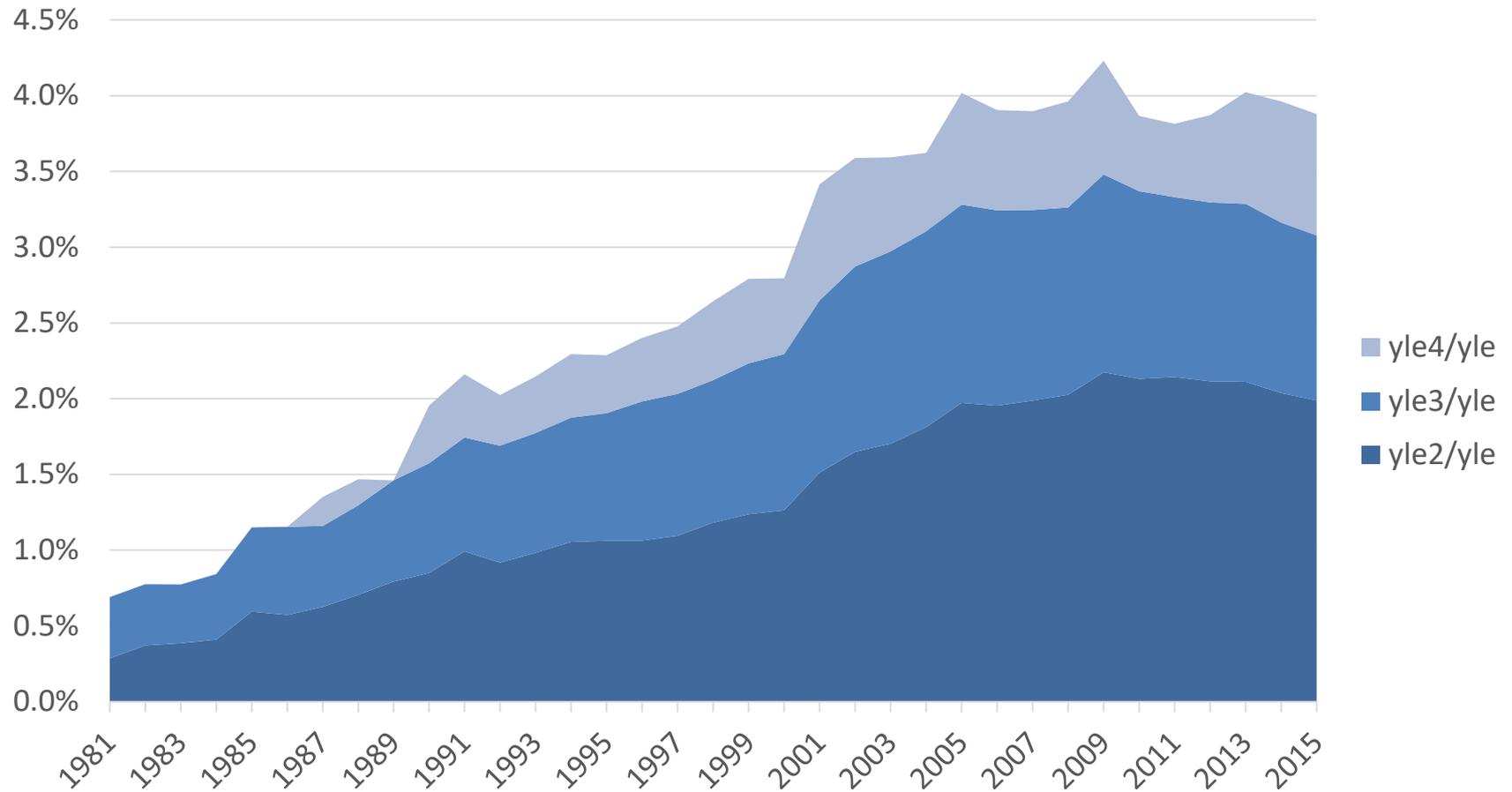
- Old public servant pension fund (YLE2): Age profile comes from the “retirement wage income” in FIES; aggregate statistics are calculated from data in various official actuarial reports
- High yield deposit (YLE3): Same as YLE2, with the additional criterion of whether total interest income of the retired person is above a certain level
- Old labor pension (YLE4): Age profile comes from current workers; aggregate statistics are from Ministry of Labor

YL of elderly, recalculated

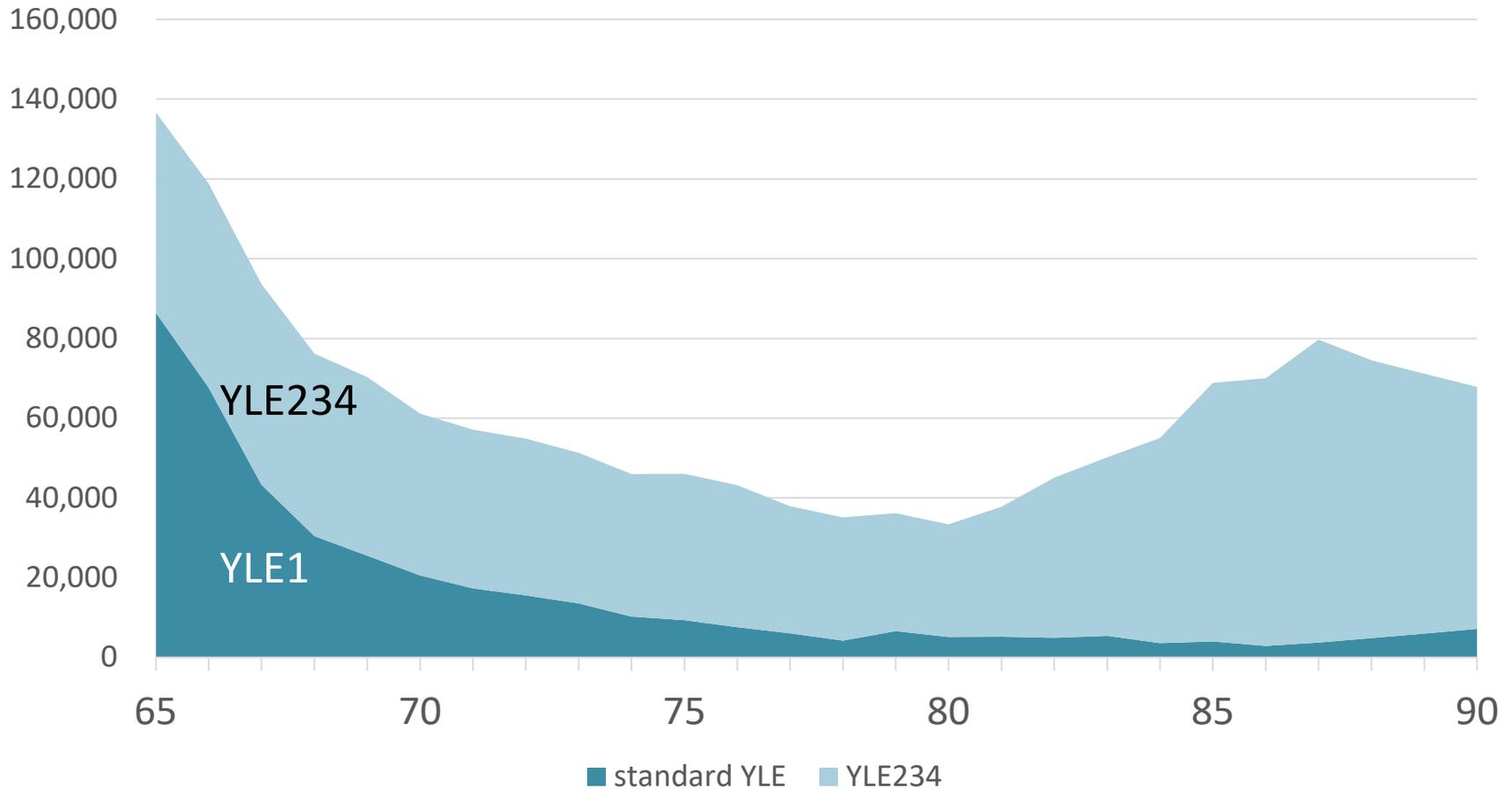
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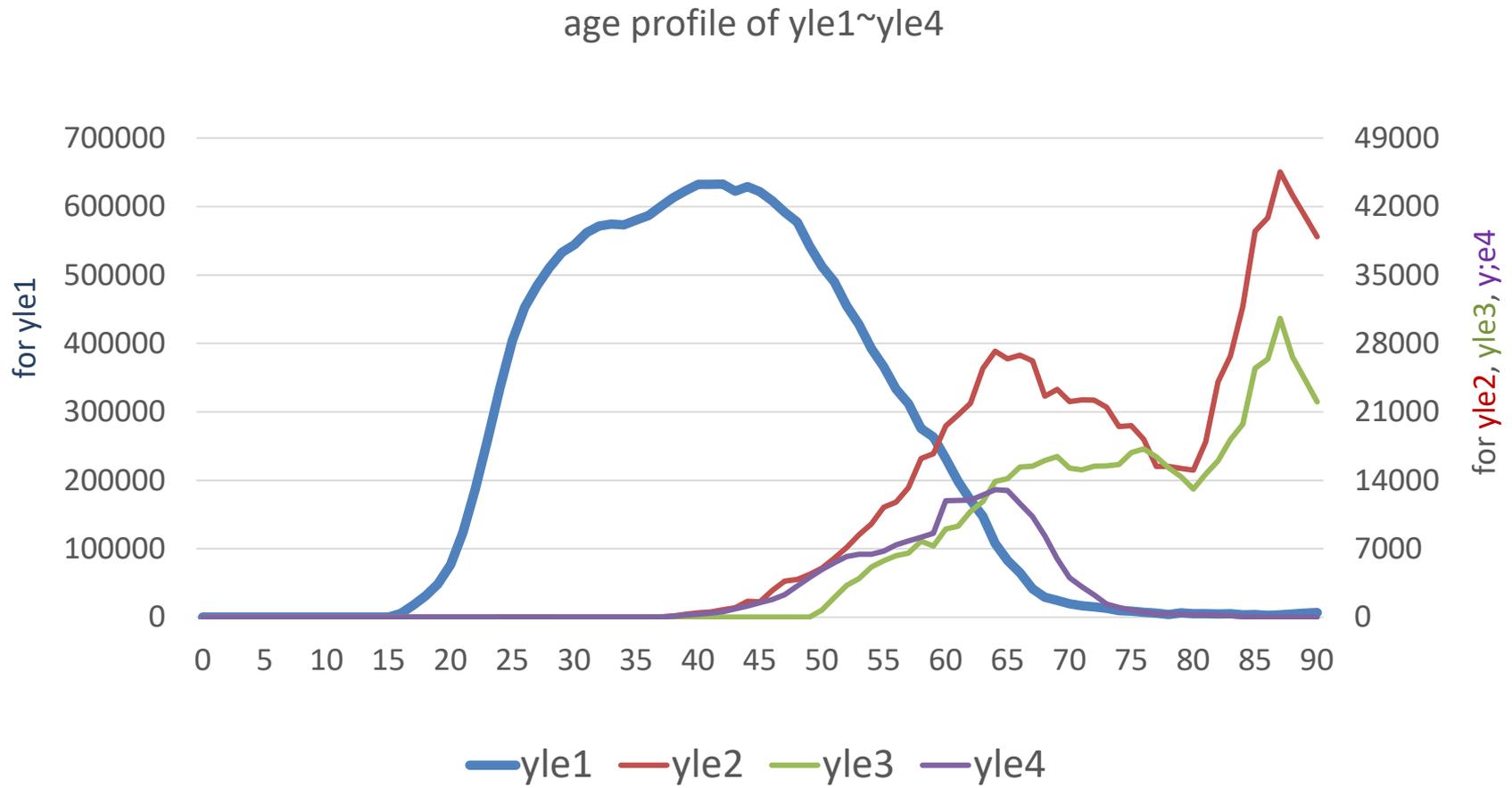
YLE2~YLE4 is small as percentage of YLE



YLE2~YLE4 is very large for the elderly



Age distribution of YLE1 vs YLE2~YLE4



YL of elderly recalculated

Question: Should we allocate YLE2~4 to current workers?

- ✓ No, because the ratio is not stable, and data only available when paid
- ✓ For example, the YLE234/YLE ratio was 4.23% in 2009, but when those at work in 2009 retire, they receive retirement payment at a much smaller (even zero) ratio
- ✓ Some cohorts (those who retired in 1995-2005) probably gain more than others

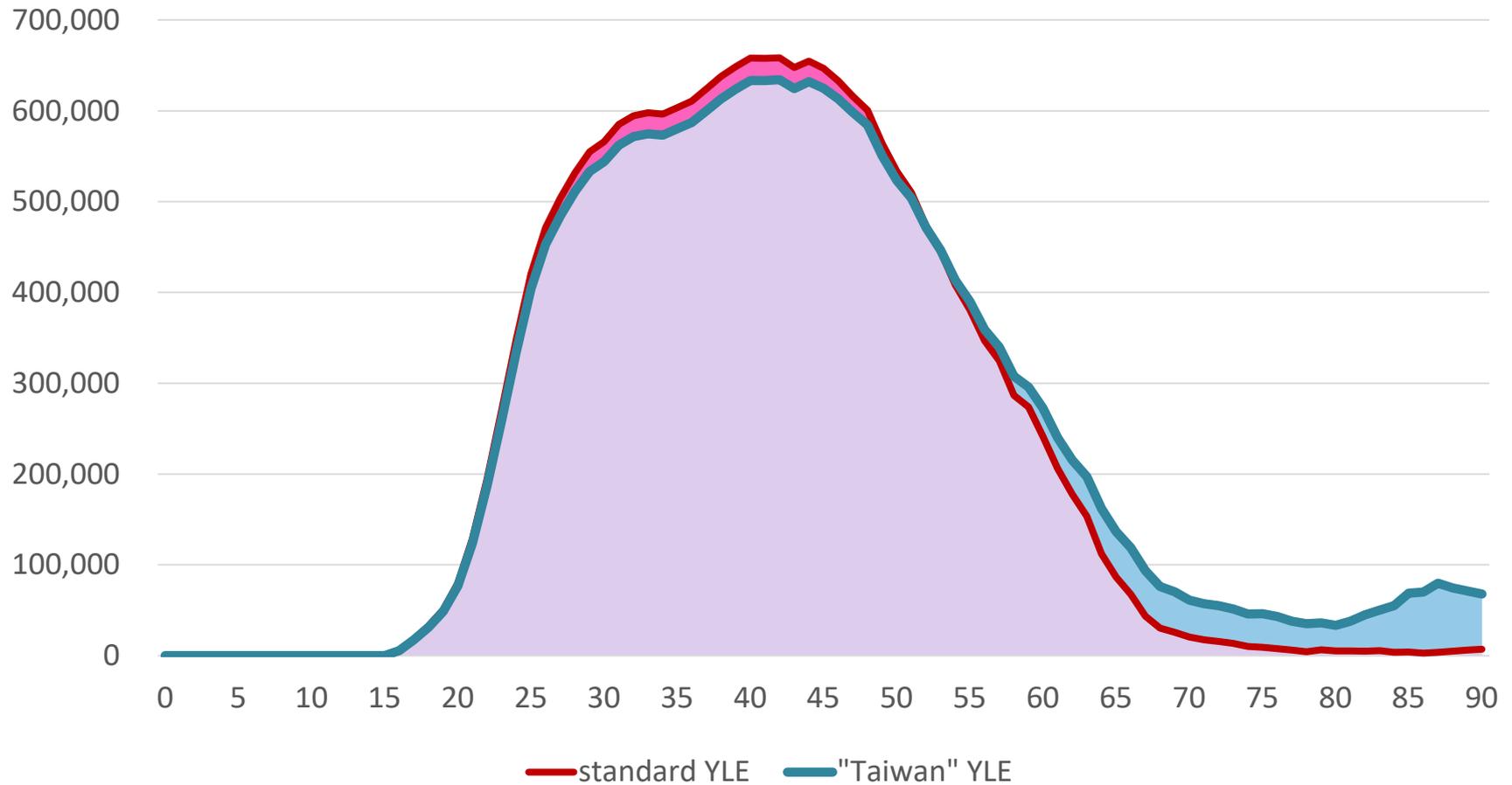
Another way to treat deferred wage payments

- ✓ Standard NTA method: Aggregate YL is allocated only to those at work
- ✓ “Taiwan” method: Aggregate YL is allocated to both current and retired workers, by type of payment, namely YLE1 to current workers, and YLE234 to retired workers

Standard vs “Taiwan”

- $C = YL + RA + TG + TF$
 $= (YLE + YLS) + (YAF - SF + RAG) + TG + (TFB + TFW)$
- We use different β 's to ensure the consistency between FIES and NI
Standard NTA: $\overline{YLE} = \beta_0 * yle1$
“Taiwan” version: $\overline{YLE} = \beta_1 * yle1 + \beta_2 * yle2 + \beta_3 * yle3 + \beta_4 * yle4$
where β is the macro adjustment factor, and $\beta_0 > \beta_1$
 $yle1$ is the (smoothed) wage of current workers
 $yle2 \sim yle4$ are the (smoothed) wages of retired workers

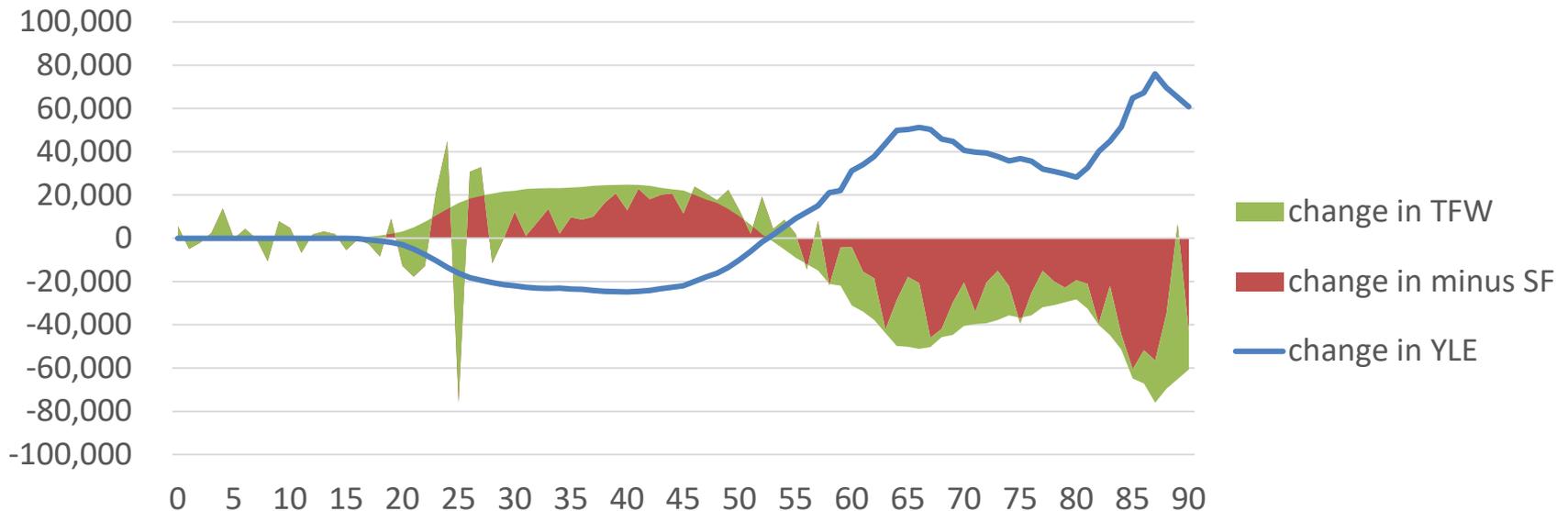
Changes in YLE



$$\Delta YL + \Delta TFW + (-\Delta SF) = 0 = \Delta C$$

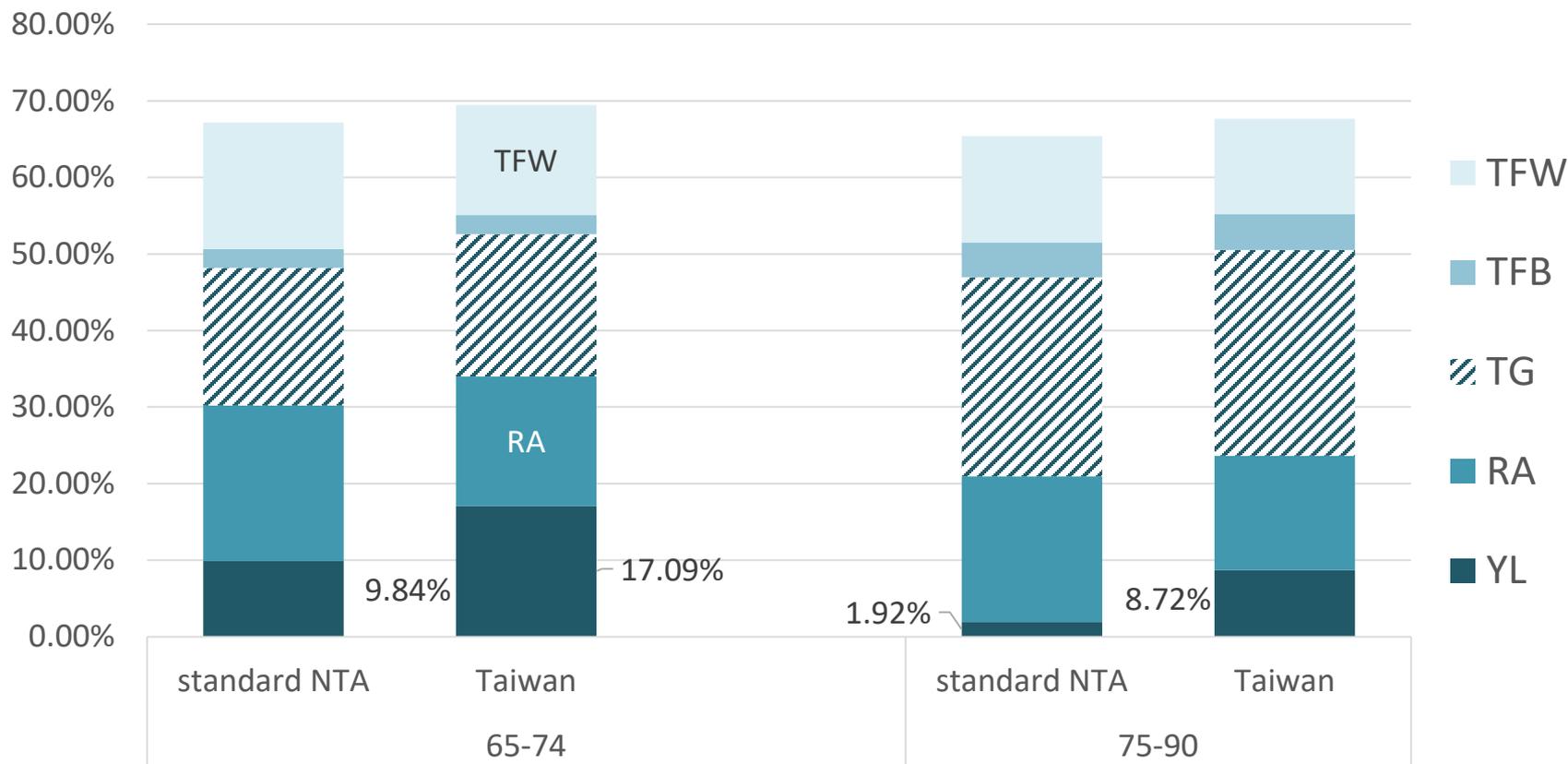
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- ✓ As YL is one determinant of TFW, the elderly will receive less as TFW
- ✓ To balance the basic NTA equation, SF will increase, so that



The “Taiwan” method results in higher YL, smaller TFW and smaller RA (or larger SF) for the elderly

standard NTA vs "Taiwan", 2015, by YL 30-49



2015 results: Higher wage income means smaller TFW and larger SF for the elderly

	YLE1+YLS	YLE234	RAG+YAF	minus SF	TG	TF	C
65-74 standard NTA	65,786	--	280,198	-143,925	120,181	126,749	448,989
“Taiwan”	64,280	46,206	280,198	-170,943	120,181	109,067	448,989
75-90 standard NTA	12,834	--	189,013	-61,693	173,908	123,209	437,271
“Taiwan”	12,610	43,770	189,013	-92,745	173,908	110,716	437,271

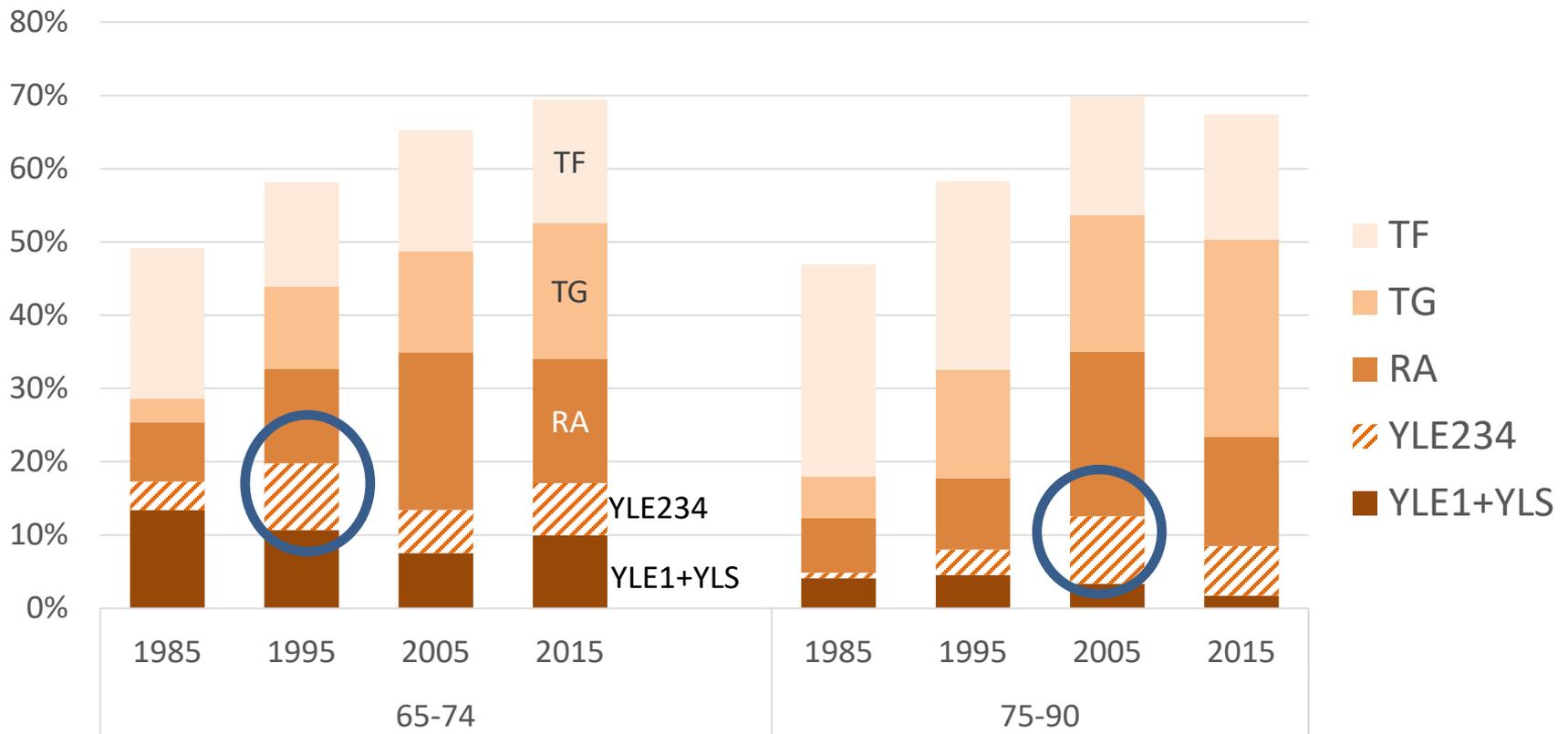
Note 1: $\Delta YL + \Delta TFW + (-\Delta SF) = 0 = \Delta C$

(+) (-) (-)

Note 2: aggregate SF remains unchanged

- (1) Before 2005, **YLE1**↓ and TF↓, but TG↑ and RA↑
- (2) But **YLE234** varies by year and age group (* to be explored)
- (3) In 2015, TG↑, but other variables? (* to be explored)

Financing C, standard NTA, standardized by YL 30-49



C. What to expect in the future
with pension reform and population aging?

Pension reform

- Pension reform
 - Starting in 2018, YLE2 is to be cut by 40-50%, YLE3 will terminate in 6 years, and YLE4 will phase out in 20~30 years
- What we do
 - Assume $YLE2 = YLE3 = YLE4 = 0$
 - Assume the decline in labor income is **matched by a rise in capital income** (RAF/RAG), although with different age distribution
 - Assume the imputed TGDS remains unchanged at the macro level
- Results
 - When YL and RA change, TF and SF will change, to maintain the balance of the basic NTA equation

2015 results: Without YLE234, TFW will have to rise and SF fall

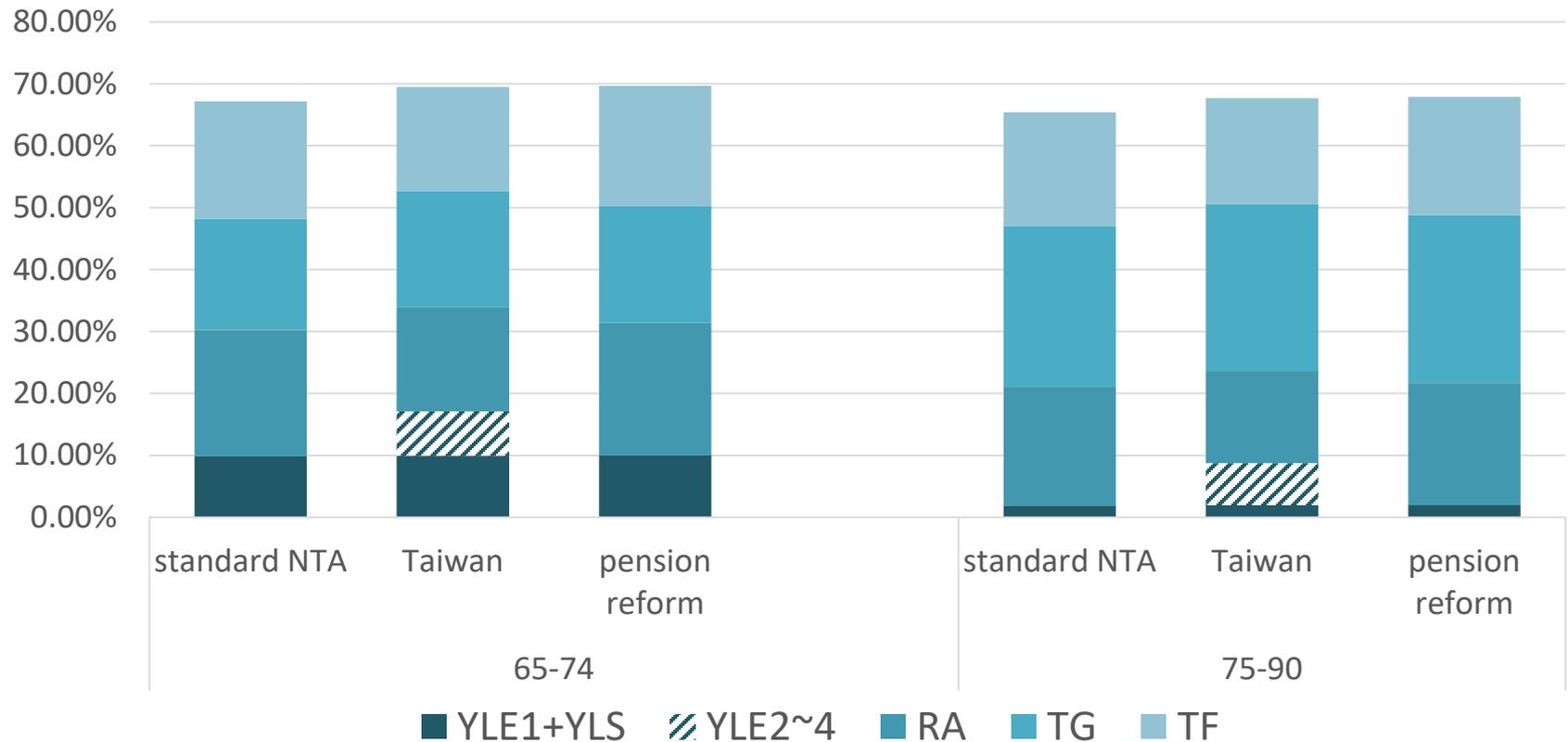
	YLE1+YLS	YLE234	RAG+YAF	minus SF	TG	TF	C
65-74 standard NTA	65,786	--	280,198	-143,925	120,181	126,749	448,989
“Taiwan”	64,280	46,206	280,198	-170,943	120,181	109,067	448,989
pension reform	64,280	--	286,704	-148,484	121,413	125,076	448,989
75-90 standard NTA	12,834	--	189,013	-61,693	173,908	123,209	437,271
“Taiwan”	12,610	43,770	189,013	-92,745	173,908	110,716	437,271
pension reform	12,610	--	192,180	-65,093	174,708	122,867	437,271

$$\Delta YL + \Delta RAG+YAF + (-\Delta SF) + \Delta TG + \Delta TFW = 0 = \Delta C$$

(-) (+) (+) (+)

Standard, “Taiwan,” pension reform

standard NTA vs "Taiwan, 2015, by YL 30-49



Discussion

- Among all elderly, only a small portion (<8%) receives YLE234>0; their adjustment should be larger in scale than for those without YLE234
 - Yet these people not only have higher YL, but also higher C
 - And their headship rate is much higher (57.8%) than the elderly with no retirement wages (31.8%); as HH heads are normally net providers of TFW, their TFW cannot increase after the pension reform

=> Either their SF decreases more, or C has to decrease

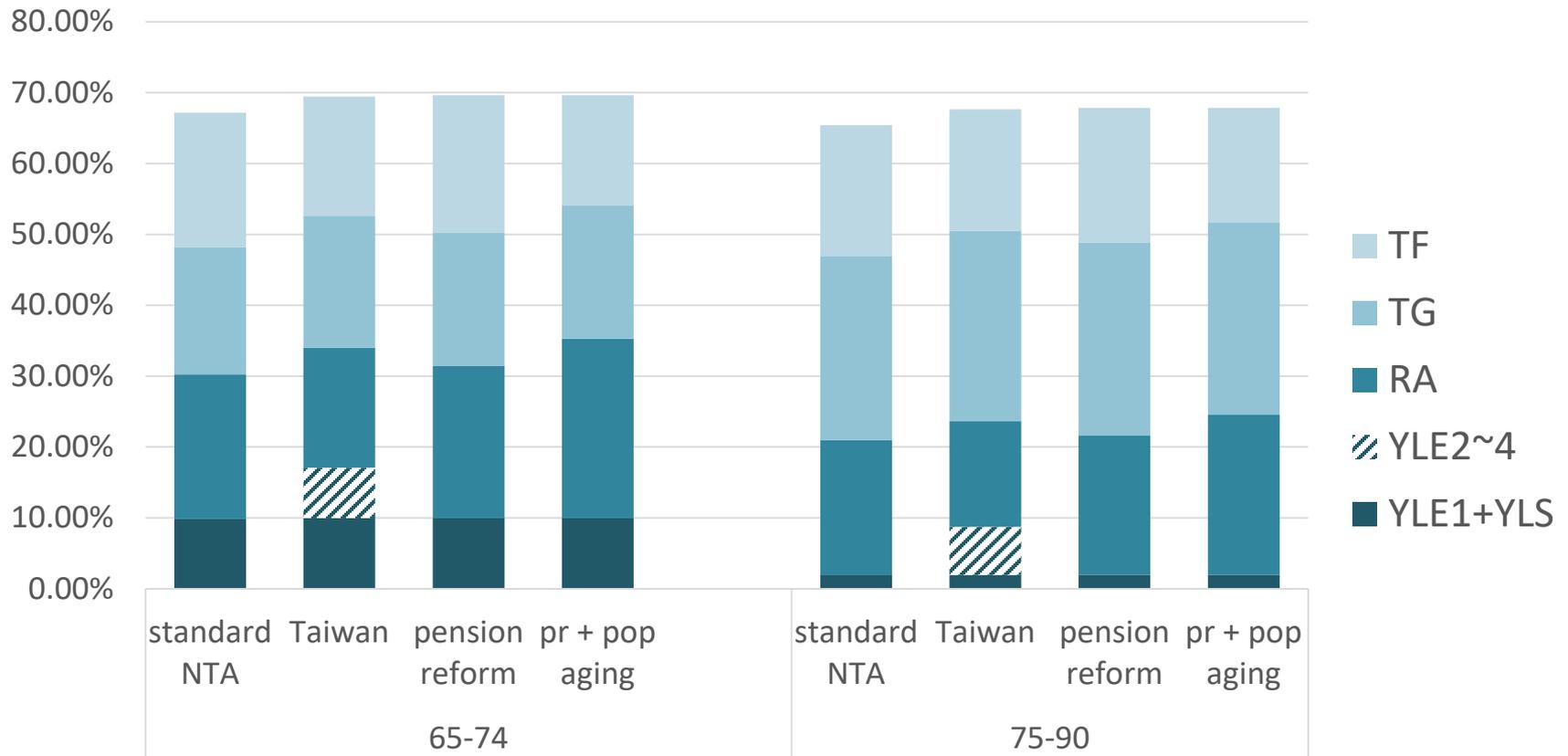
(* separate estimates will be calculated)
- If the affected are so few in number, why do we care about them?
 - They are few in number, but make a big difference in YL, and give a more realistic picture of how many resources the elderly have
 - The importance may become more obvious in a cohort study

Population aging

- Population aging
 - Any impact?
- What we do (yet to refine)
 - Assume there is the pension reform
 - Assume the same age profiles, **except for TFW and SF**
 - Use the population of 2050 instead of 2015 population
- Results
 - Aggregate YL decreases much more relative to aggregate C
 - Aggregate RA has to increase (aggregate SF would decrease)
 - At per capita level, the elderly may receive smaller TFW inflow, and have slightly smaller savings

2050 results

standard NTA vs "Taiwan", pension reform, and population aging



2050: TF and SF may decrease for the elderly

		YLE1+YLS	YLE2~4	YAF	minus SF	TG	TF
65-74	standard NTA	9.84%		41.91%	-21.53%	17.98%	18.96%
	Taiwan	9.94%	7.15%	43.35%	-26.45%	18.59%	16.87%
	pension reform	9.97%		44.48%	-23.04%	18.84%	19.41%
	pension reform + pop aging	9.97%		47.56%	-22.00%	18.84%	15.54%
75-90	standard NTA	1.92%		28.27%	-9.23%	26.01%	18.43%
	Taiwan	1.95%	6.77%	29.24%	-14.35%	26.91%	17.13%
	pension reform	1.96%		29.82%	-10.10%	27.11%	19.06%
	pension reform + pop aging	1.96%		31.72%	-9.00%	27.11%	16.15%

Concluding remarks

Summary

- With revised social insurance data
 - ✓ 1985-2005: Similar results as previous findings, $YL\downarrow$, $TF\downarrow$, $TG\uparrow$, $RA\uparrow$
 - ✓ 2015 changes may be dominated by large TG increase under new policies
- With deferred wage payments allocated to those retired
 - ✓ 1985-2005: Similar results: $YLE1\downarrow$ and $TF\downarrow$, $TG\uparrow$, $RA\uparrow$
 - ✓ Again, 2015 trend is somewhat different
- With pension reform
 - ✓ $YLE1$ declines, RA increases (SF reduces), TFW has to increase, thus younger generations will have to provide more intra-household transfers to the elderly
 - ✓ The impact is greater on those with deferred payments before the reform
- With population aging
 - ✓ The elderly may receive less TFW and make less SF
 - ✓ But are they worse off? Yes, if C is forced to go down
 - ✓ Does reduced aggregate SF harm economic growth potential? Probably yes

Work in progress/future plan

- Why does 2015 seem different?
- What are the impacts of new social programs (such as National Pension, Pension Reform, Long-term Care)
- What importance is YLE234 to each cohort?
- What is the impact of population aging?
- What happens to the “Sandwich Generation” in TF and TG?
- What happens to children?

Thanks for listening

Comments are welcome