

Wealth Change and Active Saving at Older Ages
Also Intervivos Transfers and Bequests

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Singles

Review of predictions from simple life-cycle model

Time separable utility

Only risk is mortality

No bequest motive

Annuities (Social Security) predetermined

First-order condition

$$\frac{d \ln c_t}{dt} = \frac{1}{\gamma} (r - \rho - h_t)$$

γ = risk aversion

r = fixed interest rate

ρ = subjective time rate of interest

h_t = mortality risk

$$\frac{d \ln c_t}{dt} = \frac{1}{\gamma} (r - \rho - h_t)$$

h_t is approximately exponential \Rightarrow declining consumption in old age.

No bequest motive \Rightarrow desired bequests = 0

Wealth goes to zero at greatest age possible
(But accidental bequests)

Implication: if consumption declines wealth should decline
Declining wealth in old age

Couples

Same setup

First-order condition

$$\frac{d \ln C_t}{dt} = \frac{1}{\gamma} (r - \rho - h_t) + \frac{1}{\gamma} \frac{\Omega_t}{C_t^{-\gamma}}$$

h_t is mortality risk of the couple = sum of mortality risk of husband and wife (high)

Ω_t is expected marginal utility of “bequest” to surviving spouse. Complex...depends on economic situation of survivor.

Implications

$$\frac{d \ln C_t}{dt} = \frac{1}{\gamma} (r - \rho - h_t) + \frac{1}{\gamma} \frac{\Omega_t}{C_t^{-\gamma}}$$

Consumption should decline at old age but hard to say when

Younger spouse increases Ω_t flattening any declining consumption path.

Hard to say when wealth should decline.

Some prior literature states that wealth does not decline...casts doubt on life-cycle model

- Makes no distinction between singles and couples
- What type of data used?
 - Cross-section by age: cohort differences and differential mortality (wealth survive longer)
 - Synthetic cohorts: differential mortality
 - Panel

Empirical question

Does wealth decline?

Is spending greater than net income?

Answer questions in two ways

- Panel data on wealth
- “Active saving” difference between after-tax income and spending

Data

Health and Retirement Study (HRS)

- Large panel (about 20,000)
- Age 51 or over
- Collected since 1992
- Complete measure of income and assets

Consumption and Activities Mail Survey (CAMS)

Consumption and Activities Mail Survey (CAMS)

- Biennial mail survey (2001, 2003, 2005, ...)
- Self administered
- Random sub sample of the Health and Retirement Study (5000 households) in October 2001
- Response rate was 77.3%
- Sent to same households in Oct. 2003.
- Sent to same households in Oct. 2005 plus and additional 850 from new cohort

CAMS content

Part A. 36 activities (time-use) categories:

Part B. 32 consumption categories:

- **6 big ticket items (durables)**
 - **26 non-durable items**
 - **Consumption categories designed following CEX**
 - **Increased by several categories in waves 2 and 3 (small additions)**
- Anticipated and recollected spending change at retirement
 - Spending change to hypothetical income change

CAMS-CEX comparison
Average of 2001, 2003 and 2005. (2003\$)

Age	CAMS	CEX	Relative	
			CAMS	CEX
55-64	38970	39677	1.00	1.00
65-74	34276	32436	0.88	0.82
75+	28761	24066	0.74	0.61
All	34472	33096		

Interview schedule of HRS and CAMS

	HRS Core	CAMS
1996	X	
1997		
1998	X	
1999		
2000	X	
2001		X
2002	X	
2003		X
2004	X	
2005		X
2006	X	

Link CAMS to HRS to obtain

Income

Wealth

Health status

Education

etc

Singles living alone and couples living alone

No prediction for more complex households

Use six waves of HRS (all cohorts)

1996-2006...5 transitions

In panel calculate wealth change statistics by marital status and living arrangements, adjusted for inflation. Calculate by life expectancy bands (not age).

Wealth is total bequeathable wealth including housing (but not pension or Social Security wealth)

1. $\Delta \bar{w}_t = \frac{\sum w_{i,t+1}}{\sum w_{i,t}}$, the ratio of mean wealth for two adjacent

waves: “**population mean**”

2. $\Delta w_t^{med} = \frac{w_{t+1}^{med}}{w_t^{med}}$, the ratio of median wealth in two adjacent

waves: “**population median**”

3. $(\Delta w_{i,t})^{med}$, the median of household wealth ratios in two adjacent waves: “**individual or household median**”

Then average these statistics across five panel transitions.

Another possible statistic is $\frac{1}{n} \sum \frac{w_{i,t+1}}{w_{i,t}}$, the mean of household level wealth ratios has considerable bias because of observation error on w .

Two-year rate of wealth change (percent). Singles living alone.

Life Expectancy	Median age	popln mean	popln median	household median
20+	60	15.5	5.0	-3.5
16.0-19.9	66	5.5	2.3	-6.0
12.0-15.9	73	10.9	-4.0	-4.5
9.0-11.9	78	-2.8	-6.3	-7.6
0-8.9	85	-3.8	-13.0	-13.2

All measures show dissaving in old age.

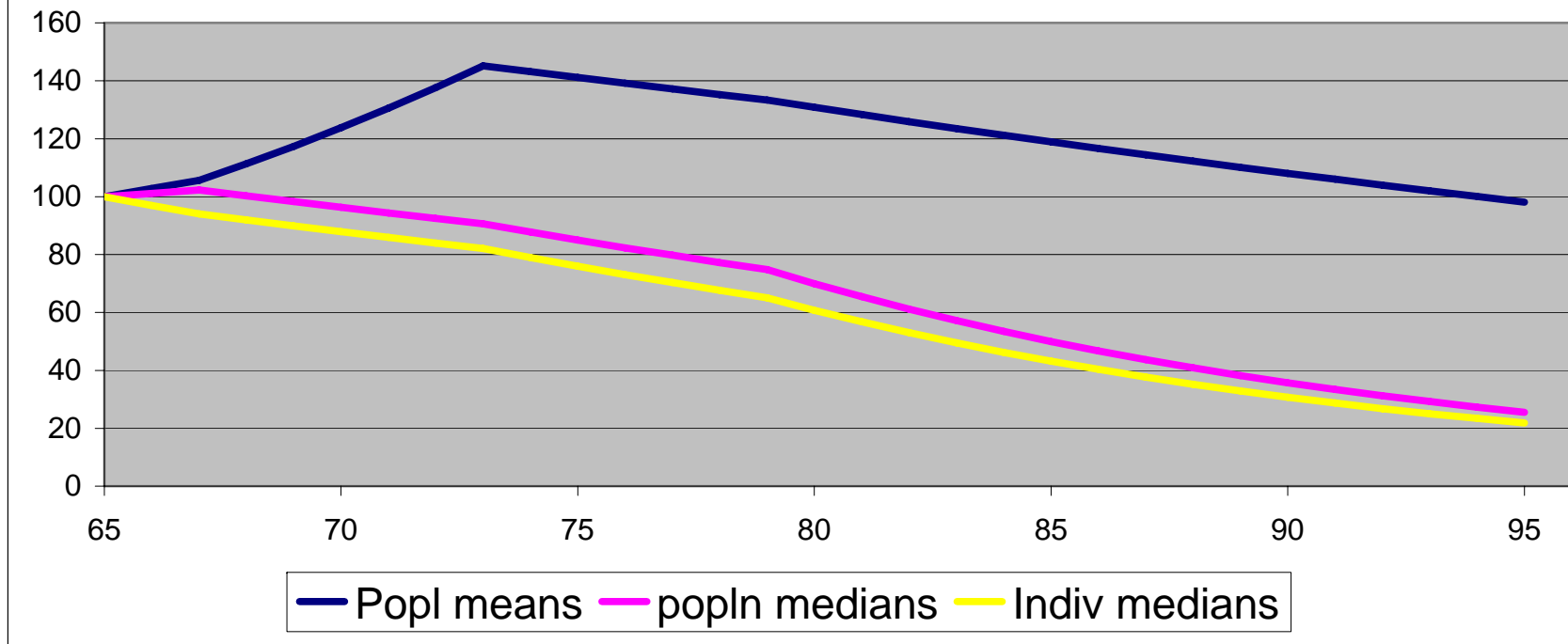
Medians likely most reliable

Simulations

Begin at age 65 with wealth of 100

Apply observed panel rates of wealth change in each age band

Estimated wealth trajectories. Singles living alone.



Female survival falls below 50% at age 85.

About half of wealth remaining (medians)

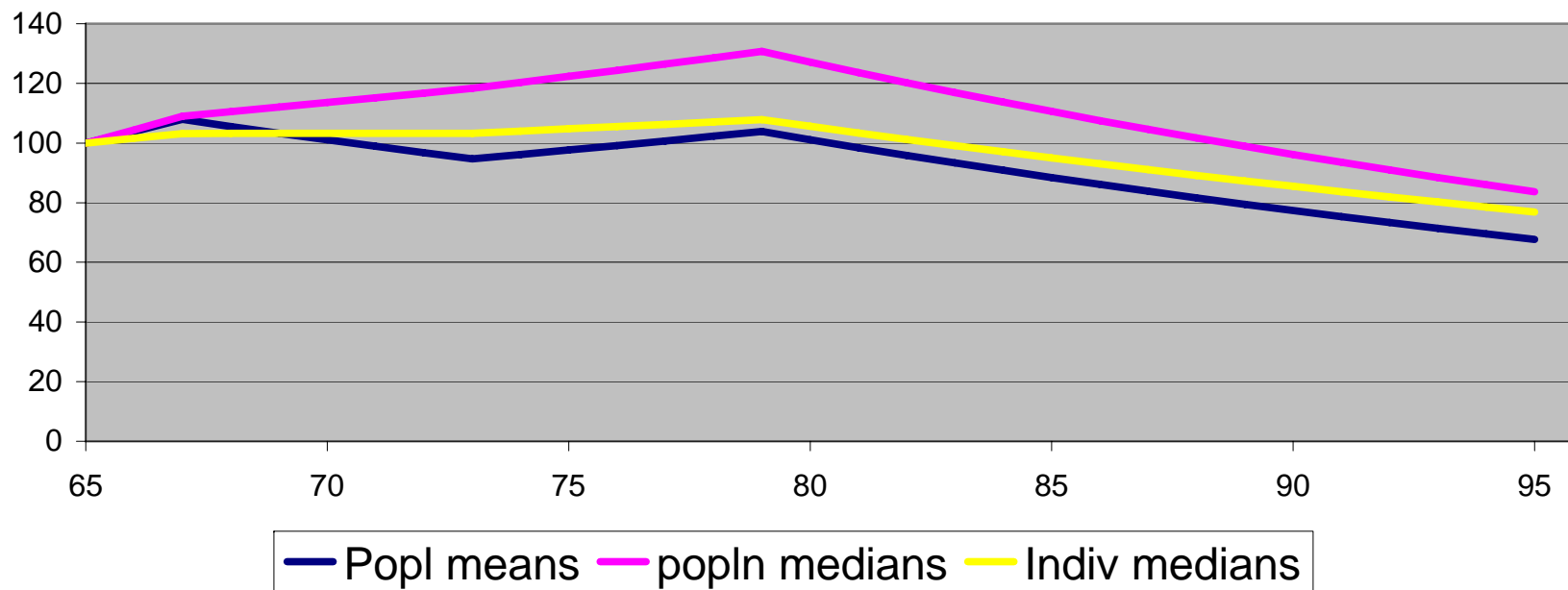
11% chance of surviving to 95.

Two-year rate of wealth change (percent). Couples living alone. Age difference five years or less

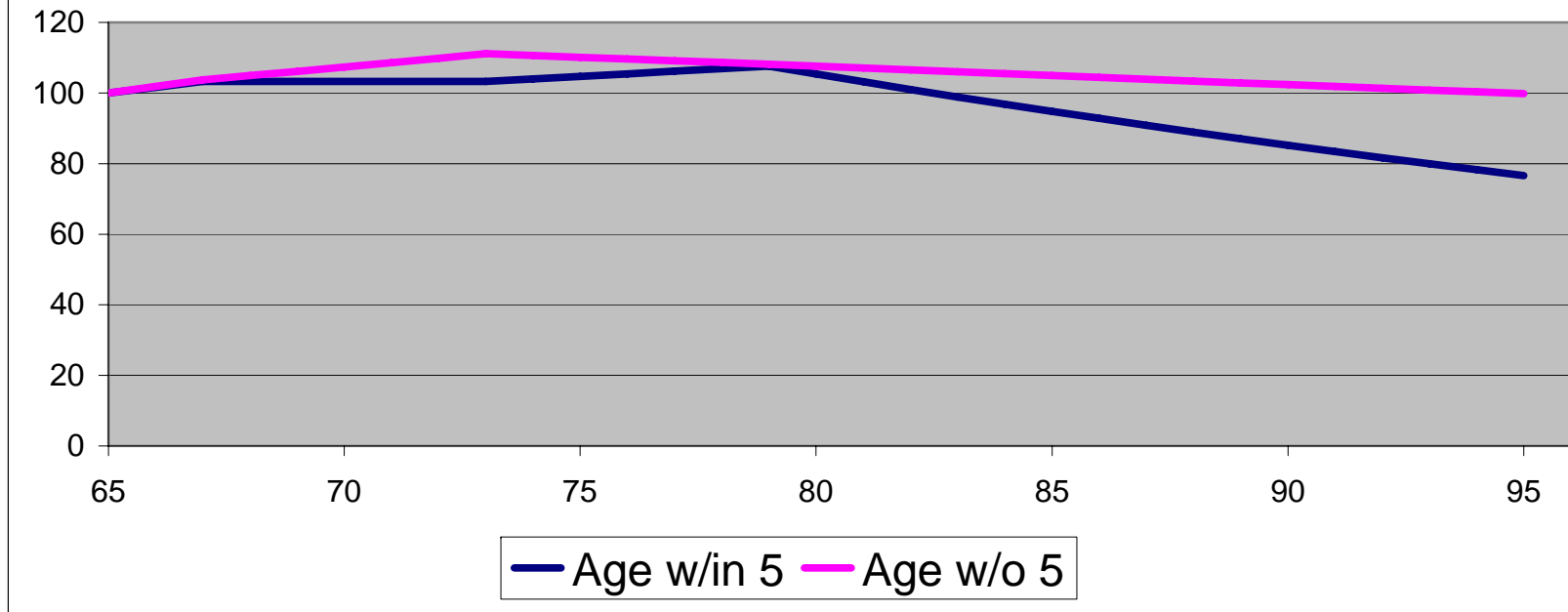
Life Expectancy	Median age	popln mean	popln median	household median
20+	58	12.0	11.5	5.9
16.0-19.9	64	7.8	8.8	3.2
12.0-15.9	70	-4.3	2.8	0.0
9.0-11.9	75	3.1	3.3	1.4
0-8.9	82	-5.3	-5.5	-4.2

Consistent dissaving only at advanced age.

Estimated wealth trajectories. Couples living alone. Ages within five years



Estimated wealth trajectories. Couples living alone. Based on household medians



Some still working at younger ages, especially younger spouses.
Suggests high returns-to-scale

Active saving

After-tax income from HRS minus estimated spending from CAMS.

Two waves of CAMS...don't yet have after-tax income for HRS 2006.

Normalized by wealth to give annual rate of wealth change due to active saving.

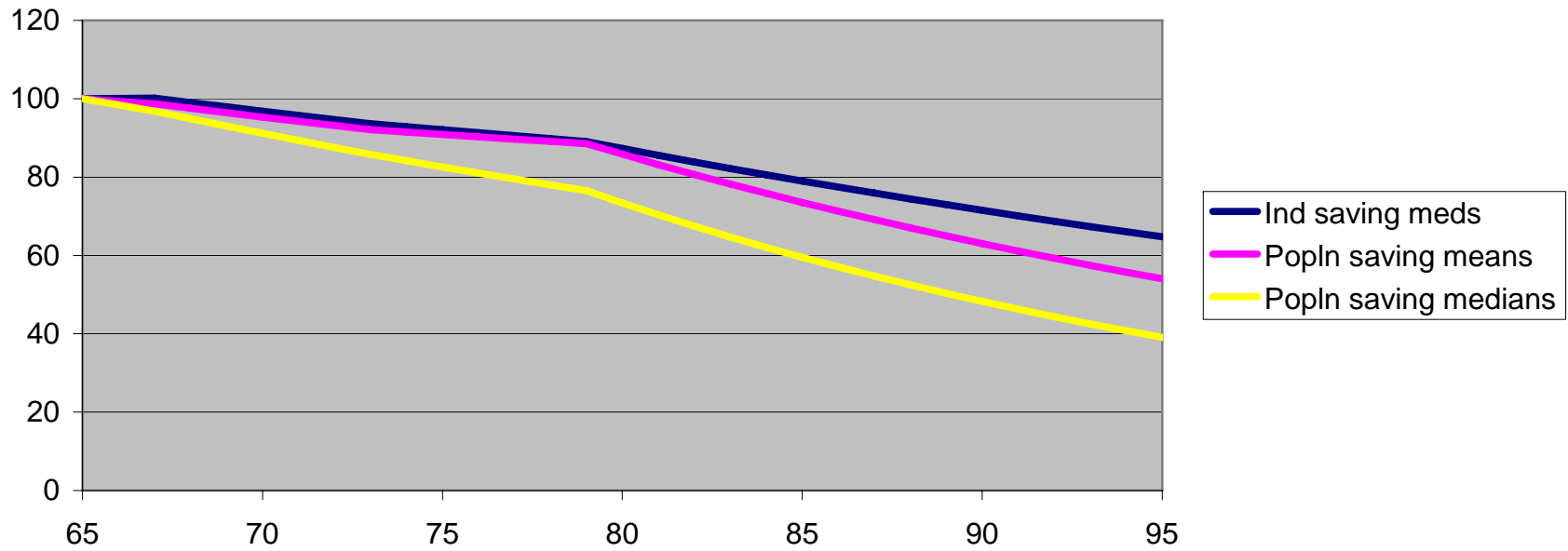
Measures: same as wealth change

$$\frac{\bar{s}}{\bar{w}}, \frac{s_{med}}{w_{med}}, med\left(\frac{s_i}{w_i}\right)$$

Singles. Active saving rate (annual) expressed as a percent of wealth

Life expectancy	Population means	Population medians	Individual medians
20+	-1.77	-4.46	-1.42
16.0-19.9	-0.67	-1.60	0.06
12.0-15.9	-1.15	-2.00	-1.11
9.0-11.9	-0.65	-1.89	-0.83
0-8.9	-3.04	-4.11	-1.97

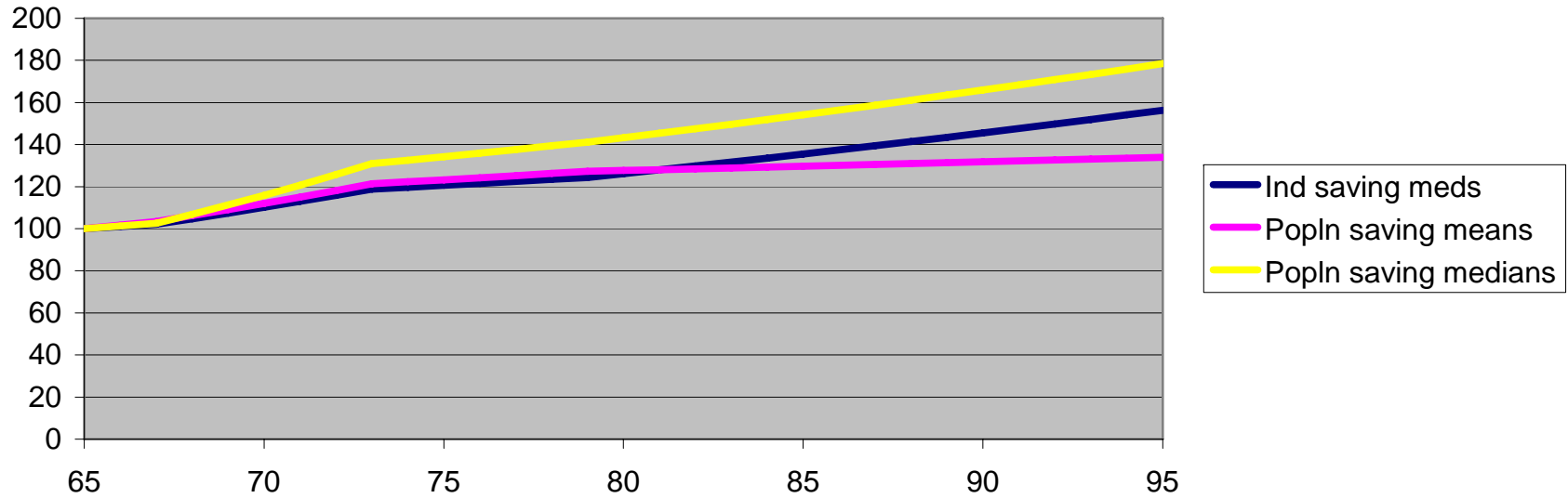
Estimated wealth trajectories, singles living alone. Active saving



Couples. Active saving rate (annual) expressed as a percent of wealth. Spouse age difference five years or less

Life expectancy	Population means	Population medians	Individual medians
20+	4.59	3.36	4.57
16.0-19.9	1.70	1.29	1.05
12.0-15.9	2.69	4.15	2.56
9.0-11.9	0.80	1.27	0.77
0-8.9	0.32	1.48	1.44

Estimated wealth trajectories, couples. Active saving. Spouse age difference five years or less

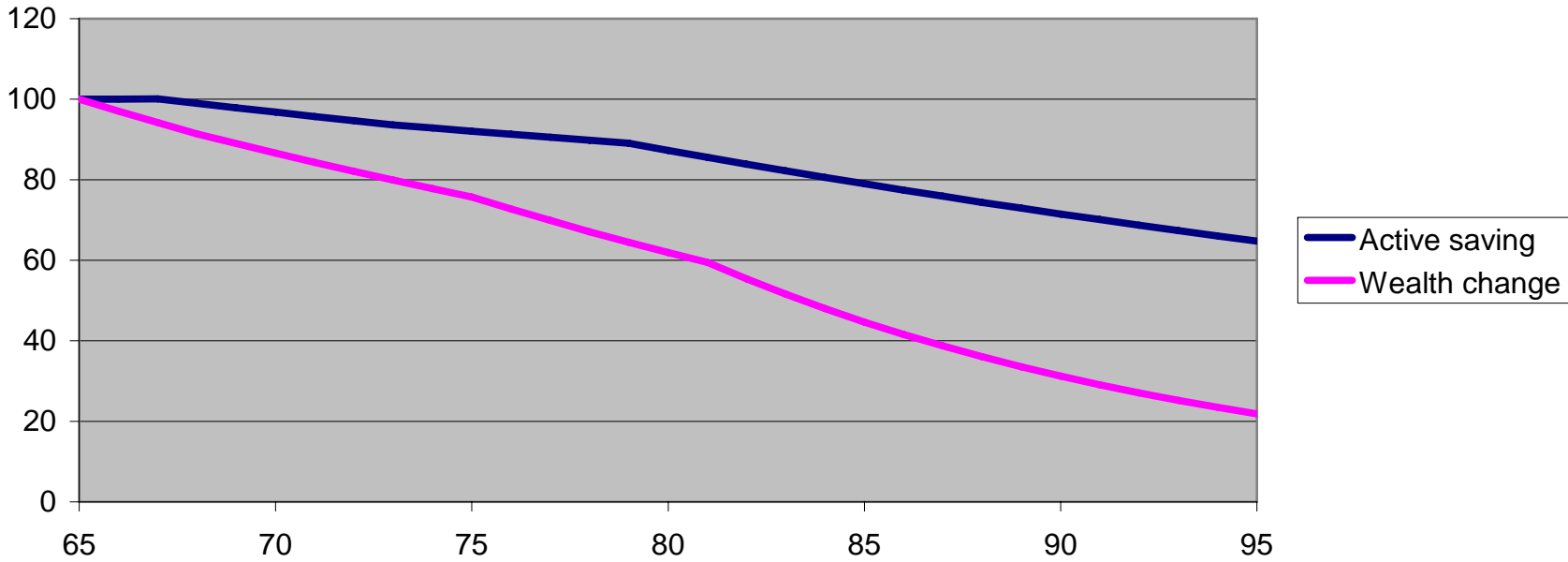


Comparison of wealth paths

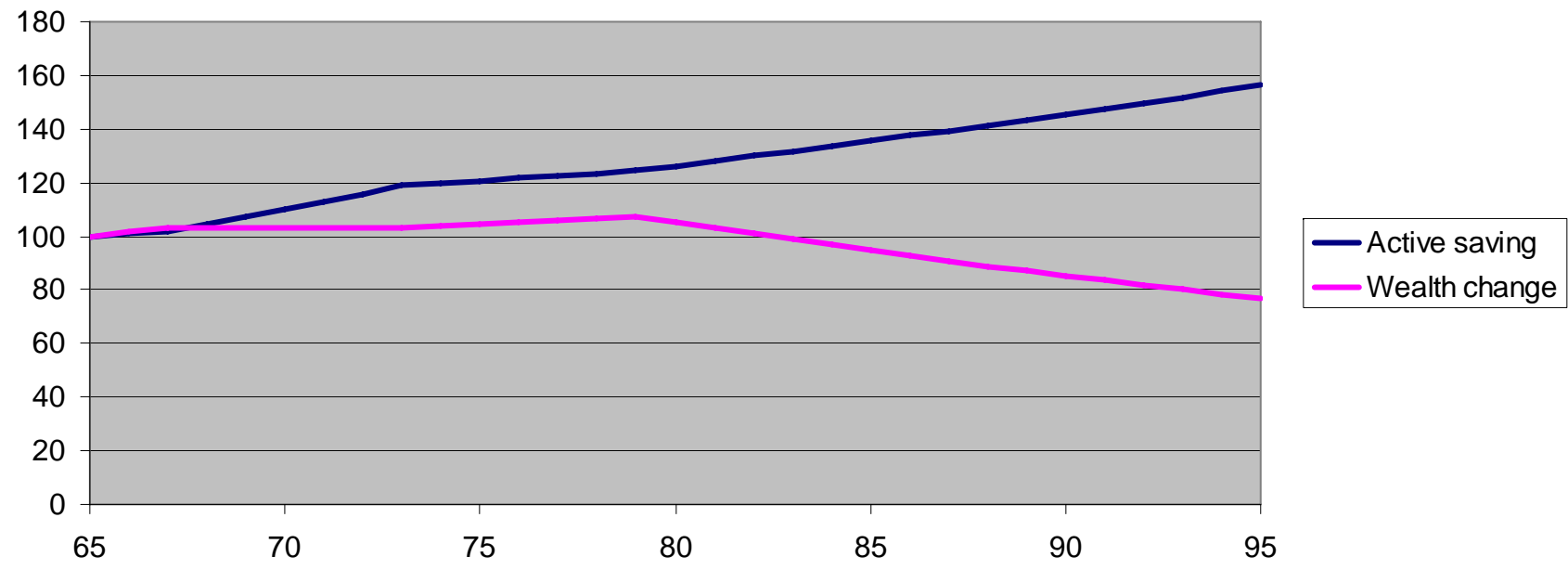
1. based on panel wealth change
2. based on active saving

Wealth change and active saving based on median of household or individual changes

Estimated wealth trajectories, singles. Median active saving and wealth change.



Estimated wealth trajectories, couples. Median HH active saving and wealth change. Age difference 5 years or less



Conclusions

Singles

Dissaving measured by

- Wealth change over long time periods in panel
- “Active” saving

Good support for fundamental prediction of life-cycle model

But quantitative discrepancy between wealth change and active saving.

Couples

Small rates of dissaving measured by wealth change

Even smaller with young spouse

Wealth path suggests high returns-to-scale in consumption

But asset accumulation when measured by “active” saving

Measurement of consumption

Somewhat under-estimated in CAMS:

Active saving leads to greater wealth accumulation than observed

But use of CEX would produce even greater active saving

Magnitude of bequests and inter vivos financial transfers

Especially intergenerational

Interesting question: how much of Social Security and Medicare transfers offset by bequests and inter vivos transfers?

Why (sort of) hard

Differential mortality: Can't use life tables

Not all wealth goes to younger generation

- Couples: most (but not all) to surviving spouse
- Singles including widows and widowers
 - some have no children
 - some wealth goes to charity, other relatives etc

Some wealth lost to medical and death-related expenses

Use Health and Retirement Study

Large panel, age 51 or over, ongoing since 1992.

HRS 2004

8261 households with someone 65 or older

\$298k net worth including housing

HRS exit interview

Asks about value of estate and disposition

1194 deaths 2004 to 2006.

\$222k net worth among those households where someone died.

\$272k bequeathed (life insurance makes up difference)

\$176k to children/grandchildren

\$67k to spouse (averaged over marrieds and singles)

\$29k to other (charity and other relatives)

Use these distribution rules to find total distributions
(Don't have exit interviews of all, but do know who died)

All households

8261 households with someone 65 or older

\$298k net worth including housing

Adjusted net worth \$305.3k

Adjusted net worth \$305.3k

Two-year amounts bequeathed per household
(‘000 in 2006\$) and distribution

	amount	percent of amount	percent of total wealth
children	25.2	64.6	8.3
spouse	9.7	24.9	3.2
other	4.1	10.5	1.3
total	39.0	100.0	12.8

Two-year financial transfers

HRS 1998-2006 in 2006\$

Average transfer amounts received from or given to
children or grandchildren

	N	received	gave
Single	23008	493.8	4159.0
Couple	31976	226.2	5540.9
All	54984	338.2	4962.6

Annual financial transfers to child/grandchildren per elderly household, thousands

Intervivos

received	gave	net	bequests	total
0.2	2.5	2.3	12.6	14.9

Total as a percent of total wealth: about 4.9%

How does this compare with Social Security income and transfer value of Medicare?

Guesses

Social Security: 10,000 per year

Medicare: 6,000 per year

Almost offset by inter vivos transfers and bequests.

But: redistributions

- Child from poor family will get no bequests or inter vivos transfers yet pay Social Security and Medicare taxes
- Child from large family will get few bequests and inter vivos, yet pay same Social Security and Medicare taxes

The End

