

Who wins and who loses? Public transfer accounts for US generations born 1850 to 2090

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All industrial nations have huge public transfer programs to elderly, for pensions and health care.

- Do these programs permit the current elderly to live well at the unfair expense of today's youth and tomorrow's newborns?
- “The living and well organized are taking money from the weak and unborn. Over the past few decades we have seen a gigantic transfer of wealth from struggling young families and the next generation to members of the AARP [Elderly].” (David Brooks, NYT, 2/5/05)

- Typical public pension and health care programs have:
 - Very large fiscal imbalances
 - Participants earn low rates of return
 - Programs are unsustainable under current policy
 - Future generations will have to pay far higher taxes, and/or receive far smaller benefits
- But public education is also a public transfer program for investing in children.
- Taking it into account changes the picture dramatically.
 - Theoretical basis for doing so: Becker and Murphy, 1988, link public education and pensions.

Plan of talk

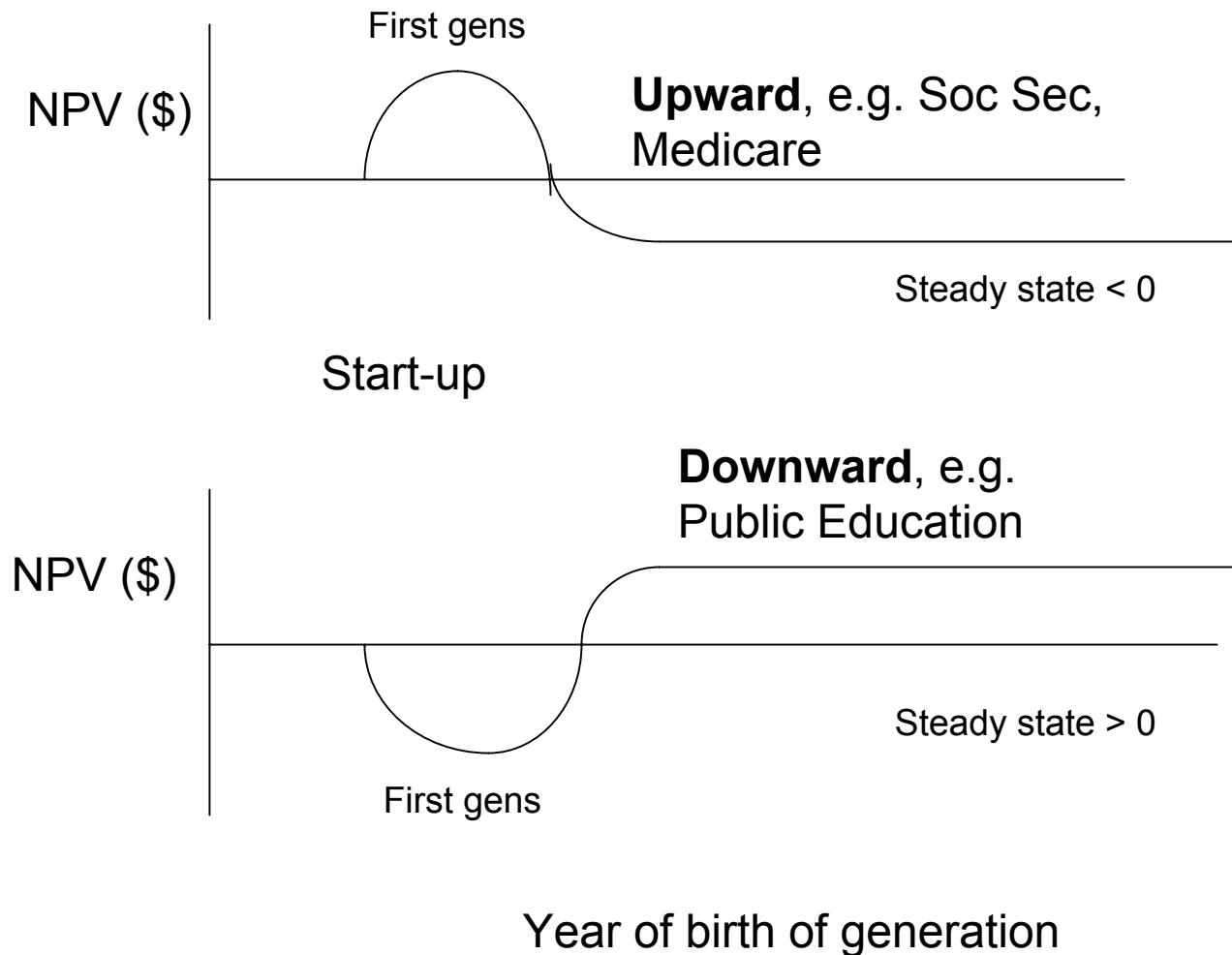
- Estimate historical and future generational accounts for major public transfers in US
 - Social Security, Medicare & Public education (Medicare is US public health care for elderly).
 - Generations born 1850 to 2090
- Address several questions:
 - Which generations are net gainers or losers?
 - Do generations that lose when public education is introduced, gain when public pensions are started?
 - Consider implications of different budget balancing policies for generational redistribution of income

Calculating Net Present Value (NPV) for generation born in year t

- $\tau(x,s)$ = tax paid at age x in year s
- $\beta(x,s)$ = benefit received at age x in year s
- $l(x,t+x)$ = survival to age x of births in year t
- r = discount rate, 3% per year (after inflation) for baseline calculations
- NPV for generation born in year t is discounted, survival-weighted sum of lifetime benefits minus taxes

$$NPV(t) = \sum e^{-rx} l(x,t+x) [\beta(x,s+x) - \tau(x,s+x)]$$

Net Present Value of life time benefits minus taxes (**NPV**) by generation for **upward** transfers versus **downward** transfers



Public Education Benefits Received by Age and Time (2004 US \$) per Native Born Individual

Age	Time (Calendar Year)					
	1850	1851	...	2004	...	2200
0						
1						
2						
...						
109						
110						

Historical data and methods

- For education, IPUMS (Integrated Public Use Micro Sample of census) and Admin data
 - costs driven by enrollment rates, number of kids, and costs per pupil at each level
 - property taxes are set to generate revenue equal to costs
- For Social Security and Medicare, we use actual historical data on taxes and benefits.
- For budget balancing etc. we use actual population by age each year.
- NPV calculations are for native born.
- Discount at 3% for baseline; sensitivity tests

Projections—need very long term

- Mostly based on official projections assumptions
 - Demography
 - Tax and benefits rules
 - Productivity growth, program costs

Projections are reasonably consistent with Official and other US budgetary projections

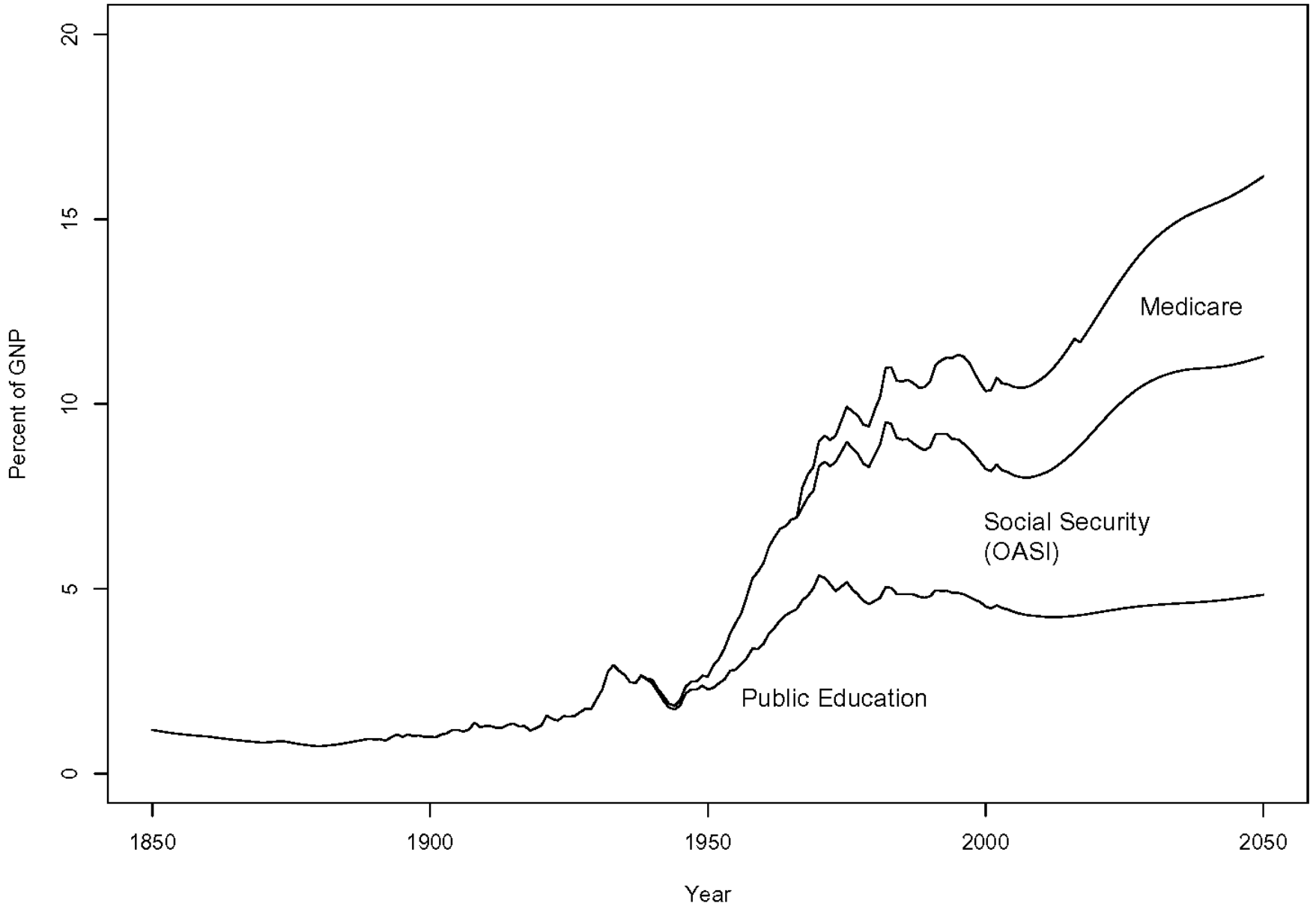
But we consider alternative policy scenarios for balancing the budget

- Current policies would lead to unsustainable deficits, impossible.
- We consider three different adjustments
 - Raise taxes to meet cost of scheduled benefits.
 - Cut benefits to meet scheduled tax revenues.
 - **OUR BASELINE:** Combine tax and benefit adjustments 50-50.

Now look at the data.

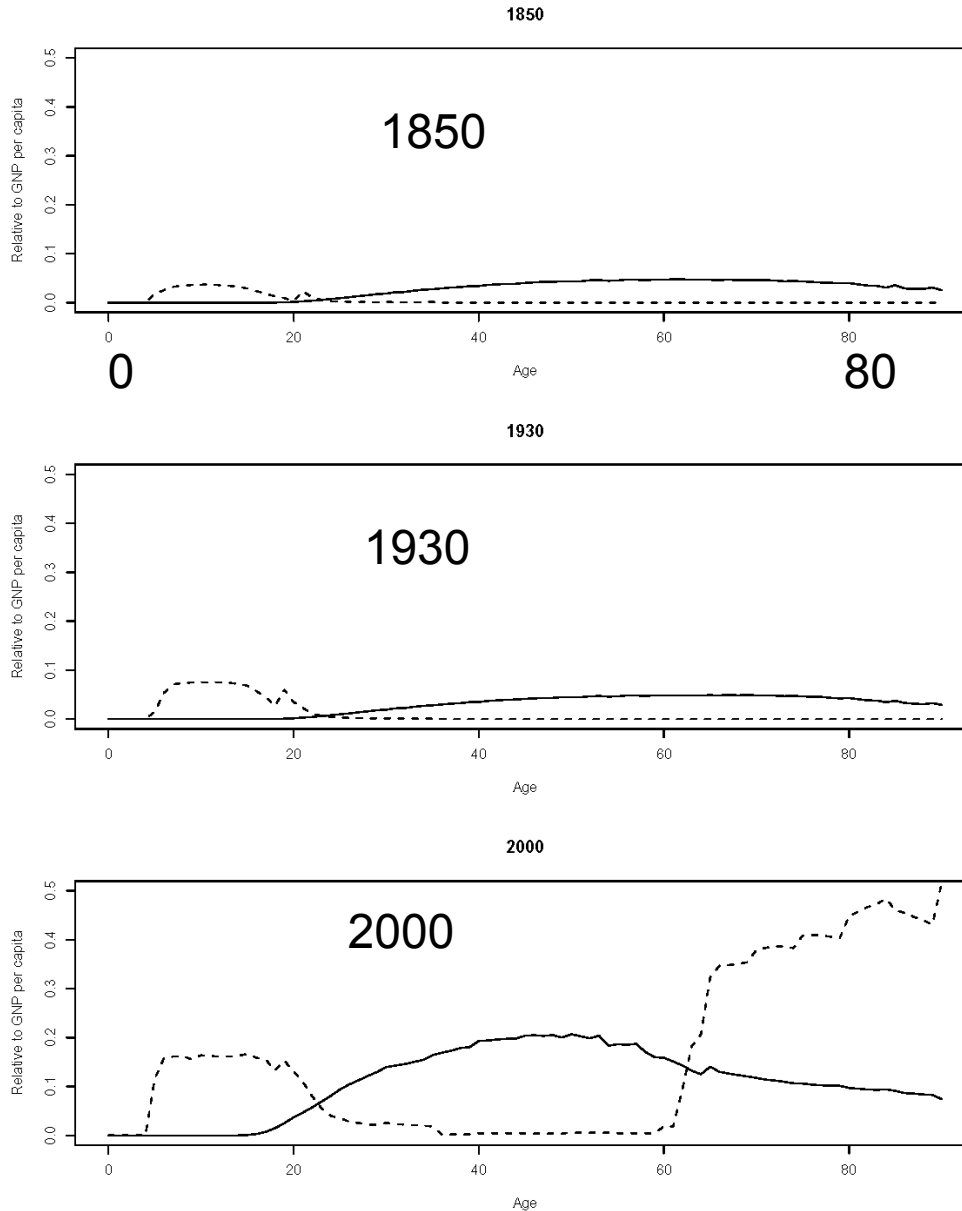
First, development of US public transfer system, 1850 – 2000, and projected to 2050

Spending on Public Education, Social Security and Medicare as % of GDP

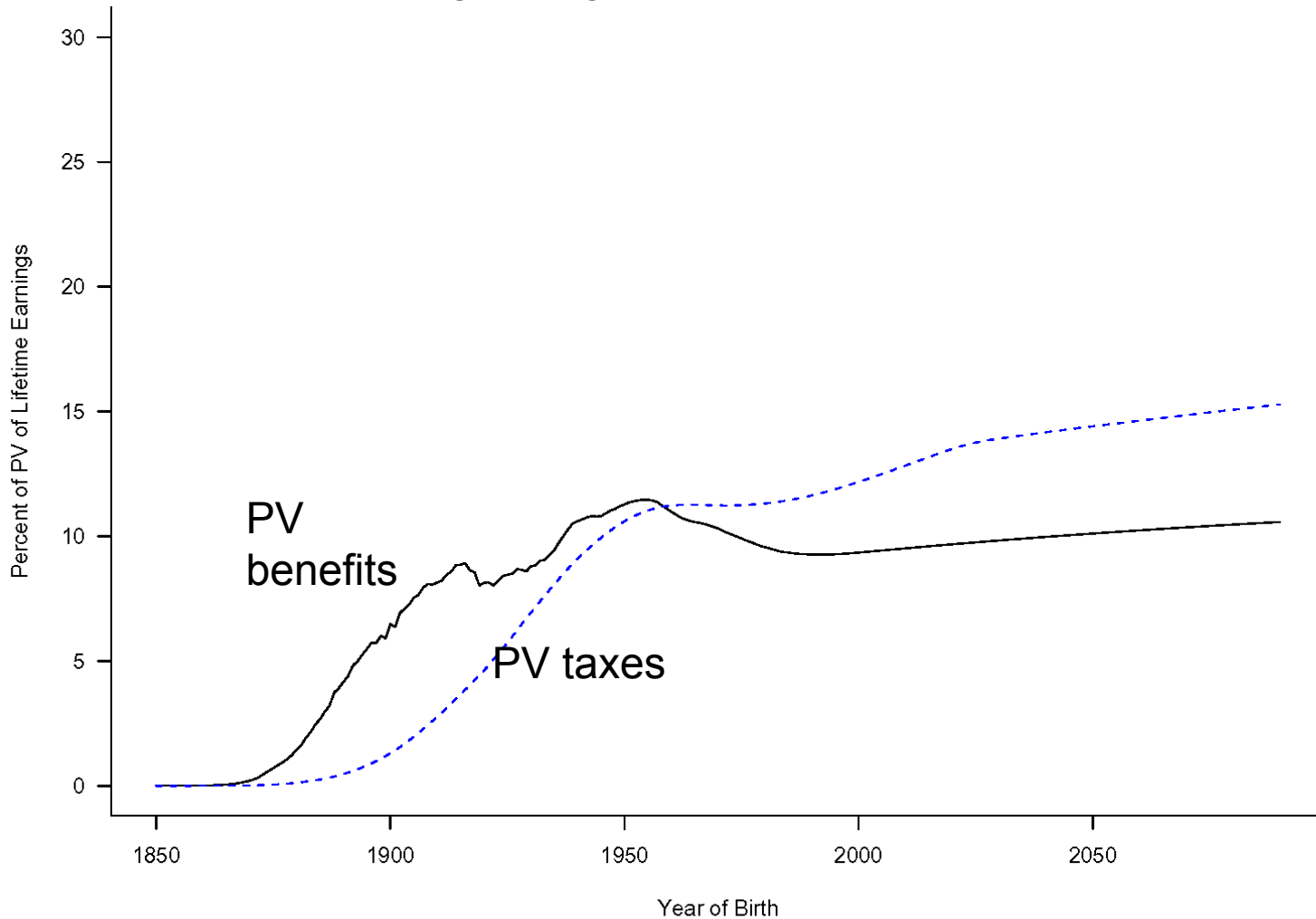


The changing age profiles of taxes and benefits in the US: 1900, 1930 and 2000 (cross-sectional)

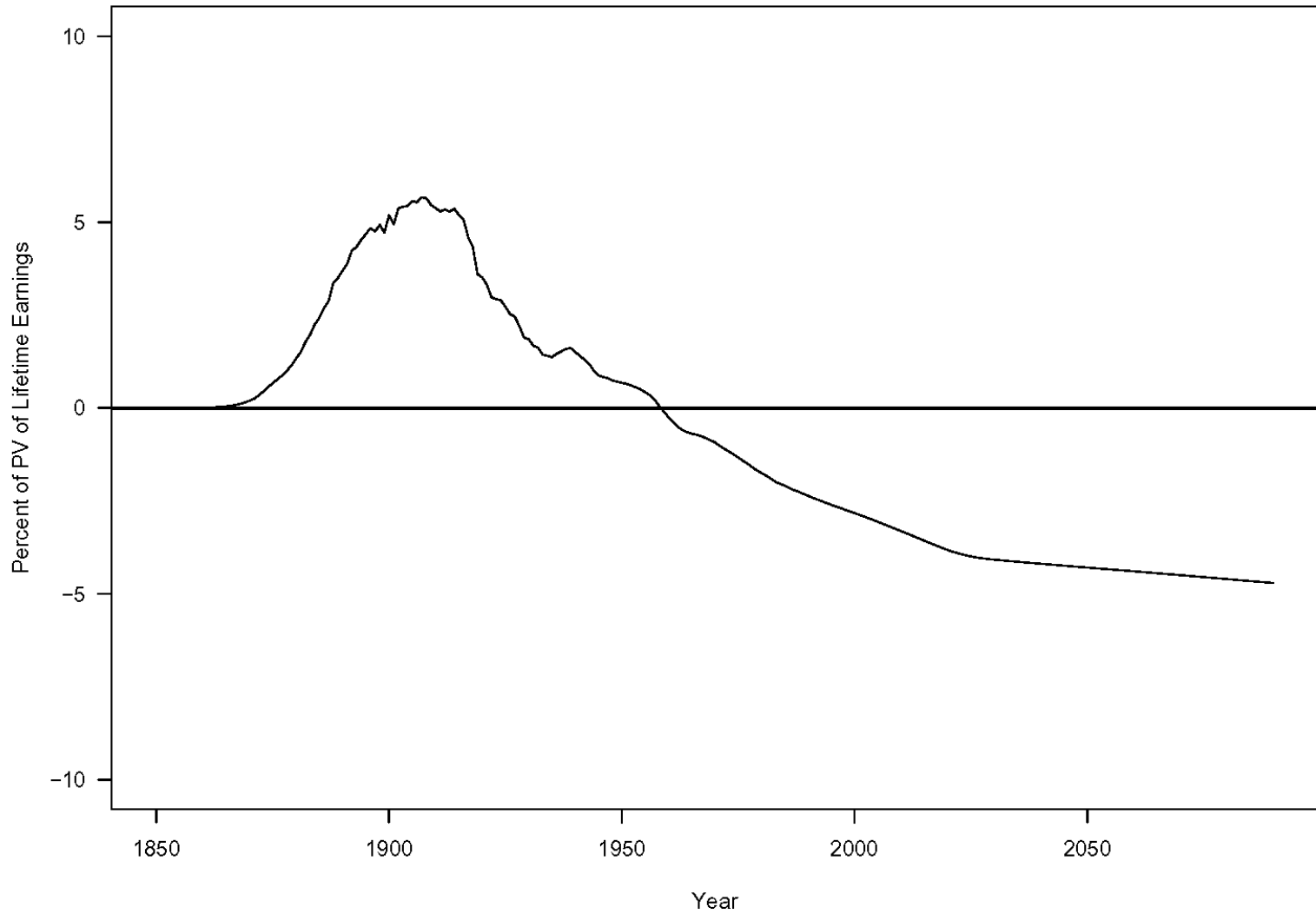
% per
capita
gdp



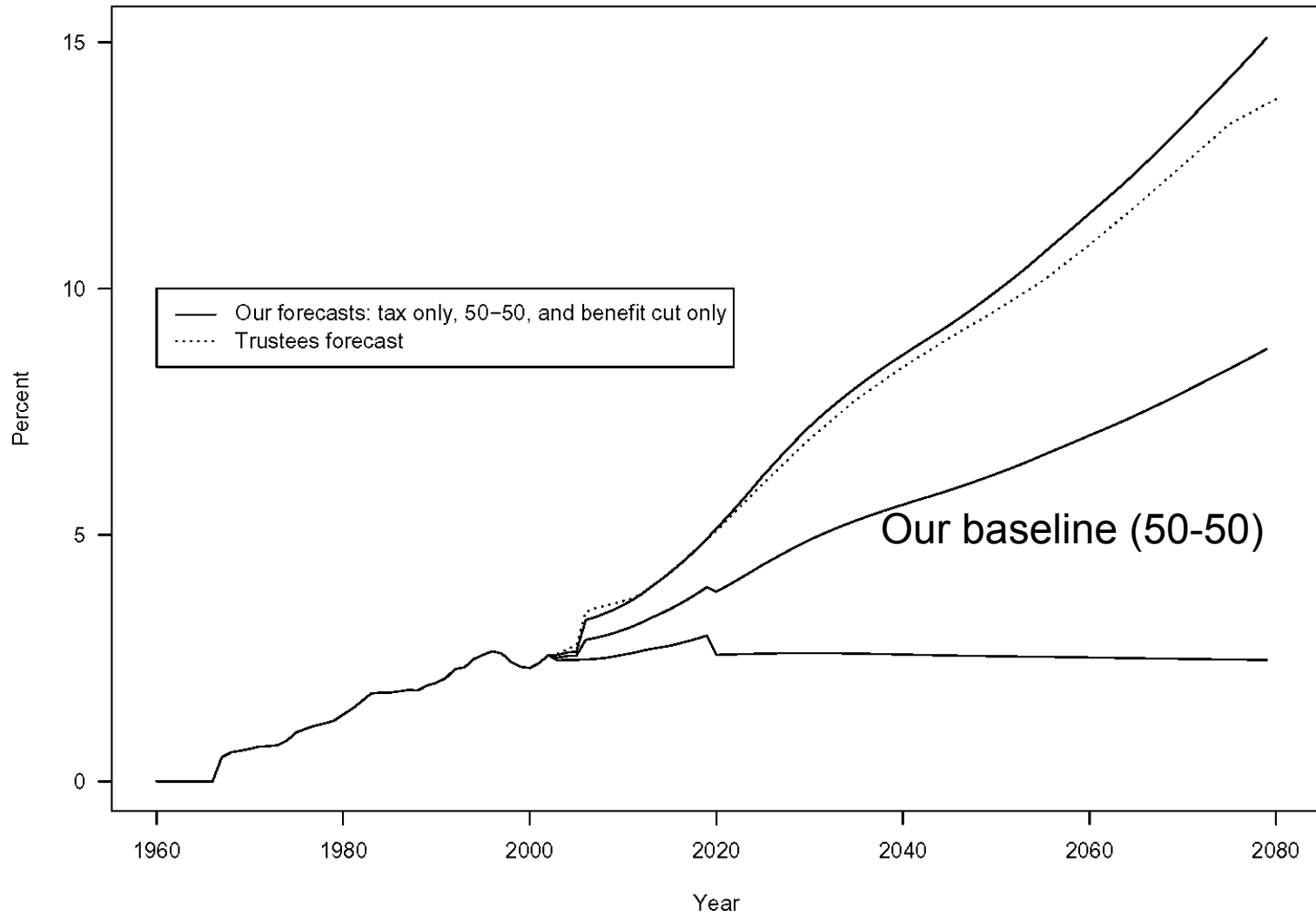
Present Value at birth of Social Security taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



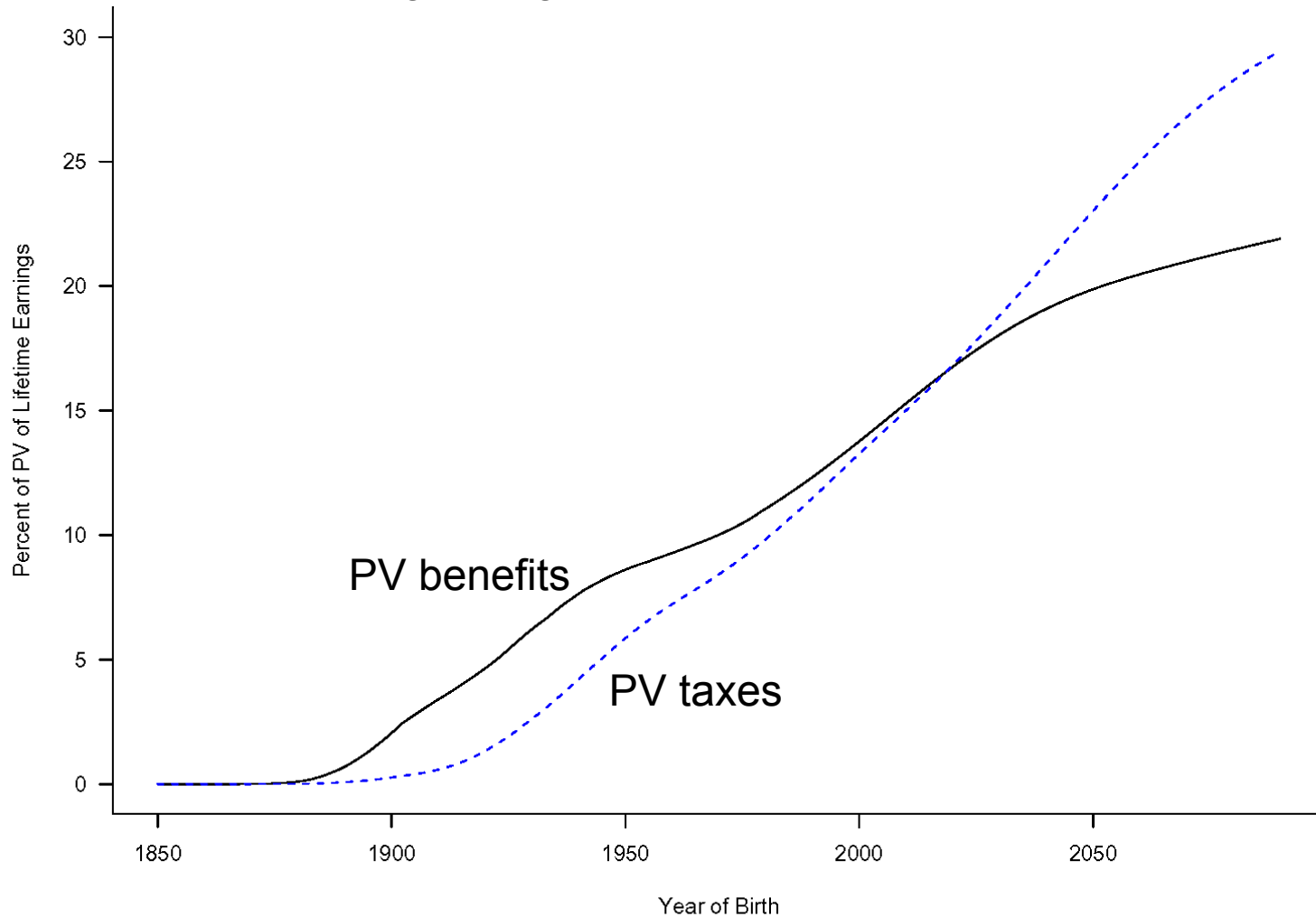
Net Present Value at birth of Social Security taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



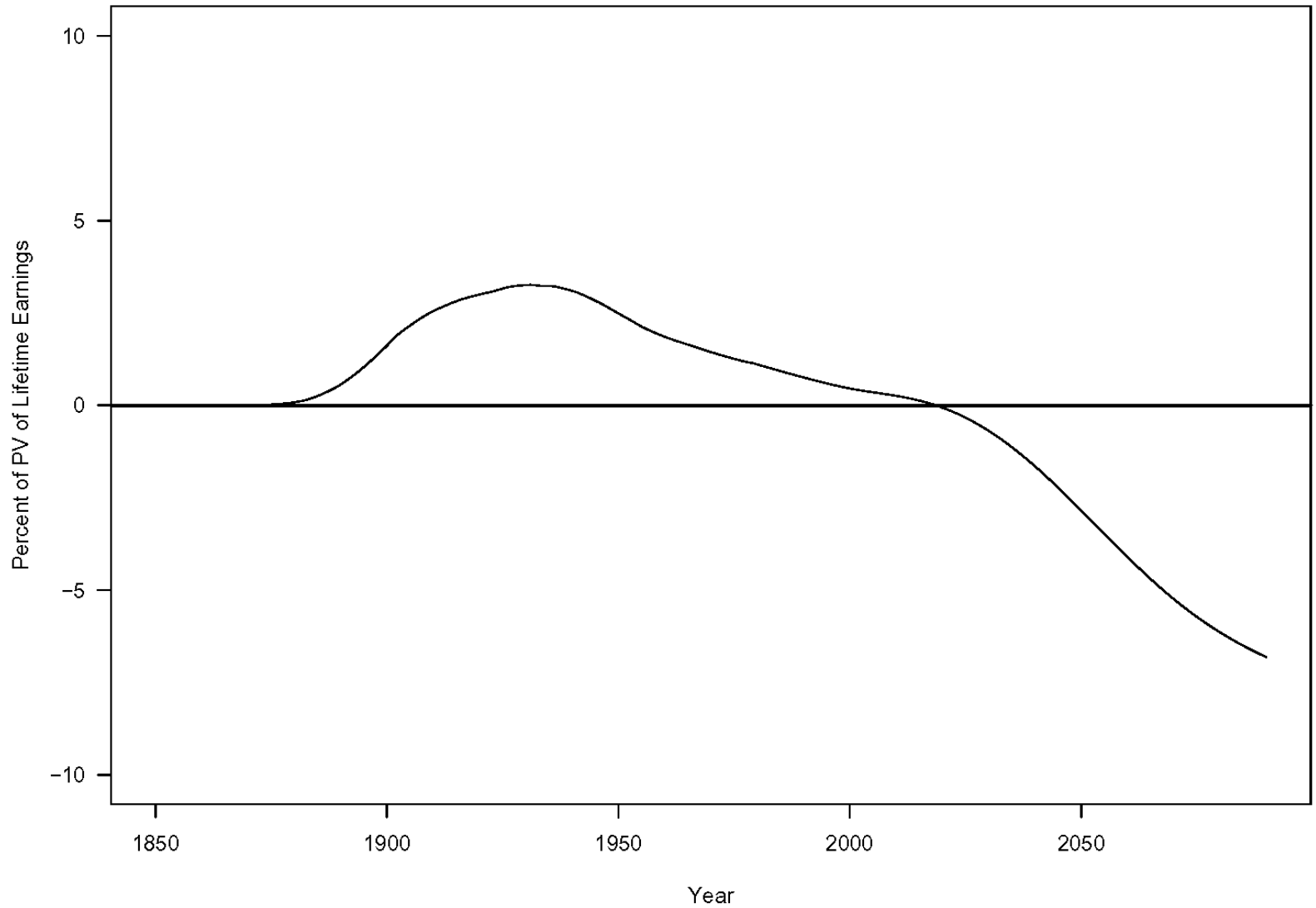
Medicare Expenditures as % of GDP



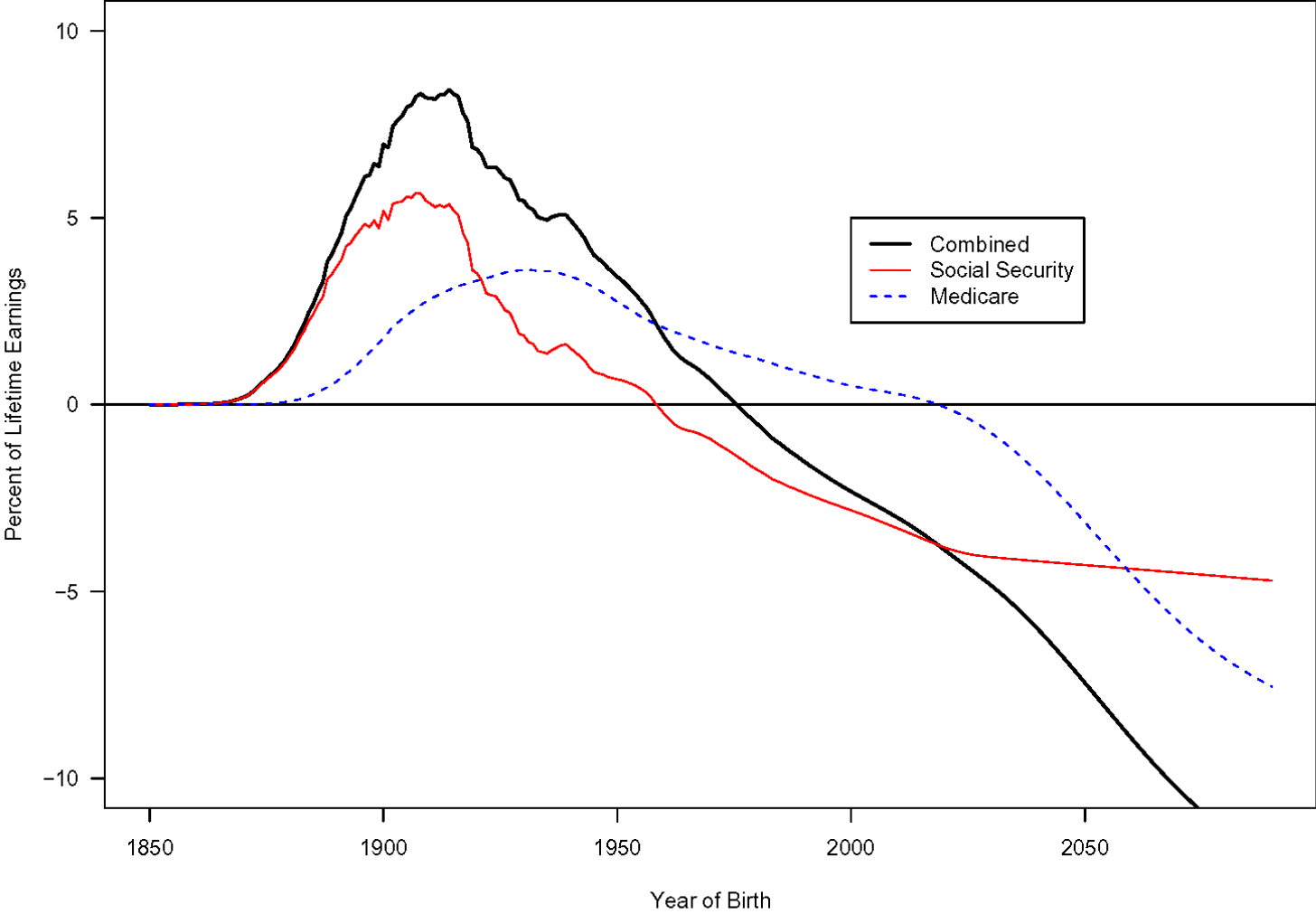
Present Value at birth of Medicare taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



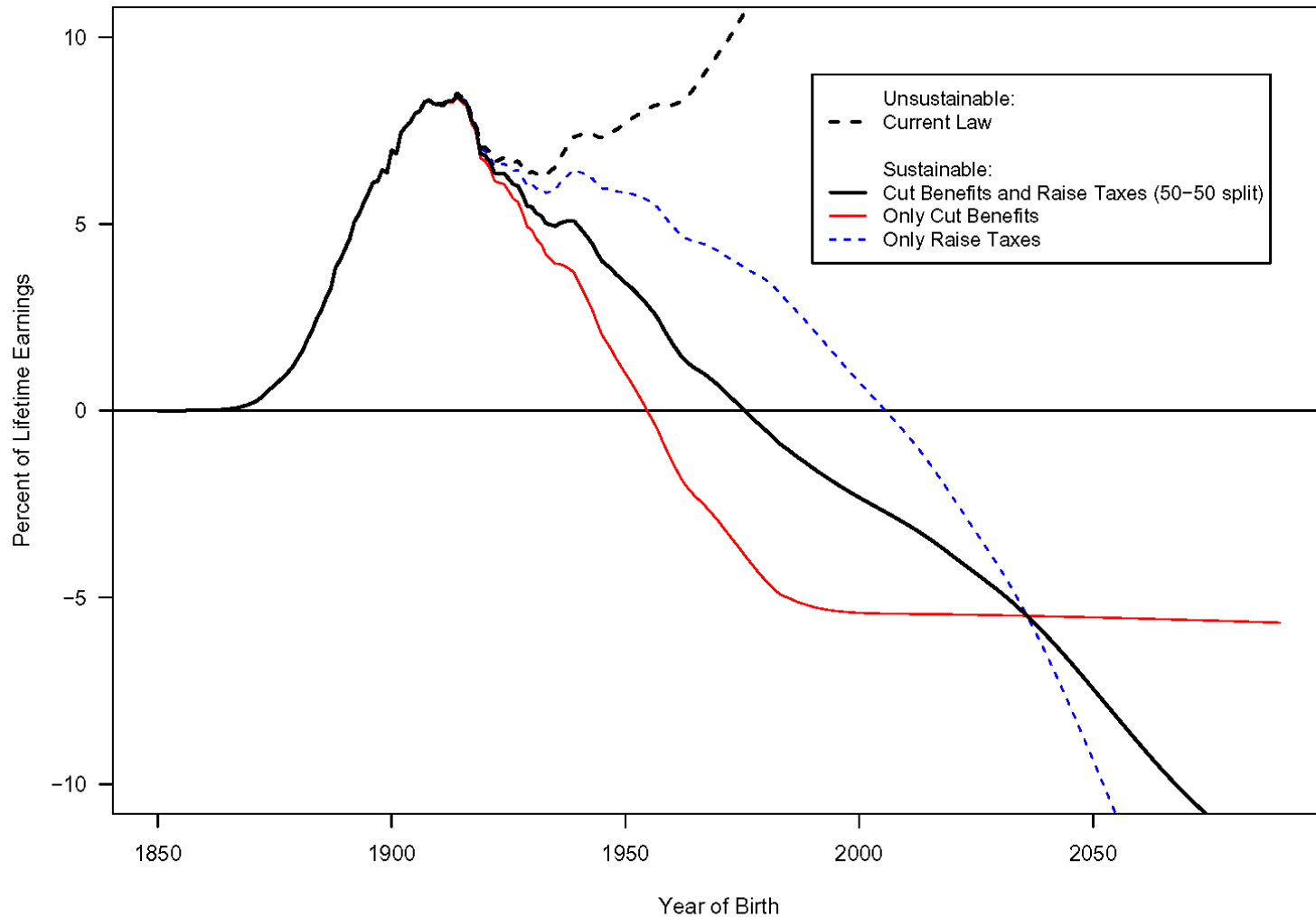
Net Present Value at birth of Medicare taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



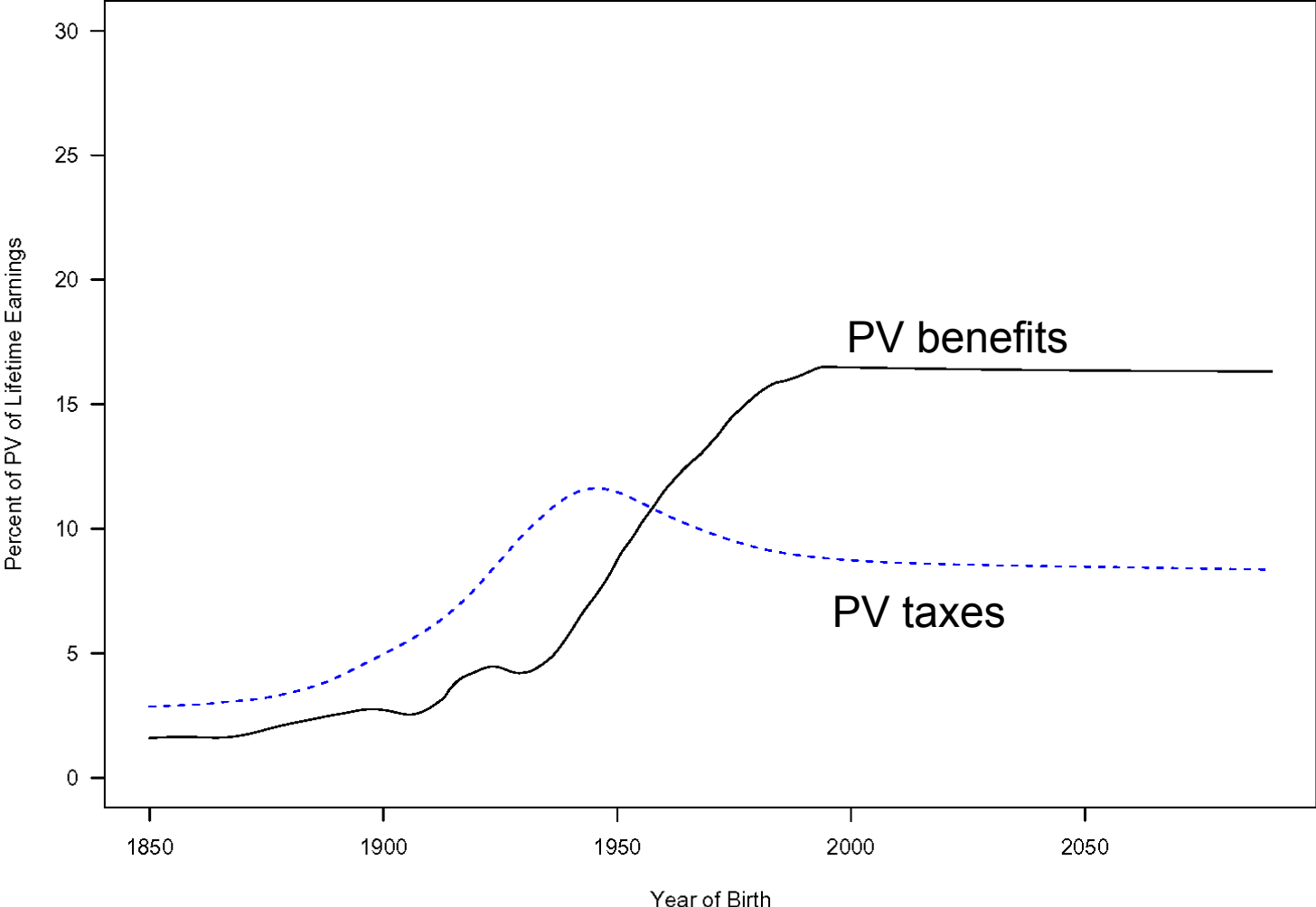
Net Present Value at birth of Social Security plus Medicare as % of lifetime earnings, for generations born 1850 to 2090



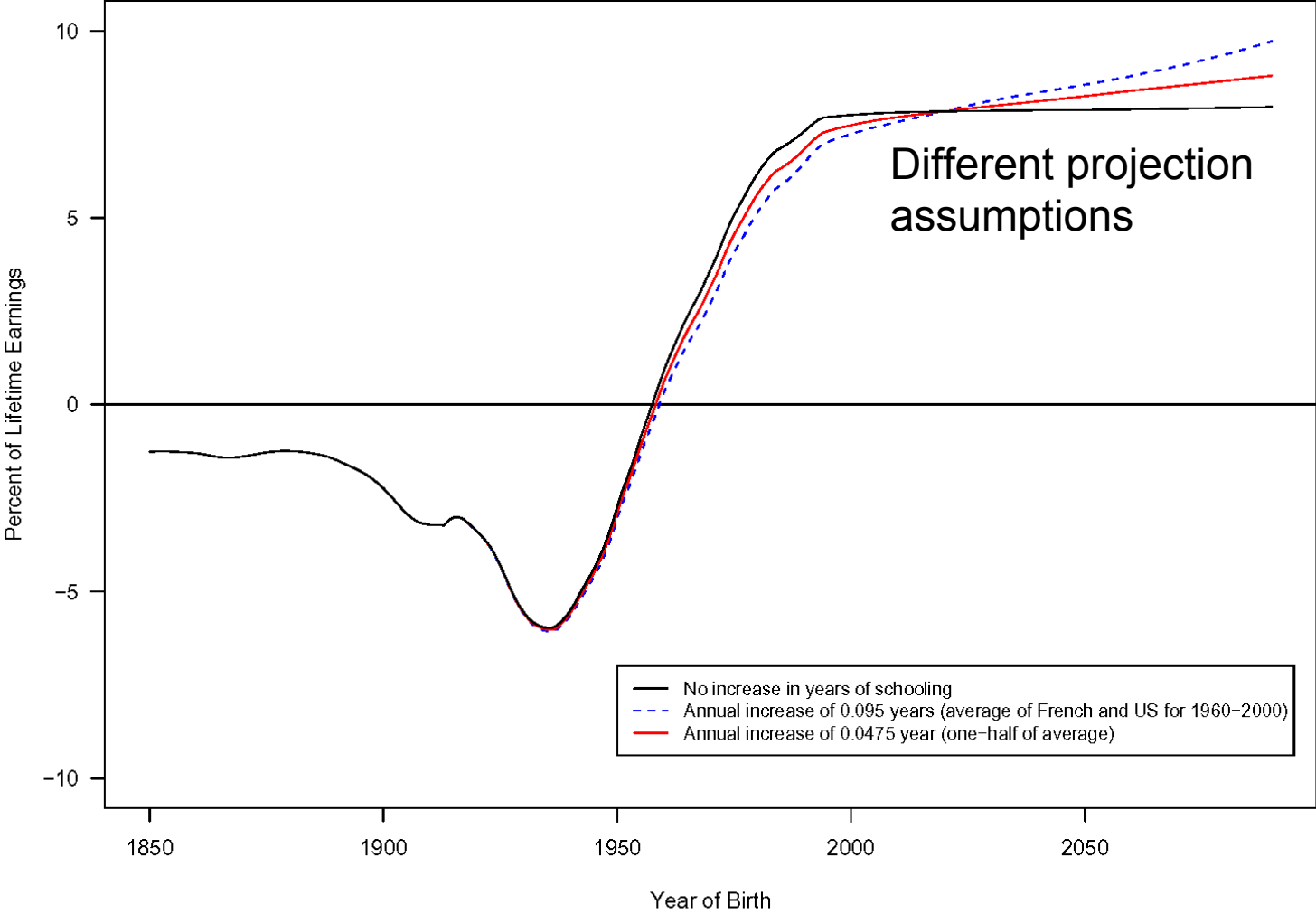
The effect of different policy scenarios: Net Present Value at birth of Social Security plus Medicare as % of lifetime earnings, for generations born 1850 to 2090



Present Value at birth of Public Education benefits and taxes as % of lifetime earnings, for generations born 1850 to 2090



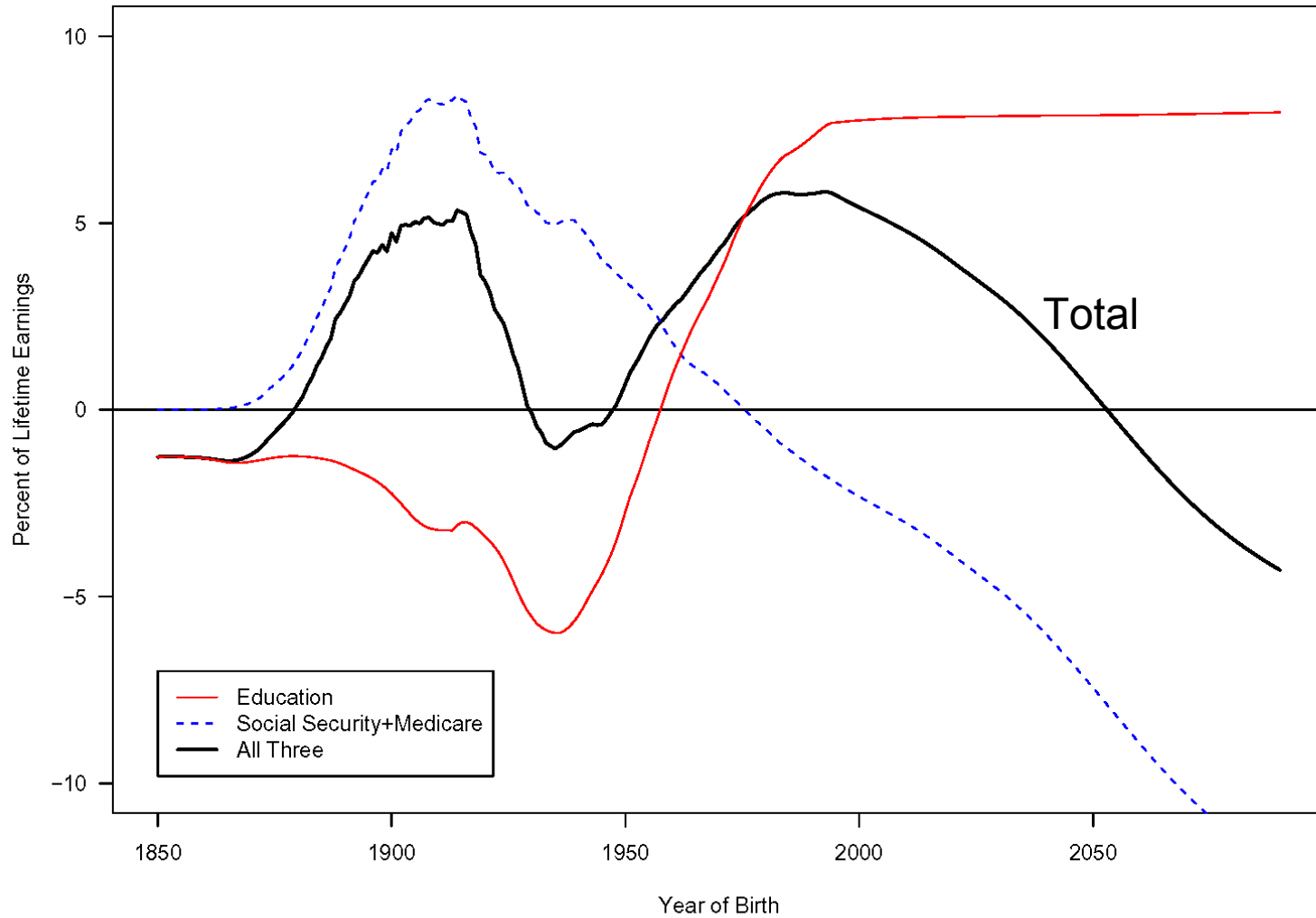
Net Present Value at birth of Public Education as % of lifetime earnings, for generations born 1850 to 2090



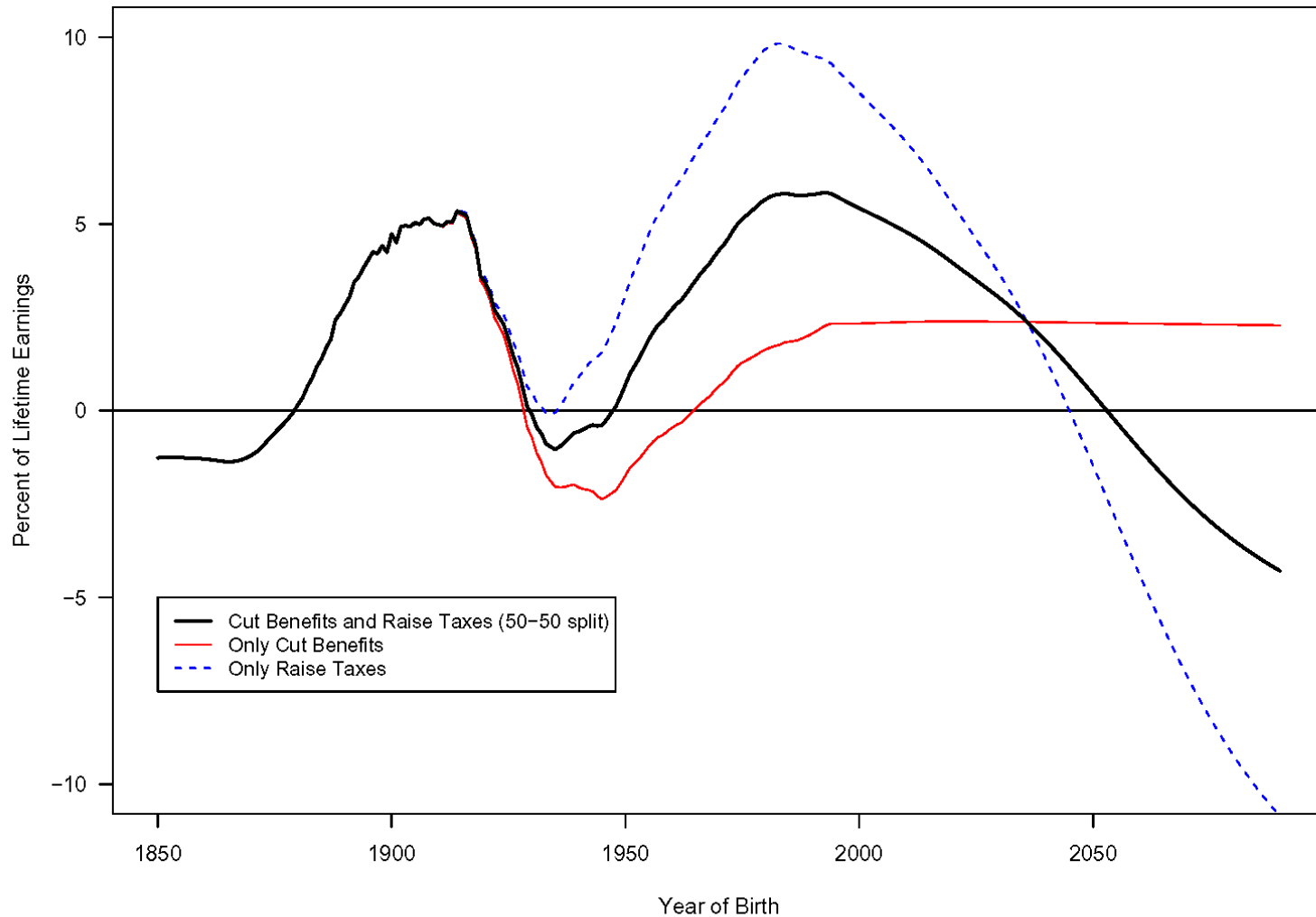
Putting it all together

- Combine NPV for upward transfers
 - Soc Sec
 - Medicare
- With downward transfers: Pub Ed

Net Present Value at birth of expected life time benefits for Social Security, Medicare and Public Education as % of lifetime earnings, for generations born 1850 to 2090



Budget balancing options and Net Present Value at birth of Social Security, Medicare and Public Education as % of lifetime earnings, for generations born 1850 to 2090

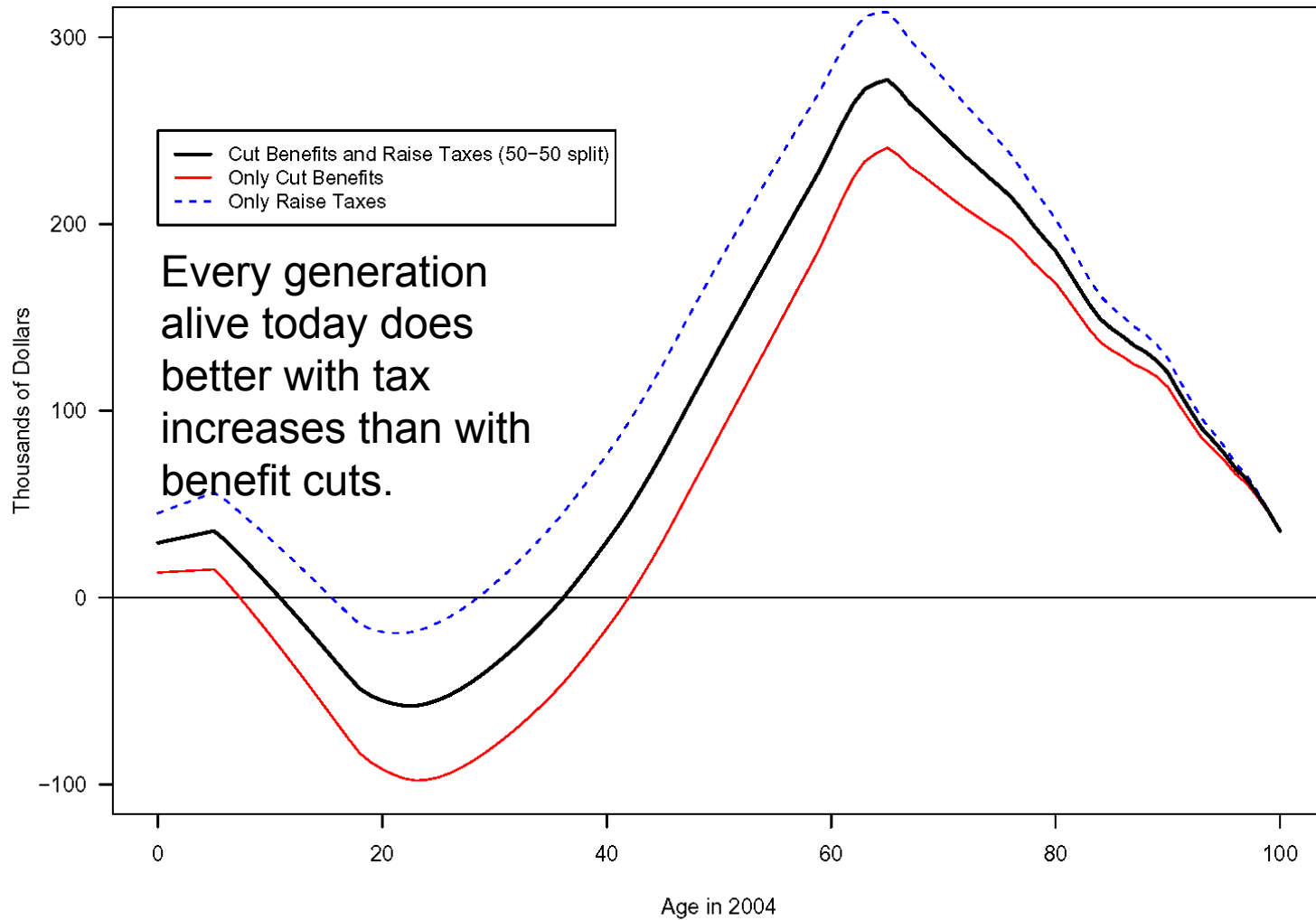


Conclude: Generational redistribution is opposite to our expectations

- Today's young are the biggest winners, due to importance of public education.
 - Their children and grandchildren will also be winners, until generations born after 2050.
- Today's elderly, age 57 to 74, are net losers (slightly).
- As expected, those born in decades around 1900 are also big winners.
- Eventually, generations after 2050 will suffer increasingly large losses.

Now look at generational consequences of different budget balancing policies and their political implications.

NPV calculated for each generation in year 2000, forward from age in 2000 (not from birth)

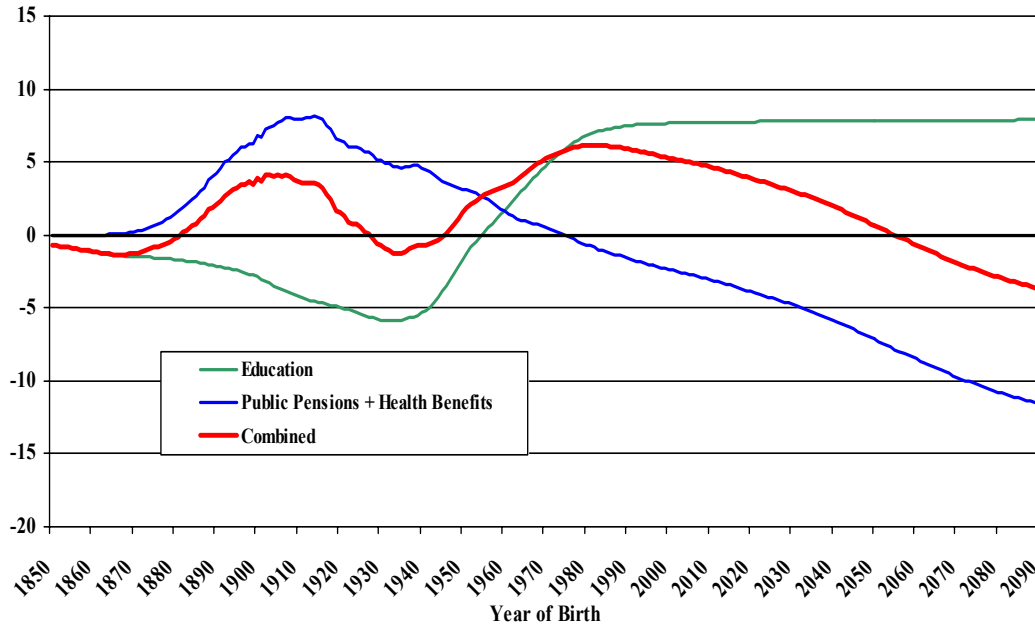


- Everyone alive today is better off if we just raise taxes to balance budget rather than cut benefits.
- For those born after 2040, this policy is increasingly catastrophic, but no voters for many decades will have self interest in cutting benefits.

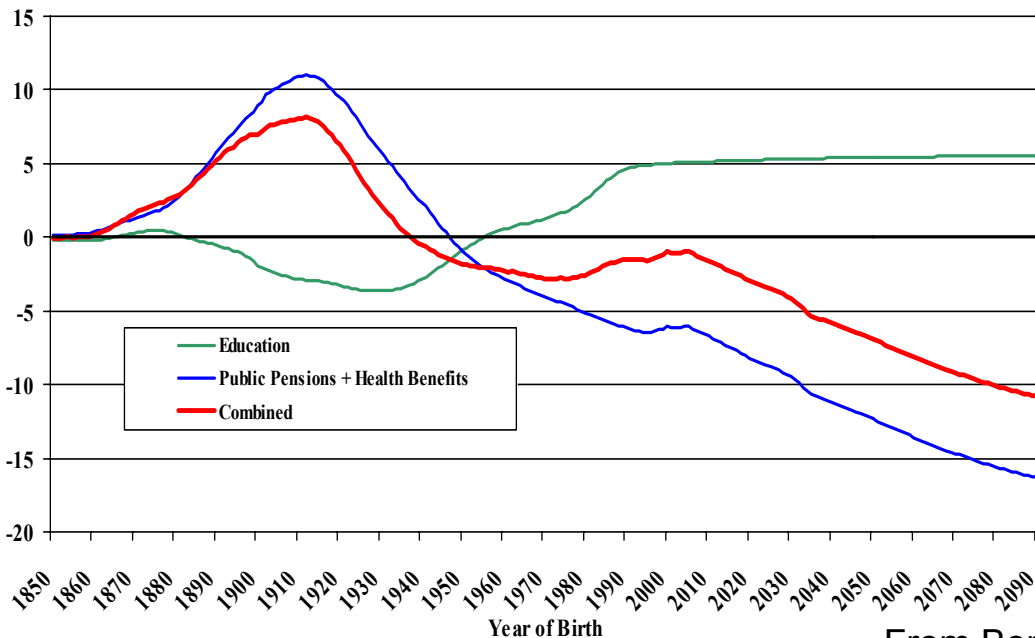
Comparative results for France (from Zuber)

- Use exactly same methods, assumptions
- Different results, because
 - Pensions much bigger in France
 - Public health care is much bigger in France and goes to all ages

USA and France (Stephane Zuber) : A Comparison

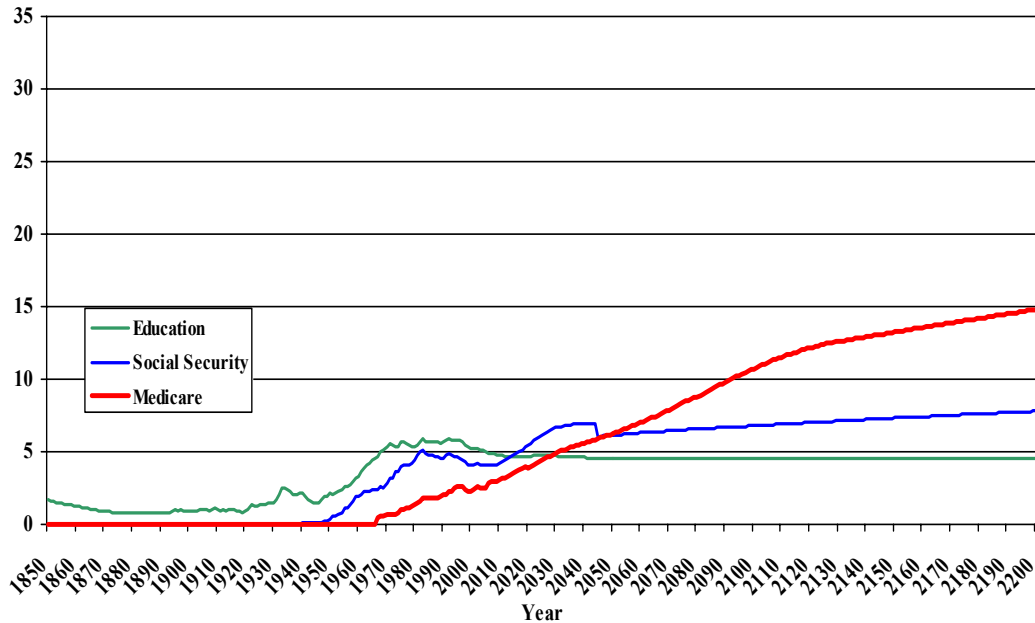


NPVs for the US

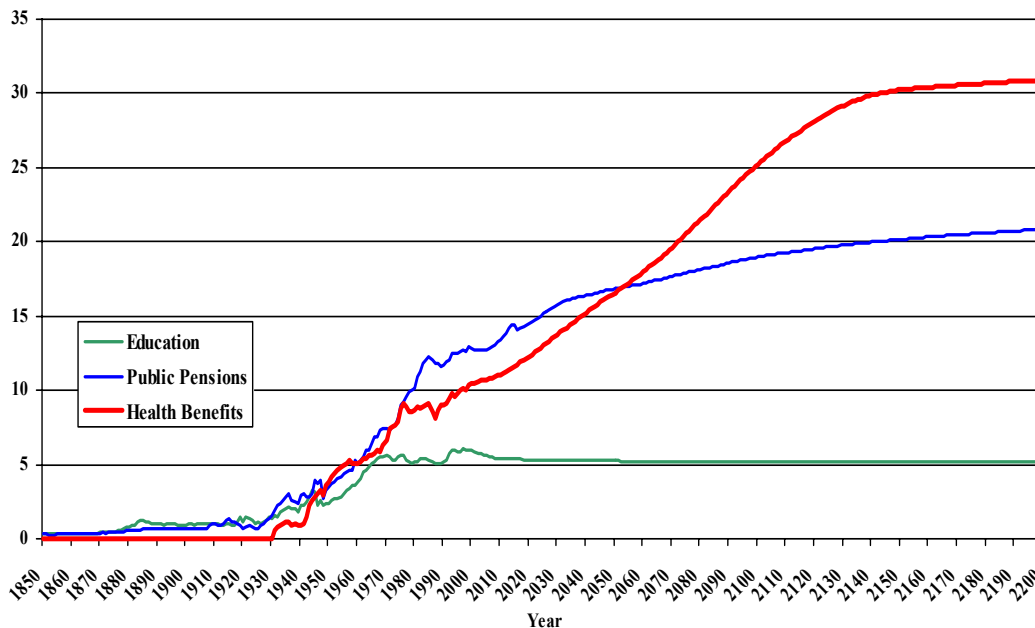


NPVs for France

USA and France: Accounting for the differences (1)



Spending as Percent of GDP:
US



Spending as Percent of GDP:
France