

# 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)

# Characteristics of typical public pension and health care programs--

- Programs are unsustainable under current policy
- Future generations will have to pay far higher taxes, and/or receive far smaller benefits
- Participants earn low rates of return
- But public education is also a public transfer program for investing in children.
- Taking it into account changes the picture dramatically.

# Plan of talk

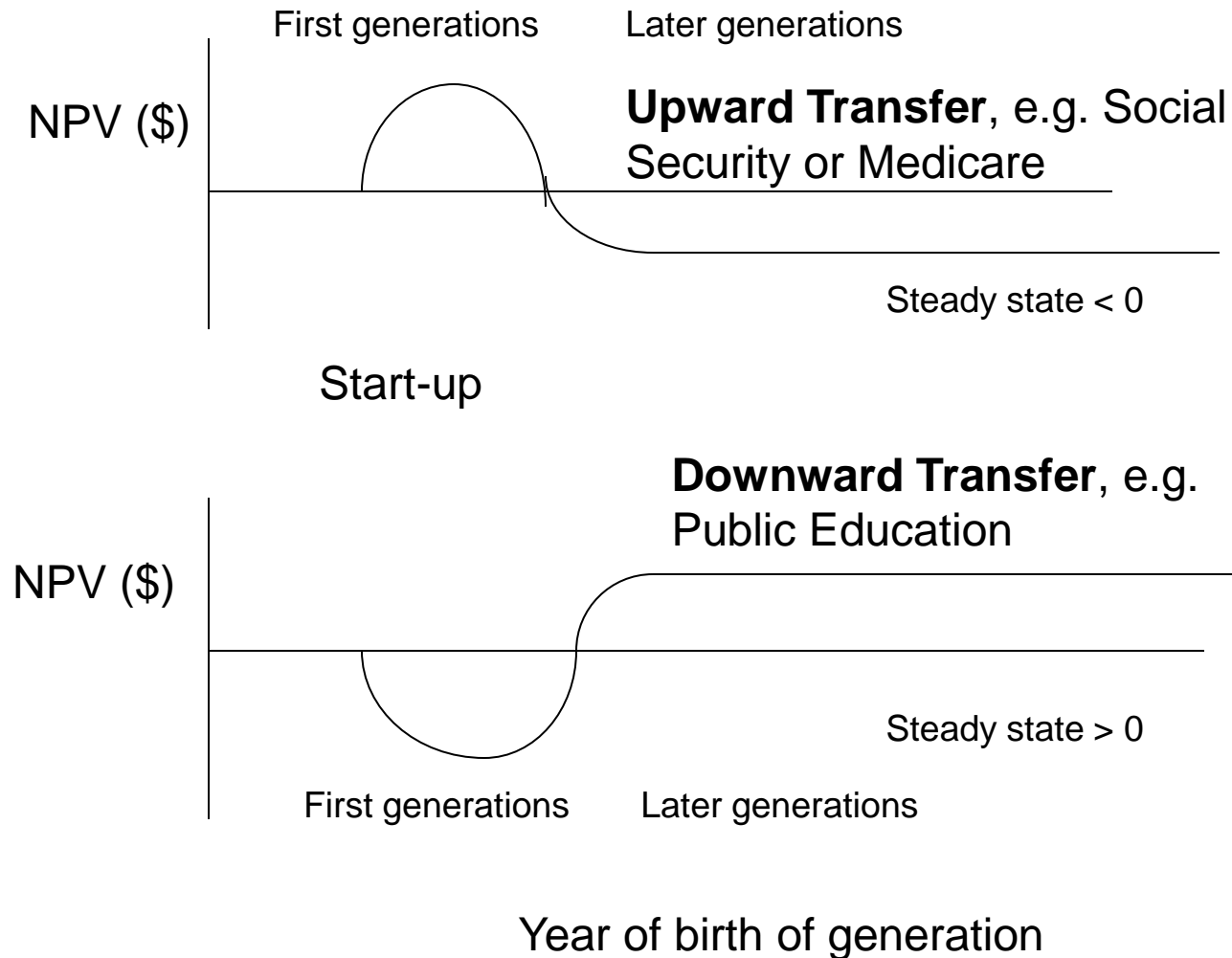
- Estimate historical and future generational accounts for major public transfers in US
  - Social Security, Medicare & Public education (Medicare is US public health care for elderly).
  - Generations born 1850 to 2090

# Calculate the Net Present Value (NPV) of survival-weighted benefits minus taxes

For the generation born in year  $t$ :

- $l_x(t+x)$  = cohort survival from birth to age  $x$  of births in year  $t$
- $r$  = discount rate, 3% per year (after inflation) for baseline calculations
- For generation born at  $t$ , at each age find  $l_x(t+x) e^{-rx}$  (Benefits–Taxes received at age  $x$ )
- NPV == sum overall all ages for this generation.

What happens when a new transfer program starts? (**NPV**) by generation for **upward** transfers versus **downward** transfers



# Reality is more complicated because

- Transfer programs do not just start and then stay the same forever.
- Programs are started, and then
  - The share of the population that is covered increases.
  - The relative size of the benefit is increased.
- This blurs the shapes I just showed for starting upward and downward programs.

# Historical data and methods

- For education, IPUMS (Integrated Public Use Micro Sample of census) and Administrative data
  - costs driven by enrollment rates, numbers of kids, and costs per pupil at each level.
  - property taxes are set to generate revenue equal to these 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

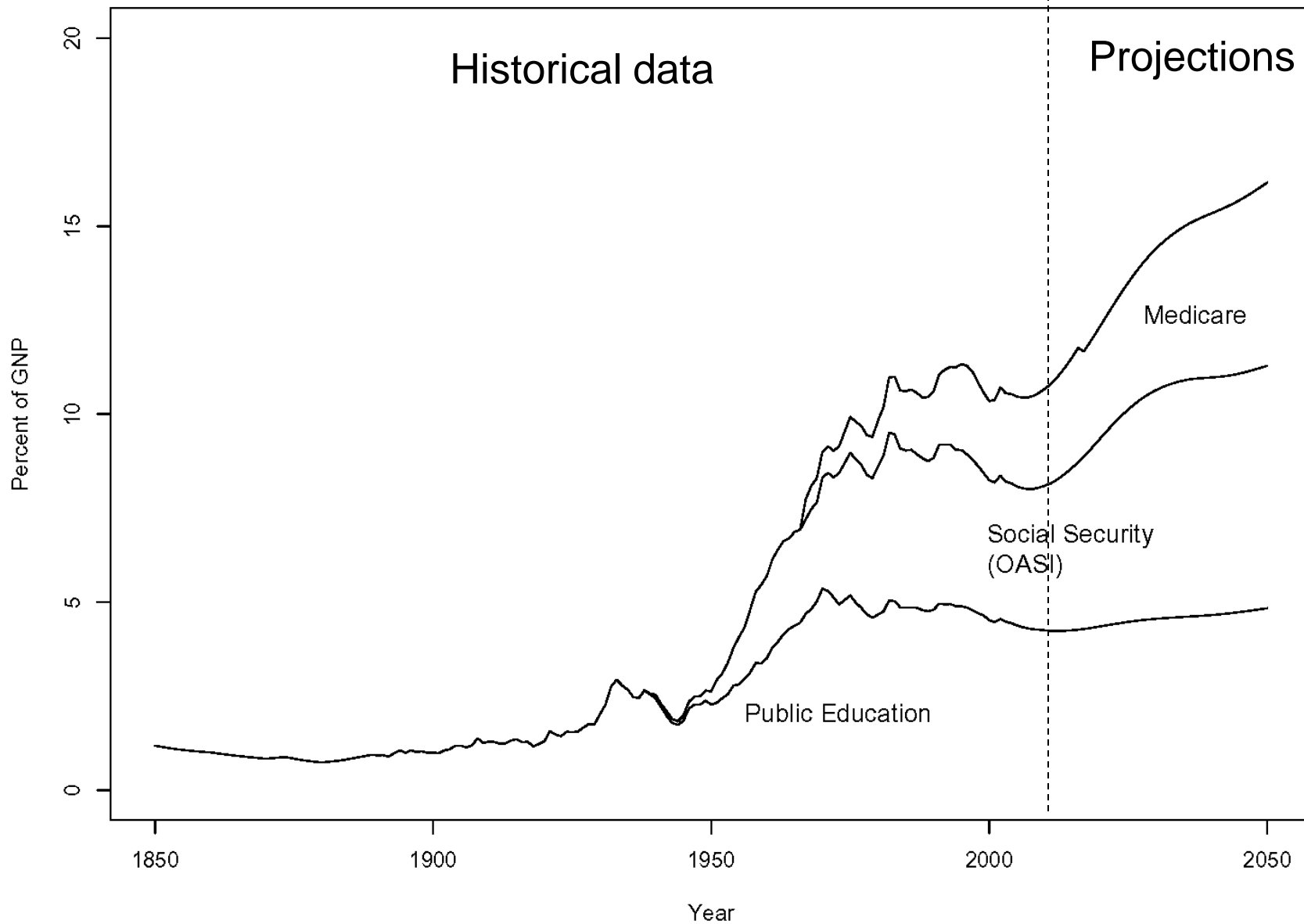
- Mostly based on official projection assumptions for
  - Demography
  - Tax and benefits rules
  - Productivity growth, program costs

Our projections are reasonably consistent with Official and other US budgetary projections

But we consider alternative policy scenarios for balancing the budget, because current policies lead to unsustainable deficits, and are impossible in the long run.

- We consider three different program adjustments to balance budgets
  - Raise taxes to meet the cost of scheduled benefits.
  - Cut benefits to meet scheduled tax revenues.
  - **OUR BASELINE:** Combine tax and benefit adjustments 50-50.

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

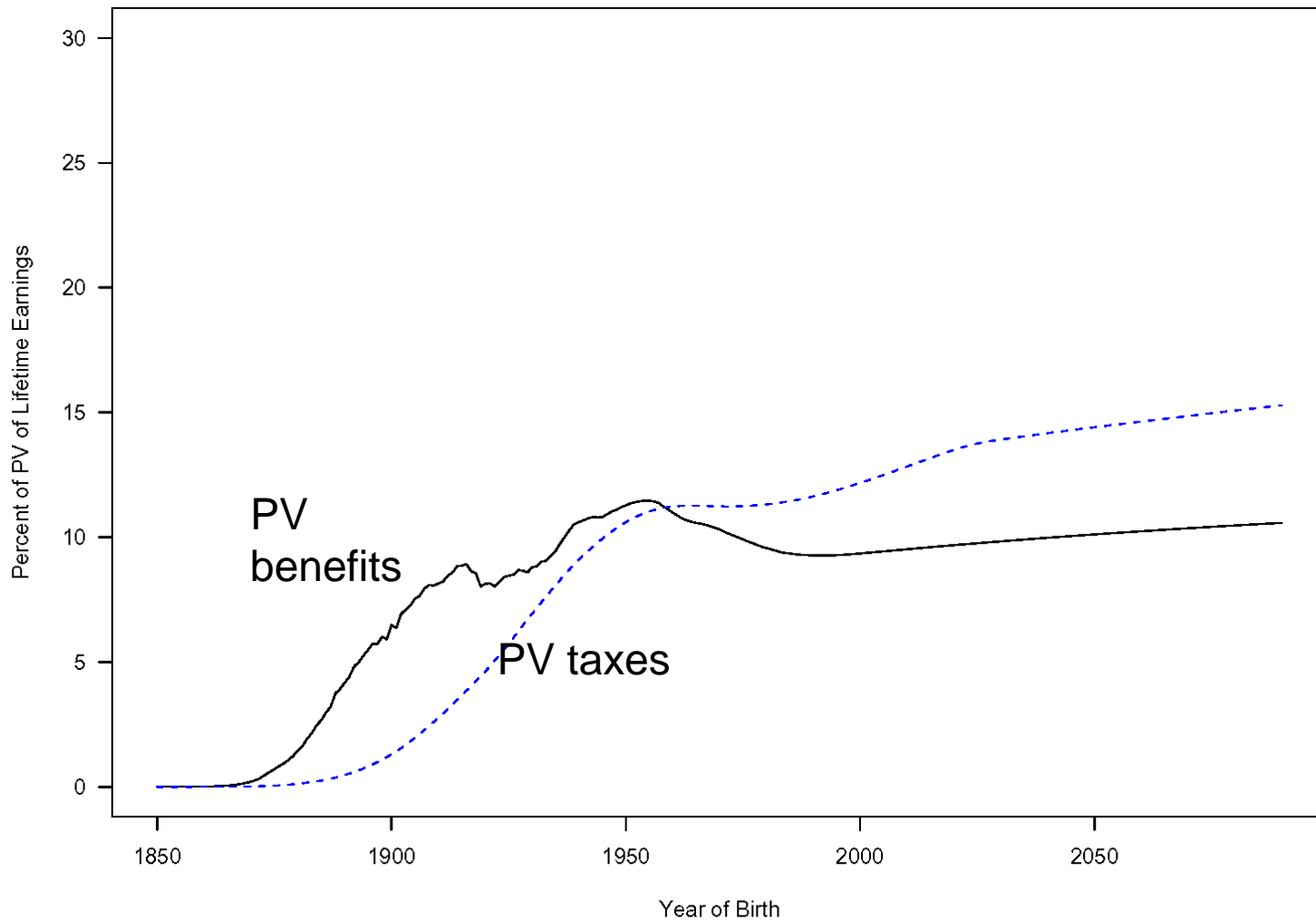


# The changing age profiles of taxes and benefits in the US: 1900, 1930 and 2000 (cross-sectional)

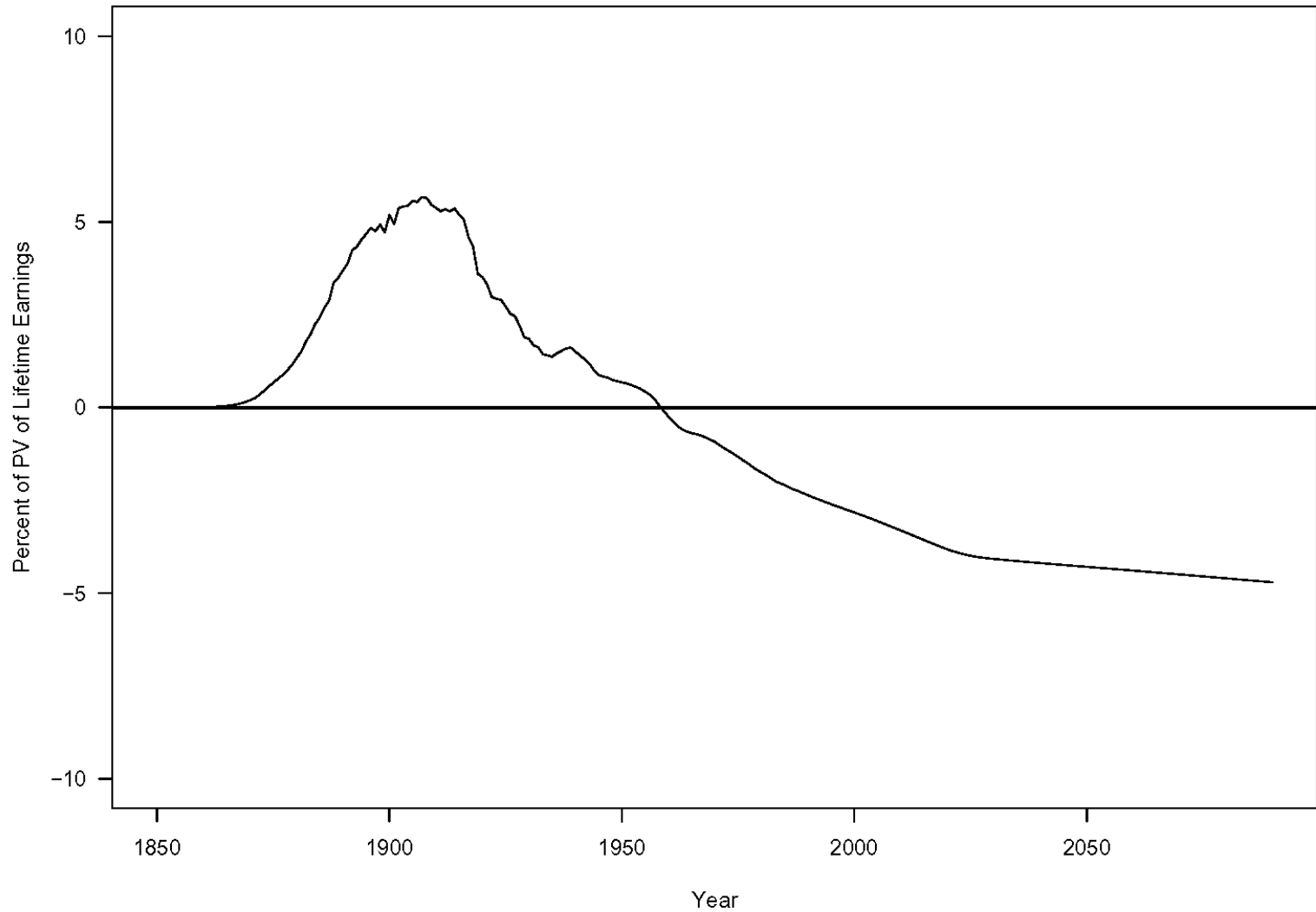
% per capita  
gdp



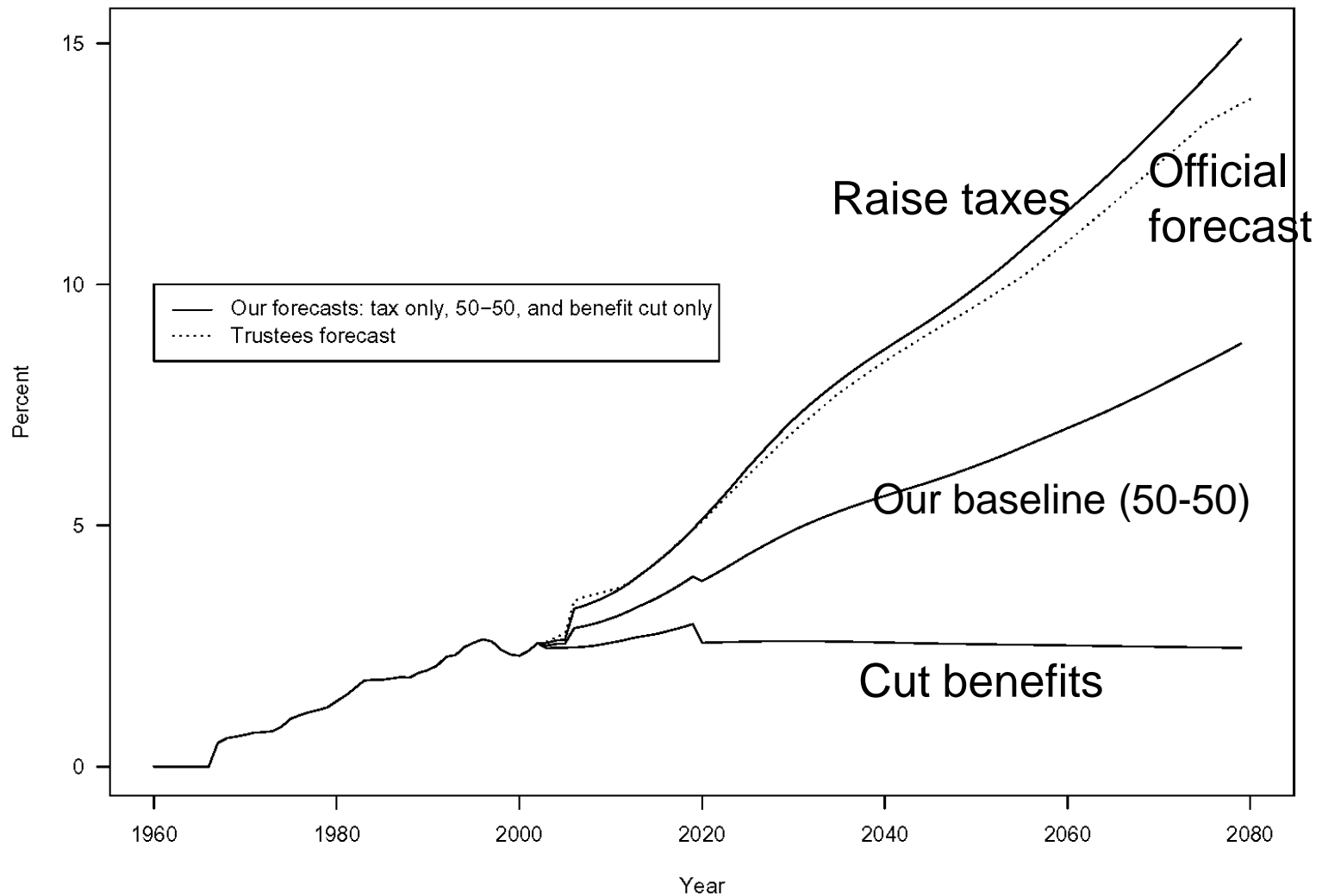
# Present Value at birth of Social Security taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



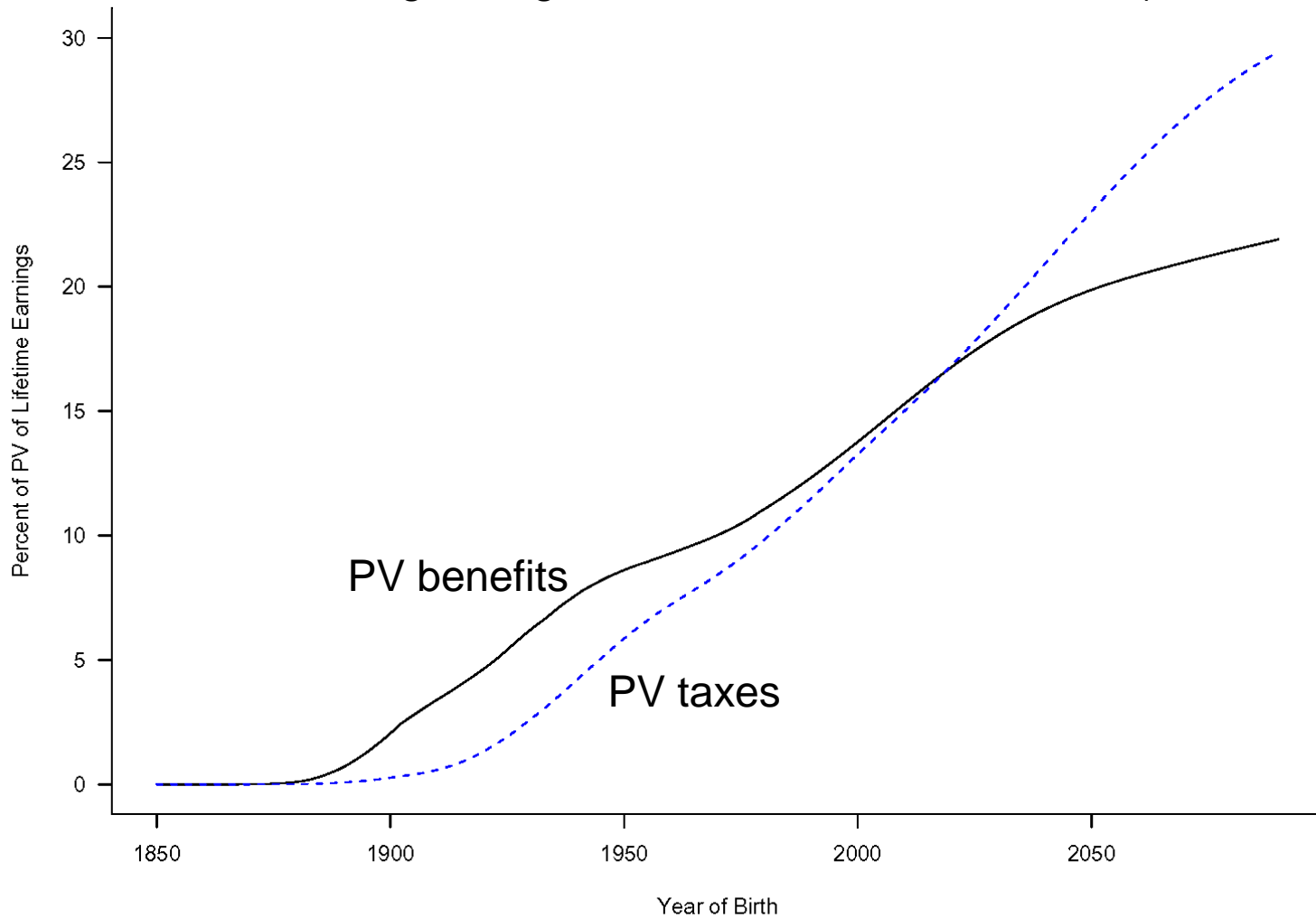
**Net** Present Value at birth of Social Security taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



# Medicare Expenditures as % of GDP under three fiscal adjustment scenarios

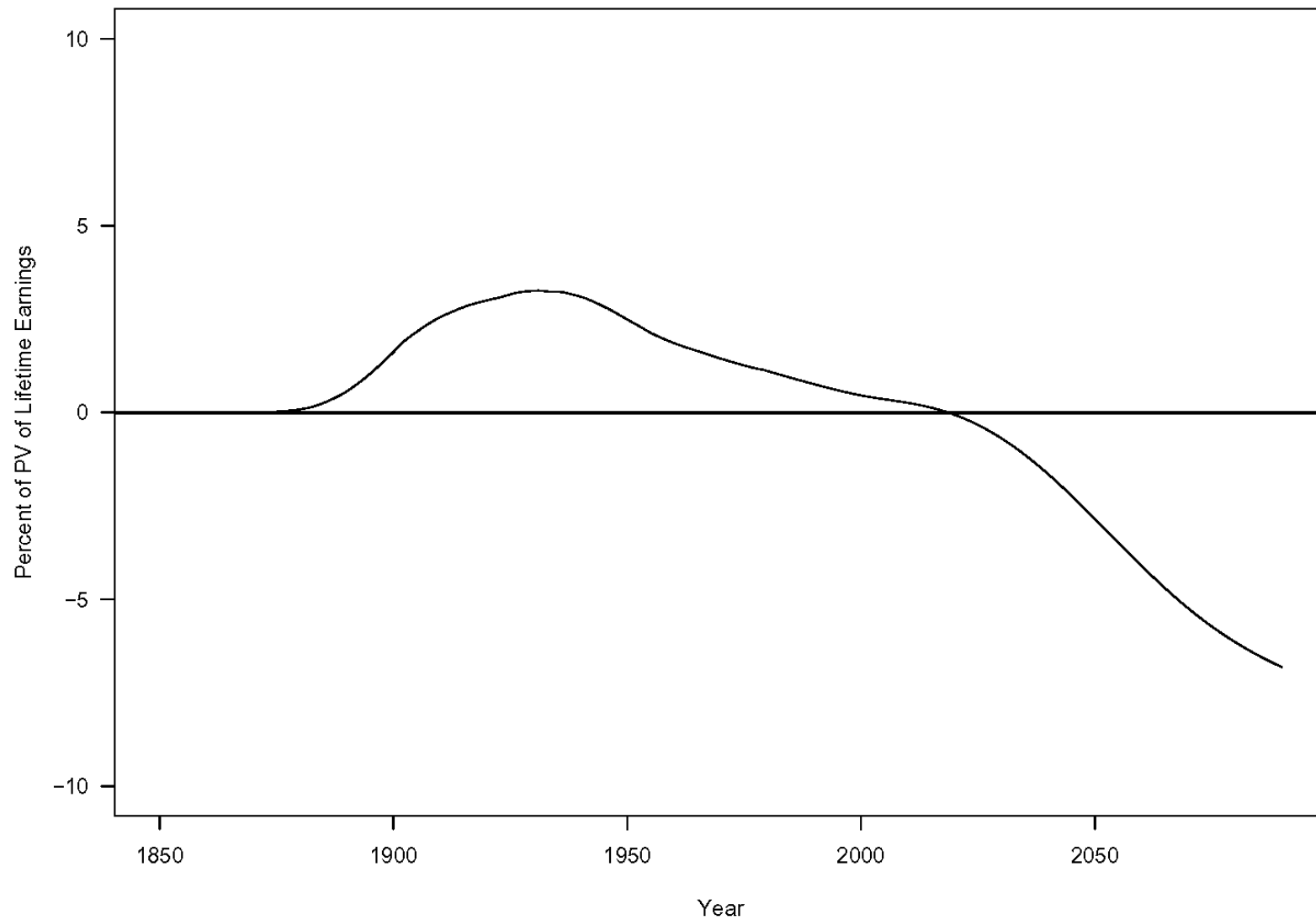


# Present Value at birth of Medicare taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090 (Baseline)

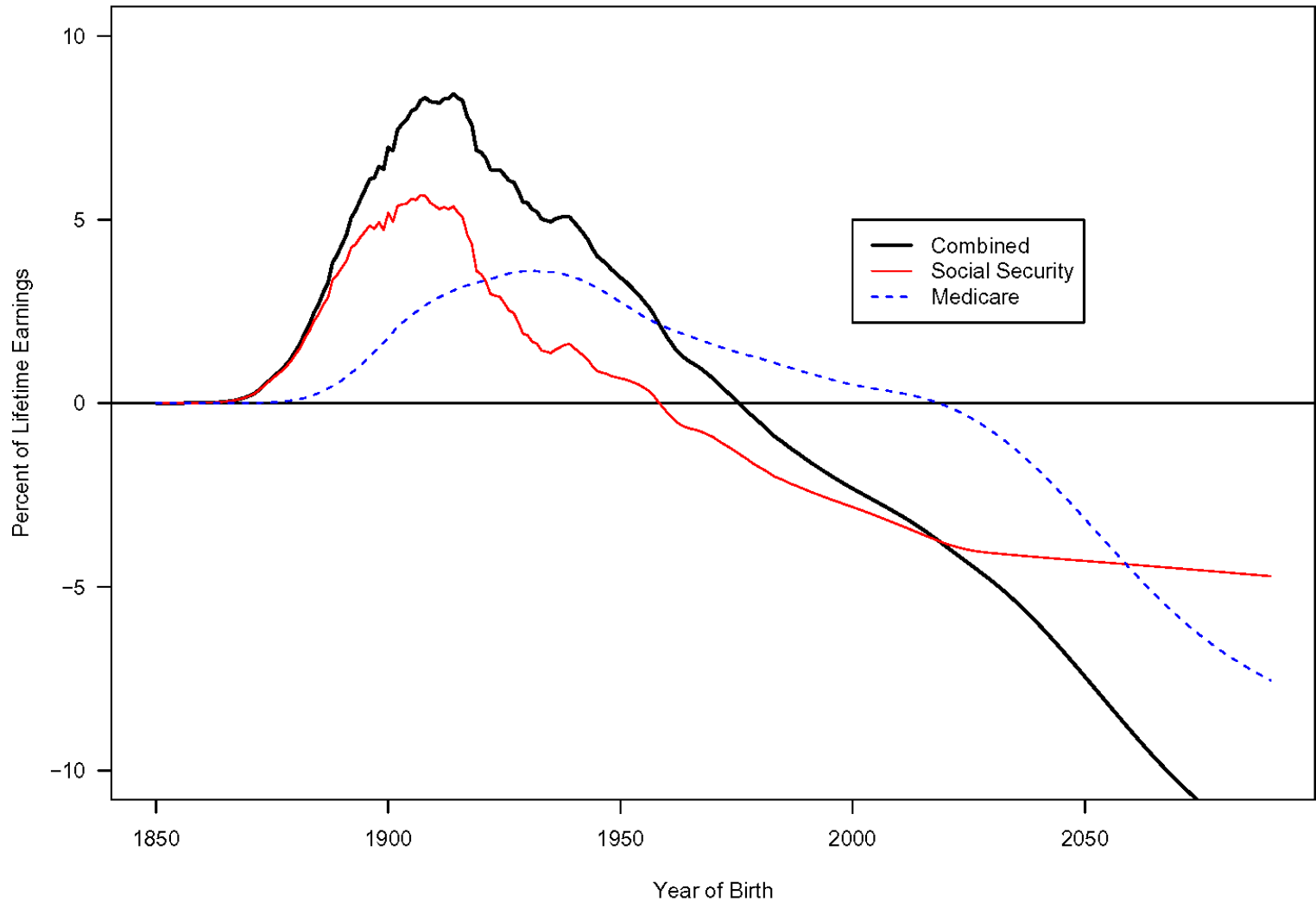




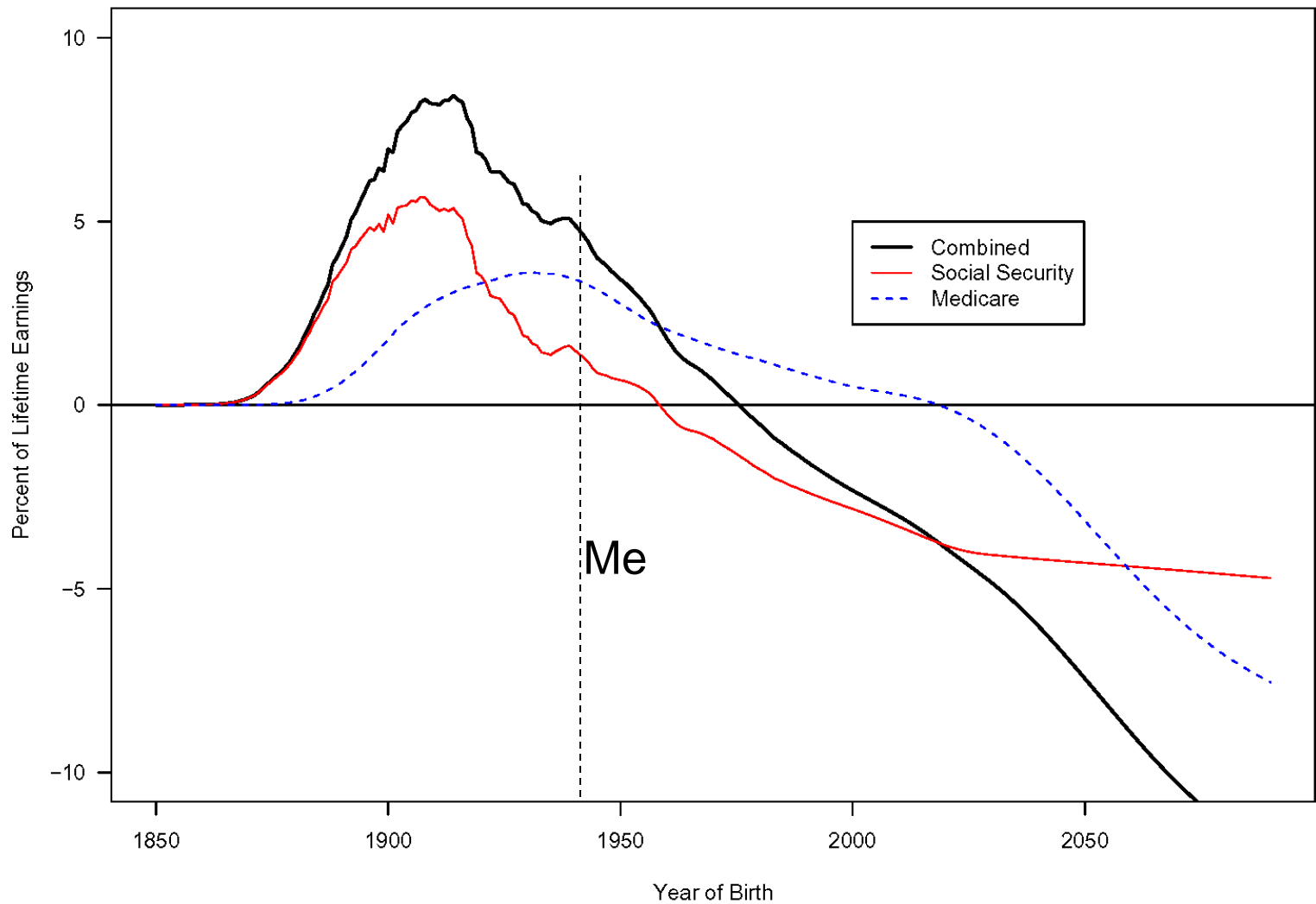
# Net Present Value at birth of Medicare taxes and benefits as % of lifetime earnings, for generations born 1850 to 2090



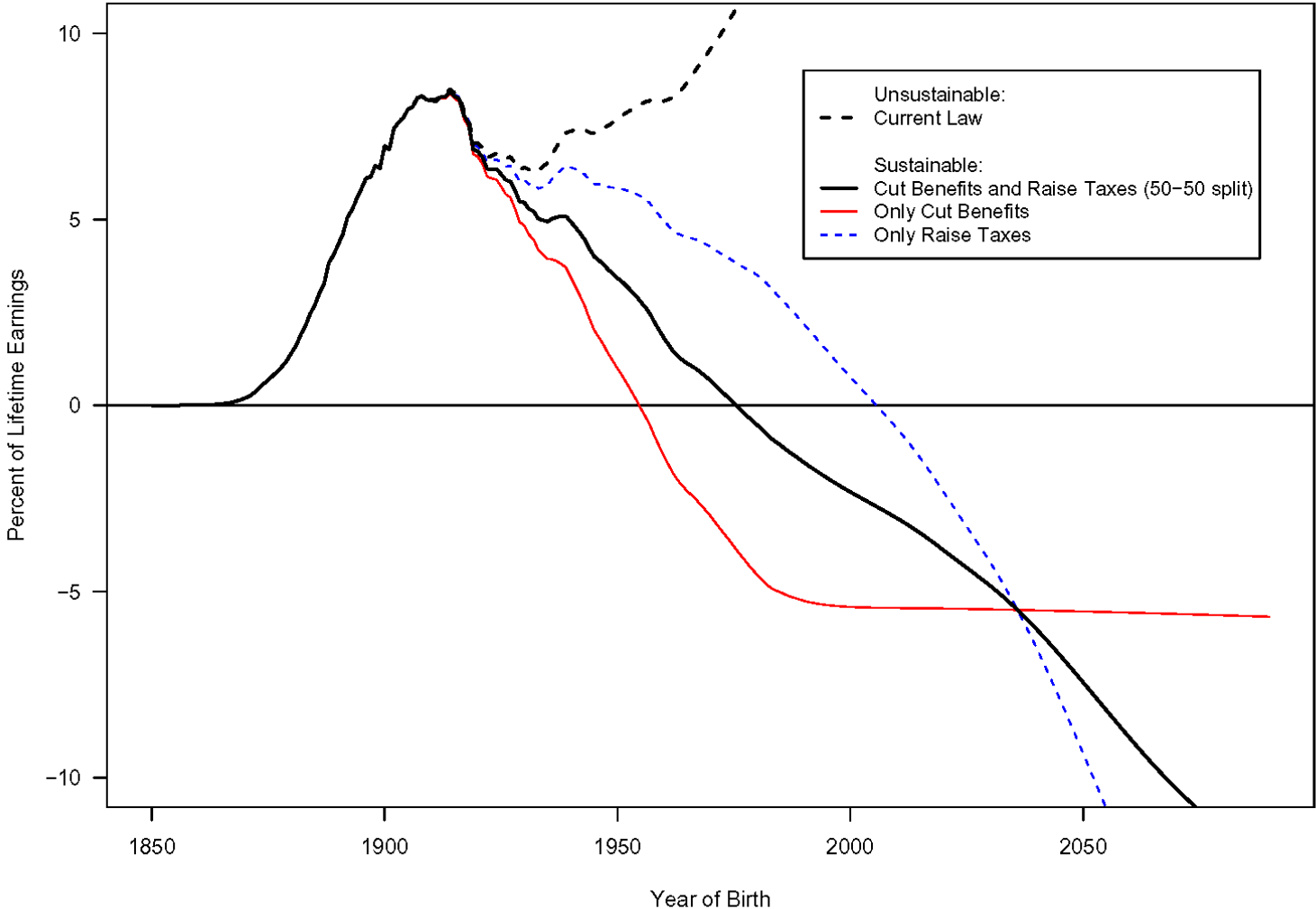
# Net Present Value at birth for life time Social Security and Medicare as % of lifetime earnings, for generations born 1850 to 2090



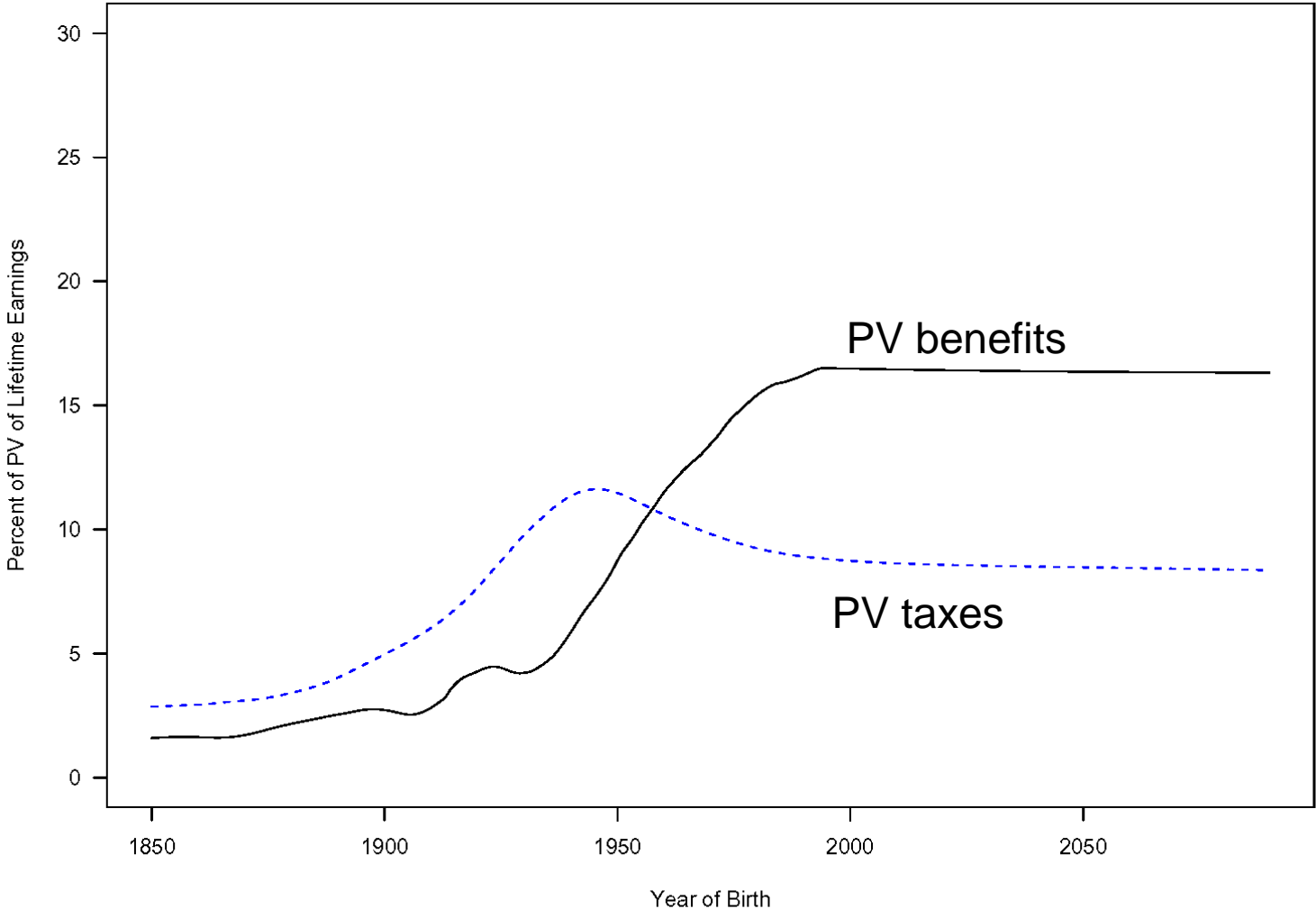
# Net Present Value at birth for life time Social Security and Medicare as % of lifetime earnings, for generations born 1850 to 2090



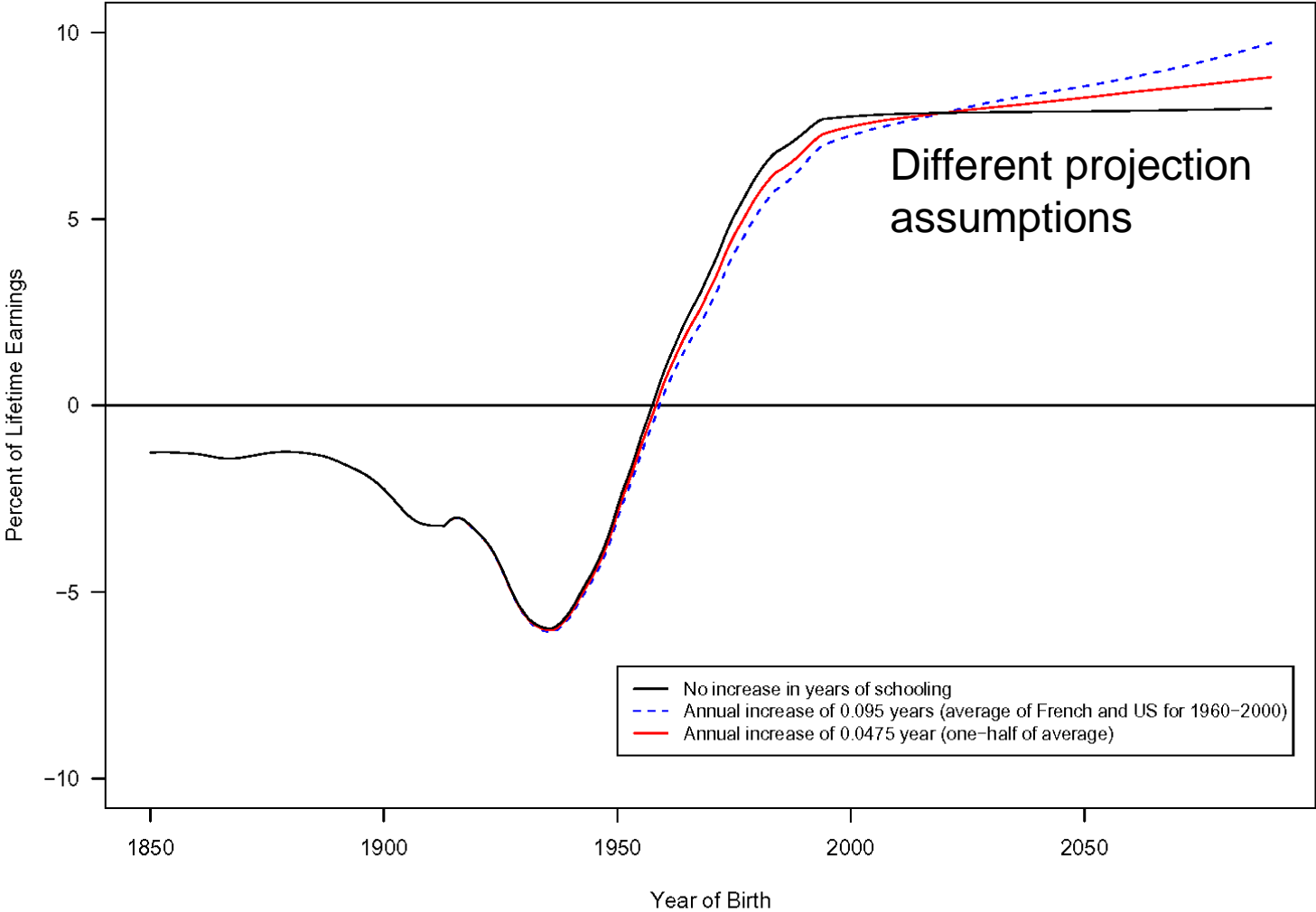
# The effect of different policy scenarios: Net Present Value at birth of Social Security plus Medicare as % of lifetime earnings, for generations born 1850 to 2090



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



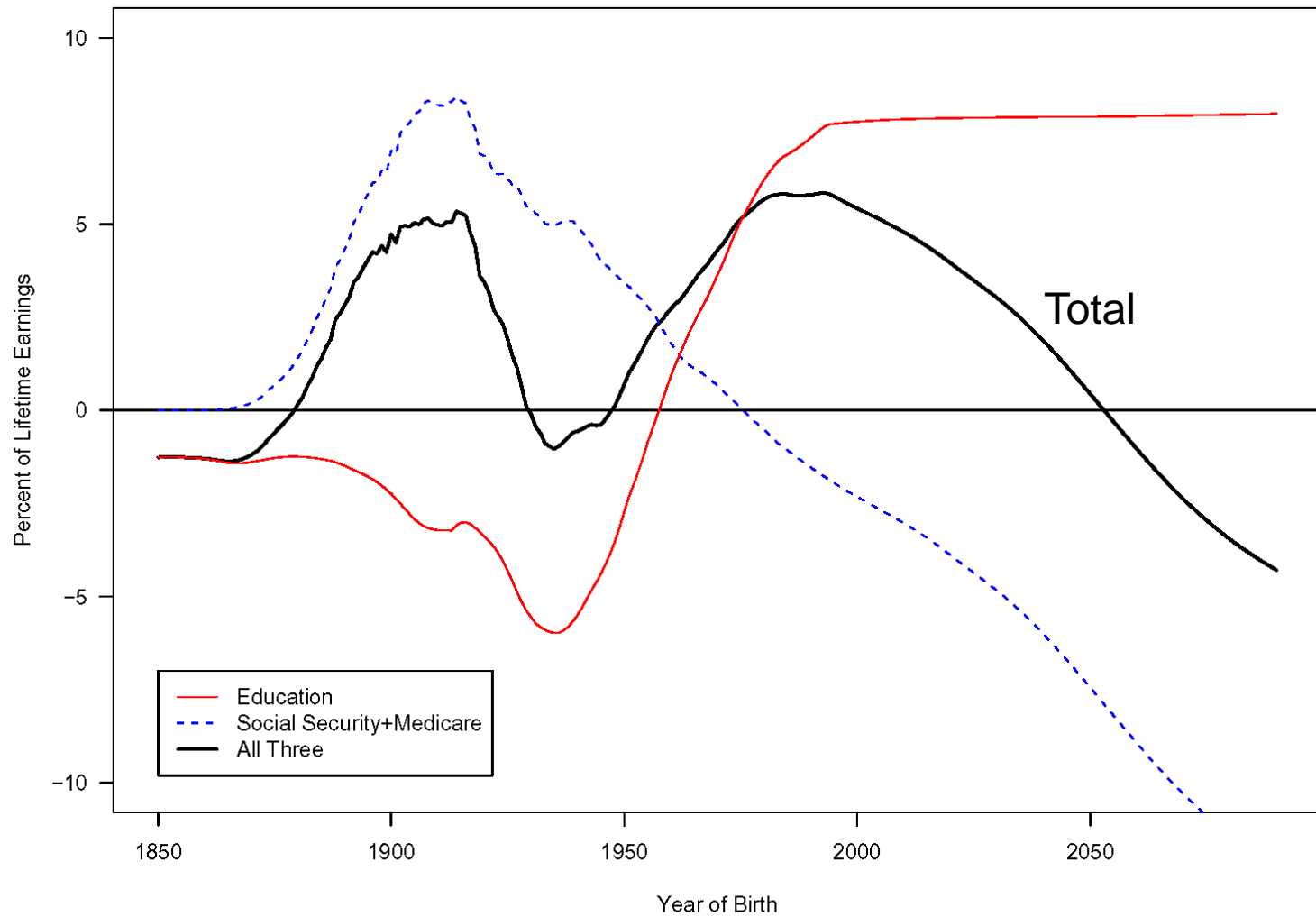
# Net Present Value at birth of Public Education as % of lifetime earnings, for generations born 1850 to 2090



# Putting it all together

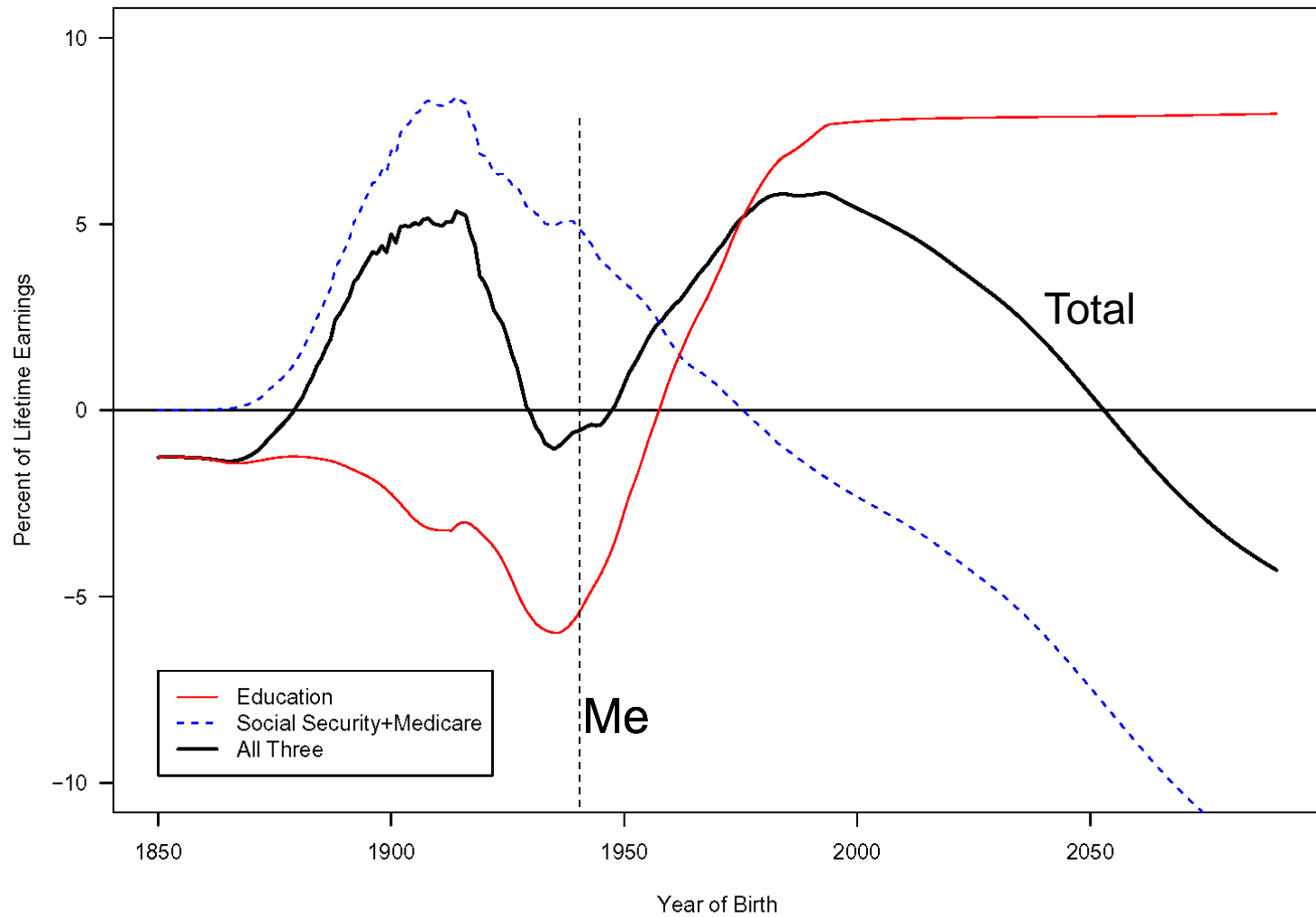
- Combine NPV for upward transfers
  - Soc Sec
  - Medicare
- With downward transfers: Pub Ed
- Simply add these together.

# 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

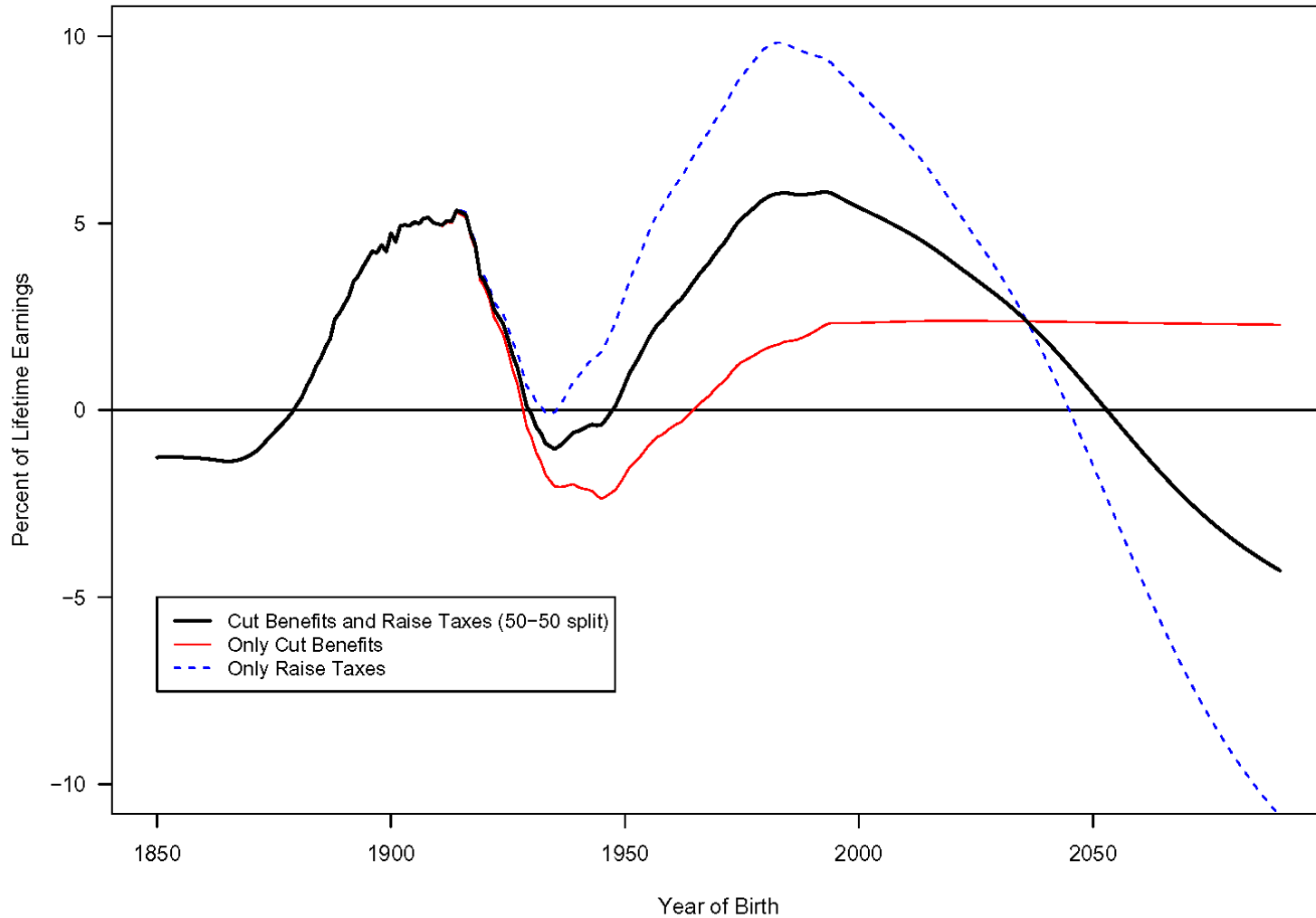




# Net Present Value at birth of expected life time benefits for Social Security, Medicare and Public Education as % of lifetime earnings, for generations born 1850 to 2090



# 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.

# Comparative results for France (from Zuber)

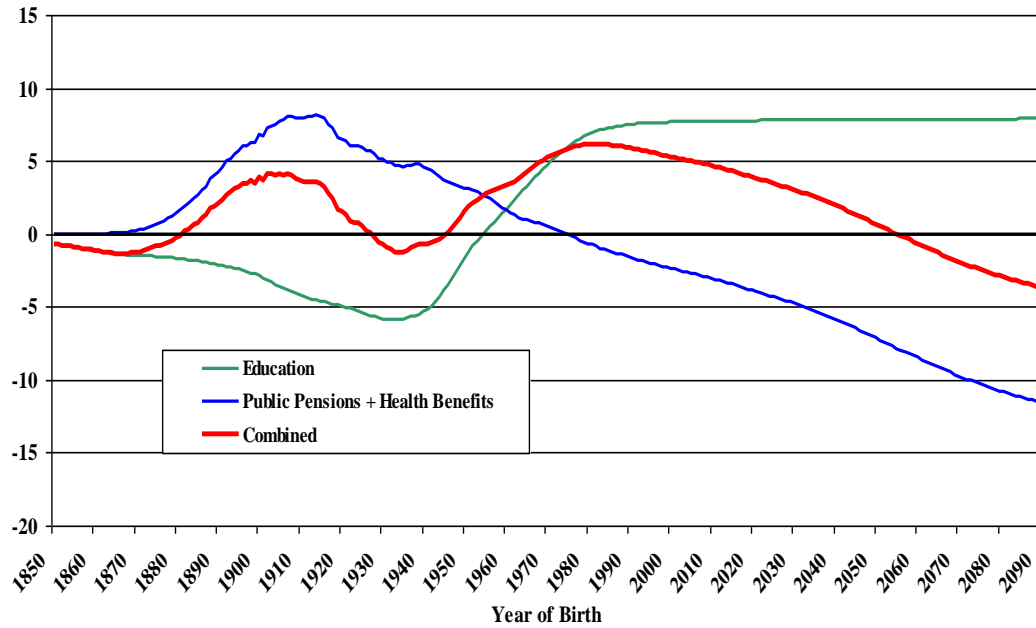
- Use exactly same methods, assumptions
- Different results, because
  - Pensions much bigger in France
  - Public health care is much bigger in France and goes to all ages
- Projected to 2100, 23% of GDP in US, but 49% in France.
- In US, all generations born after 2050 are losers.
- In France, all generations born after 1940 are losers!

# Conclusion

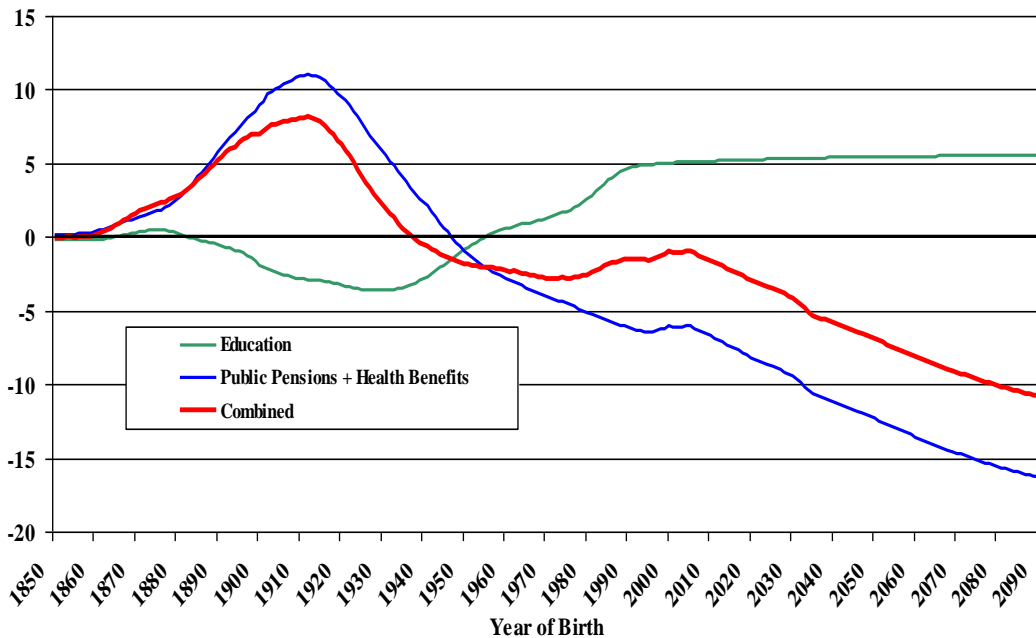
- Some countries are increasing the generosity and coverage of their welfare state.
- Some countries are cutting back and restructuring.
- Some generations win and some lose as a result of these changes.
- Looking at one program can be misleading.
- Need comprehensive accounts.
- Policy makers should be aware of these consequences, and pay attention to generational equity.

**END**

# USA and France (Stephane Zuber) : A Comparison

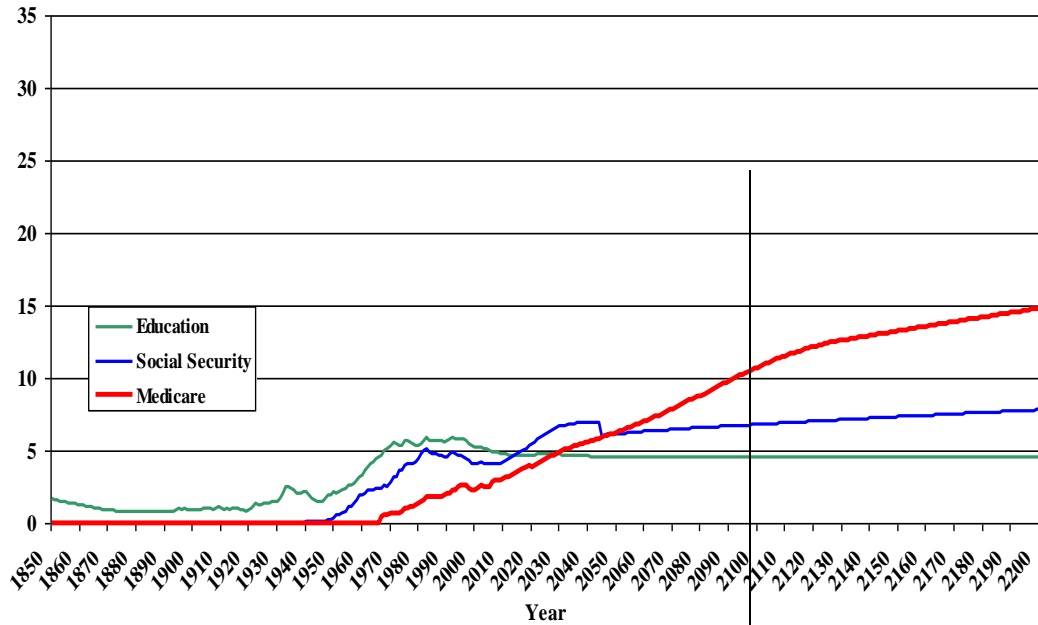


NPVs for the US

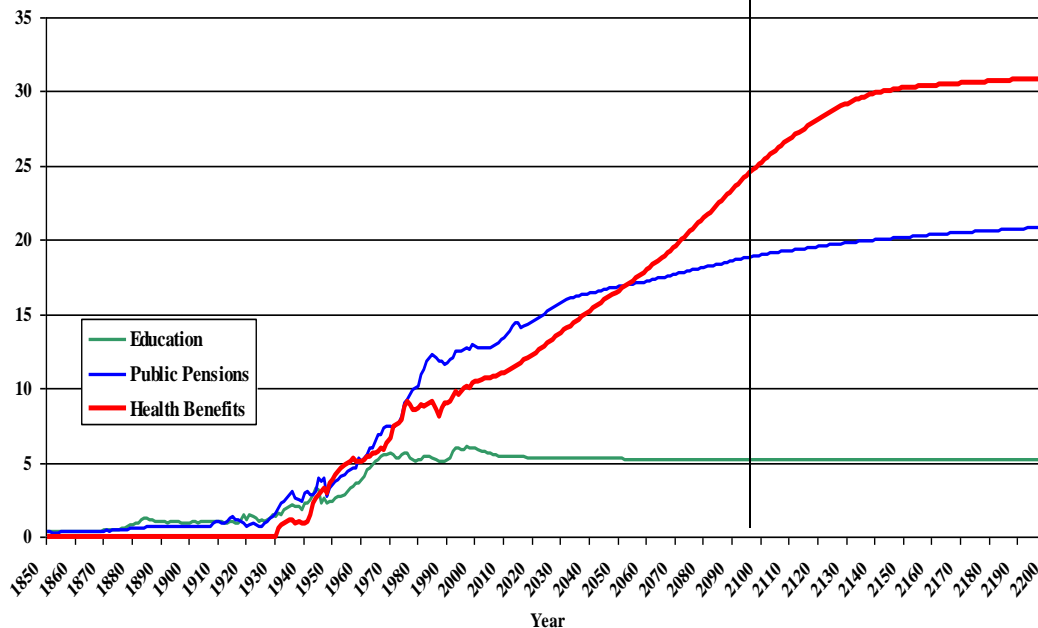


NPVs for France

# USA and France: Accounting for the differences (1)



Spending as Percent of GDP:  
US



Spending as Percent of GDP:  
France