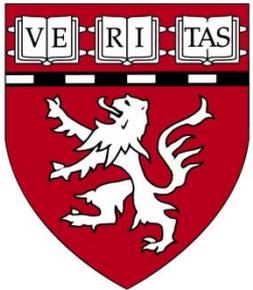


Utility maximizing models of Medicare supplemental insurance choices



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Thanks to my co-authors



Melissa Favreault

- Urban Institute



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- Health Policy PhD
program, Harvard

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Outline

Motivation

Spending and supplemental insurance coverage of Medicare beneficiaries

Approach

Microsimulation model

Results

Projected enrollment and spending

Discussion

Methods extensions



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Following

Today my dad is signing up for Medicare. The rest of us are screwed, per [@USCBO](#) [#AHCA](#)

Who Wins and Who Loses Under Obama's Health Care Plan

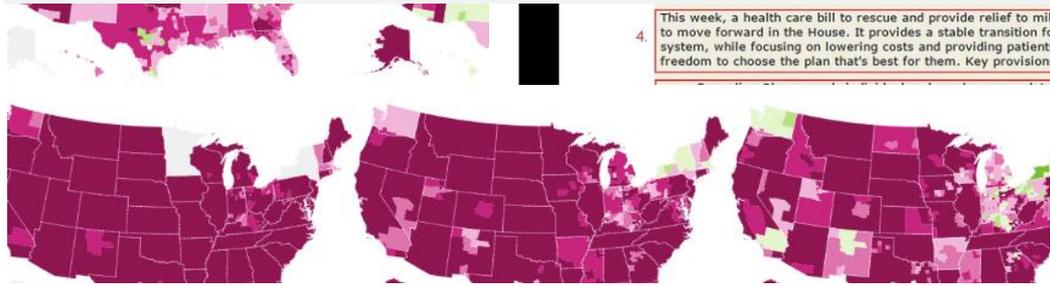
Vox

TOPICS - TRENDING



CBO estimates 24 million lose coverage under GOP plan. The devastating report, explained.

Updated by Sarah Kliff | sarah@vox.com | Mar 13, 2017, 4:52pm EDT



CBO REPORT: UNDER RYAN PLAN, 14 MILLION TO LOSE INSURANCE BY 2018...

...24 MILLION BY 2026



...READ THE FULL REPORT
by BRISTOL NEWS

5:44

TRUMP SIGNALS 'BIG FAT BEAUTIFUL NEGOTIATION' ON HEALTHCARE BILL
by CHARLIE SPURRING

5:45

REPORT: OBAMA ADMINISTRATION SPENT \$77M TO PROMOTE OBAMACARE IN 2016
by KATHERINE RODRIGUEZ

5:46

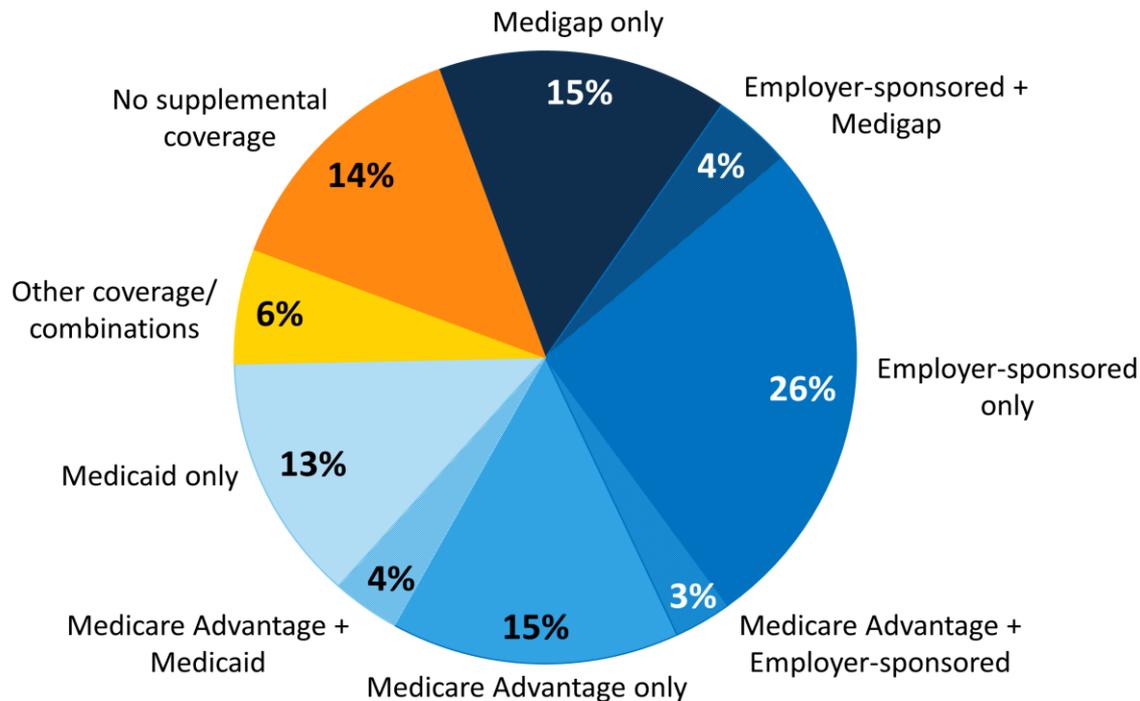
APPEALS COURT RULES CONFEDERATE STATUES IN NEW ORLEANS CAN COME DOWN

WILL THE BEST PATENTS BE MADE IN CHINA?

Most Medicare beneficiaries have supplemental coverage

Figure 12

Distribution of Sources of Supplemental Coverage Among Medicare Beneficiaries, 2010



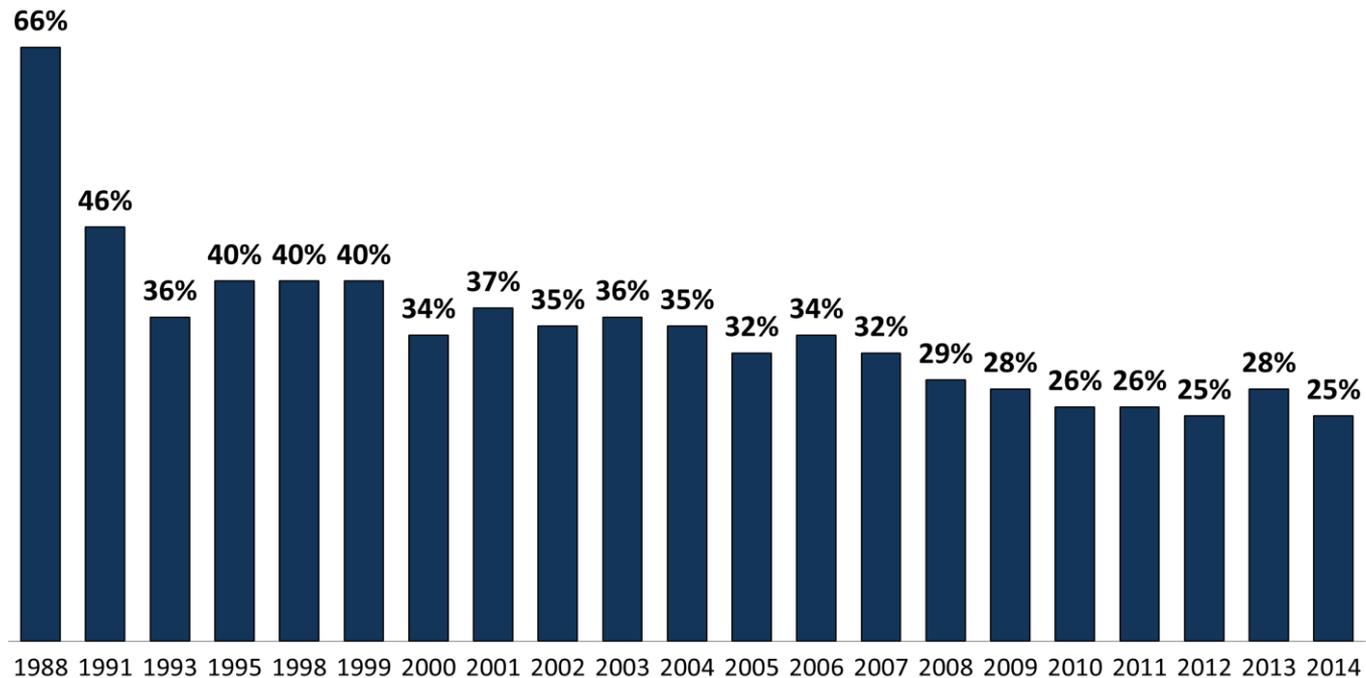
Total Medicare Beneficiaries, 2010 = 48.4 Million

SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey 2010 Cost and Use file.

But employer offerings to new retirees are eroding

Figure 13

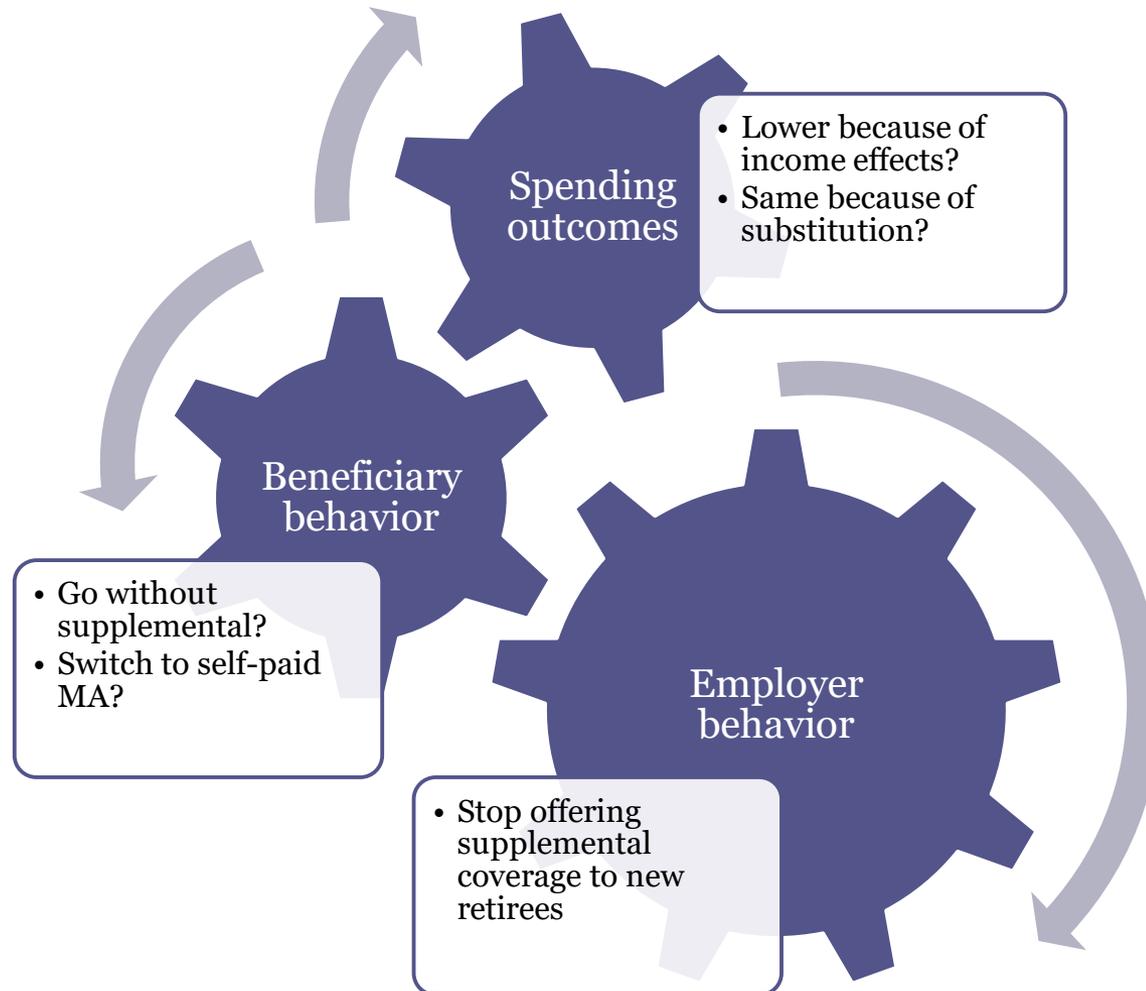
Percent of Large Firms (200+ Workers) Offering Retiree Health Benefits to Active Workers, 1988-2014



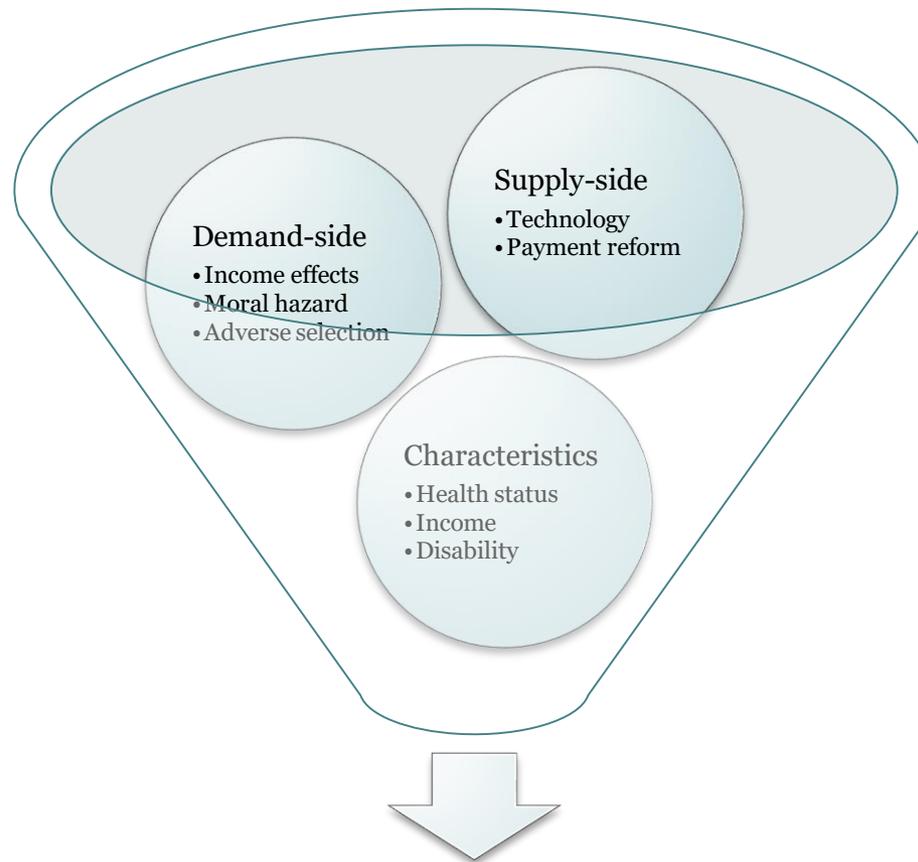
NOTE: Tests found no statistical difference from estimate for the previous year shown ($p < .05$). No statistical tests are conducted for years prior to 1999.

SOURCE: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2014; KPMG Survey of Employer-Sponsored Health Benefits, 1991, 1993, 1995, 1998; The Health Insurance Association of America (HIAA), 1988.

So what will new retirees do?

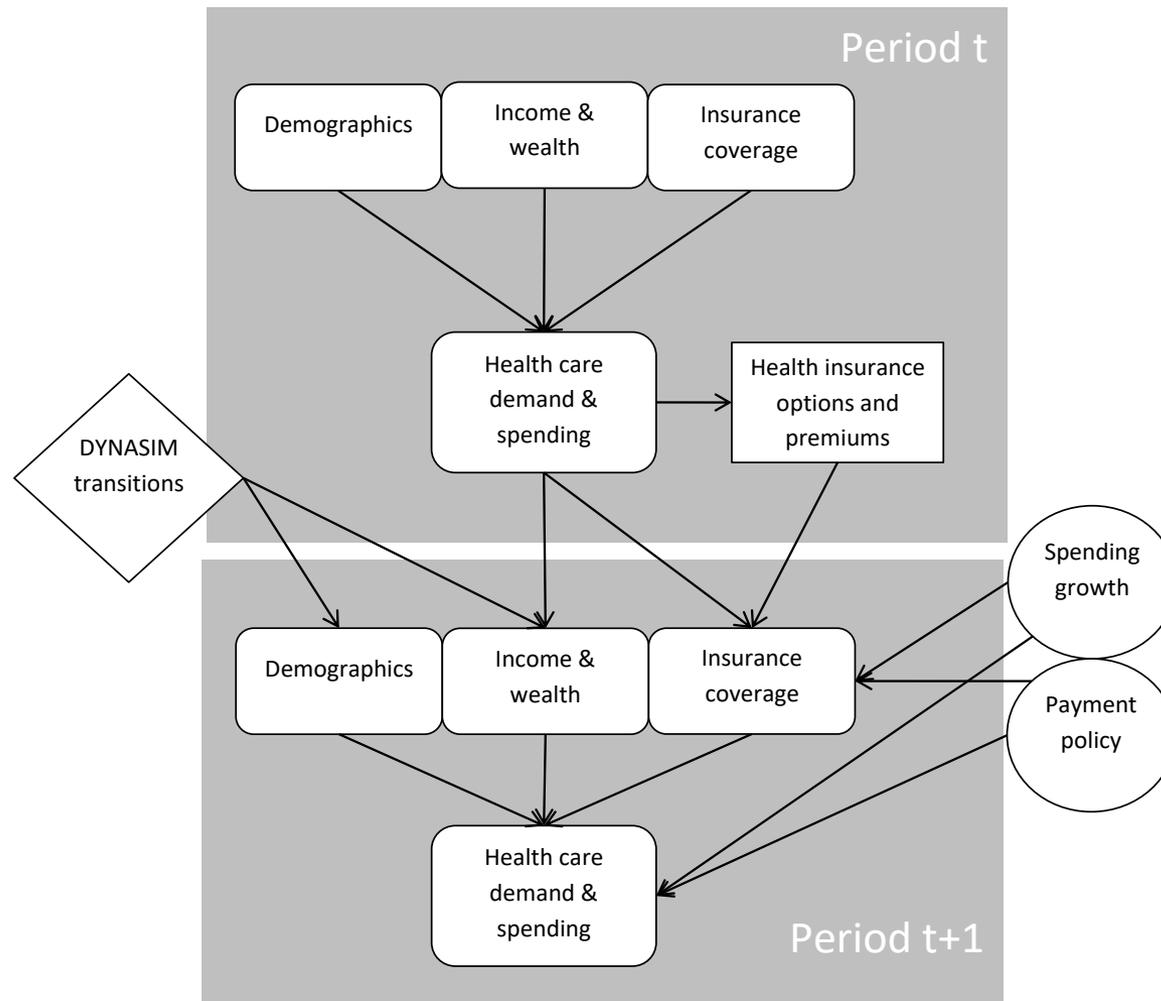


We forecast Medicare program and personal out-of-pocket spending

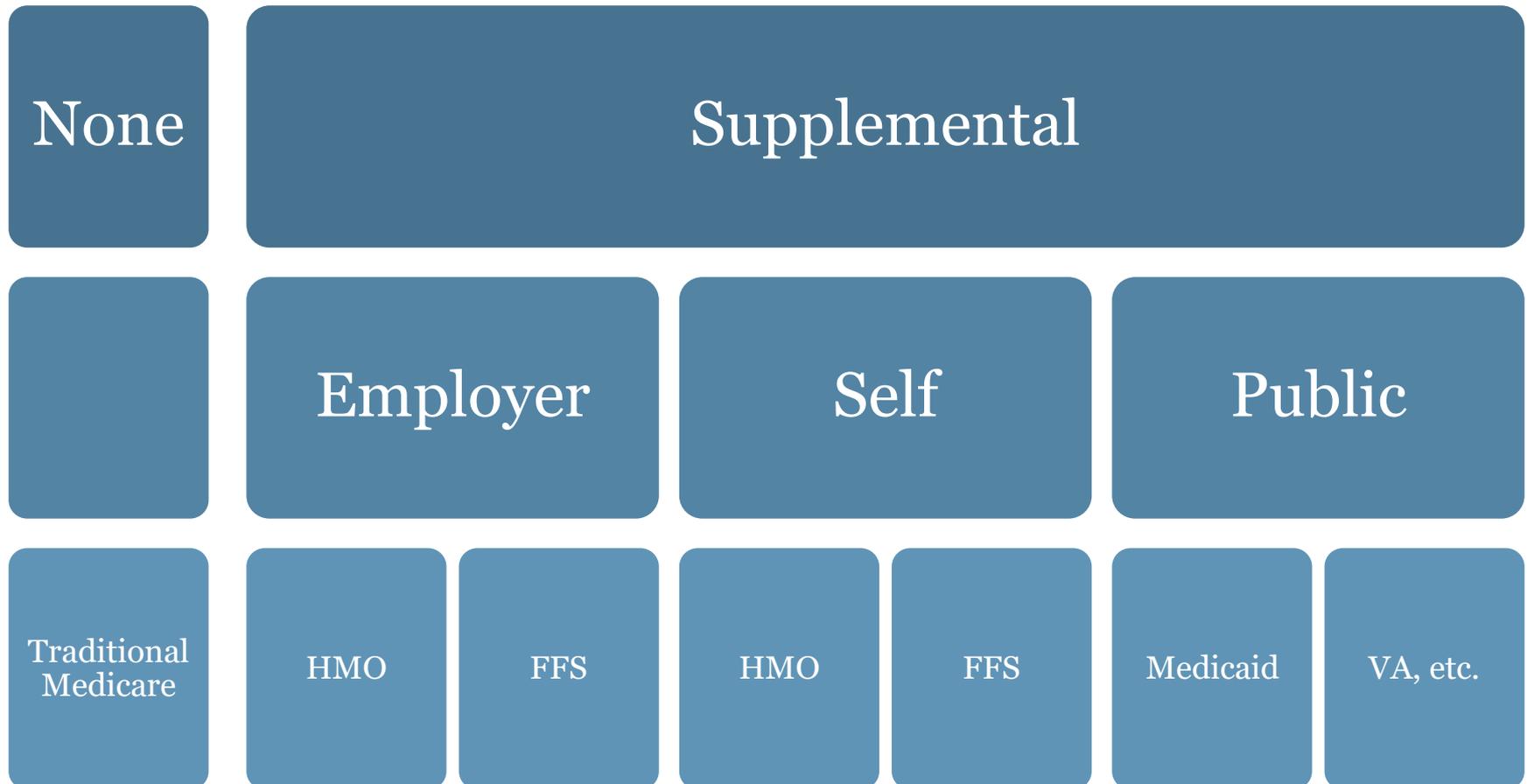


Health care spending

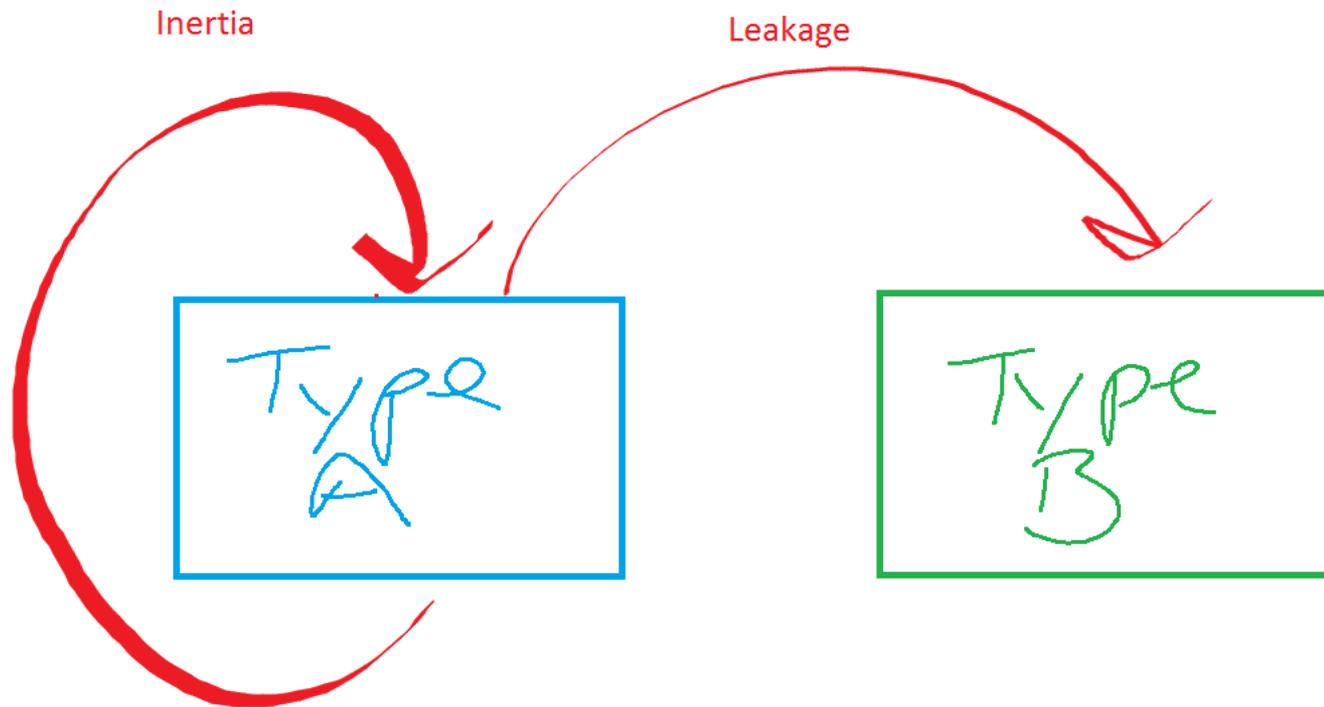
Spending depends on supplemental coverage through generosity (demand)



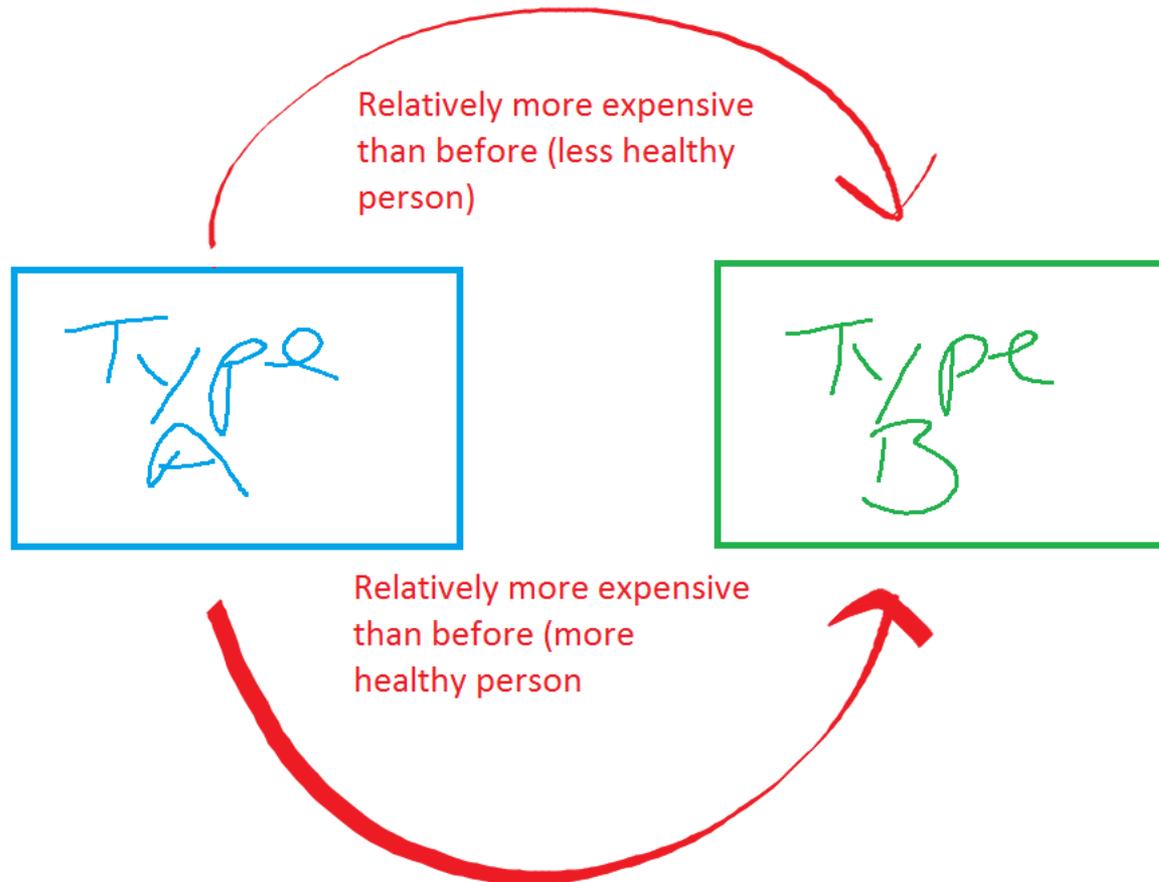
We simplify supplemental coverage to 7 mutually exclusive and exhaustive types



An elasticity model modifies baseline switching probabilities



An elasticity model modifies baseline switching probabilities



A simple elasticity model governs annual switching probabilities

$$p_{jj'} = p_{jj'}^{bl} \exp \left\{ .5^{1-HS} \epsilon_{jj'} \left(\Delta\Pi_{jj'}(t) - \Delta\Pi_{jj'}(0) \right) \right\}$$

$j \rightarrow j'$

Coverage type transition

$p_{jj'}^{bl}$

Baseline switching probability

$\Delta\Pi_{jj'}(t)$
 $- \Delta\Pi_{jj'}(0)$

Premium difference, relative to time 0

$\epsilon_{jj'}$

Price-sensitivity

$.5^{1-HS}$

Beneficiaries in poor health are half as price-sensitive

What data can inform these parameters?

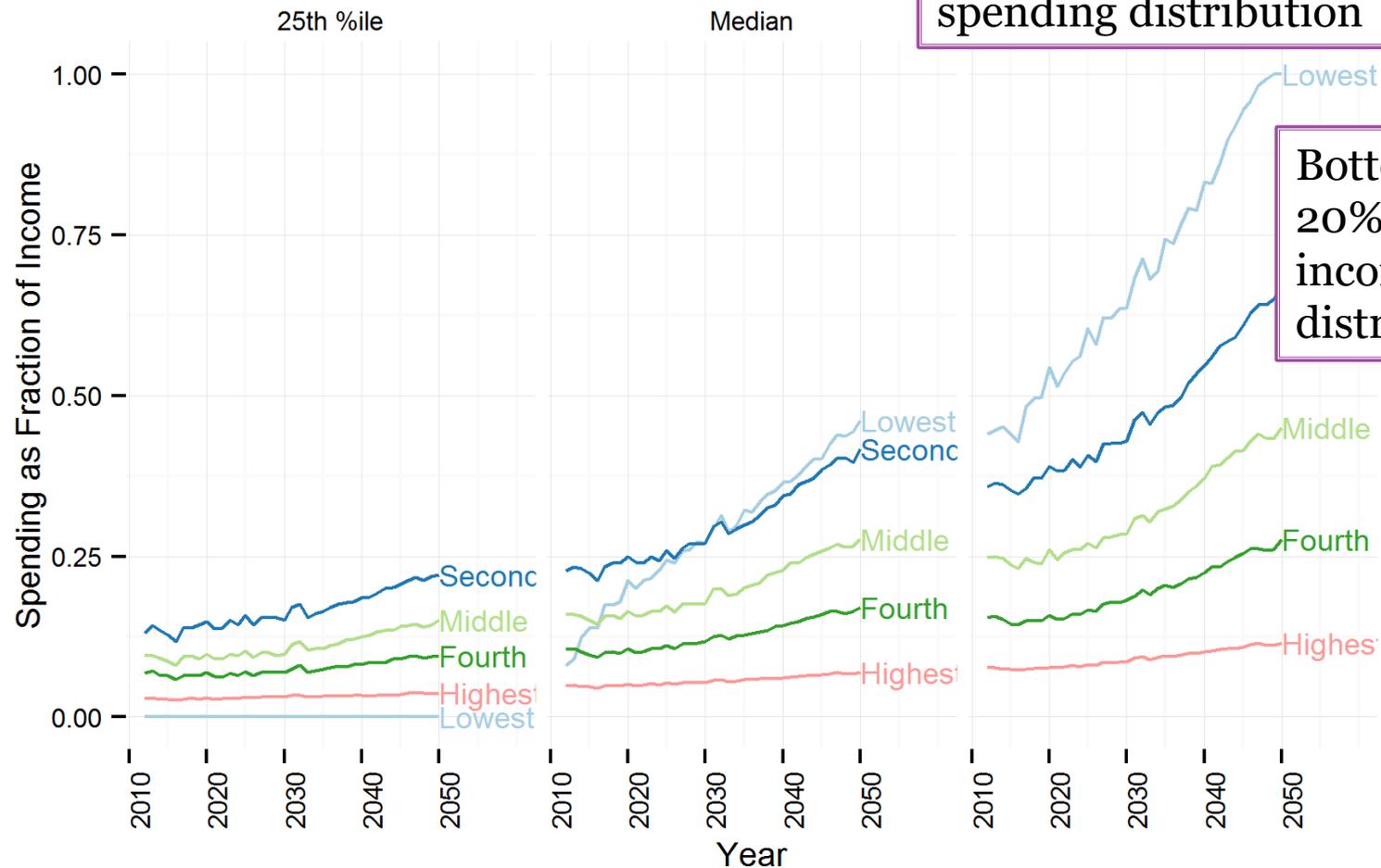
Medicare Current Beneficiaries Survey (MCBS)

- Nationally representative sample of Medicare beneficiaries, linked to claims
- Information on all sources of coverage, premiums, benefits, health status, spending, etc.
- We have a few (old) years of data

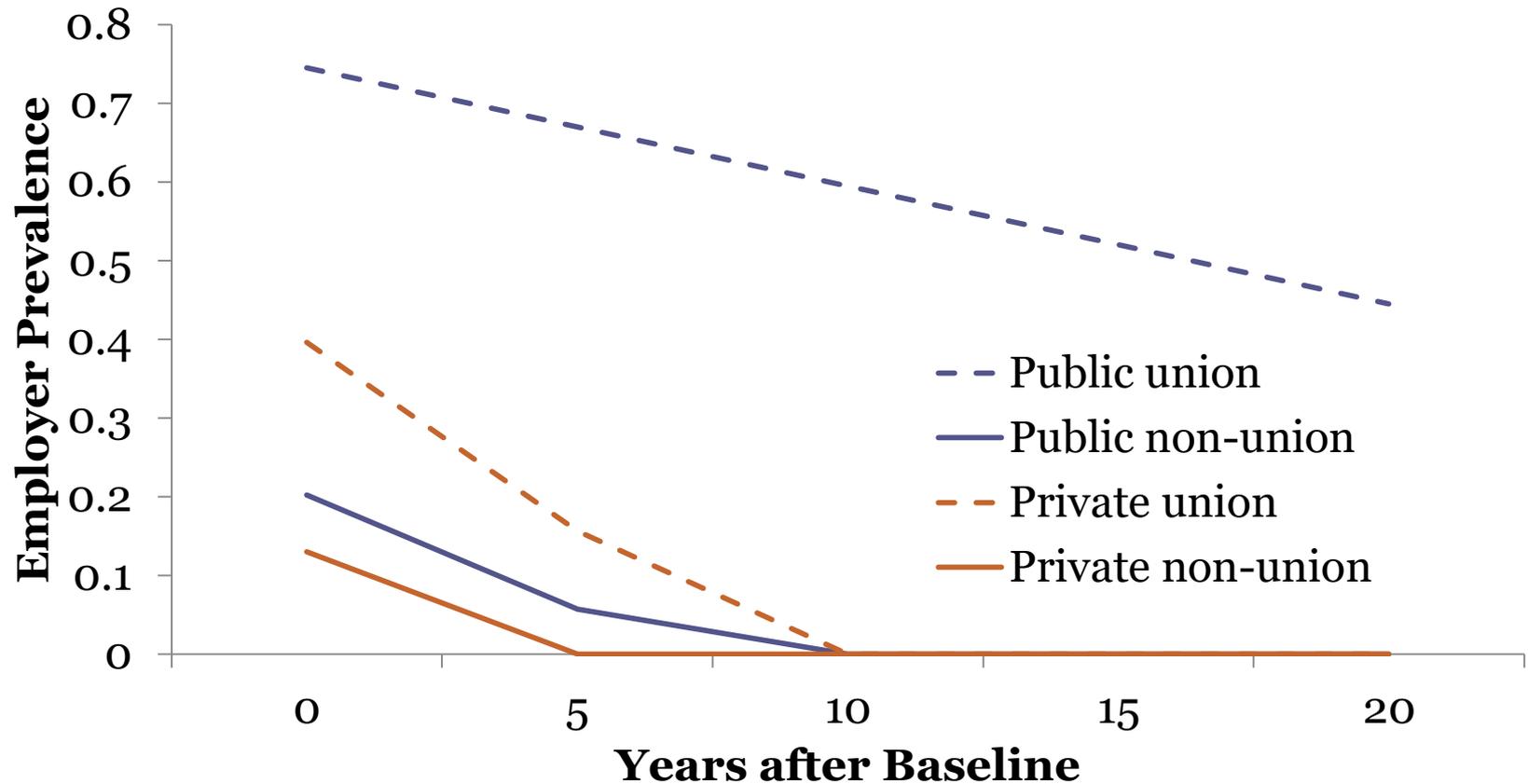
Out-of-pocket spending growth is fastest for low-income people with high spending

Highest 25% of the health spending distribution

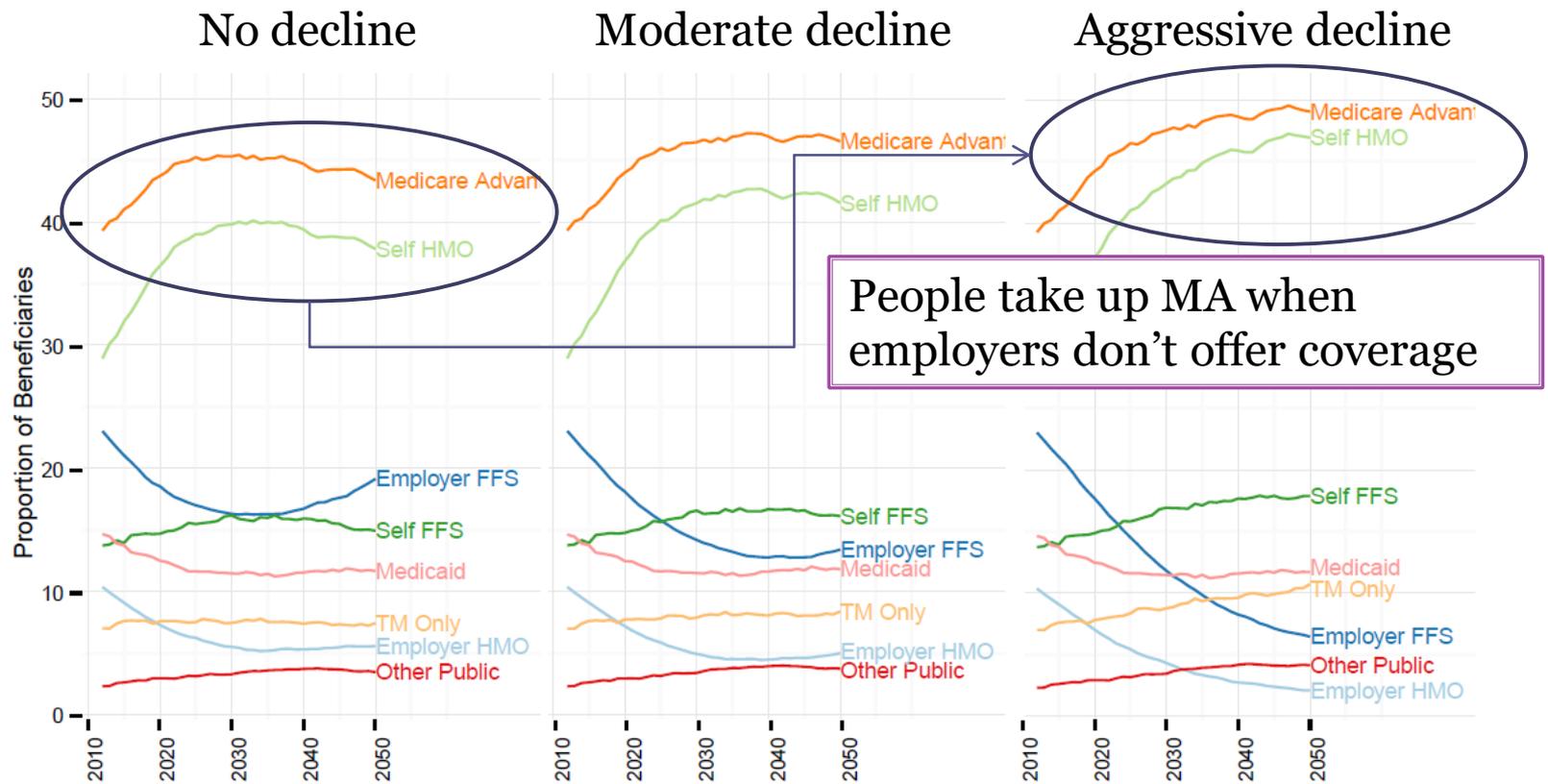
Bottom 20% of the income distribution



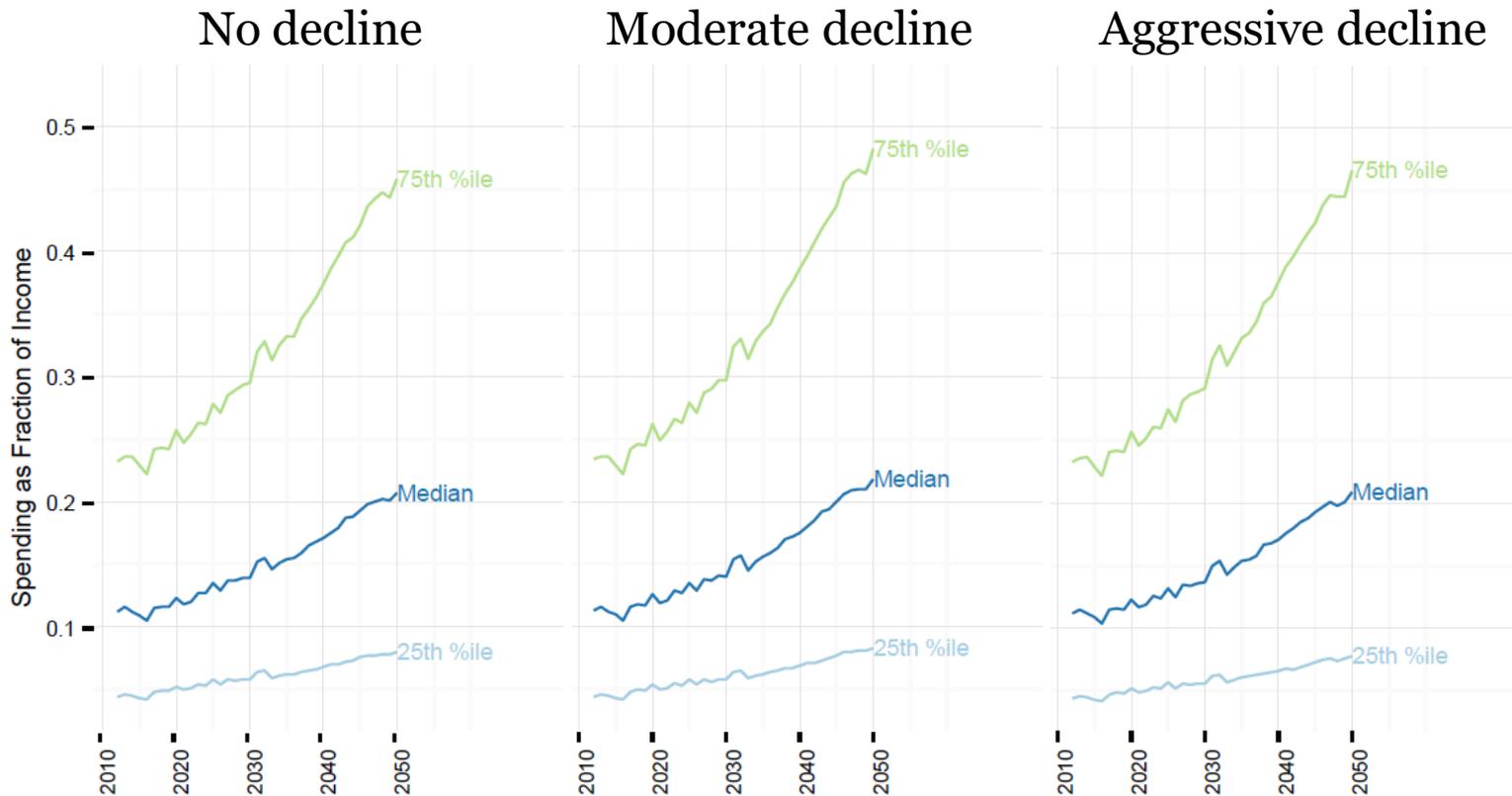
These results assume aggressive declines in employer offerings to new retirees



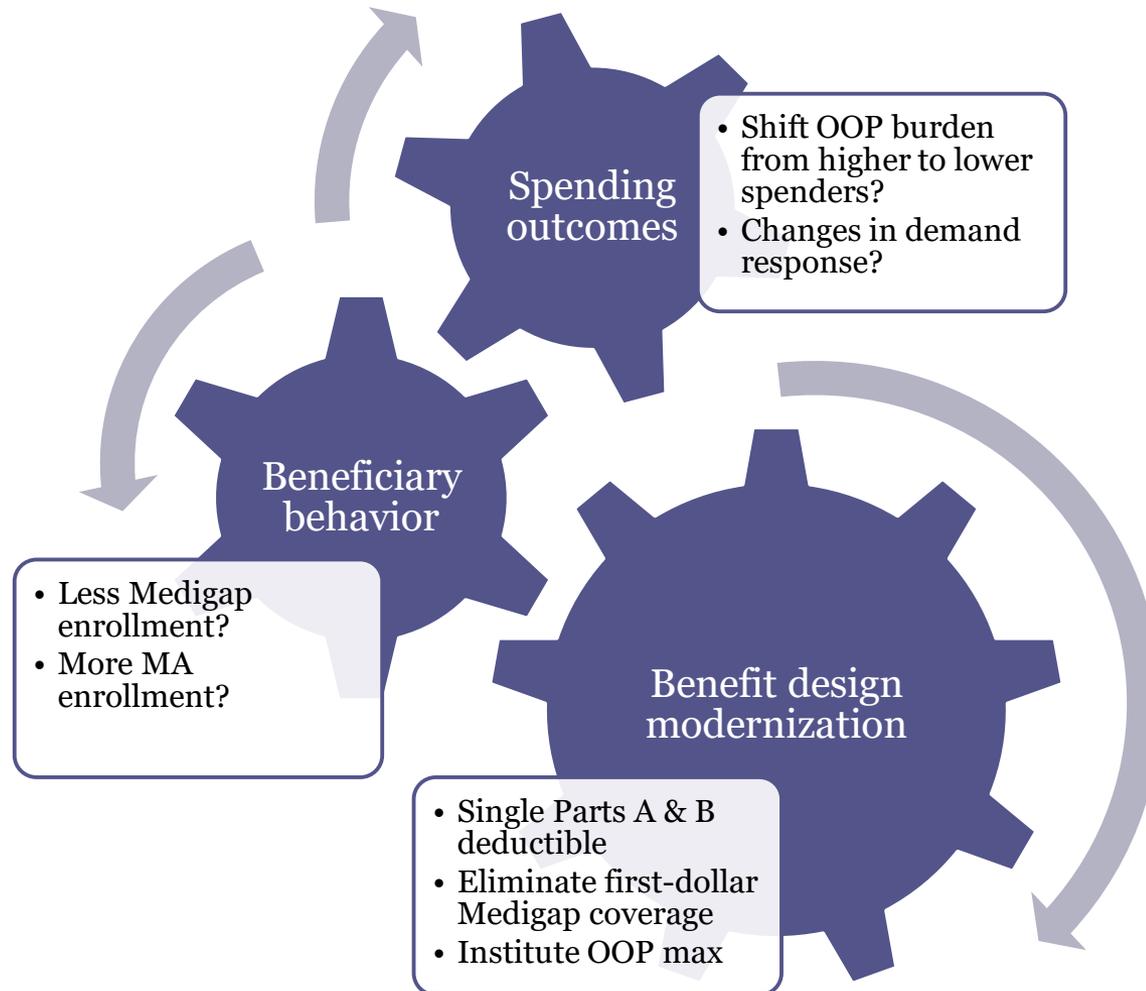
The employer dropping rate strongly influences projected enrollment



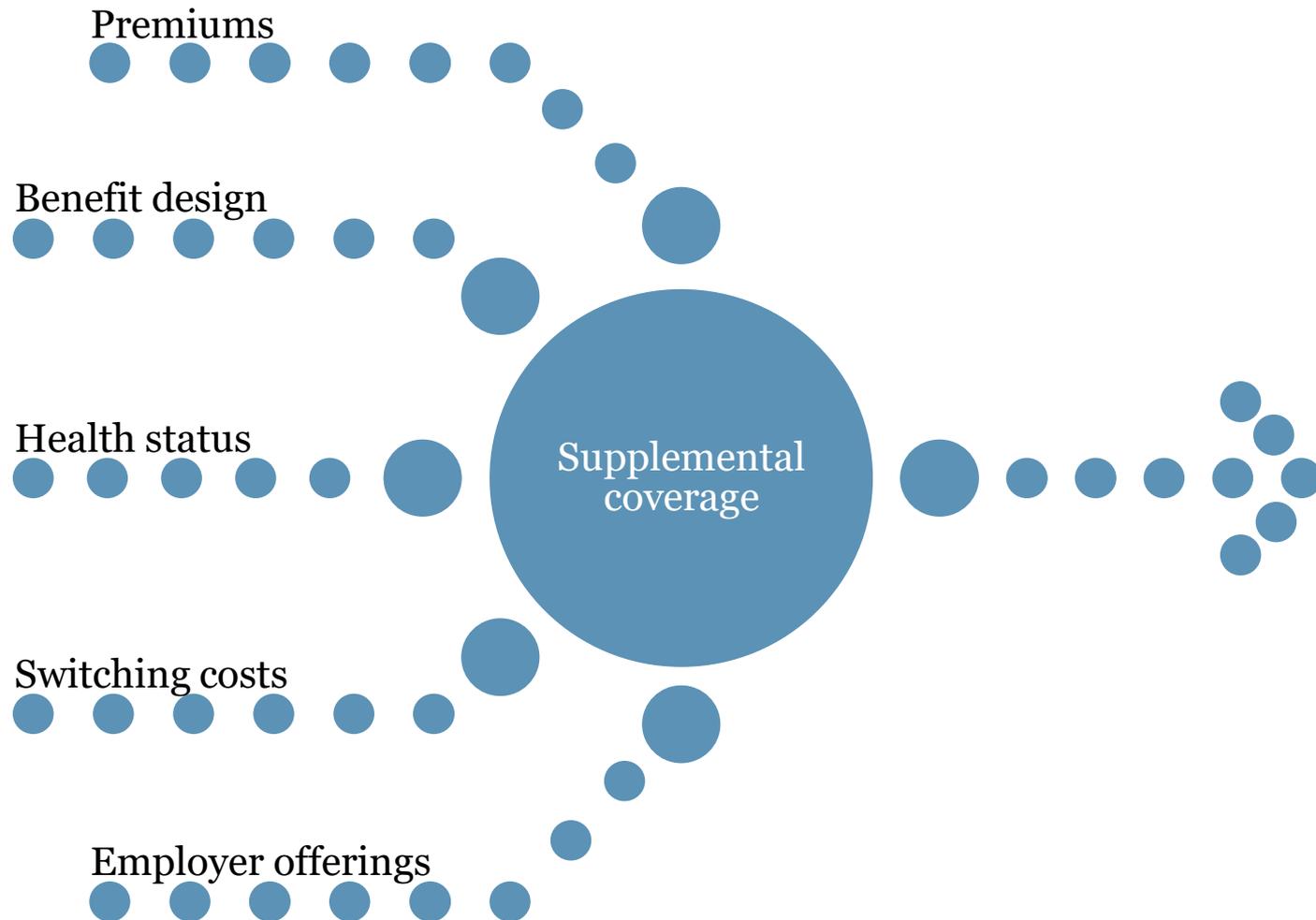
The impact of employer offerings on out-of-pocket spending is modest



Want to model other policy reforms that impact supplemental coverage



Need model for coverage that has inputs beyond only premium changes



We can expand the simple model to include more inputs (and thus more parameters)

$$p_{jj'} = p_{jj'}^{bl} \exp\{\beta_o \Delta_{jj'}^O + \beta_p \Delta_{jj'}^P + \beta_m \Delta^{HS} (M_j - M_{j'})\}$$

$j \rightarrow j'$

Coverage type transition

$p_{jj'}^{bl}$

Baseline switching probability

$\Delta_{jj'}^O$

Expected OOP difference, relative to last period

$\Delta_{jj'}^P$

Premium difference, relative to last period

Δ^{HS}

Health deterioration, relative to last period

M_j

Indicator for managed care

$\beta_o \beta_p \beta_m$

Elasticities for OOP, premiums, and managed care

Alternatively, we can use a utility-maximizing framework

Value of type j'

- $v_{j'} = \beta_s ES_{j'} - OOP_{j'} - \pi_{j'}$

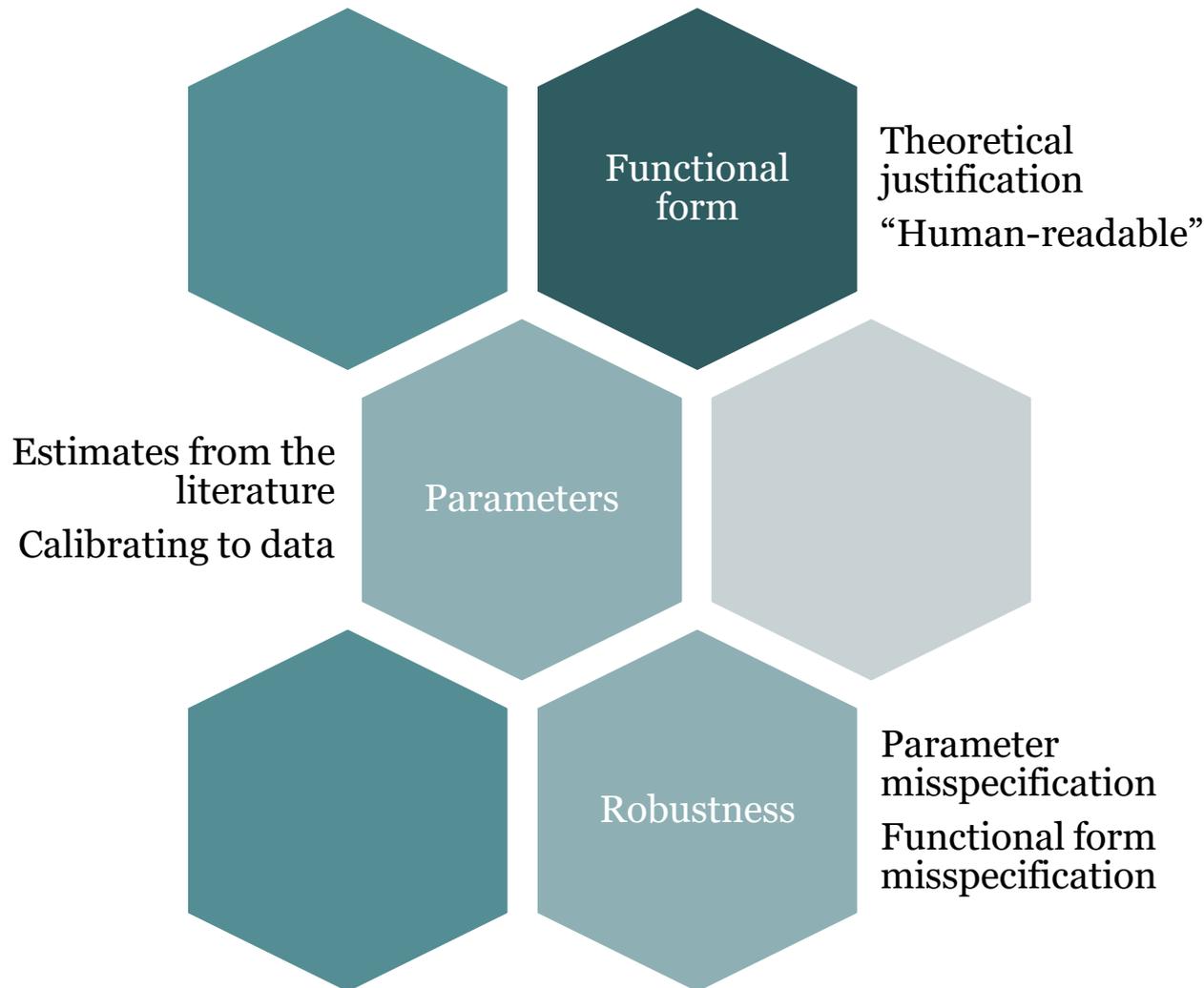
Change in value

- $j \rightarrow j'$
- $\Delta_{jj'}^v = v_{j'} - v_j$

Switching probability

- $p_{jj'} = \frac{\exp\{\epsilon(\Delta_{jj'}^v - SC)\}}{\sum_{j'} \exp\{\epsilon(\Delta_{jj'}^v - SC)\}}$

We will compare these two frameworks from a practical modeling perspective



Thanks!

Hatfield, Favreault, McGuire, Chernew. Modeling health care spending of older adults. *Health Services Research*. 26 Dec 2016. doi: 10.1111/1475-6773.12640



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