Disability Research and Policy:
New Evidence and Promising Ideas
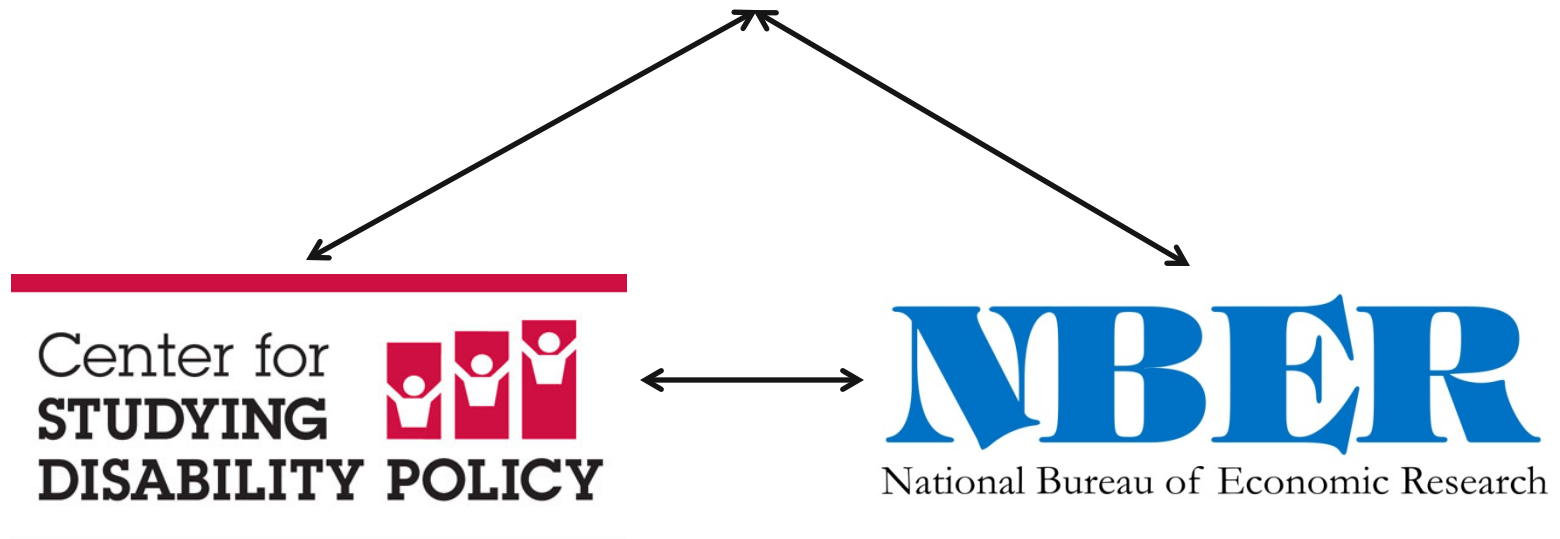
October 15–16, 2013
Washington, DC

Welcome

**David Stapleton
Director,
Center for Studying Disability Policy**

About the
Disability Research Consortium

Social Security Administration

Agenda: Tuesday, October 15

9:45–10:00	**Welcome and Opening Remarks**
10:00–11:45	**Trends in Disability Claims and Benefit Receipt**
11:45–12:30	Lunch (provided by Mathematica)
12:30– 2:30	**Early Intervention and Employment**

Note: Individual research projects are at varying stages of completion; not all findings are final

Center for
**STUDYING
DISABILITY POLICY**

NBER
National Bureau of Economic Research

Trends in Disability Claims and Benefit Receipt

Moderator
Gina Livermore,
Mathematica

Chronic Disease, Functional Status Limitations, and Social Security Disability Payments
Jay Bhattacharya, Stanford University and NBER

Understanding the Increase in DI Spending
Jeffrey Liebman, Harvard University and NBER

Exploring the Growth of the Child SSI Caseload
Nora Gordon, Georgetown University and NBER

Center for
STUDYING
DISABILITY POLICY

NBER
National Bureau of Economic Research

Social Security Forecasting Using the Future Elderly Model

Jay Bhattacharya

Stanford University

Based on work with Brian Tysinger, Ed Sung, and Dana Goldman

October 2013

10-Year Trends in Health for 40-59 Year Olds

Condition	1997-98	2005-06	Change*
Musculoskeletal	47	43	⬇
Cardiovascular	30	32	⬆
Obesity	26	33	⬆
Vision	11	10	▬
Lung	10	11	⬆
Diabetes	5.6	7.5	⬆
Cancer	5.4	5.8	▬

*Significance based on p-values for test of trend for 10-year period in logistic models run separately by condition and controlling for 5-year age intervals.

Source: Martin, Freedman, Schoeni, Andreski (2008).

Improvements in US Mortality
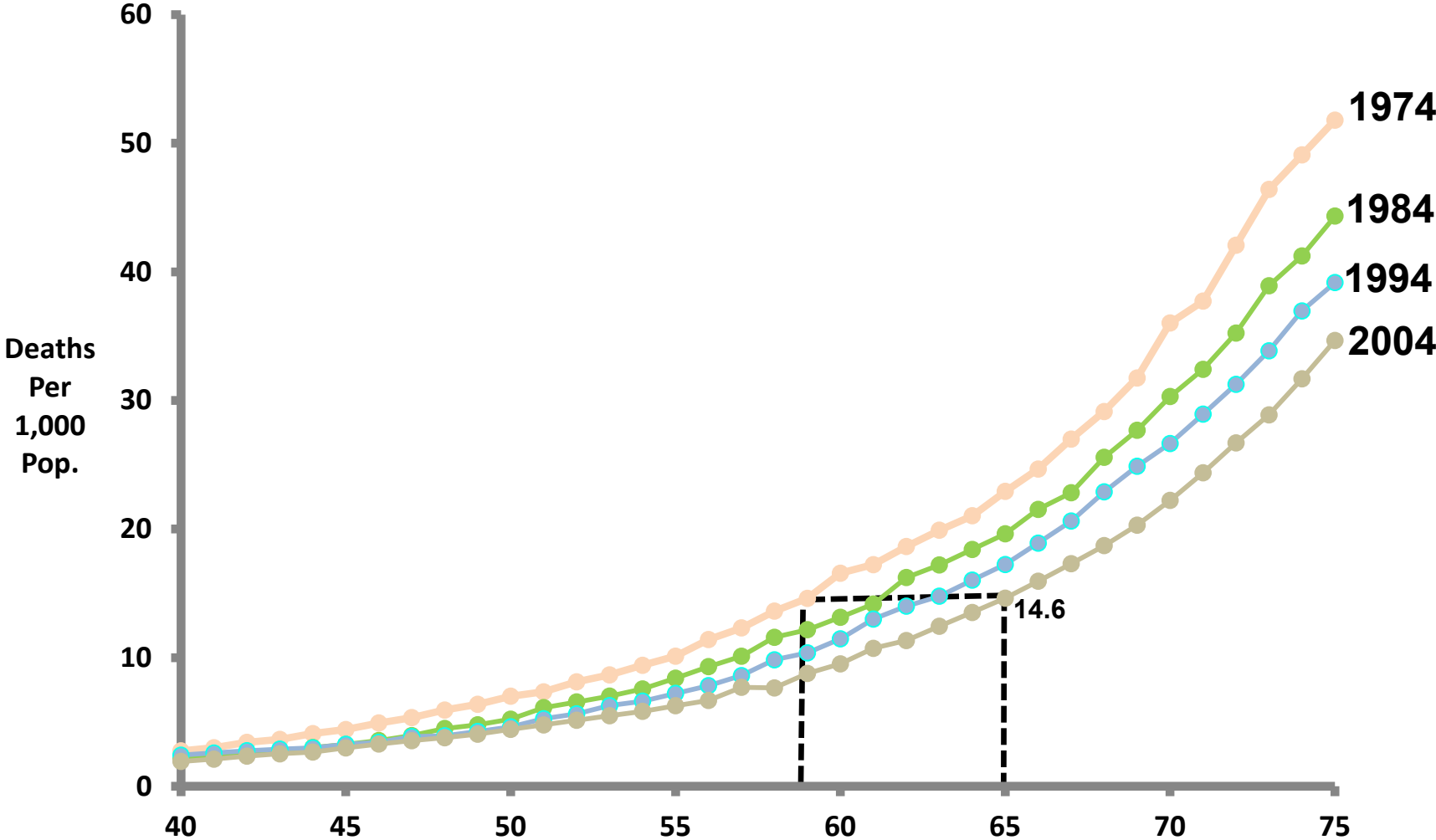
Source: Martin, Freedman, Schoeni, 2008.

Problems with Existing Forecasts

- Do not account for changes in the future health status of the population.

- There is no life-table to account for the complex interaction between co-morbidities and Social Security outcomes

- Makes controversial assumptions about future improvements in mortality.

  - Soneji & King (2012): SSA underestimates future mortality changes

Mortality Forecasting

- Accurate cause-specific mortality estimates for people with multiple conditions are important for Social Security because:

    - Competing risks problem

    - Mean expenditures on SSDI, SSI, and even OASI vary with health

Research Question

- How well can the Future Elderly Model (FEM) make forecasts of future Social Security expenditures?

- How do different assumptions about secular trends in mortality affect these forecasts?

The Future Elderly Model

- The model tracks the complex interaction between health conditions, disability and mortality
  - Estimated on Health and Retirement Study Data (longitudinal)
  - It tracks economic outcomes such as work, program participation, wealth and detailled medical expenditures (Medicare, Medicaid and Private)
- It uses actual and simulated cohorts of future age 51 individuals from the NHIS to refresh the cohort.

Microsimulation Tracks Individuals Over Time
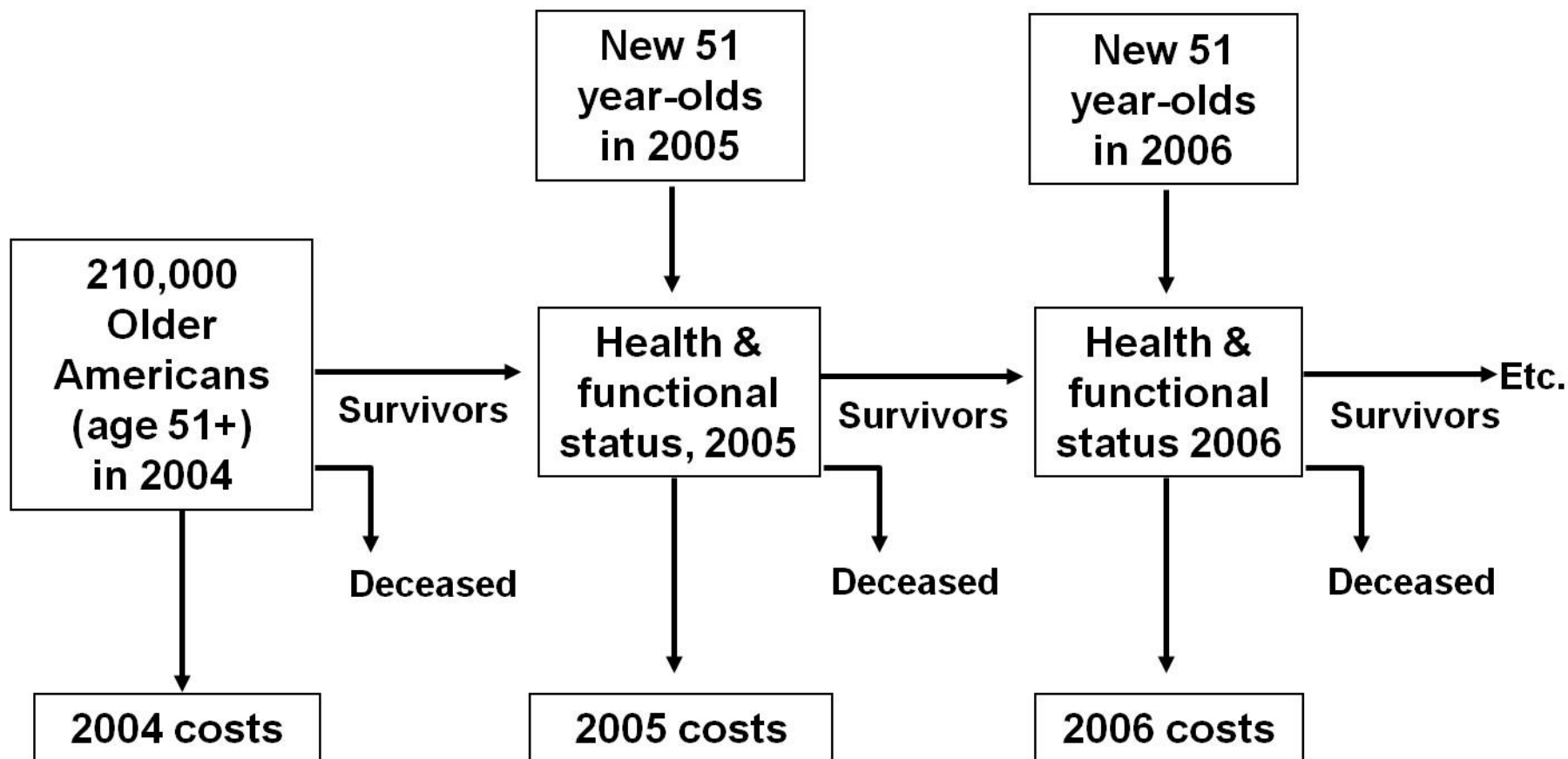
Elements of the Model

- Health-Related Outcomes
- Conditions
  - Heart disease
  - Diabetes
  - Lung disease
  - Cancer
  - Hypertension
  - Stroke
- Functional status
  - ADLs and IADLs
  - Nursing home
  - Death
- Risk Factors
  - BMI
  - Smoking (now/ever)

- Economic Outcomes
- Labor Market
  - Employment
  - Earnings
- Social Security-Related
  - Benefit receipt & amount
  - SS tax revenues
  - Widowhood
- Spending
  - Total medical spending
  - Out-of-pocket spending
- Other Demographic Factors
  - Non-time varying
  - Age, gender, race, education, marital status

Elements of the Model

- Health-Related Outcomes
- Conditions
  - Heart disease
  - Diabetes
  - Lung disease
  - Cancer
  - Hypertension
  - Stroke
- Functional status
  - ADLs and IADLs
  - Nursing home
  - Death
- Risk Factors
  - BMI
  - Smoking (now/ever)

- Economic Outcomes
- Labor Market
  - Employment
  - Earnings
- Social Security-Related
  - Benefit receipt & amount
  - SS tax revenues
  - Widowhood
- Spending
  - Total medical spending
  - Out-of-pocket spending
- Other Demographic Factors
  - Non-time varying
  - Age, gender, race, education, marital status

Not yet implemented

Three alternative mortality scenarios

- No future secular change in mortality
  - Baseline: no technological shocks

- Secular mortality declines mimic SSA intermediate scenario

- Same as above, except that these declines in mortality will only affect the above-52 population
  - Isolate what difference changes in the health status of the under-50 population will have on forecasts

Forecast of Real Health Care Spending by Elderly
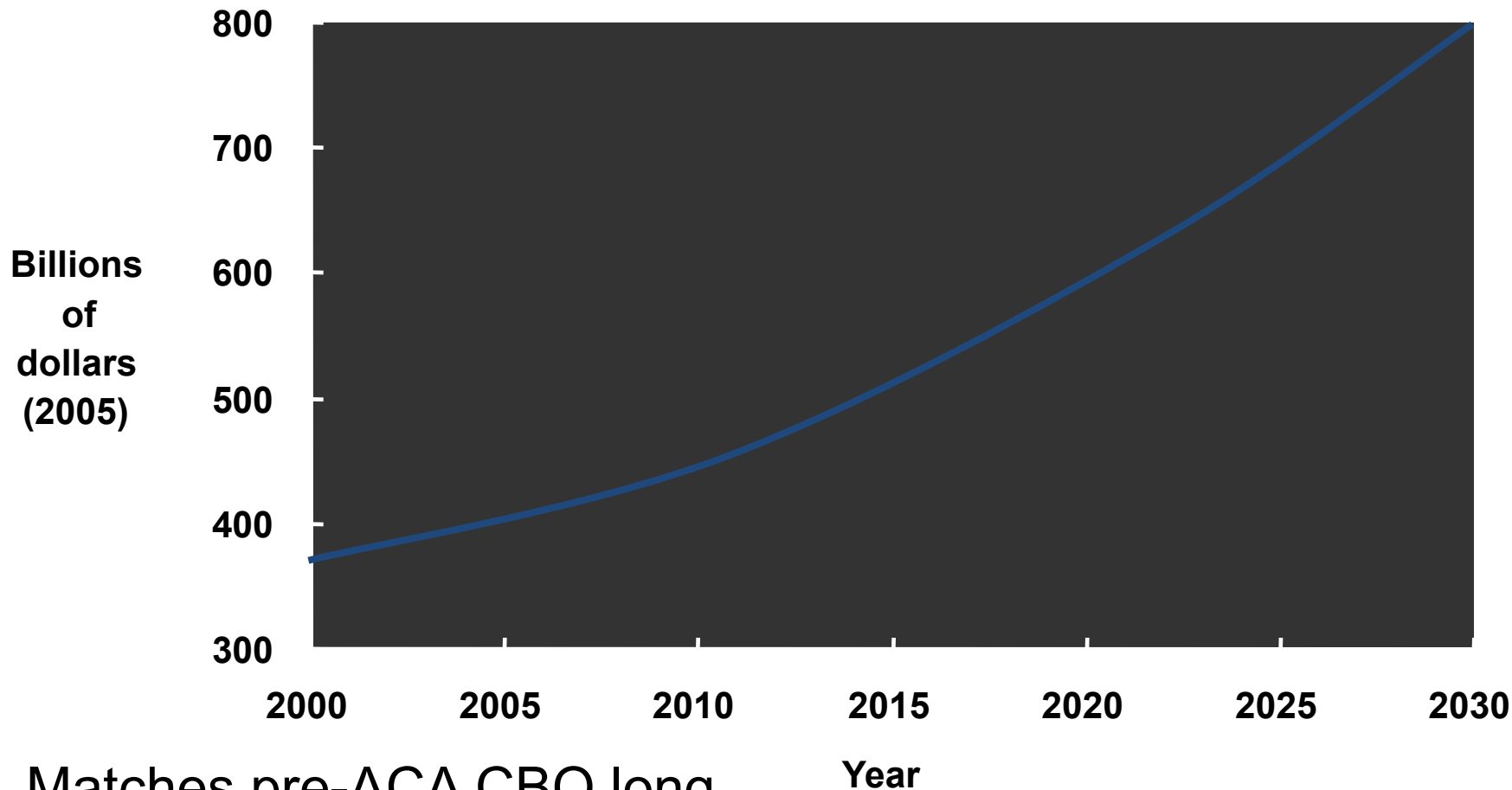
Matches pre-ACA CBO long run forecast

Backcasting SS Expenditures

- OASI Expenditures
  - The FEM predicted $625 billion in 2012 (based on the HRS data up to 2006)
  - Actual: $637 billion
- SSI and DI Expenditures
  - FEM only forecasts expenditures for 51+ →
  - Leads to an underestimate because many receiving SSI and DI are younger than that.
  - There is work underfoot to extend FEM to younger populations

FEM Mortality Rate Forecasts
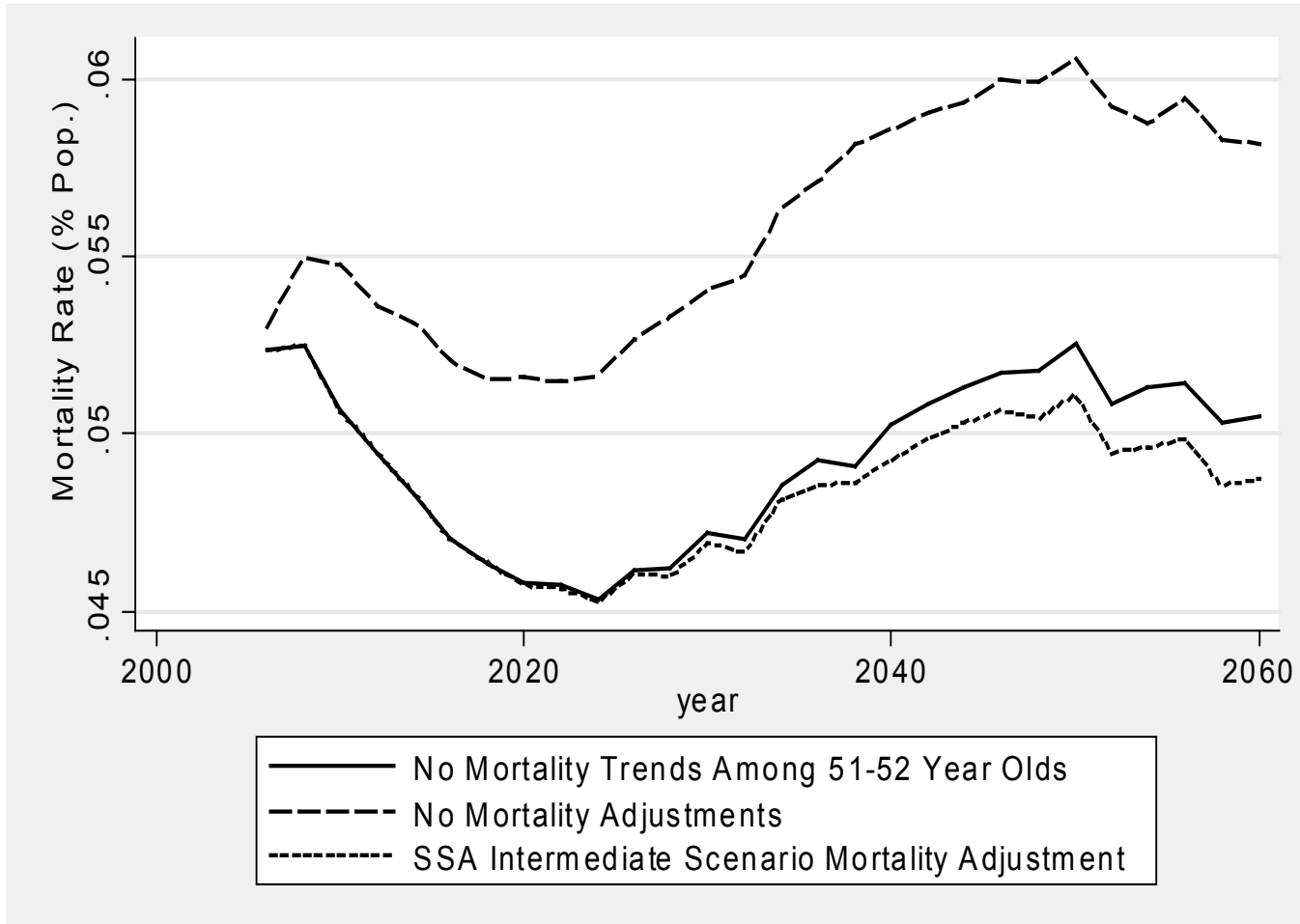
FEM Population Forecasts (Age 51+, US)
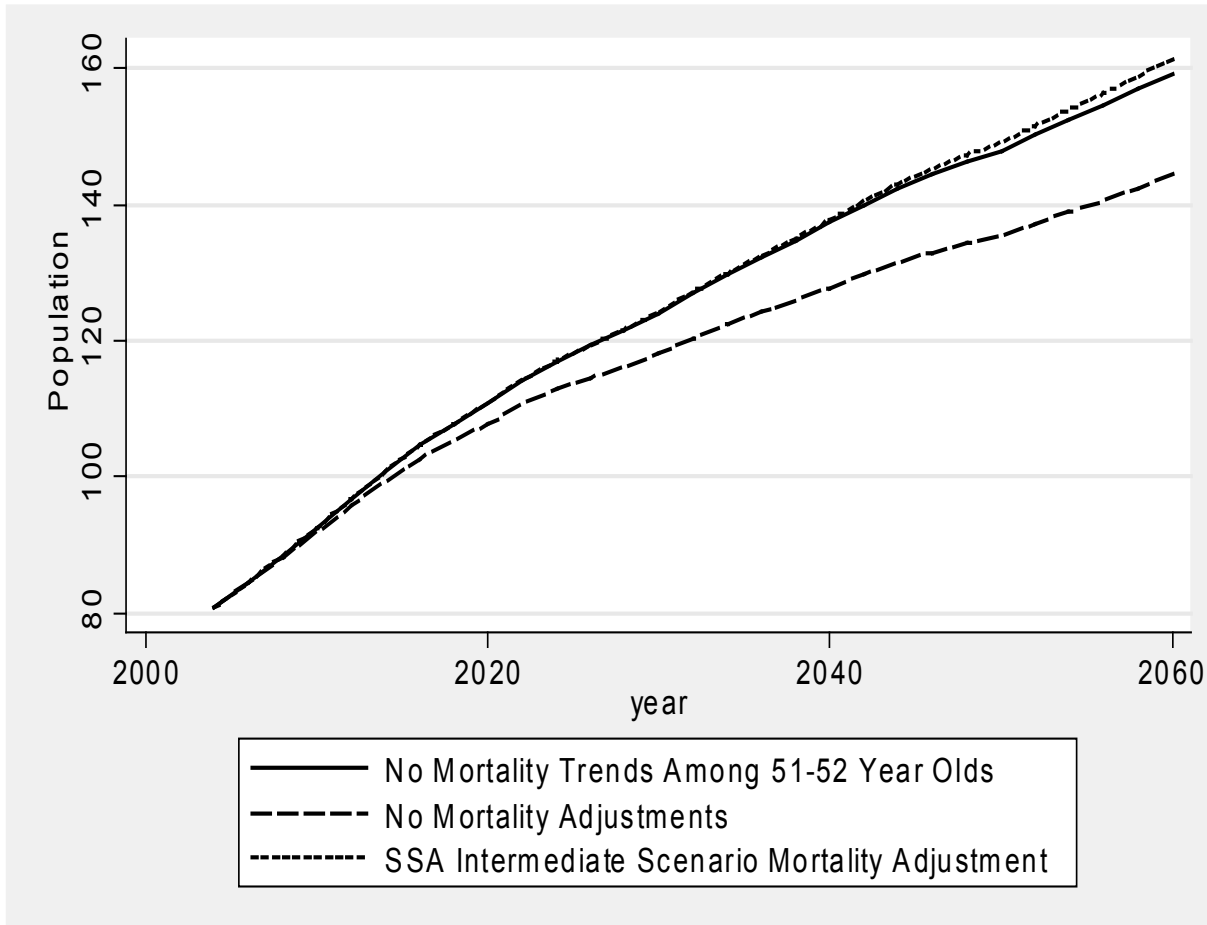
Population Age Structure
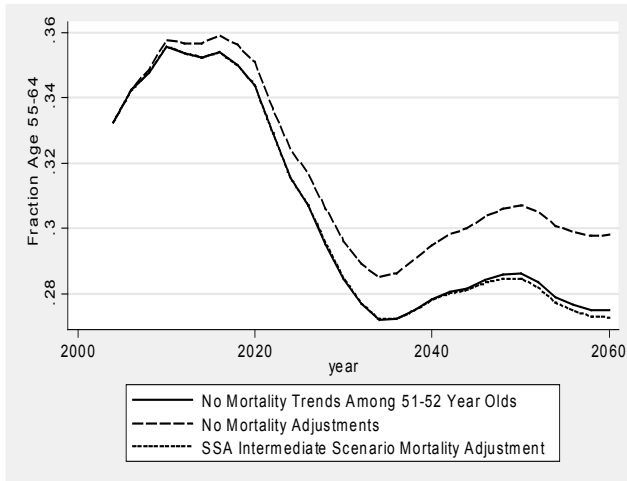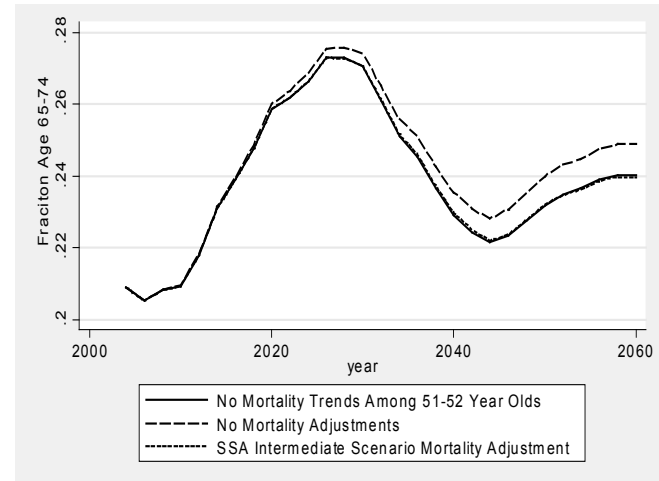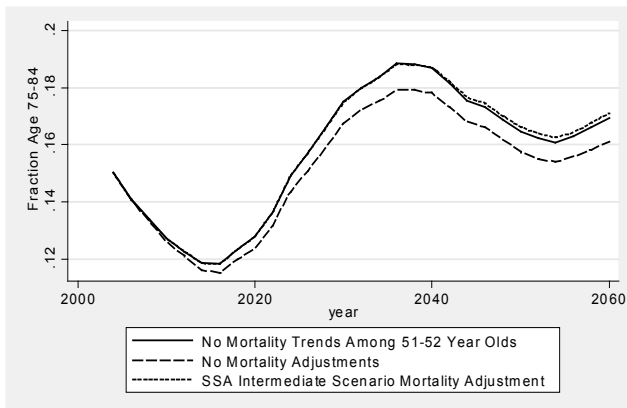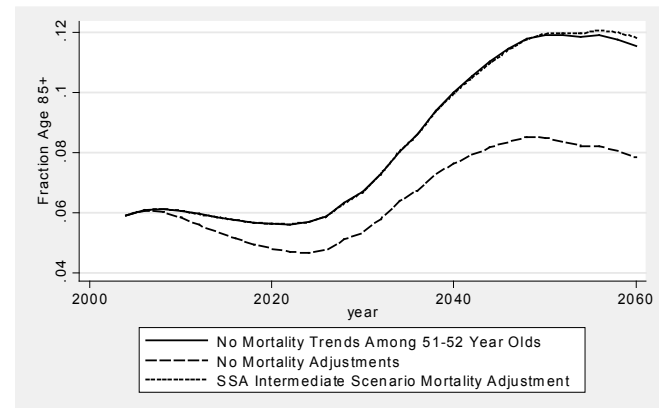
Health Status Forecasts

Diabetes
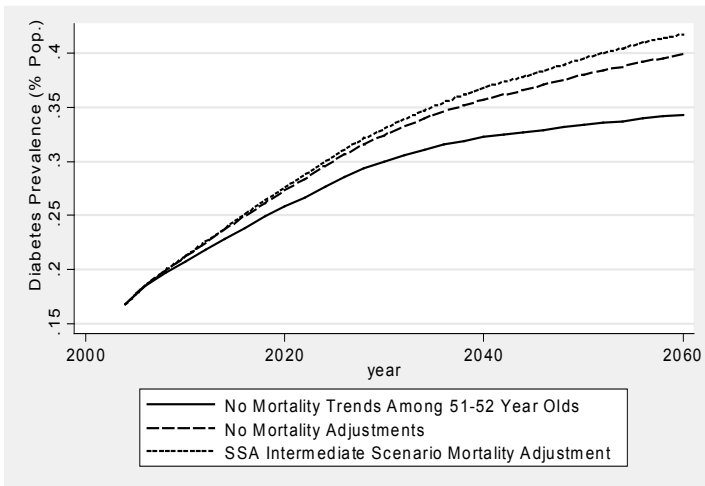
Hypertension
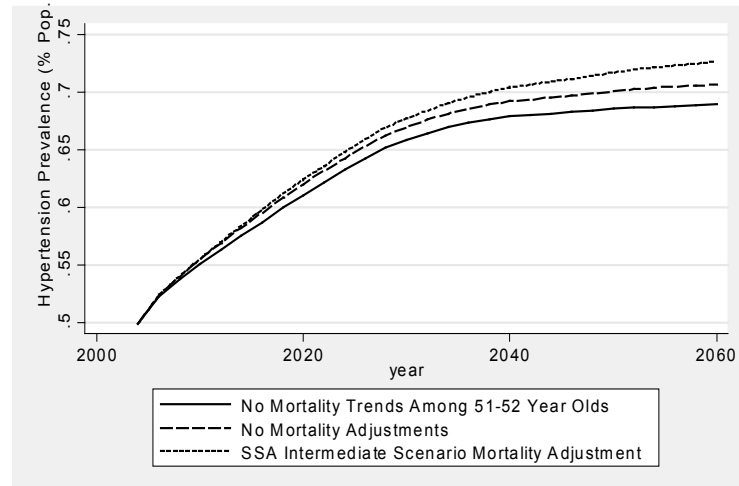
Heart Disease
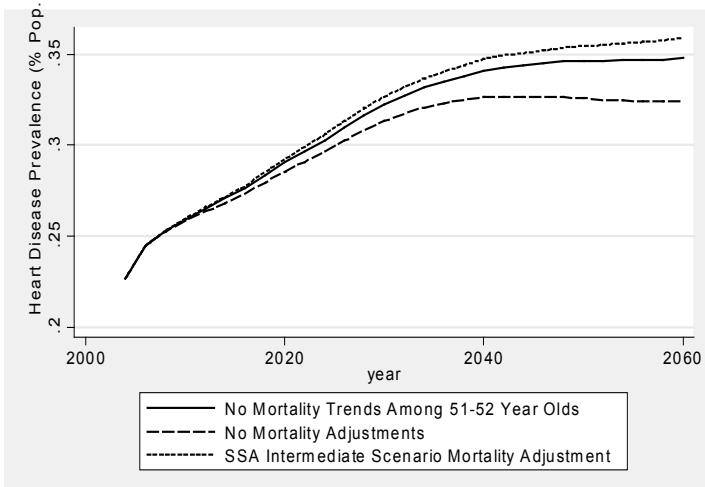
Cancer
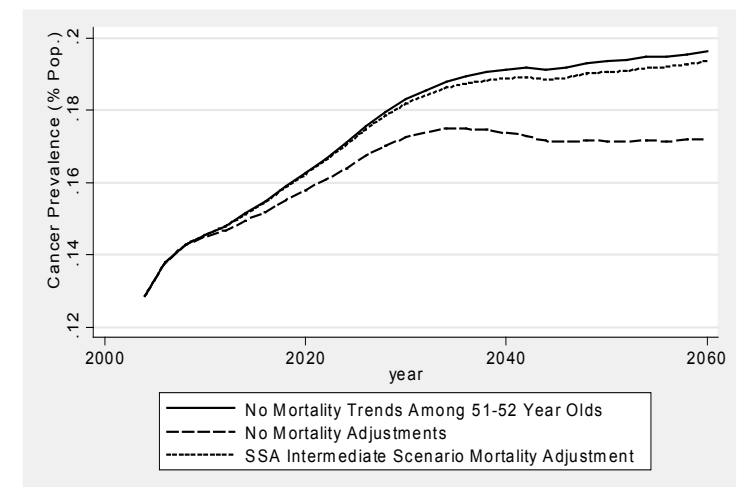
More Health Status Forecasts

COPD
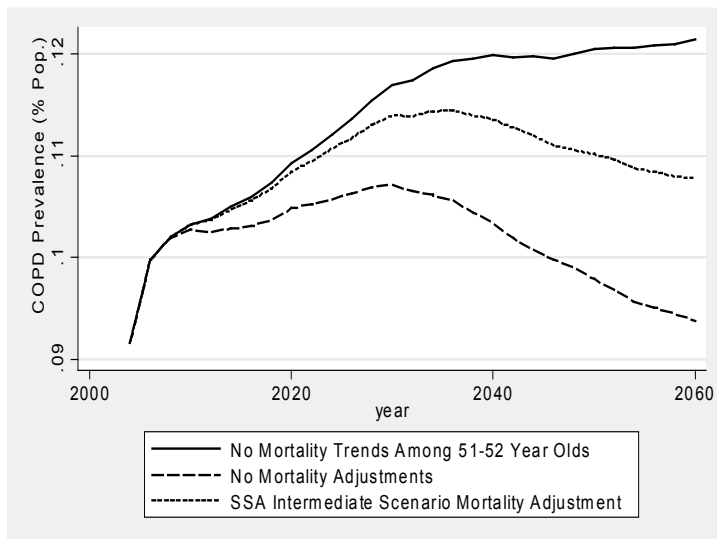
Stroke
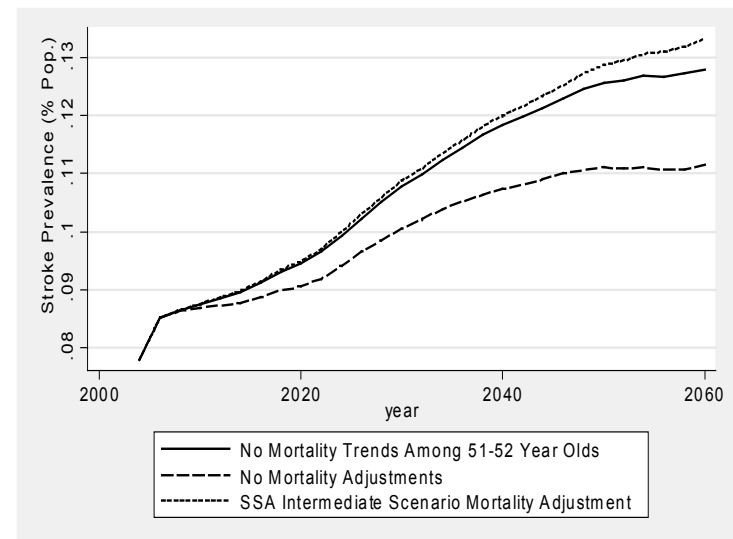
OASI Forecasts

Proportion of Age 51+ Population Claiming OASI
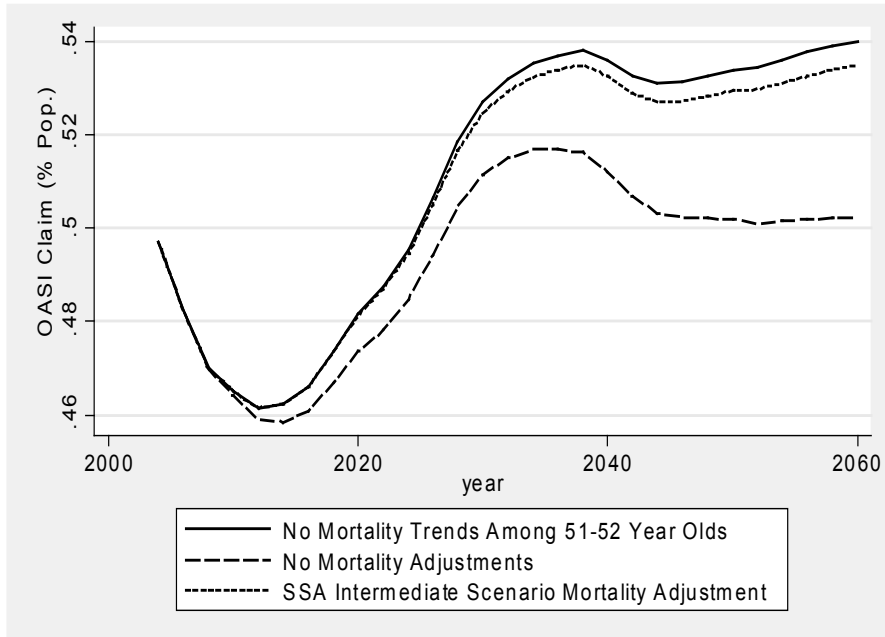
OASI Payment Forecast (for Age 51+ Population)
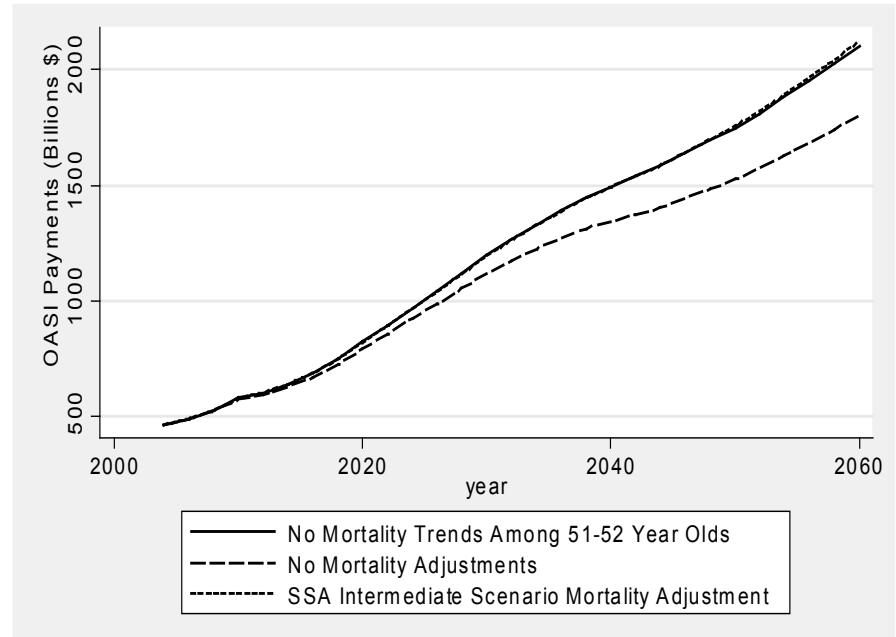
SSI Forecasts

Proportion of Age 51+ Population Claiming SSI
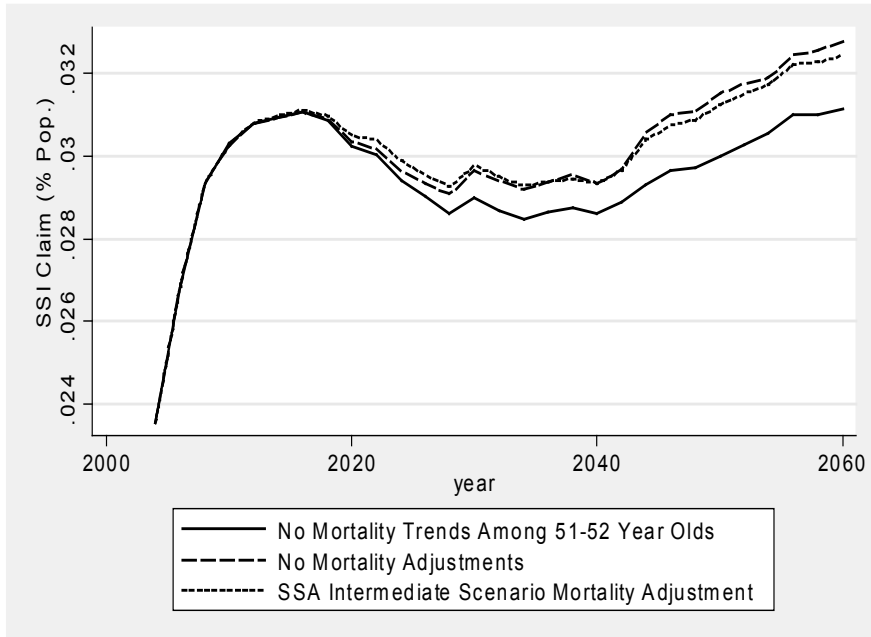
SSI Payment Forecast (for Age 51+ Population)
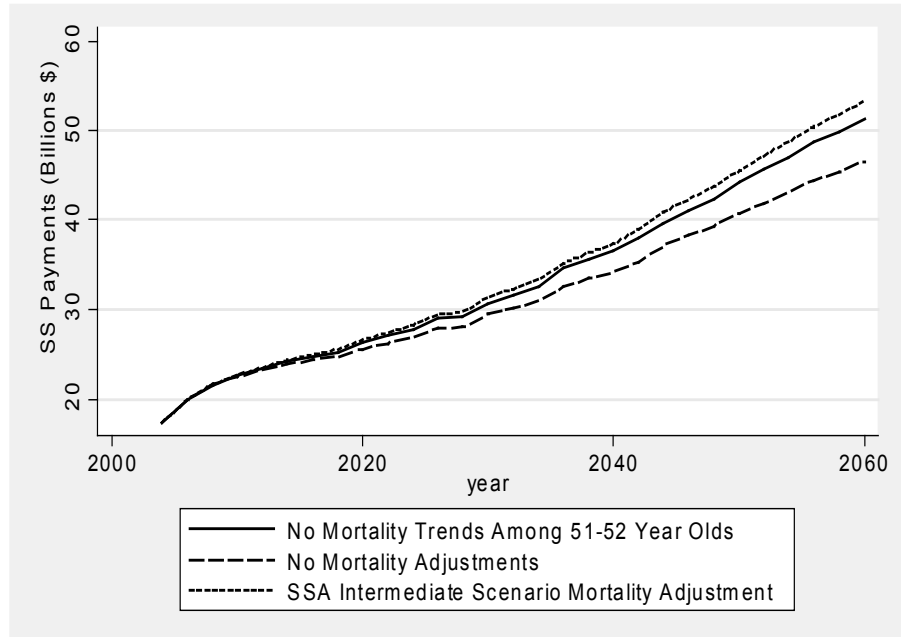
DI Forecasts

Proportion of Age 51+ Population Claiming DI
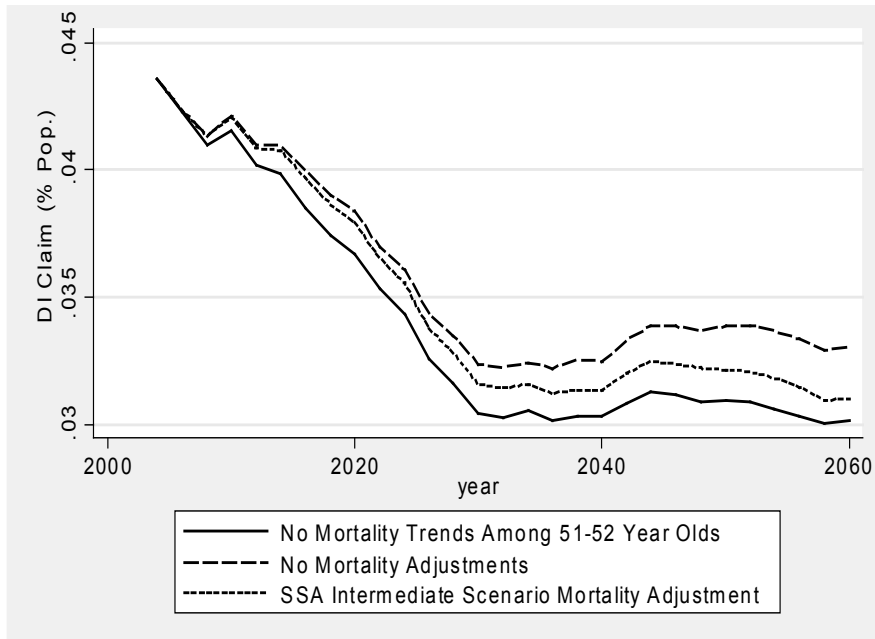
DI Payment Forecast (for Age 51+ Population)
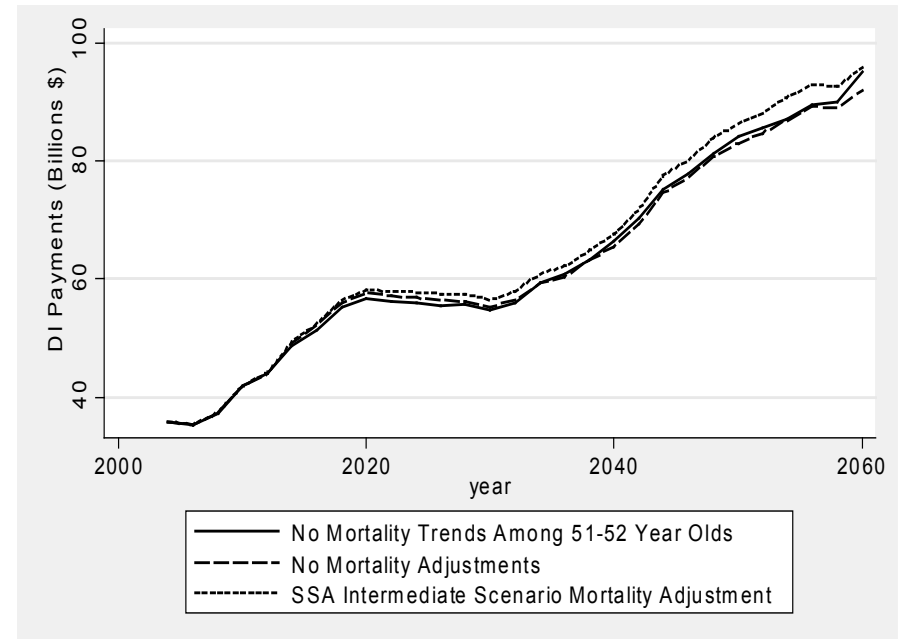
Note on the DI Forecasts

- The FEM predicted a drop in DI participation between 2006 and 2012 for the age 51+
  - There was actually an expansion in DI participation over that period
- The DI expansion is, in part, due to the recession (as well as other economic factors)
  - See Autor and Duggan (2006)
  - This points to a weakness of the FEM's focus on health and demography in forecasting short-term fluctuations

Summary of Predictions: Population

- Due to changes in the health status of the American population alone, mortality rates will decline in the 51+ population until about 2025, and then will rise sharply until about 2050.

- The size of the American 51+ population will increase steadily throughout the coming decades, reaching a total of between 145 and 160 million people

Summary of Predictions: Age Structure

- The age structure of the 51+ population will shift dramatically toward older ages, with the size of the 85+ population in particular experiencing the sharpest growth.

Summary of Predictions: Health

- Under all of our scenarios, diabetes, hypertension, stroke, heart disease and cancer prevalence will increase (in many cases sharply) in the age 51+ population throughout the coming decades.

- These forecasted prevalence rates are not sensitive to assumptions about future changes in conditional mortality rates.

Summary of Predictions: OASI

- The proportion of the age 51+ population claiming OASI will increase sharply in the coming decades, reaching a plateau in 2030;

- OASI expenditures, by contrast, will increase steadily through 2060, reaching between $1.5 trillion and $2 trillion in annual payouts (depending on conditional mortality rate assumptions).

Summary of Predictions: SSI

- The proportion the age 51+ population claiming SSI will increase sharply until 2020, and then reach a plateau through 2060.

- As with OASI payments, SSI payments will increase steadily through 2060, reaching a level of about $50 billion per year for the 51+ population.

Summary of Predictions: DI

- Finally, DI participation rates are predicted to fall sharply through 2030 and then plateau.

  - This prediction misses the effect of economic fluctuations.

- Despite this fall, DI expenditures will rise to nearly $100 billion in expenditures for the 51+ population by 2060.

FEM Detail Slides

Effect of Health and SES on Incident Disease

		Conditions						
Selected Risk Factor		**Heart Disease**	**Stroke**	**Cancer**	**HBP**	**Diabetes**	**Lung**	**Memory Disorder**
Transition	(mean)	3.4%	1.5%	2.2%	4.5%	2.3%	1.7%	0.9%
Race/ Ethnicity [Ref=white]	Black	-1.2*	-0.1	-0.3	2.0*	0.4*	-0.7*	0.0
	Hispanic	-1.5*	-0.2	-0.6*	0.4	1.0*	-0.6*	0.0
Education [ref=HS degree]	Less than HS	0.4*	0.1	-0.1	0.6	0.4*	0.1	0.1
	College	0.0	0.1	0.3*	-0.3	0.1	-0.1	0.1
Gender	Male	1.1*	0.1	0.8*	-2.0*	0.6*	-0.0	0.2
Conditions	Heart disease		0.6*					
	Stroke							
	Cancer		-0.0					
	Hypertension	1.6*	0.4*					
	Diabetes	1.1*	1.0*		4.8*			
	Lung							
Functional status	1+ IADL							3.3*
	1-2 ADL							1.4*
	3+ ADL							1.1*
	Currently Smoking	1.2*	0.2	0.1	0.3	-0.5*	0.9*	0.1
Marital status [ref=married]	Widowed	-0.6	0.2	0.0	2.2*	0.2	0.0	-0.1
	Single	-0.1	-0.2	0.6*	-0.4	0.3*	0.3*	0.0
BMI	min(llogbmi, 3.40)	-1.3	-1.1	-0.3	12.1*	3.4*	-0.8	-2.2*
	max(llogbmi - 3.4, 0)	3.5*	-1.8*	1.9	4.8	5.4*	2.5*	-0.5

Marginal Effects on Probabilities of Changes in Functional Status

Selected Risk Factor		Functional Status						
		Mortality	Nursing Home	Healthy	IADL Only	1-2 ADL	3+ ADL	
Mean (transition, unweighted)		7.6%	10%					
Race/ Ethnicity [Ref=white]	Black	0.2	-0.1*	-1.5*	0.3*	1.0*	0.2*	
	Hispanic	-0.6*	-0.1*	-2.9*	0.6*	1.9*	0.3*	
Education [ref=HS degree]	Less than high school	0.1	0.0	-1.3*	0.3*	0.9*	0.1*	
	College	-0.2	0.0*	0.3	-0.1	-0.2	-0.0	
Gender	Male	1.4*	0.0*	-1.3*	0.3*	0.9*	0.1*	
Conditions	Heart disease	1.3*	0.0	-2.9*	0.6*	1.9*	0.3*	
	Stroke	1.6*	0.4*	-10.8*	2.0*	7.3*	1.5*	
	Cancer	6.4*	-0.1*	-1.7*	0.4*	1.1*	0.2*	
	Hypertension	0.9*	0.1*	-0.7	0.1	0.4	0.1	
	Diabetes	1.21*	0.1*	-2.9*	0.6*	1.9*	0.3*	
	Lung	3.3*	-0.1*	-5.1*	1.0*	3.4*	0.6*	
Functional status	1+ IADL	2.0*	0.7*	-20.0*	3.2*	13.3*	3.5*	
	1-2 ADL	2.5*	0.4*	-30.9*	4.3*	20.1*	6.4*	
	3+ ADL	9.1*	1.6*	-66.4*	2.7*	32.8*	30.9*	
	Currently Smoking	0.6*		-0.3	0.1	0.2	0.0	
Marital status [ref=married]	Widowed	0.2	0.1*	-0.1	0.0	0.1	0.0	
	Single	0.6*	0.2*	-1.1*	0.2*	0.7*	0.1*	
BMI	min(llogbmi, 3.4)			11.2*	-2.5*	-7.5*	-1.2*	
	max(llogbmi - 3.4, 0)			-22.0*	4.8*	14.8*	2.4*	
	Work							

Marginal Effects on Predicted Medical Costs

Selected Risk Factor		Cost Categories					
		Total Expenditures MCBS	Total Expenditures MEPS	Out of Pocket Expenditures MCBS	Out of Pocket Expenditures MEPS	Medicare Part A	Medicare Part B
Mean (value)		13444	5030	2455	1015	3759	3032
Race/ Ethnicity [Ref=white]	Black	1,812*	-951*	-487*	-430*	1,122*	895*
	Hispanic	172	-1,483*	-471*	-331*	139	347*
Education [ref=HS degree]	Less than high school	-196	-647*	-468*	-130*	195	57
	College	634*	372	257*	135*	-47	92
Gender	Male	-353	-188	-365*	-315*	2	-7
Conditions	Heart disease	3,282*	4,545*	518*	373*	1,233*	896*
	Stroke	4,024*	3,727*	364	750*	1,925*	1,209*
	Cancer	3,143*	5,785*	138	509*	734*	1,760*
	Hypertension	1,044*	1,783*	228*	332*	32	225*
	Diabetes	1,150*	3,286*		555*		795*
	Lung	2,415*	2,019*	141	290*	797*	753*
Functional status	1+ IADL						
	1-2 ADL						
	3+ ADL	7,916*		929*		4,129*	2,088*
	Currently Smoking						
Marital status [ref=married]	Widowed	-288	-373	57	69	103	-12
	Single	-533	834*	-334*	109*	332	34
BMI	min(llogbmi, 3.401197)						
	max(llogbmi - 3.401197, 0)						
	Work						

Marginal Effects on Probabilities of Program Participation

Selected Risk Factor		SS Claim	SSI Claim	DI Claim	Medicare Part B Newly Eligible	Medicare Part B Currently Eligible	Medicare Part D	
					Program Participation			
Mean		10.3%	2.6%	7.8%	85.8%	16.4%	51.0%	
Race/ Ethnicity [Ref=white]	Black	-0.3	0.1	-0.1	-4.32	-5.0*	4.7*	
	Hispanic	-0.1	-0.0	-1.0*	-8.8*	-3.3	9.2*	
Education [ref=HS degree]	Less than high school	0.2	0.1	0.2	1.9	-5.3*	11.7*	
	College	-0.7*	-0.1	-0.6*	-1.5	-4.1*	-1.7	
Gender	Male	-0.9*	0.3*	-2.01e-06	-3.3	-3.0	-8.0*	
Conditions	Heart disease	0.3	0.2*	1.8*	-4.0	2.9	0.9	
	Stroke	-0.3	0.3	1.1	3.6	21.9*	2.0	
	Cancer	0.2	0.2	0.8	1.1	1.7	-0.9	
	Hypertension	0.1	-0.1	0.0	8.4*	3.7*	1.0	
	Diabetes	0.2	0.2	0.9*		1.7	3.4*	
	Lung	0.4	-0.0	0.2		4.0		
Functional status	1+ IADL	-0.1	0.3*	1.6*	4.3			
	1-2 ADL	-0.1	0.2*	2.4*				
	3+ ADL	-0.5	0.0	2.3*	3.4	0.8	3.3	
	Currently Smoking							
Marital status [ref=married]	Widowed	-0.3	0.1	3.6*	2.5	1.6		
	Single	-0.6*	0.3*	0.1				
BMI	min(llogbmi, 3.401197)							
	max(llogbmi - 3.401197, 0)							
	Work	1.5*	-0.1	-0.1	-12.5*	-11.2*	-57.3*	

Marginal Effects on Labor Outcomes

Selected Risk Factor		Labor Outcomes						
		Working	DB Pension Claiming					
Mean		42.1%	10.7%					
Race/ Ethnicity [Ref=white]	Black	-0.1	1.4					
	Hispanic	-0.7	0.4					
Education [ref=HS degree]	Less than high school	-4.0*	-0.2					
	College	2.8*	-2.4*					
Gender	Male	-1.0	0.9					
Conditions	Heart disease	-3.4*	0.9					
	Stroke	-8.7*	0.3					
	Cancer	-1.6	-2.2					
	Hypertension	-0.9	-2.3*					
	Diabetes	-2.4	0.2					
	Lung	-4.7*	-0.4					
Functional status	1+ IADL	-2.1	3.0					
	1-2 ADL	-7.8*	3.5*					
	3+ ADL	-17.6*	11.6*					
	Currently Smoking							
Marital status [ref=married]	Widowed	2.2	0.9					
	Single	-1.7*	0.4					
BMI	min(llogbmi, 3.401197)							
	max(llogbmi - 3.401197, 0)							
	Work	46.6*						

Understanding the Increase in Disability Insurance Spending

Jeffrey Liebman

Harvard University and NBER

Spending on DI and SSI Benefits
as a Share of GDP
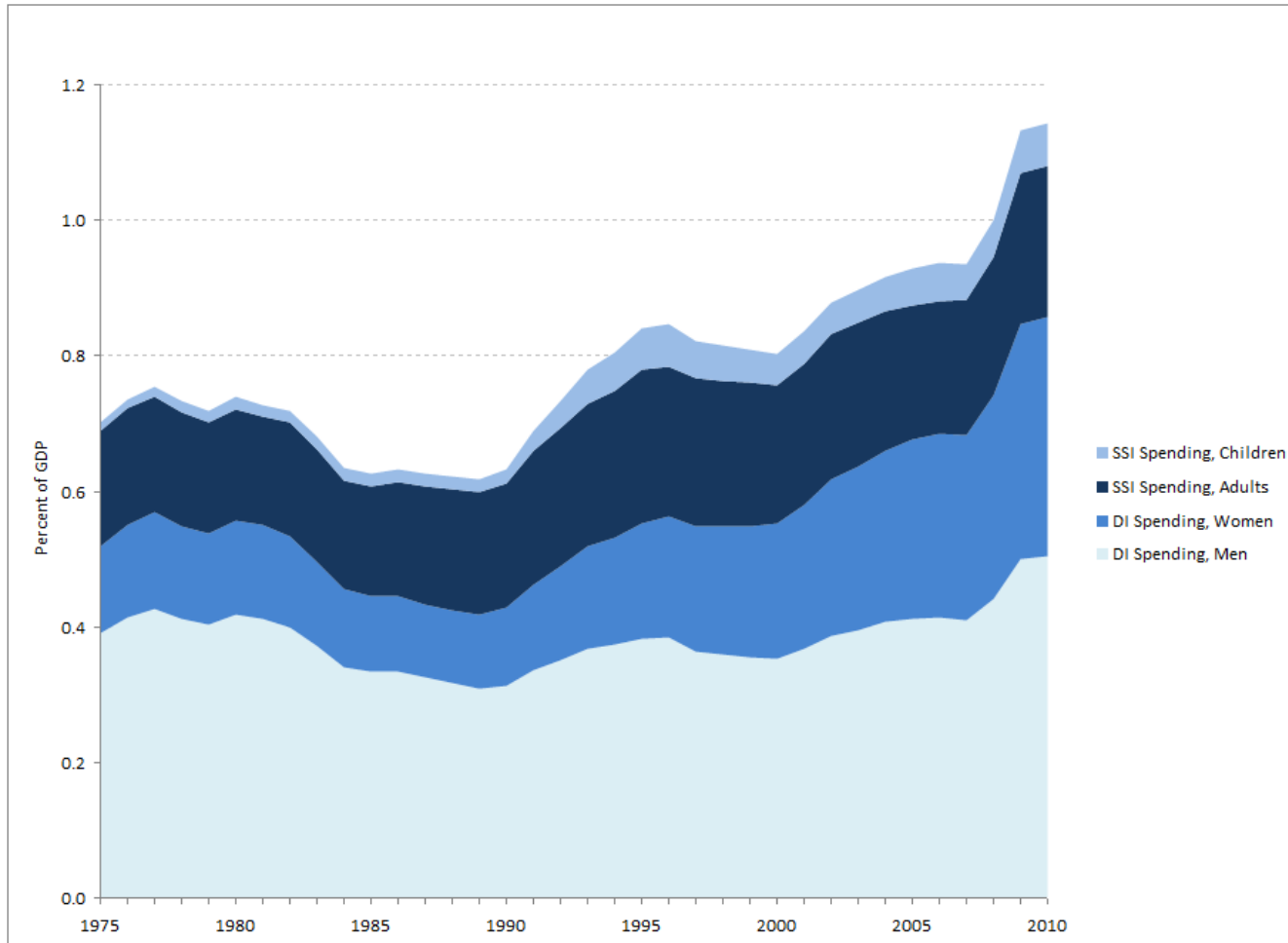
SSI spending on the disabled has been roughly 0.2 percent for a long time
Medicaid and Medicare benefits for DI and SSI recipients are about 1.0 percent of GDP

DI and SSI are the leading edge of the demographic tsunami about to swamp our social insurance programs

US population by age, 1980 v. 2010
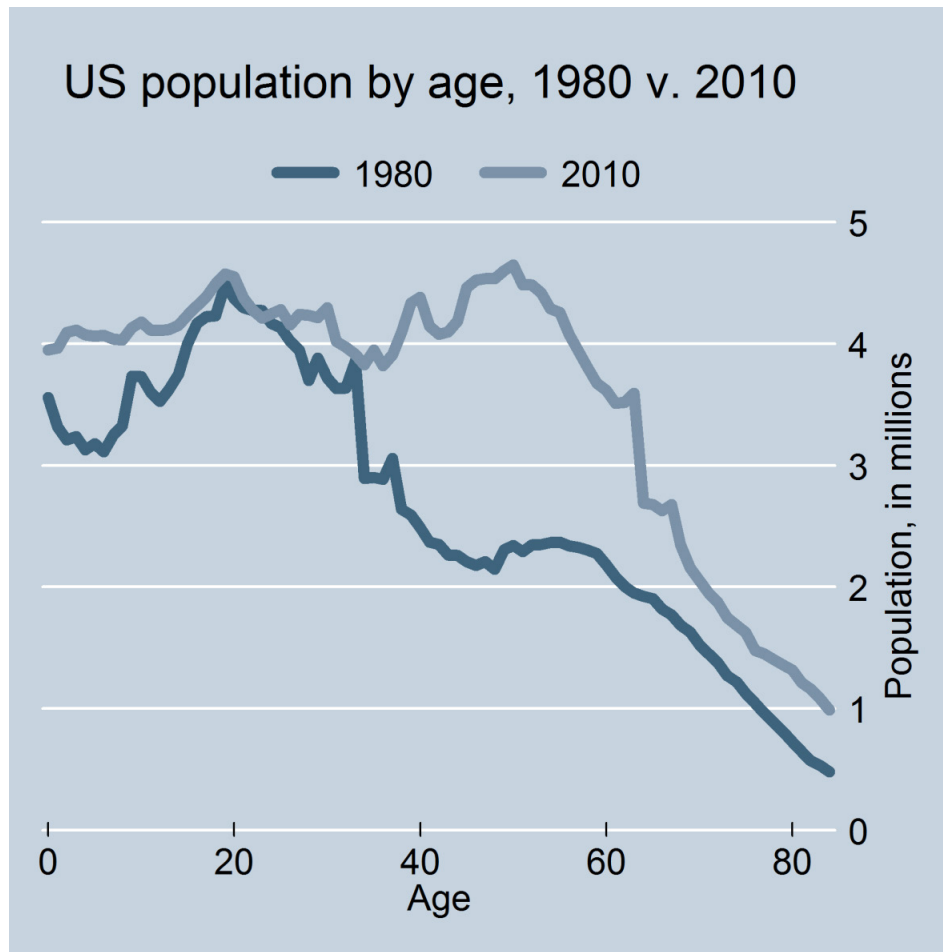
Evolution of DI Caseload

Number of people in current payments of DI program at age *i* in year *t*

$$ICP_{it} = ICP_{(i-1)(t-1)} + new\ awards_{it} - terminations_{it}$$

$$new\ awards_{it} = incidence_{it}((population_{it} * pct\ insured_{it}) - ICP_{(i-1)(t-1)})$$

$$terminations_{it} = (death\ rate_{it} + recovery\ rate_{it}) * (ICP_{(i-1)(t-1)} + \frac{1}{2} * new\ awards_{it})$$

Prediction Model Performance

MEN
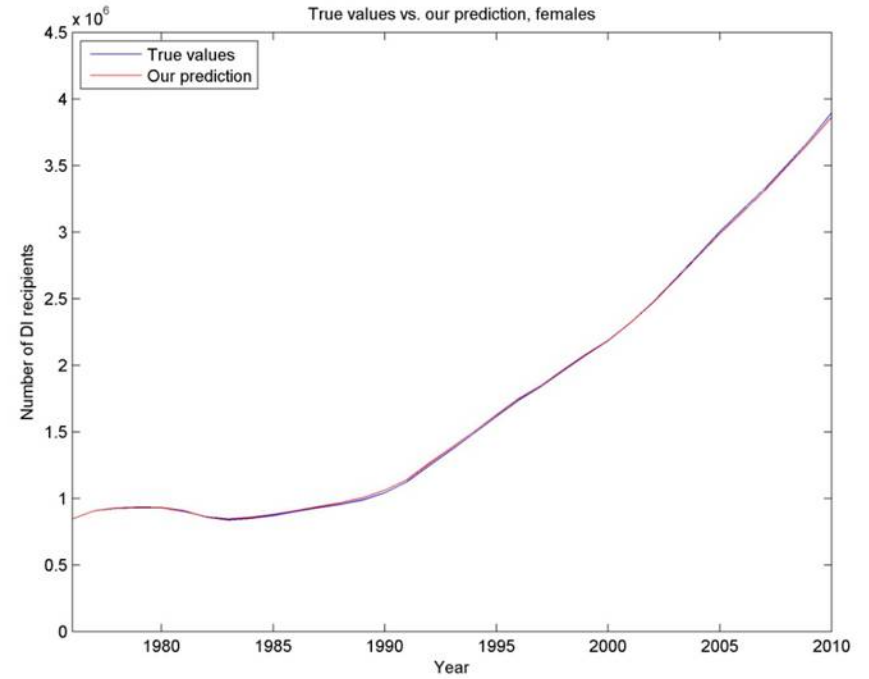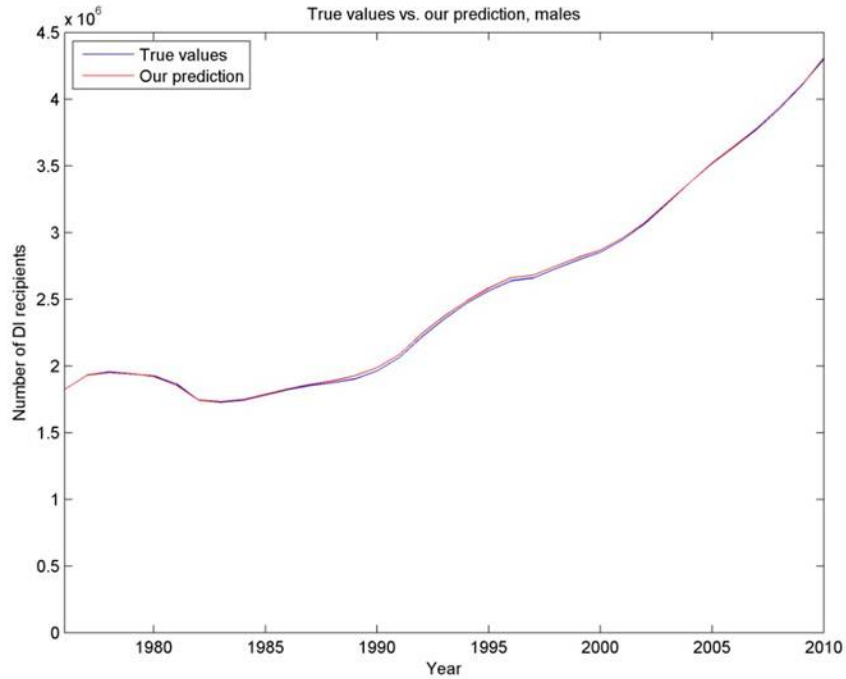
Age-adjusted rates, men
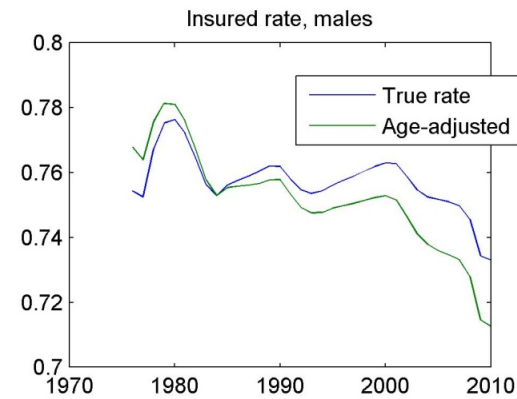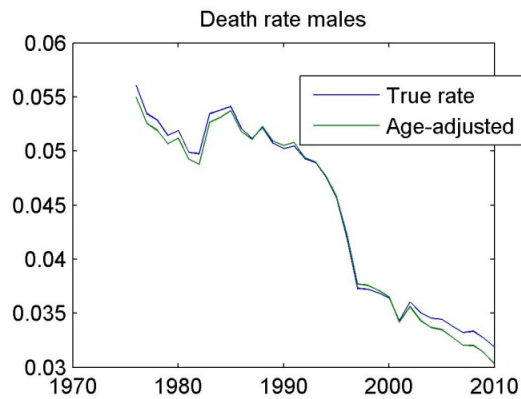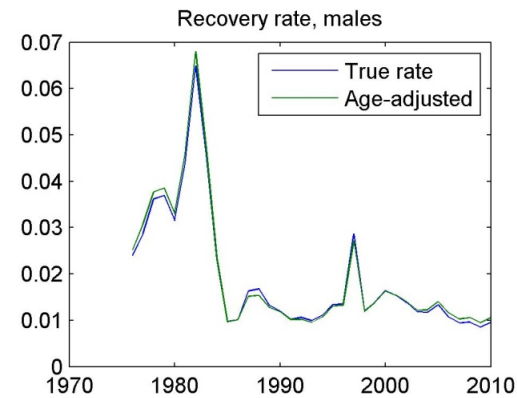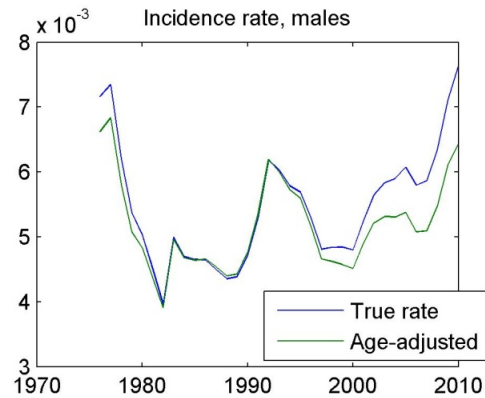
Age adjustments take 1984 as their base year

Incidence rates by age groups, males;
age-adjusted with 1984 as base
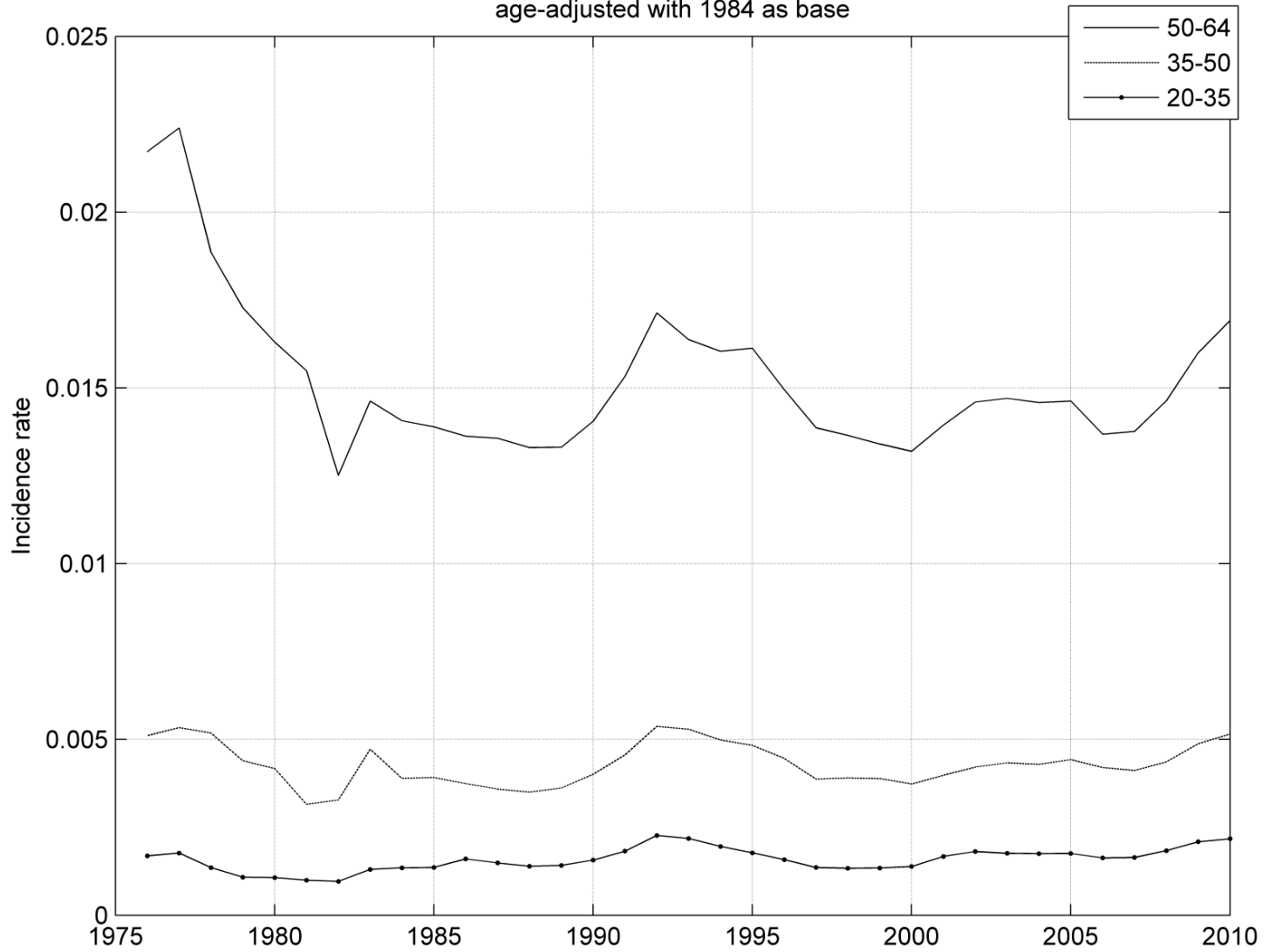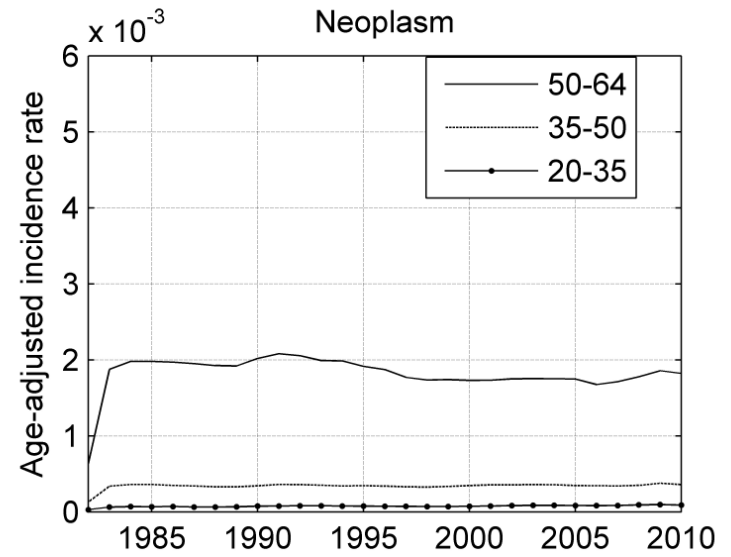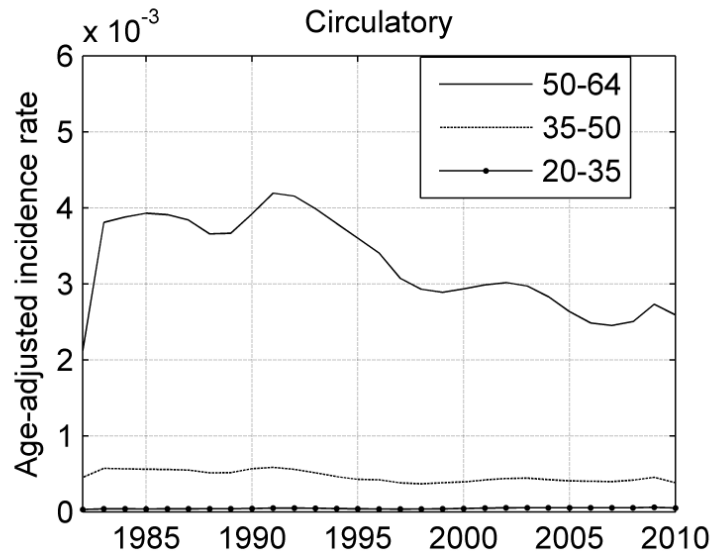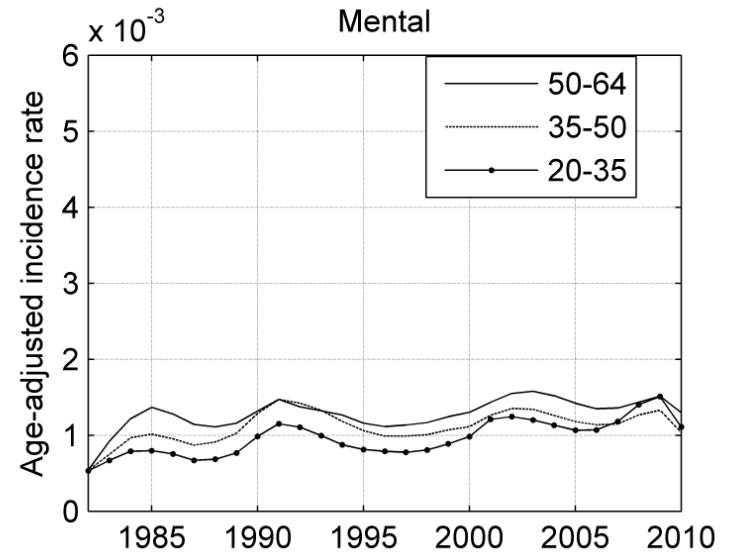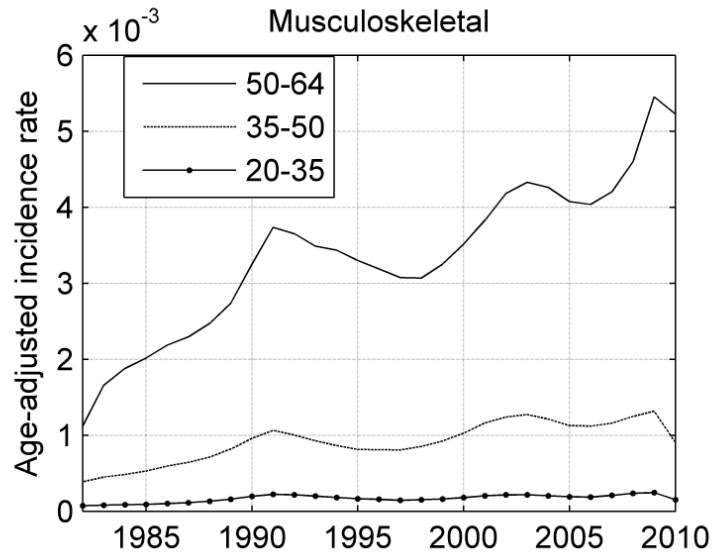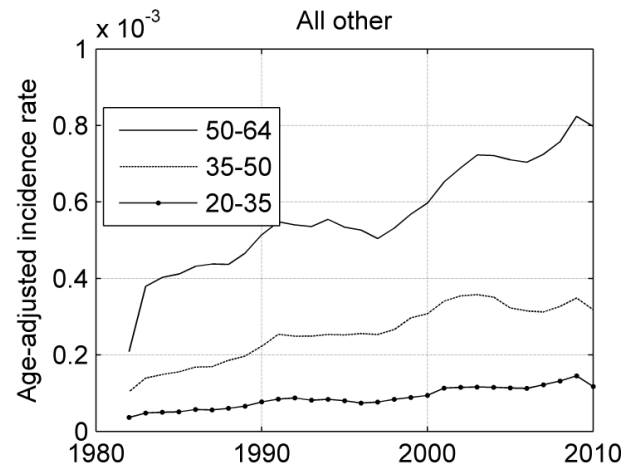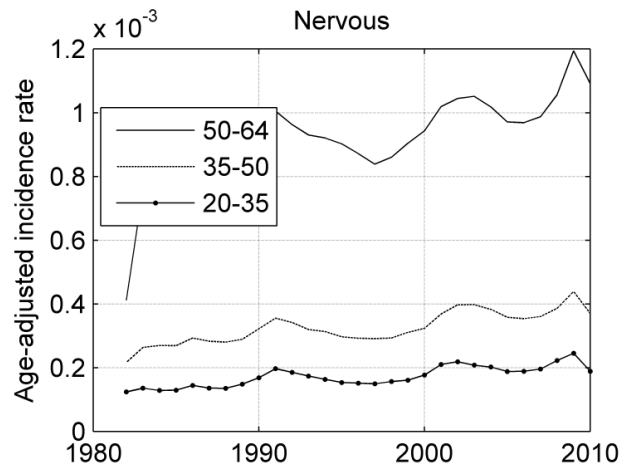
Death rate over time, with linear fit, males
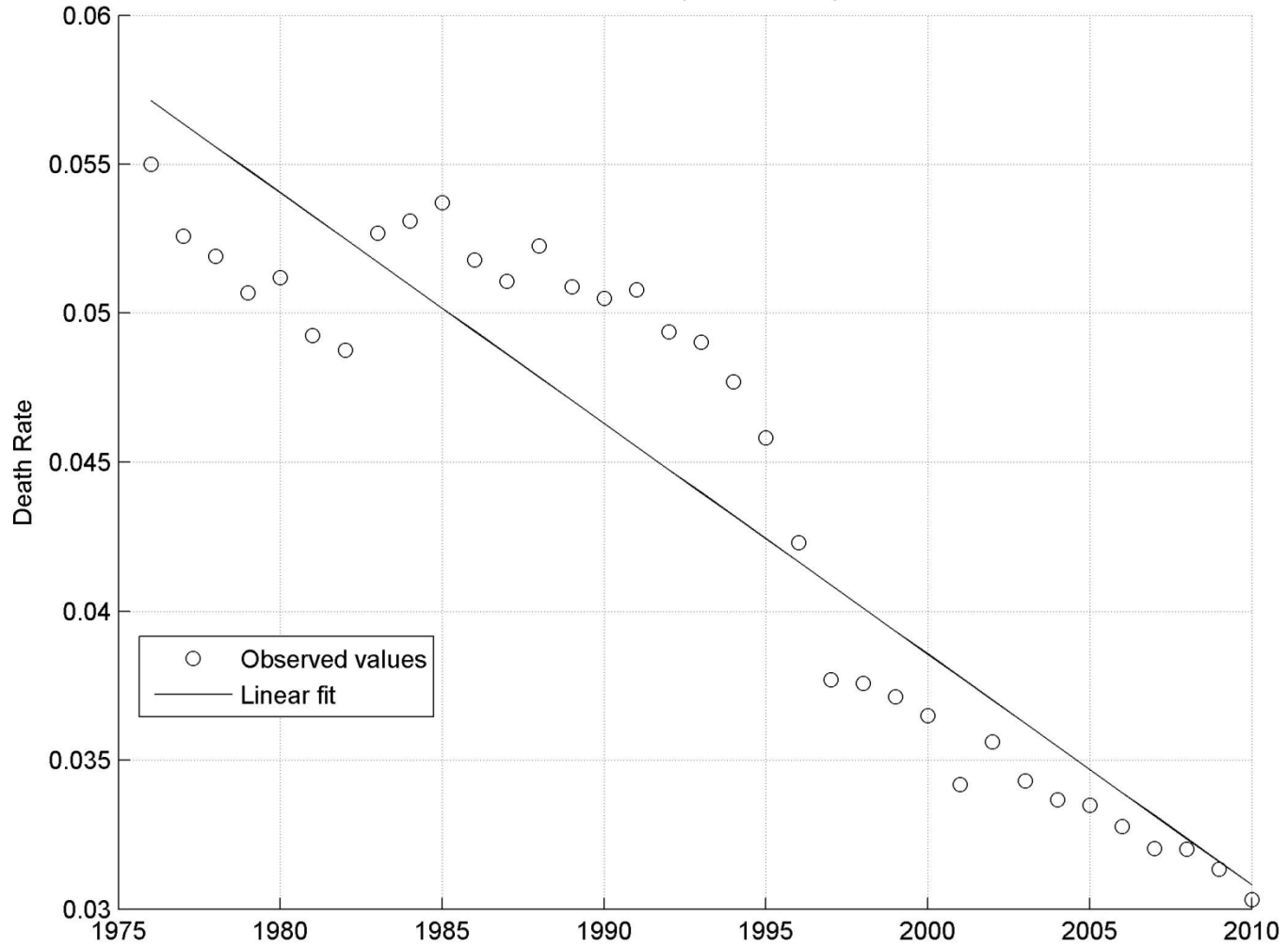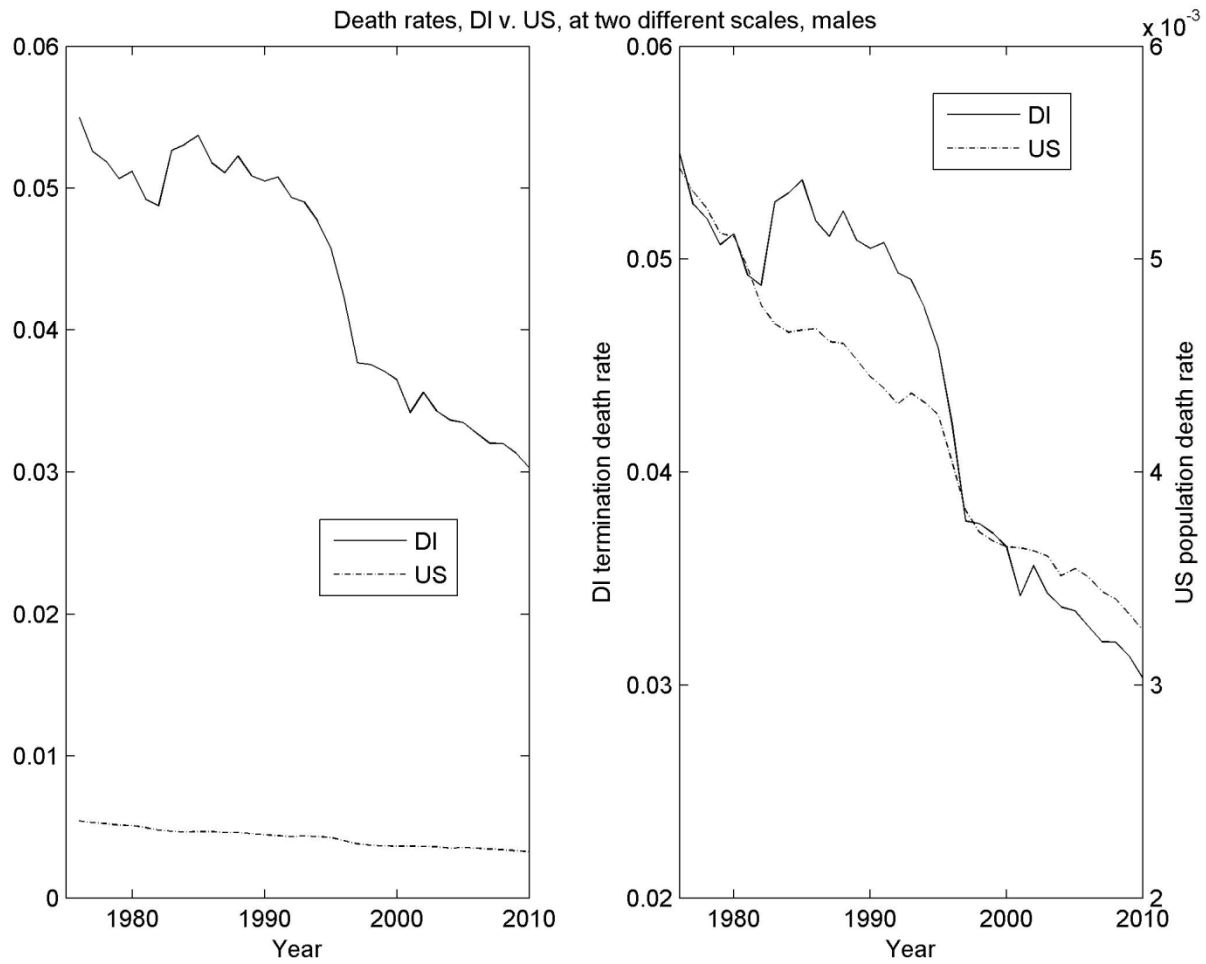
Death rates, DI v. US, at two different scales, males

51

Decomposition of the effect of various factors on the percentage of working-age population receiving disability insurance, males

Legend:
- True percentage of population receiving DI (ages 20-64)
- Projection, holding population distribution at 1985 level
- . . . and insured rates at 1984 level
- . . . and death rates at 1982 level
- . . . and recovery rates at 2001 level
- . . . and incidence rates at medium (1996) level
- . . . and incidence rates at low (1988) level instead

Y-axis: Percent of working-age population receiving DI
X-axis: Year
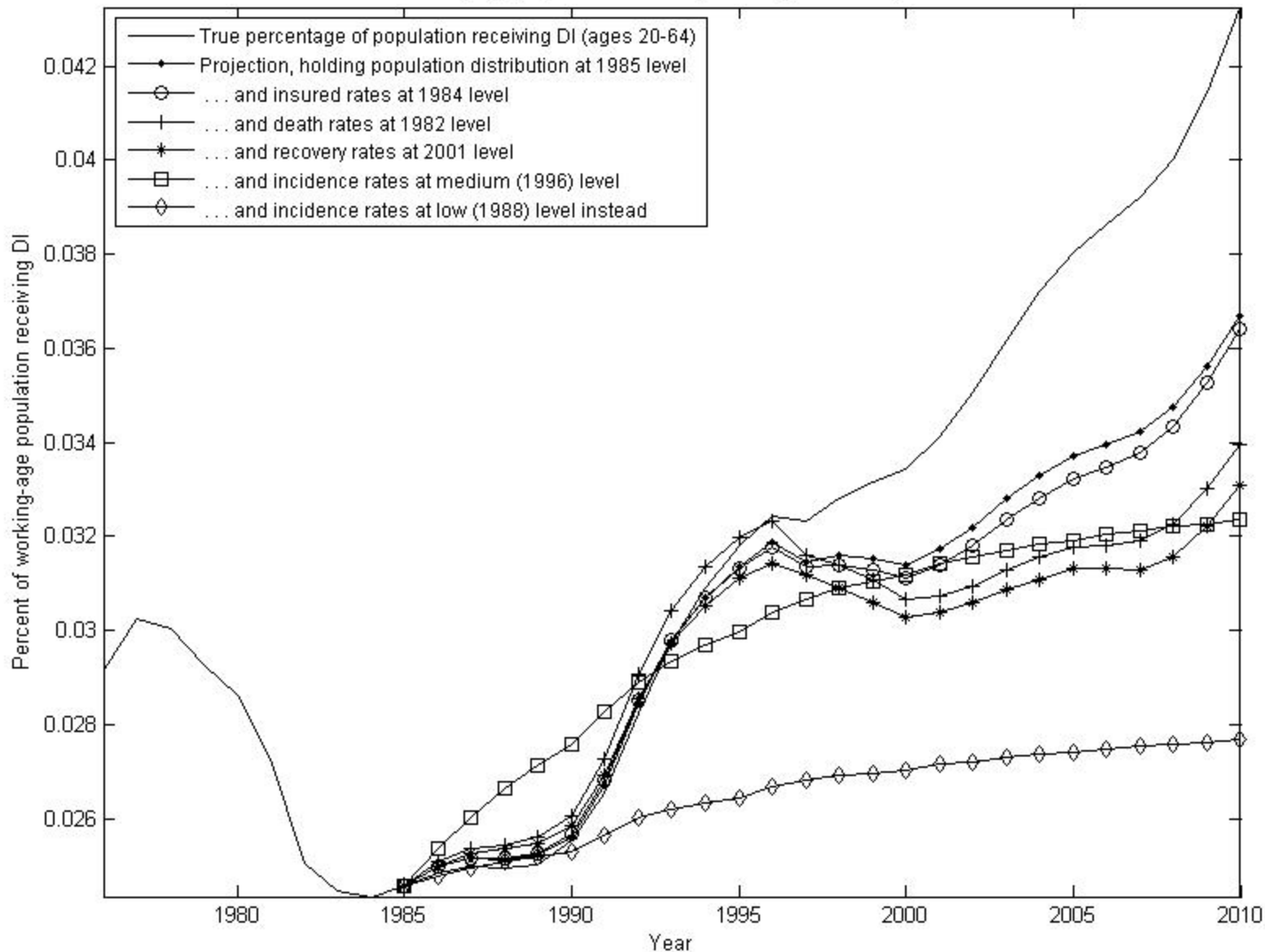
Decomposition, men

	Shares – Medium Incidence	Shares – Low Incidence
Holding population age distribution constant	60%	42%
and insured rate constant	2%	2%
and death rate constant	23%	16%
and recovery rate constant	8%	6%
and incidence rate at 1996 level	7%	5%
No business cycles (incidence at 1988 level)		30%
TOTAL	**100%**	**100%**

WOMEN

Age-adjusted rates, women
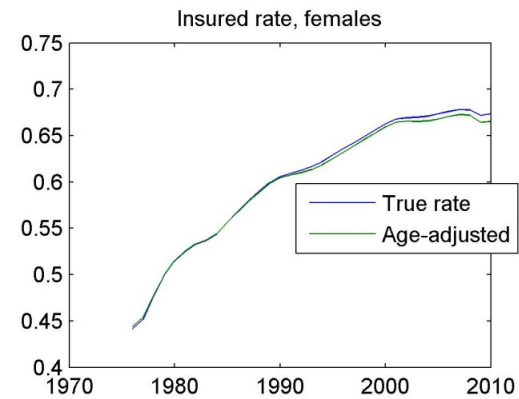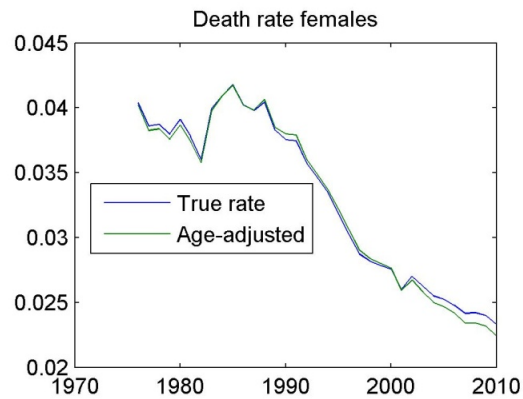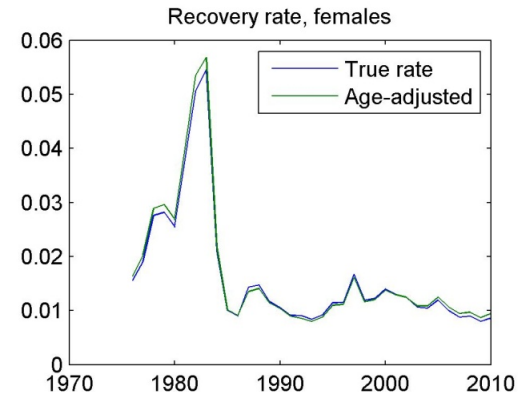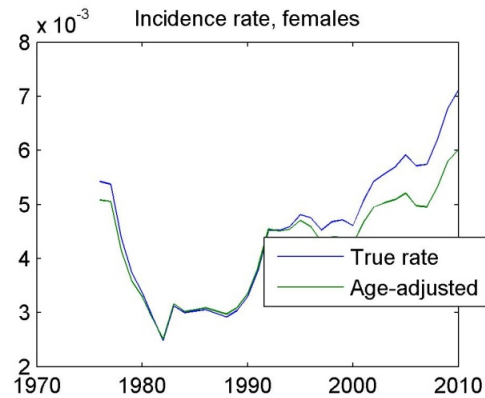
Insured rate, females

Incidence rates by age groups, females;
age-adjusted with 1984 as base
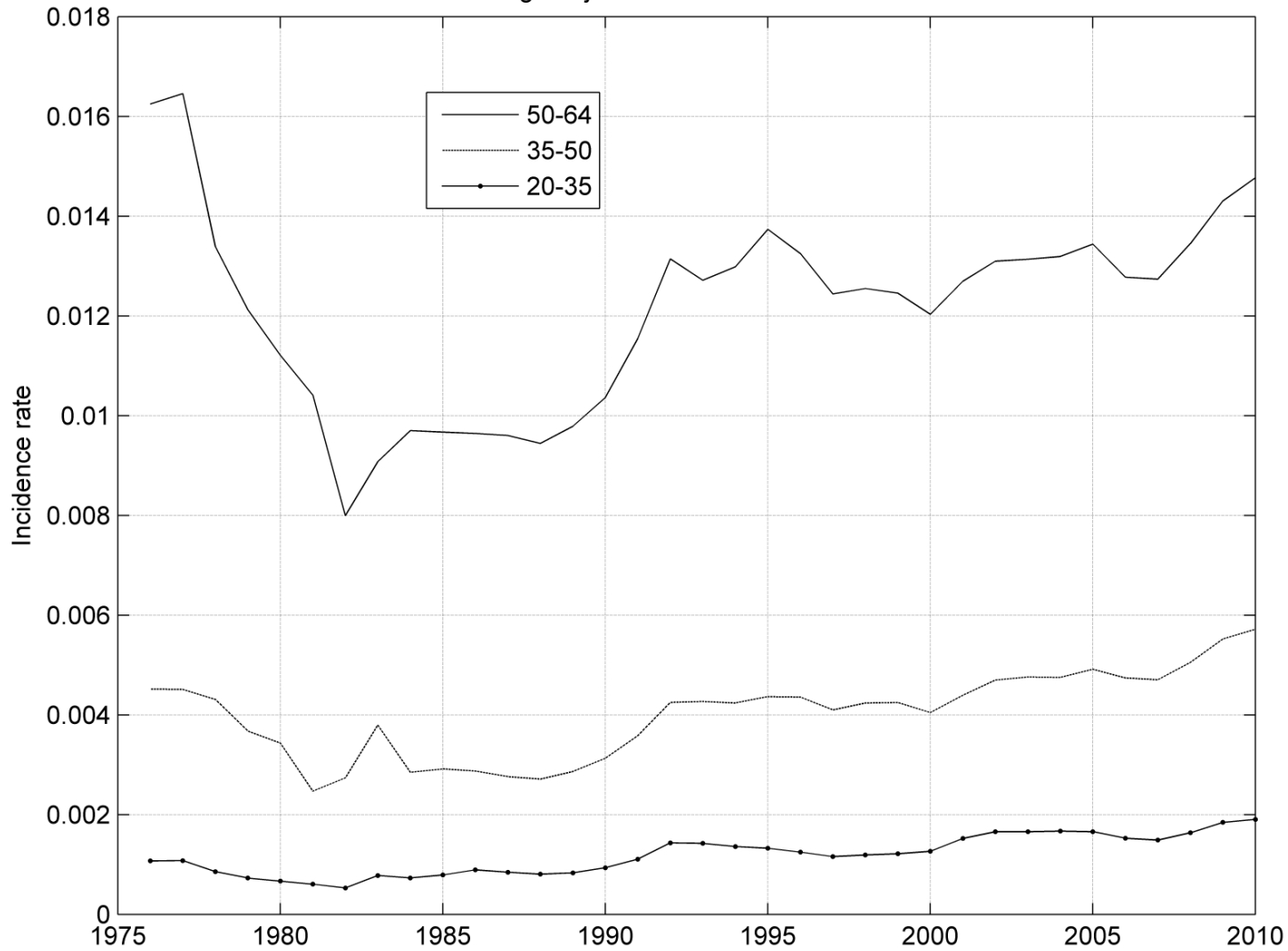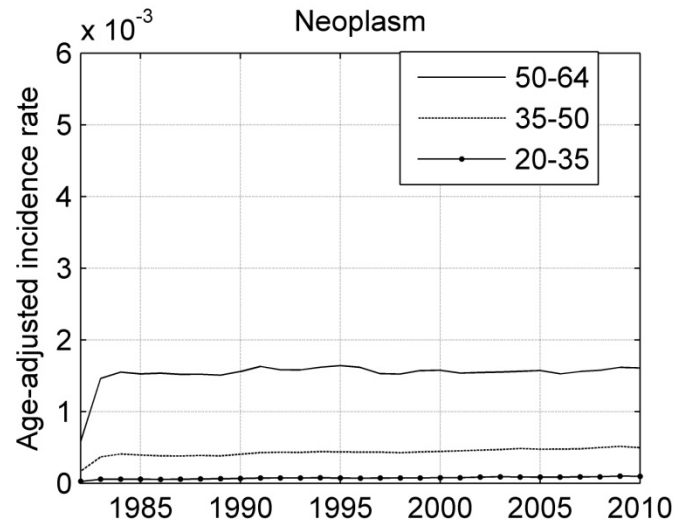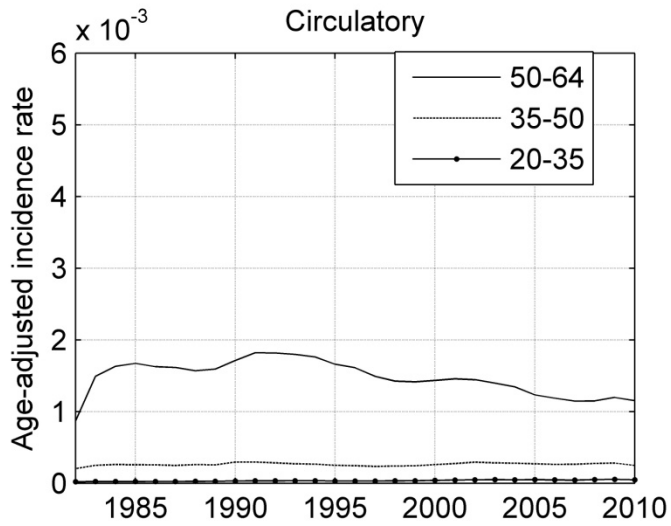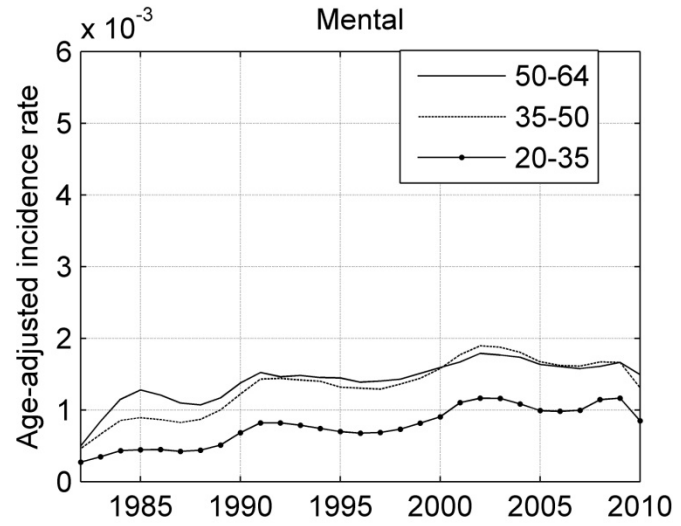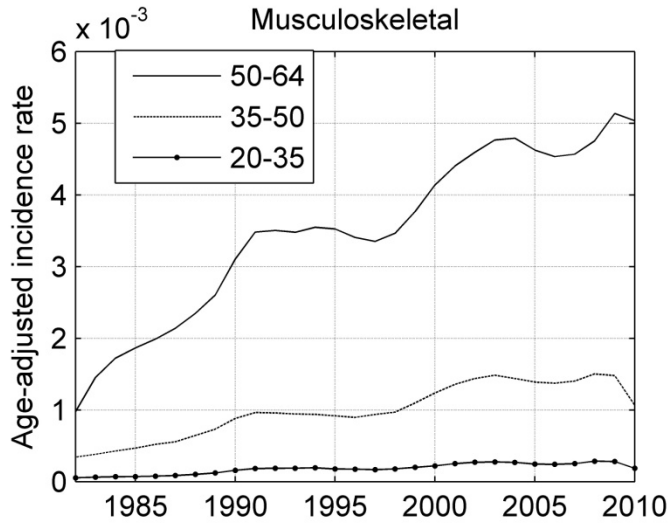
Decomposition of the effect of various factors on the percentage
of working-age population receiving disability insurance, females

Legend:
- True percentage of population receiving DI (ages 20-64)
- Projection, holding population distribution at 1985 level
- ... and insured rates at 1984 level
- ... and death rates at 1982 level
- ... and recovery rates at 2001 level
- ... and incidence rates at medium (1991) level
- ... and incidence rates at low (1988) level instead

Y-axis: Percent of working-age population receiving DI
X-axis: Year

Decomposition, women

	Shares – Medium Incidence	Shares – Low Incidence
Holding population age distribution constant	30%	25%
and insured rate constant	37%	31%
and death rate constant	9%	7%
and recovery rate constant	2%	2%
and incidence rate at 1991 level	22%	18%
No business cycles (incidence at 1988 level)		17%
TOTAL	**100%**	**100%**

ANNA AIZER

BROWN UNIVERSITY AND NBER

NORA GORDON

GEORGETOWN UNIVERSITY AND NBER

MELISSA S. KEARNEY

U. OF MARYLAND AND NBER

PREPARED FOR DRC ANNUAL RESEARCH MEETING

OCTOBER 15 & 16,2013

SSI Child Caseloads

- 1.29 million children currently enrolled in federal SSI program
  - 4-fold increase since 1990
  - 1990–1996 (post-Zebley): 3X increase
  - 1996 welfare reform removed 100K from rolls, slowed growth
  - Upward trend post-2000

- We aim to characterize growth over past decade:
  1. Present rich descriptive picture, both of national and state-level trends
  2. Investigate the role of a defined set of factors in explaining the growth

U.S. Child SSI Caseload Count by Broad Diagnosis Categories
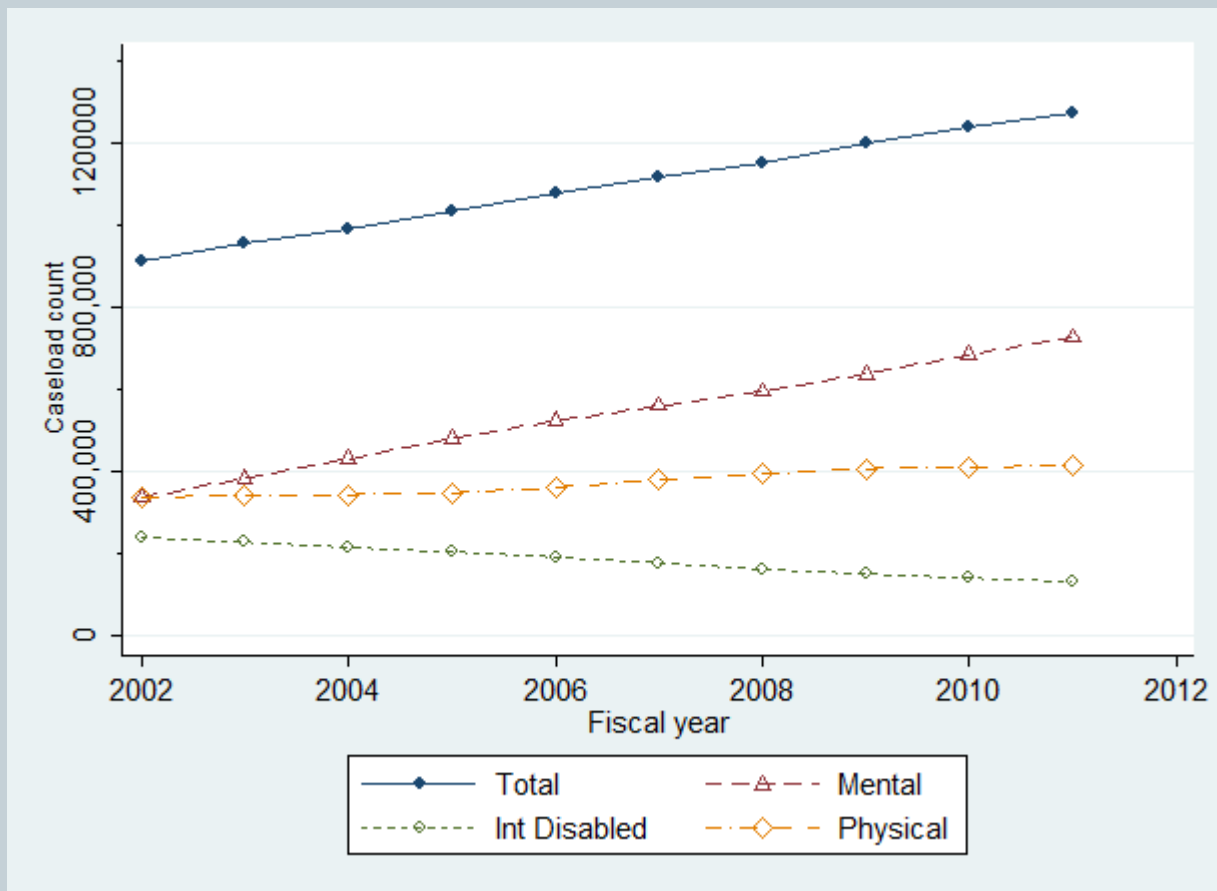
2002 Caseloads and 2002-2011 Growth, by State
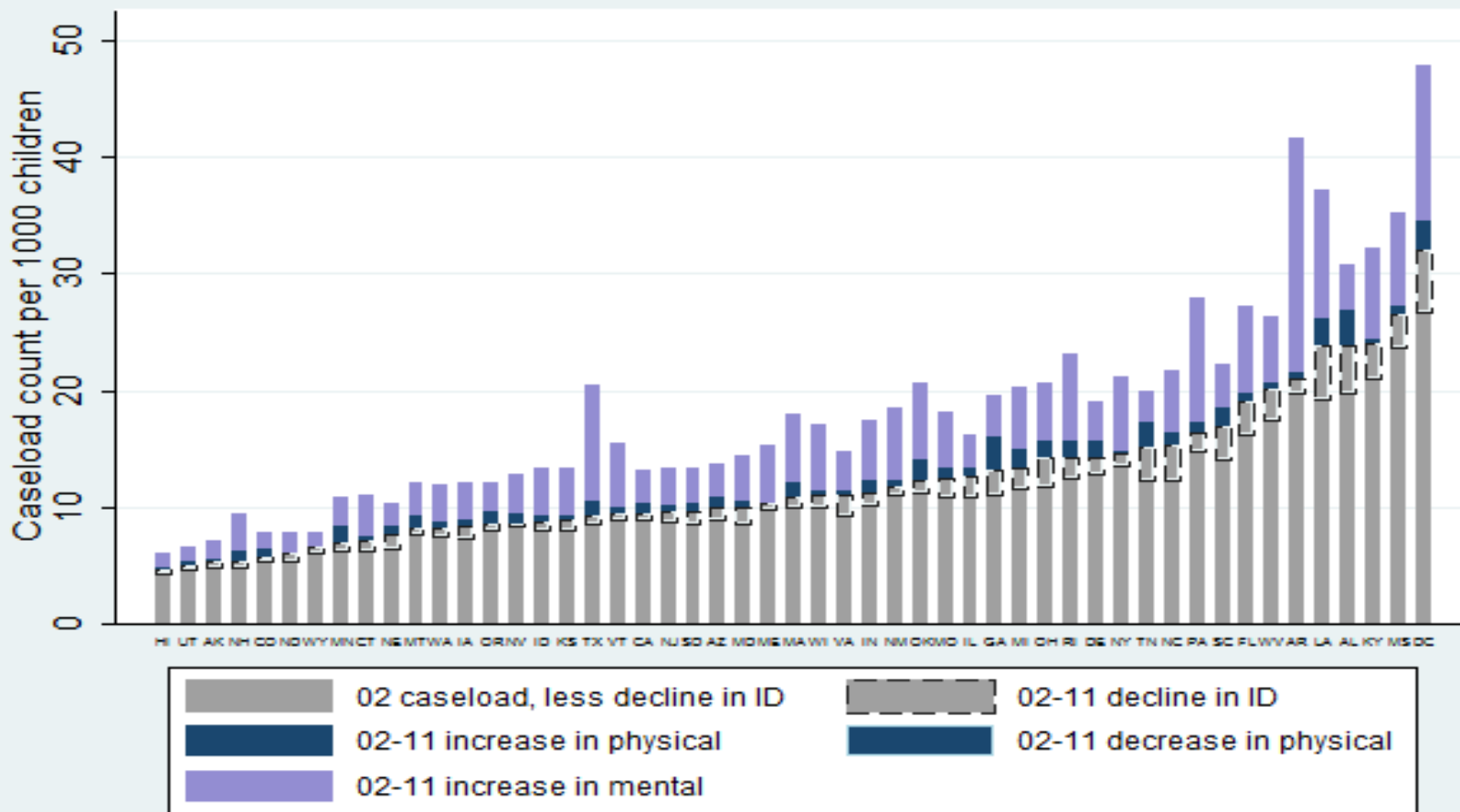
The first two categories sum to represent 2002 caseloads (02 caseload plus 02-11 decline in ID).

Percent Change in Caseload Share 2002–2011, by 2002 Caseload Share
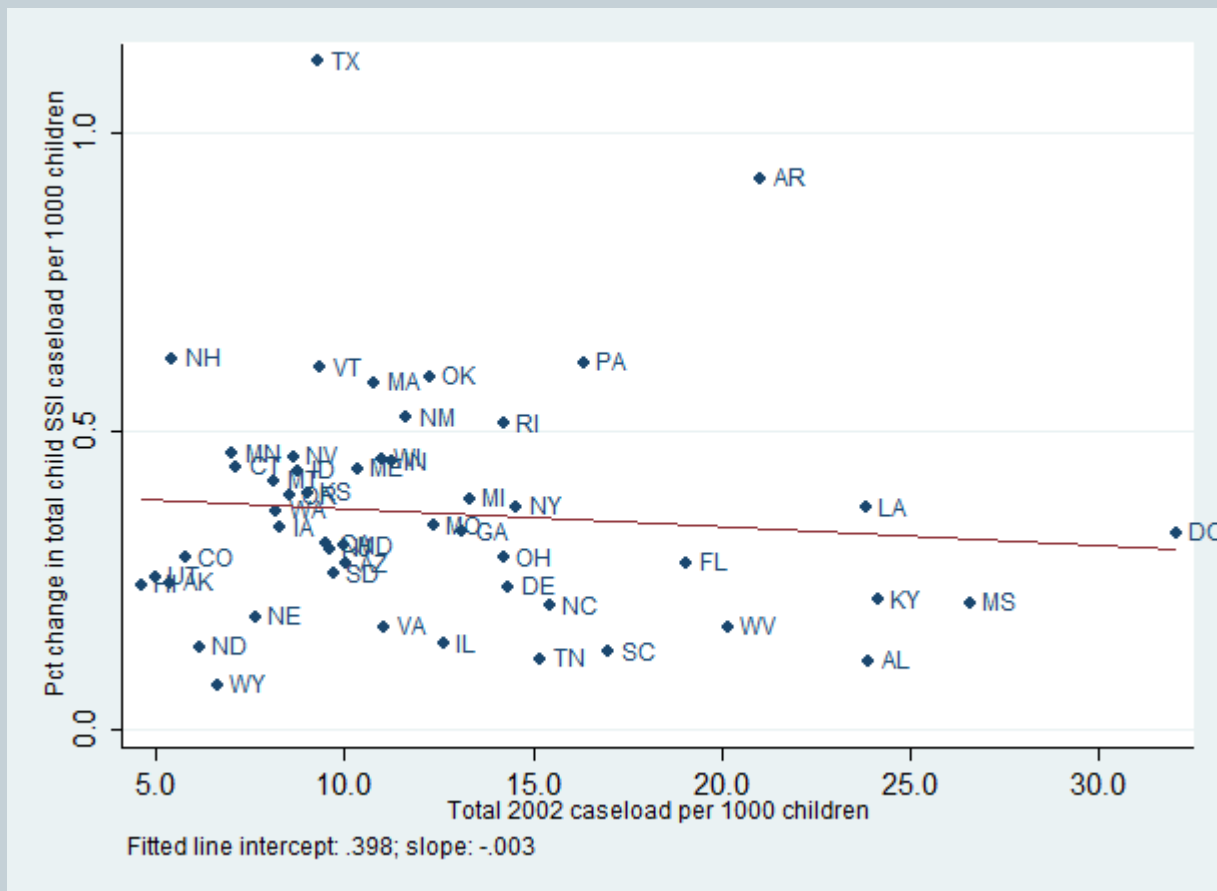
Key Findings

- Growth has come from new and continuing mental health cases
  - No substantial increase in counts with an intellectual or a physical disability
- Rate of growth in the mental diagnosis caseload was not driven by any particular age/gender group
- Significant variation across states in caseload growth over this period
  - 20% growth in WY, high of 129% growth in TX
  - Growth not related to baseline caseload size
  - Stock and flow increase
  - Flow appears to be driven by increased applications, not increased acceptance rates, but not uniform experience across states
  - We don't have data on exit rates

Potential Factors Driving Recent Growth

2012 GAO on national trends in SSI child caseloads from 2000 to 2011:

1. Rising number of children in poverty
2. Rising rates of diagnosis
3. Increased health insurance coverage
4. Rise in special education services
5. Fewer reviews for possible termination

- We focus on 1–4
- Stock and entry

Relationship Between Change in SSI Allowances and Change in Poverty Rate
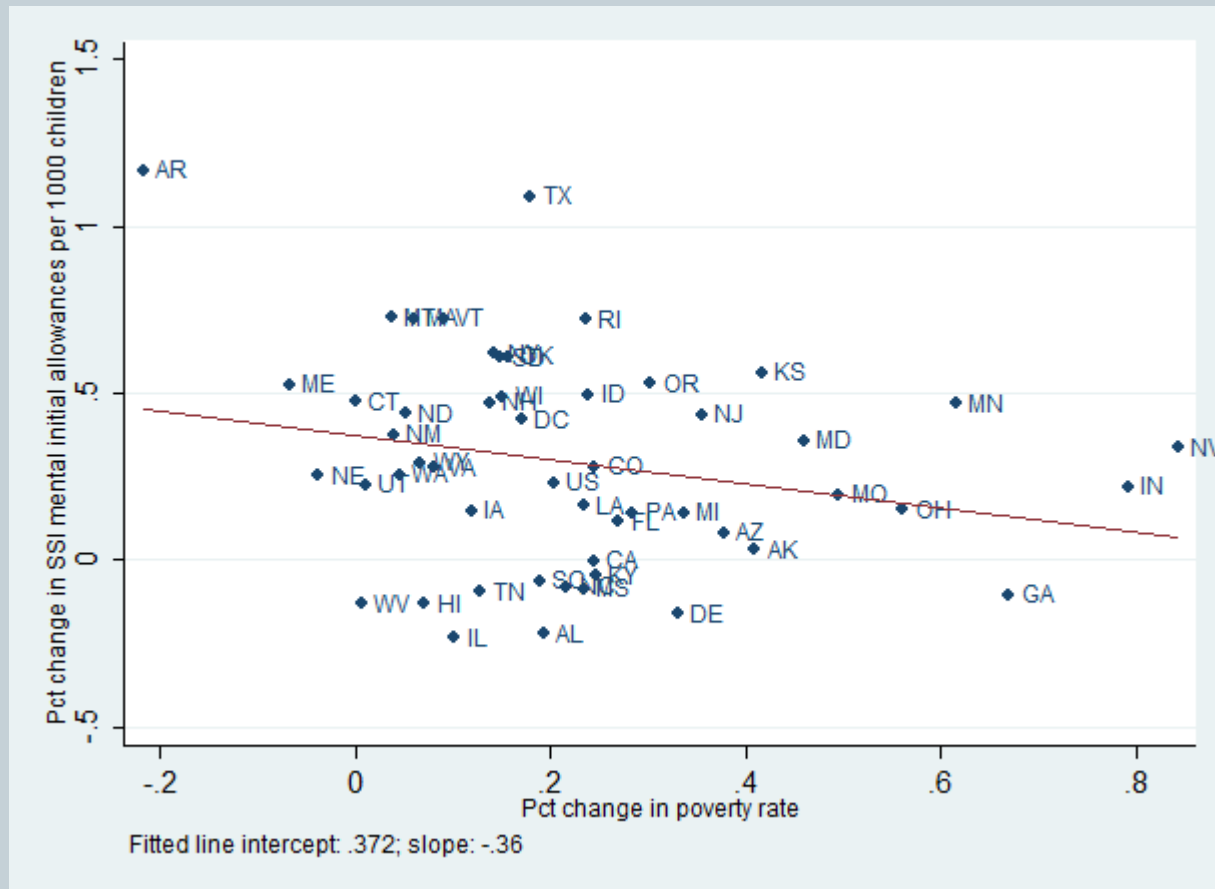
Relationship Between Change in SSI Allowances and Change in Diagnosis Rate

Fitted line intercept: .235; slope: .104
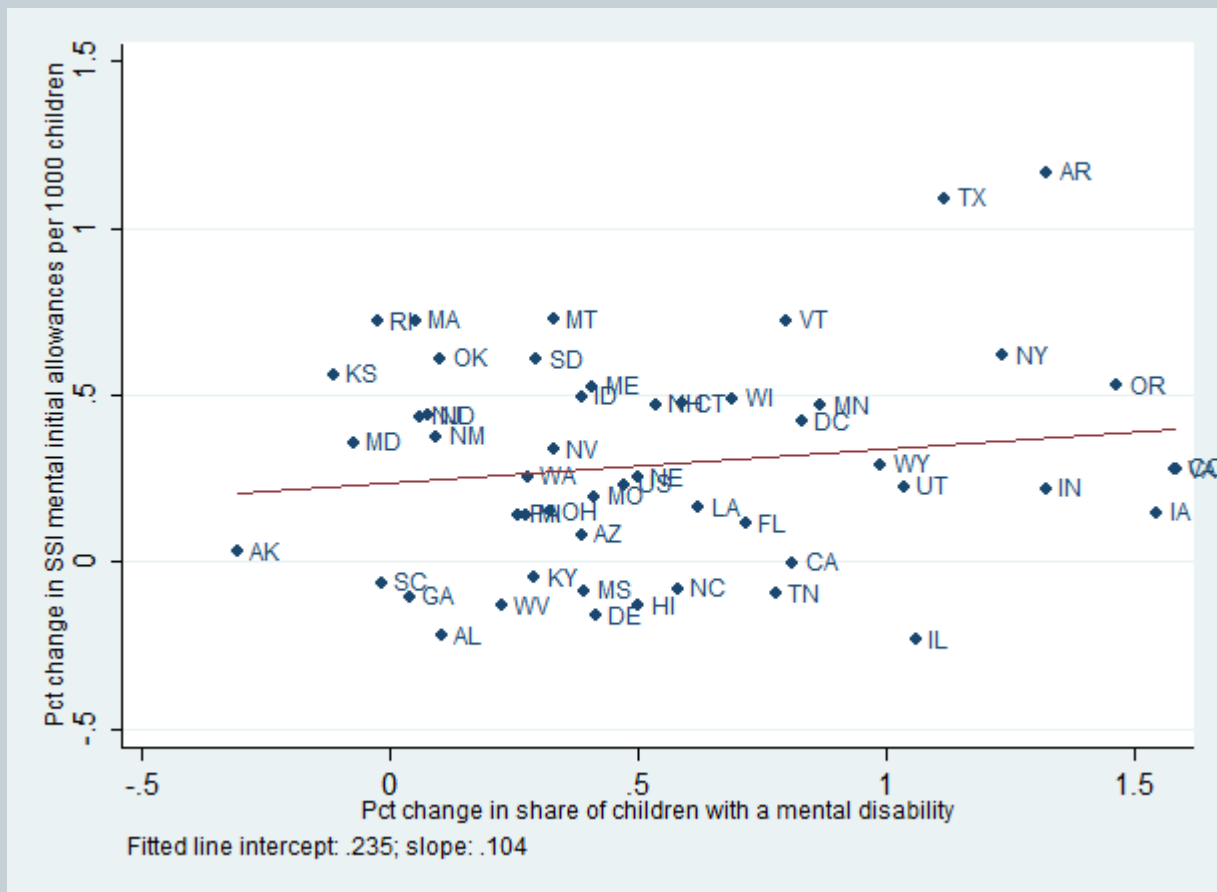
Relationship Between Change in SSI Allowances and Change in Medicaid/SCHIP Recipients
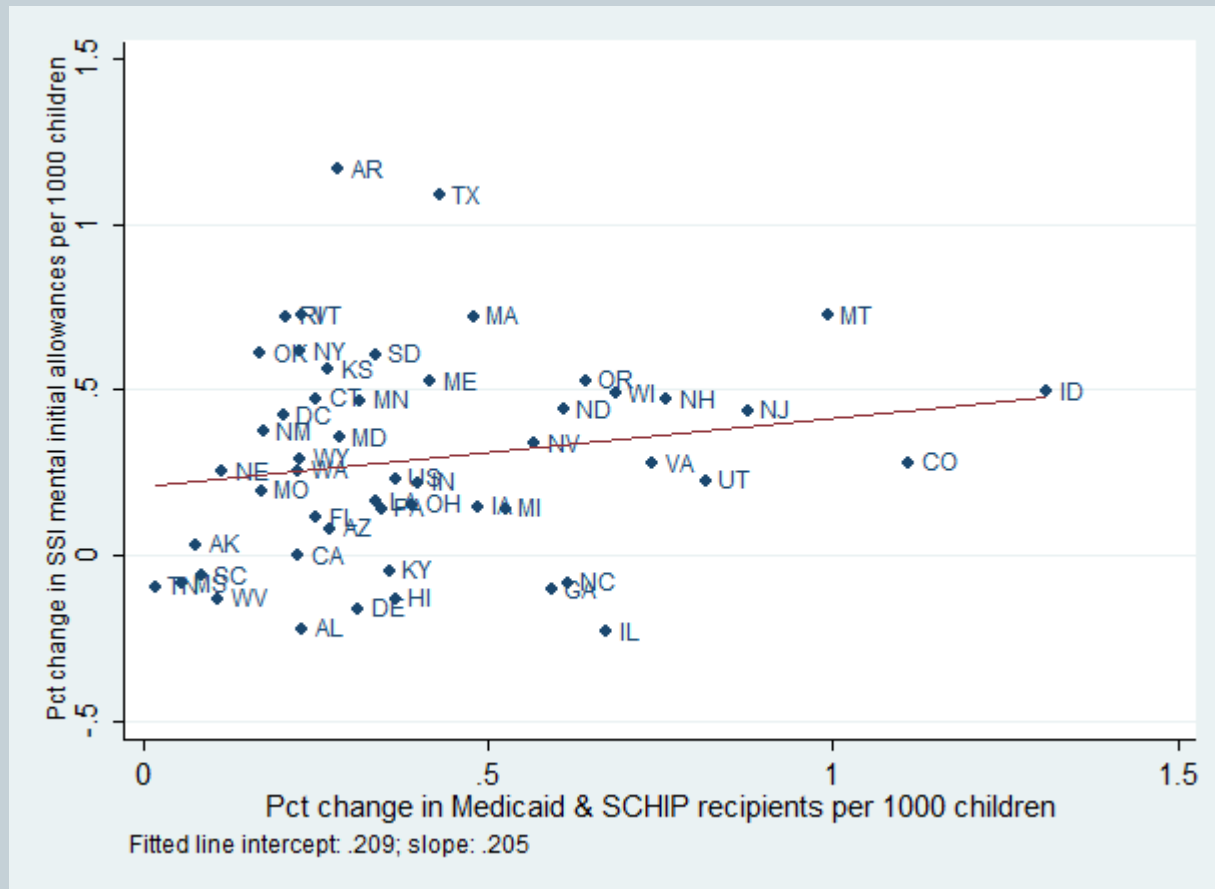
Relationship Between Change in SSI Allowances and Change in Health Insurance Coverage of Poor Kids
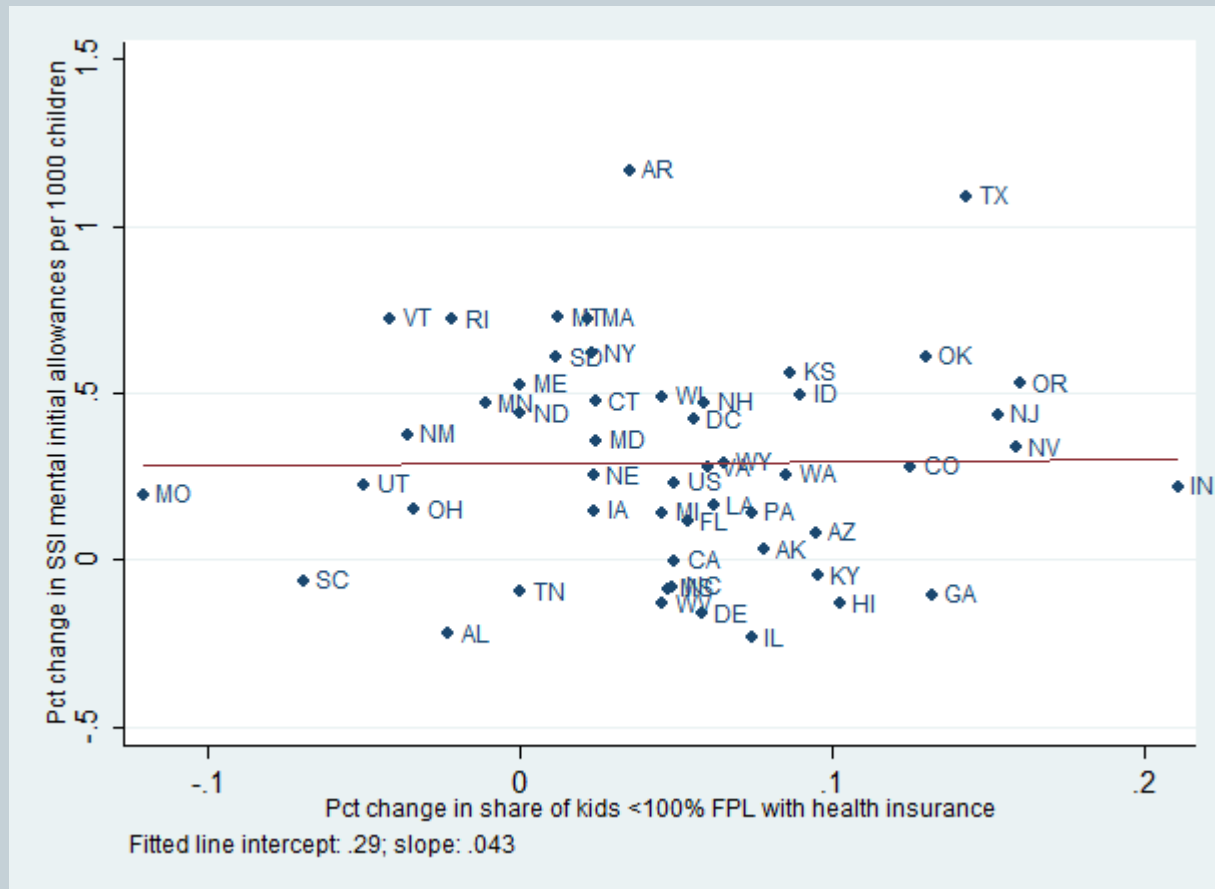
Relationship Between Change in SSI Allowances and Change in Health Insurance Coverage of Near-Poor Kids
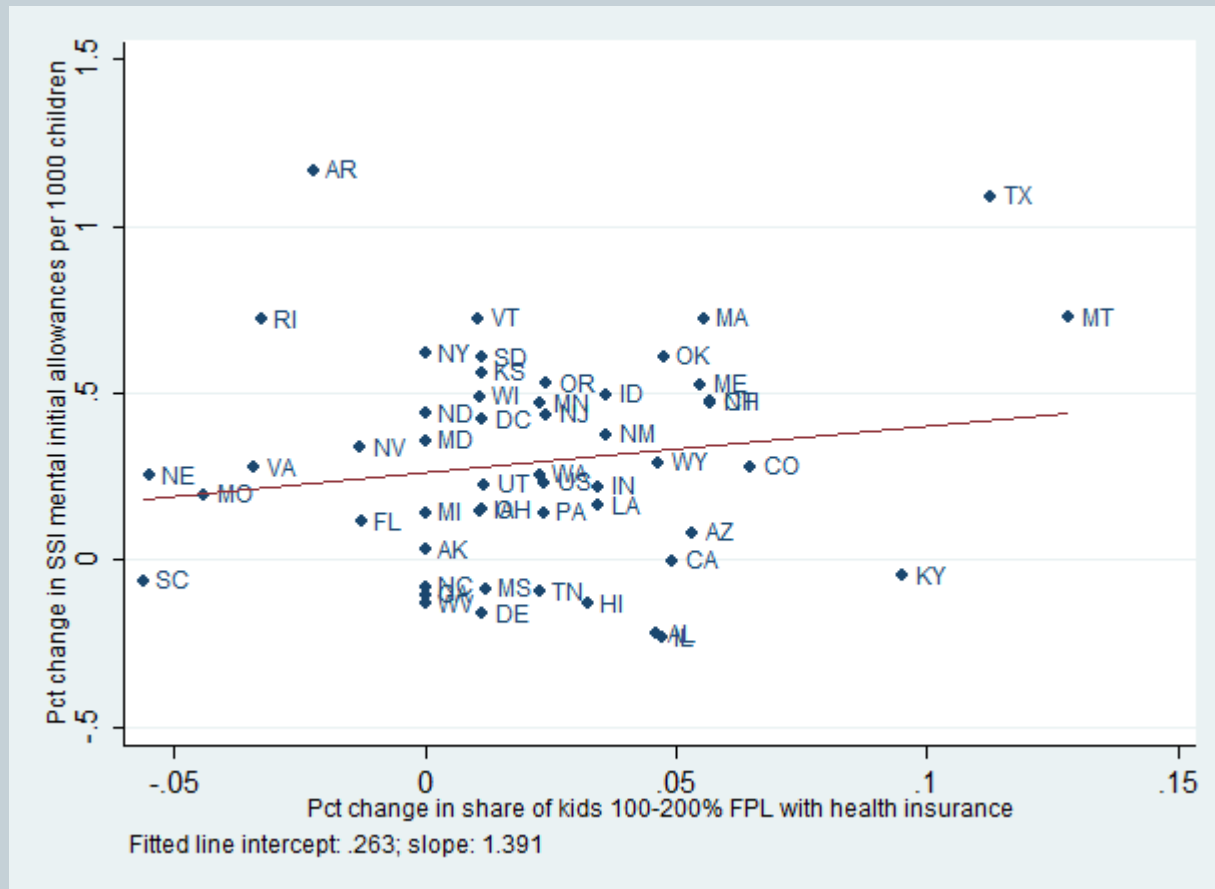
Relationship Between Change in SSI Allowances and Change in Special Ed Share
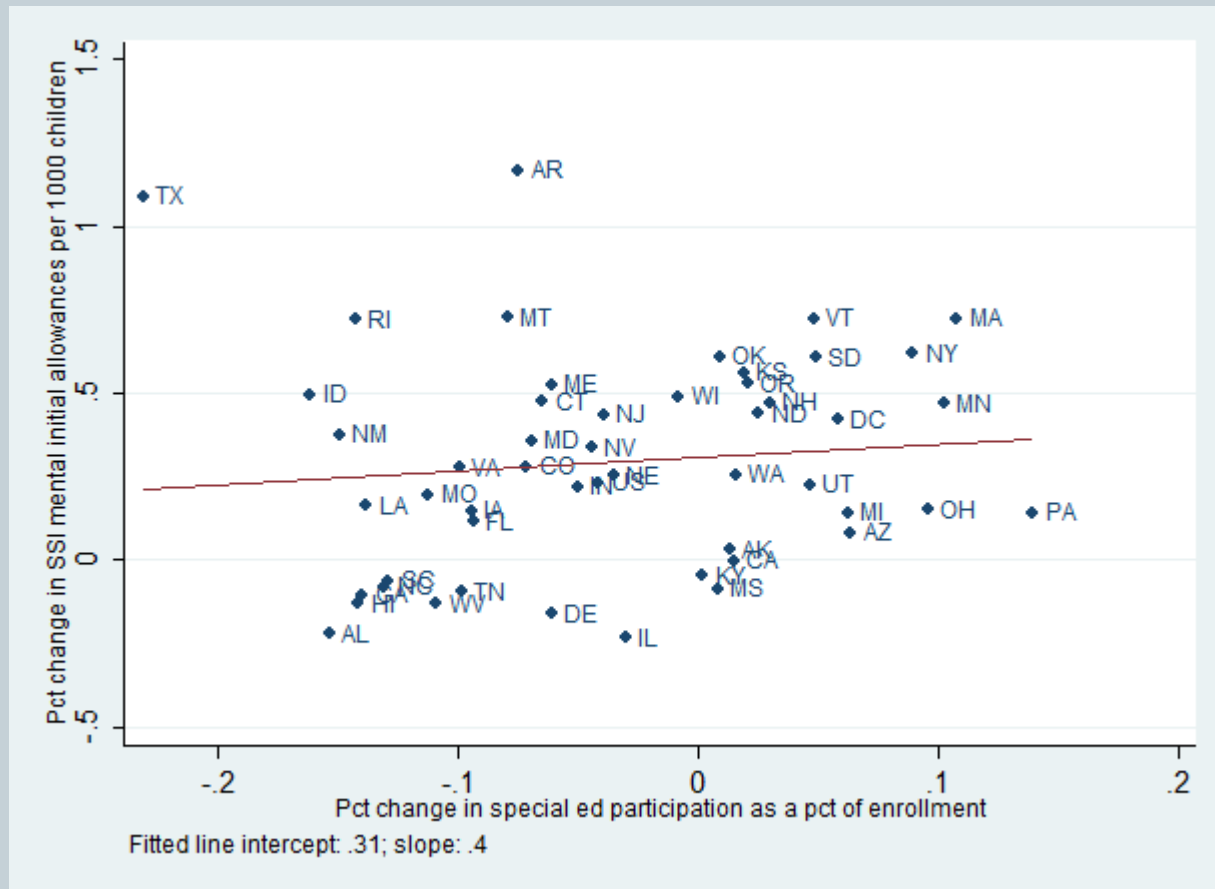
OLS Analysis

- The only factor statistically significantly predictive of caseload growth is the prevalence of special education in the state
  - When TX excluded
  - Special education predictive of initial allowances, not application rates

- Child poverty, health insurance, and rates of health diagnoses in the broader population are not predictive of changes in state-level caseloads over this period

Final Thoughts

- Our inability to identify "universal" factors that explain caseload growth across states with coarse data suggests a need for in-depth case studies of states that were outliers in terms of the growth of SSI participation of children with mental disabilities over this period, most notably Texas, Arkansas, and Washington, DC.
- More work needed on SSI/Special Ed link

Discussant Remarks
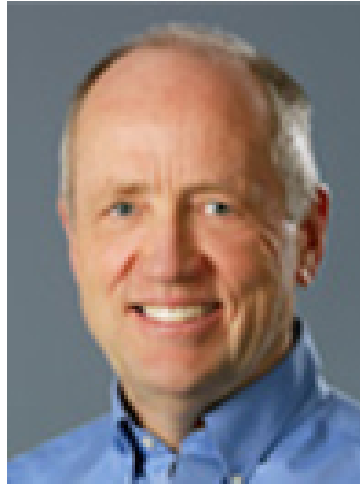
**David Stapleton
Director,
Center for Studying Disability Policy**

Stay Tuned!

Our next session begins at 12:30 p.m. ET

"Early Intervention and Employment"

Early Intervention and Employment

Moderator: David Wittenburg, Mathematica

Outcomes of Youth and Young Adults Seeking VR Services
Todd Honeycutt, Mathematica

Firm-Level Early Intervention Incentives: Which Recent Employers of Disability Program Entrants Would Pay More?
David Mann, Mathematica

The Effect of the SSI Children's Program on Parental Labor Supply and Long-Term Outcomes of Enrolled Children
Manasi Deshpande, Massachusetts Institute of Technology

Antecedents of Voluntary and Involuntary Job Separations of Workers with Psychiatric Disabilities
Judith Cook, University of Illinois

Discussant: David Wise, Harvard University and NBER

Center for STUDYING DISABILITY POLICY

NBER
National Bureau of Economic Research

Firm-Level Early Intervention Incentives: Which Recent Employers of Disability Program Entrants Would Pay More?

David R. Mann, David C. Stapleton, and Jae Song

Presented at the Disability Research Consortium
Annual Research Meeting
Washington, DC

October 15, 2013

MATHEMATICA
Policy Research

Center for
STUDYING
DISABILITY POLICY

There Are Many Proposals for Reforming Disability Insurance (DI)

- **One approach "internalizes" the cost of recent employee DI entry**

  - **Each firm's workforce costs would change based on the DI benefits paid to its recent employees**

- **Two prominent examples of this approach**

  - **Short-term disability insurance**

  - **Experience rate payroll taxes**

Overview

- **Construct statistics to examine how potential liability for DI benefits varies by employer**

- **Measure how a reform proposal (via the statistics) would affect workforce costs by:**
  - **Firm workforce size**
  - **Firm DI benefit liability**

- **Results preview**
  - **Small firms and those with low mean annual wages have relatively high DI liabilities**
  - **Financial burden of reform varies by proposal**
    - **The burden may fall heavily on firms that employ many part-time, temporary, or low-skill workers**

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

The Basic Proposals

- **Short-term disability insurance**
  - **Require all employers to have short-term private disability insurance (STDI)**
  - **For up to 24 months, each STDI claimant would receive**
    - **Partial wage replacement**
    - **Vocational rehabilitation and other supports**
  - **If a claimant is still unable to work, then the claimant may eventually apply for DI**

- **Experience rate payroll taxes**
  - **The percentage of the Social Security payroll tax allocated to the DI Trust Fund does not currently vary by employer**
  - **Experience rate payroll taxes allocated to the DI Trust Fund based on the employers' historical DI incidence rate**

Center for **STUDYING DISABILITY POLICY**

MATHEMATICA Policy Research

Data

- **100% Master Earnings File for 2000 to 2005**
    - **Annual wages paid to every worker (identified by SSN) by every employer (identified by EIN)**
    - **Aggregated across employees to produce firm-level statistics**

- **100% 831 Disability Determination File for applicants and allowed applicants (identified by SSN)**
    - **Applications, allowances, benefit amount, applicant, and allowed applicant characteristics**

- **Numident File**
    - **Date of birth and death, sex**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Benefit Liability to Wage Ratio (BLWR)

- **Firm-level annual statistic**

- **Ratio of benefit liability to total payroll**
  - Numerator: the liability accrued in year *t* for the first 24 months of DI benefits paid to year *t* workers who enter DI in year *t*, *t+1,* or *t+2*
  - Denominator: all Social Security wages paid in year *t*

- **Median BLWR = 0.007**
  - Liability accrued in year *t* is 0.7% of Social Security wages paid

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Characteristics of Variation in BLWR (1)

- **Some firms have very high BLWR**
  - **At 90th percentile, BLWR = 0.088**
  - **At 95th percentile, BLWR = 0.186**
- **High BLWR firms have the highest application and allowance rates**
- **As BLWR increases, mean wage tends to decrease**
  - **DI is progressive: the wage-replacement rate declines with wages**
  - **High BLWR firms may have many temporary, part-time, and low-skill workers**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Characteristics of Variation in BLWR (2)

- **Larger firms tend to have relatively low BLWR and higher mean wages**

- **Large relative variation in BLWR for small firms (fewer than 50 employees)**
  - **27.3% have BLWR = 0.000**
  - **22.0% have BLWR > 0.065**

- **Firms with highest BLWR are typically small**
  - **E.g., for BLWR > 0.065, mean firm size = 11 employees**

- **80% of allowed DI applicants are from firms with BLWR < 0.015**
  - **6% of allowed DI applicants are from firms with BLWR > 0.065**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Calculating Premiums
for STDI Proposal

- **Regress current year's BLWR on**
  - **Wage and size categories**
  - **Last year's BLWR**
  - **Indicator for new firm**
  - **Mean worker age**
  - **Mean worker Social Security-covered wage**

- **Use estimated model to predict expected liability to wage ratio (ELWR)**

- **Divide ELWR by loss ratio to compute STDI expected premium**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

STDI Premium as Share of Social Security Wages

ELWR Category	All Firms		1 ≤ S < 50		5,000 ≤ S	
	Premium as Share of SS Wages	%	Premium as Share of SS Wages	%	Premium as Share of SS Wages	%
Total	0.053	100.0	0.109	100.0	0.006	100.0
0.000 < ELWR ≤ 0.005	0.004	22.7	0.005	2.7	0.003	70.3
0.010 < ELWR ≤ 0.015	0.016	7.9	0.022	5.0	0.014	6.9
0.065 < ELWR	0.181	19.3	0.232	33.3	+	0.1

+ Masked due to 10 or fewer firms in cell

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Distribution and Dispersion of ELWR and BLWR

Percentile	ELWR		BLWR	
	Value	Relative to Median	Value	Relative to Median
5%	0.002	0.11	0.000	0.00
10%	0.003	0.18	0.000	0.00
50%	0.016	1.00	0.007	1.00
90%	0.103	6.57	0.088	13.44
95%	0.147	9.36	0.186	28.38

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Conclusion

- **A significant minority of firms have very high BLWR**

  - **Such firms tend to be small and may employ many temporary, part-time, or low-skill workers**

  - **Internalizing DI benefit costs will greatly increase the labor costs of such firms**

- **Policymakers need to consider the potential effects of such proposals on the labor market for temporary, part-time, and low-skill workers**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Contact Information

David R. Mann
Center for Studying Disability Policy
Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543
(609) 275-2365

dmann@mathematica-mpr.com

http://www.DisabilityPolicyResearch.org

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Citations

- **PDI proposal**
  - Autor, David, and Mark Duggan. "Supported Work: A Proposal for Modernizing the U.S. Disability Insurance System." Washington, DC: The Center for American Progress, Hamilton Project, 2010.
- **Experience rating proposal**
  - Burkhauser, Richard V., and Mary C. Daly. *The Declining Work and Welfare of People with Disabilities: What Went Wrong and a Strategy for Change*. Washington, DC: The AEI Press, 2011.
- **Our forthcoming report**
  - Stapleton, David C., David R. Mann, and Jae Song. "Firm-Level Early Intervention Incentives: Which Recent Employers of Disability Program Entrants Would Pay More?" Washington, DC: Center for Studying Disability Policy, November 2013.

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Antecedents of Voluntary and Involuntary Job Separations of Workers with Psychiatric Disabilities

Judith A. Cook, PhD
Professor, Department of Psychiatry
University of Illinois at Chicago

Disability Research Collaborative
Annual Research Meeting
Washington, DC
October 15–16, 2013

Collaborators & Funder

Jane K. Burke-Miller, PhD
Dennis D. Grey, BA

Employment Intervention Demonstration Program (EIDP)

✓ **People with psychiatric disabilities were recruited in eight states**

✓ **1,455 were randomly assigned to EBP supported employment or control**

✓ **During 24-month follow-up their employment was tracked weekly, services were monitored monthly, and in-person interviews occurred bi-annually**

✓ **2,086 jobs were ended by 892 workers**

BLS Job Openings & Labor Turnover Survey (JOLTS) Definitions

Type of Separation

Voluntary   Involuntary

Quit   Fired

                                  Temp Job End

http://www.bls.gov/jlt/

                                        Lay Off

Separation Status of N = 2,086 Jobs

Lay Off 10%

Temp Job End 14%

Fired 17%

Quit 59%
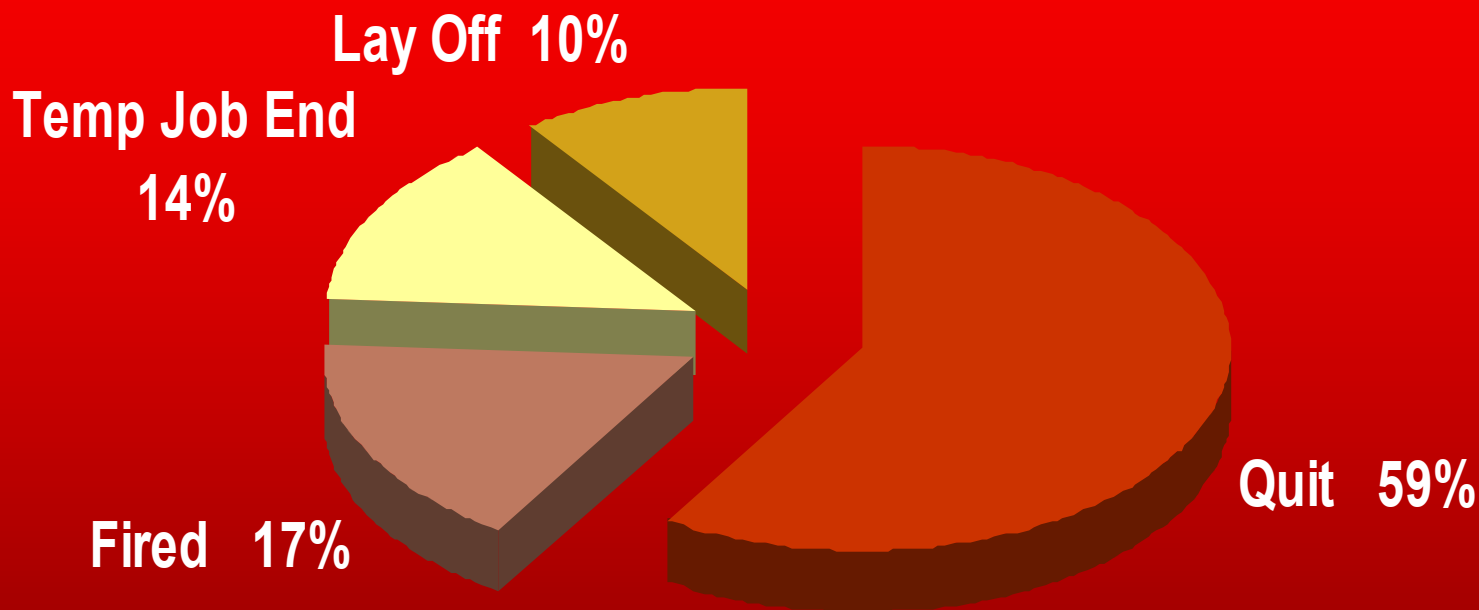
Employment Intervention Demonstration Program, 1996–2001

Job Characteristics

- Mean of 2.4 jobs per worker (s.d. = 1.8)
- 41% of workers held only one job
- 87% of jobs were minimum wage or above paying an average $5.77/hour (s.d. = 2.02)
- Most were in service occupations (44%) or clerical/sales occupations (25%)
- 33% obtained using formal job placement
- 50% worked for at least 20 hours/week
- 53% of jobs lasted 2 months or less

Separation Reasons

QUITS

FIRINGS

- ☐ **Low Job Sat**
- ☐ **Performance**
- ☐ **Psychiatric**
- ☐ **New Job**
- ☐ **Job Access**
- ☐ **Benefits**
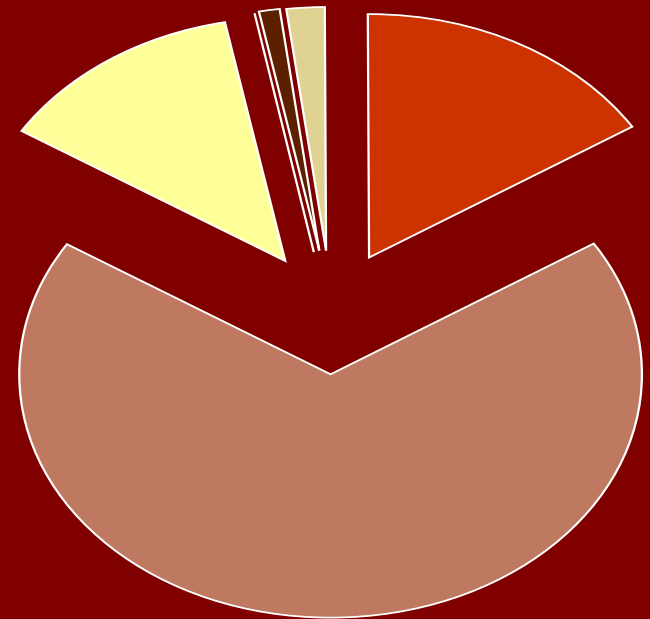
Associations with Voluntary Separation*

- Lower hourly wage
- Obtained job without assistance
- Reasonable accommodation granted
- Competitive job

*Multivariable logistic regression weighted by # of jobs held by respondent & controlling for prior work history, race/ethnicity, education, MH diagnosis, job tenure, job number, SSI, DI, & co-morbid physical illness

Factors Associated with Disclosure of Disability (56% of jobs)

- Jobs had longer tenure when supervisors were aware of workers' psychiatric disability
- Supervisor disclosure was associated w/ lower hourly wage & fewer hours worked per week
- Disclosure was more likely for workers with poorer work history (no job in past 5 years)
- Disclosure was more likely for SSI & DI beneficiaries than non-beneficiaries
- Disclosure not associated with voluntary vs. involuntary separation

Types of Reasonable Accommodations (RA) (21% of jobs)

Bar chart showing percentage by accommodation type:
- Schedule: ~32%
- Onsite assistance: ~29%
- Job coach: ~23%
- Medical time off: ~22%
- Transportation: ~14%
- Work duties: ~6%
- Breaks: ~4%
- Job sharing: ~4%
- Environment: ~3%
- Training: ~3%
- Task time: ~2%
- Other: ~4%
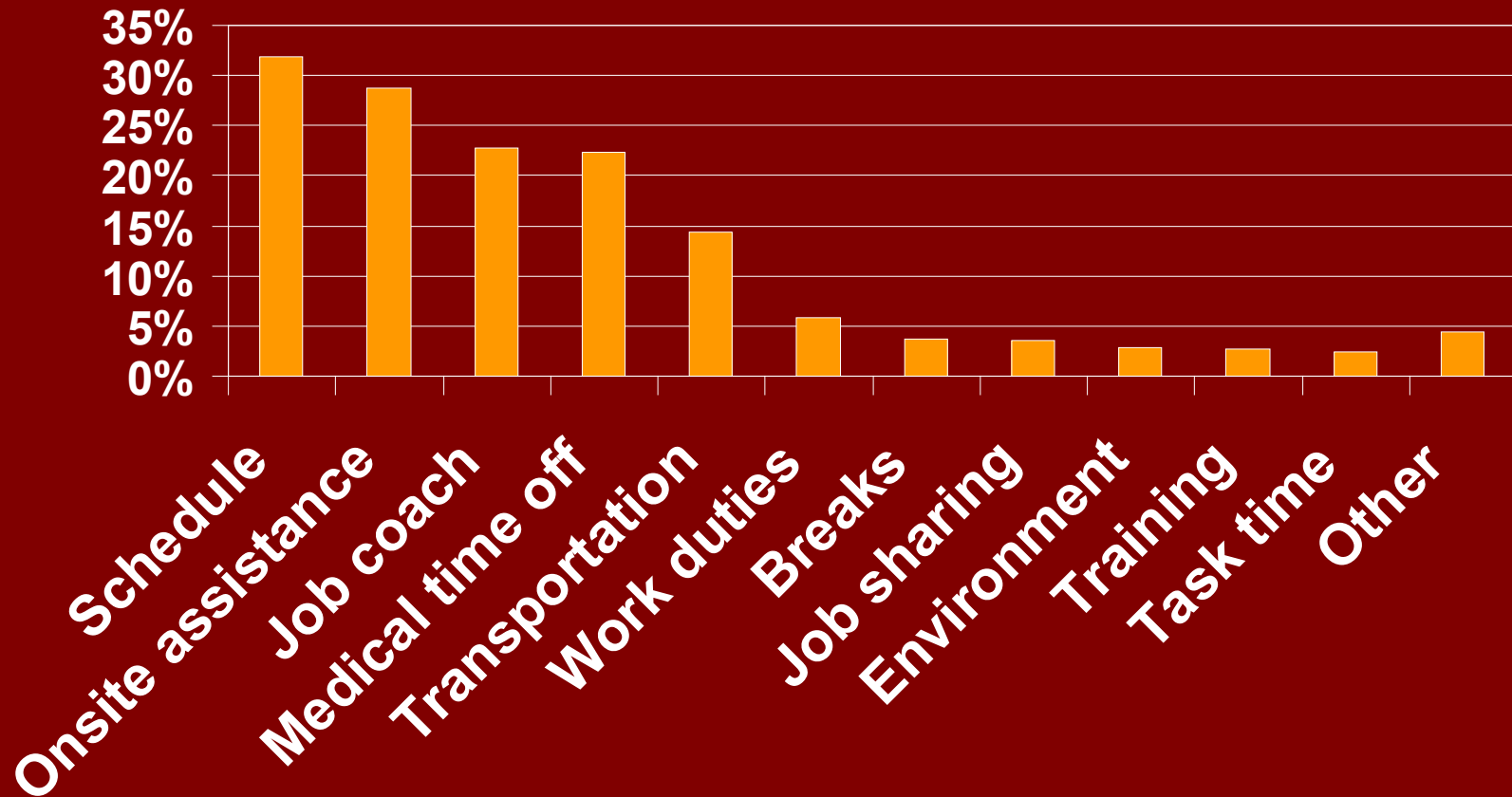
Factors Associated with Reasonable Accommodations

- Jobs with a RA more frequently ended with voluntary separation than involuntary

- Jobs with a RA had longer tenure than those without a RA

- Jobs with a RA were worked for fewer hours per week than those without a RA

- Jobs with a RA had lower hourly salaries than those with no RA

Policy Implications

- Continuing challenge—development of living-wage, career-oriented employment that reduces poverty & enhances independence from public benefits

- Firing from 1st job associated with later firing—prevention of firing (& conditions that lead to firing) are important goals for return to work models

Policy Implications (cont.)

- Job tenure enhanced by disclosure & job accommodations—but these associated with lower pay & hours worked. Policies aimed at employers (tax credits, rebates) should benefit both parties

- Low % of separations due to benefit concerns—low earnings & brief job tenures do not reach Substantial Gainful Activity or Trial Work Period levels

- Most jobs ended voluntarily by quitting due to low job satisfaction & psychiatric issues—greater access to MH care & career-building education & training

Contact Information

Judith A. Cook, PhD
University of Illinois at Chicago
1601 W. Taylor St. M/C 912
Chicago, IL 60612
312-355-3921
jcook@uic.edu
http://www.cmhsrp.uic.edu/nrtc/

Experiences of Transition-Age Youth with Vocational Rehabilitation Agencies

Todd Honeycutt, Allison Thompkins, Maura Bardos, Stephanie McLeod, and Steven Stern

Presented at DRC Annual Research Meeting
Washington, DC

October 15, 2013

MATHEMATICA
Policy Research

Center for
**STUDYING
DISABILITY POLICY**

Background

- **Policymakers are interested in promoting transitions for youth and young adults (ages 16 to 24) with disabilities**

- **Insufficient knowledge on what works best, particularly in the vocational rehabilitation (VR) context**

- **Transition-age youth make up about one-third of VR agency applicants**

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Research Questions

- **How do state VR agencies vary in the ways they serve youth?**

- **What practices do state VR agencies use to serve youth?**

Center for
**STUDYING
DISABILITY POLICY**

MATHEMATICA
Policy Research

First Study—Methods

- **RSA-911 case service records fiscal years (FY) 2004–2011**

  – **Supplemented with additional data (Rehabilitation Services Administration, American Community Survey)**

- **Identified FY 2004–2006 applicants ages 16 to 24**

- **Developed three transition-age youth ratios**

  – **Application, service receipt, and employment**

- **Descriptive analysis**

Transition-Age Youth Ratios

- **Applicant ratio**
  - **Nationally, 8 percent of youth with disabilities ages 16 to 24 applied to VR agencies each year (2004 to 2006)**
  - **States ranged from 4 to 14 percent**

- **Service ratio**
  - **Nationally, 56 percent of youth applicants received services each year (2004 to 2006)**
  - **States ranged from 31 to 82 percent**

- **Employment ratio**
  - **Nationally, 56 percent of youth receiving services closed each year (2004 to 2006) with employment**
  - **States ranged from 40 to 70 percent**

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Summary Transition Ratio

- **Summary transition ratio is product of the applicant, service, and employment ratios**

- **Nationally, 2.3 percent of transition-age youth with disabilities applied for and received VR services and were employed when their VR cases were closed**

- **States ranged from less than 1 to 7 percent on this measure**

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

State Variation in Summary Transition Ratio (1)

Summary Transition Quartile (1 = highest, 4 = lowest)

USA States (over 1.3m) Statistic

1
2
3
4

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research
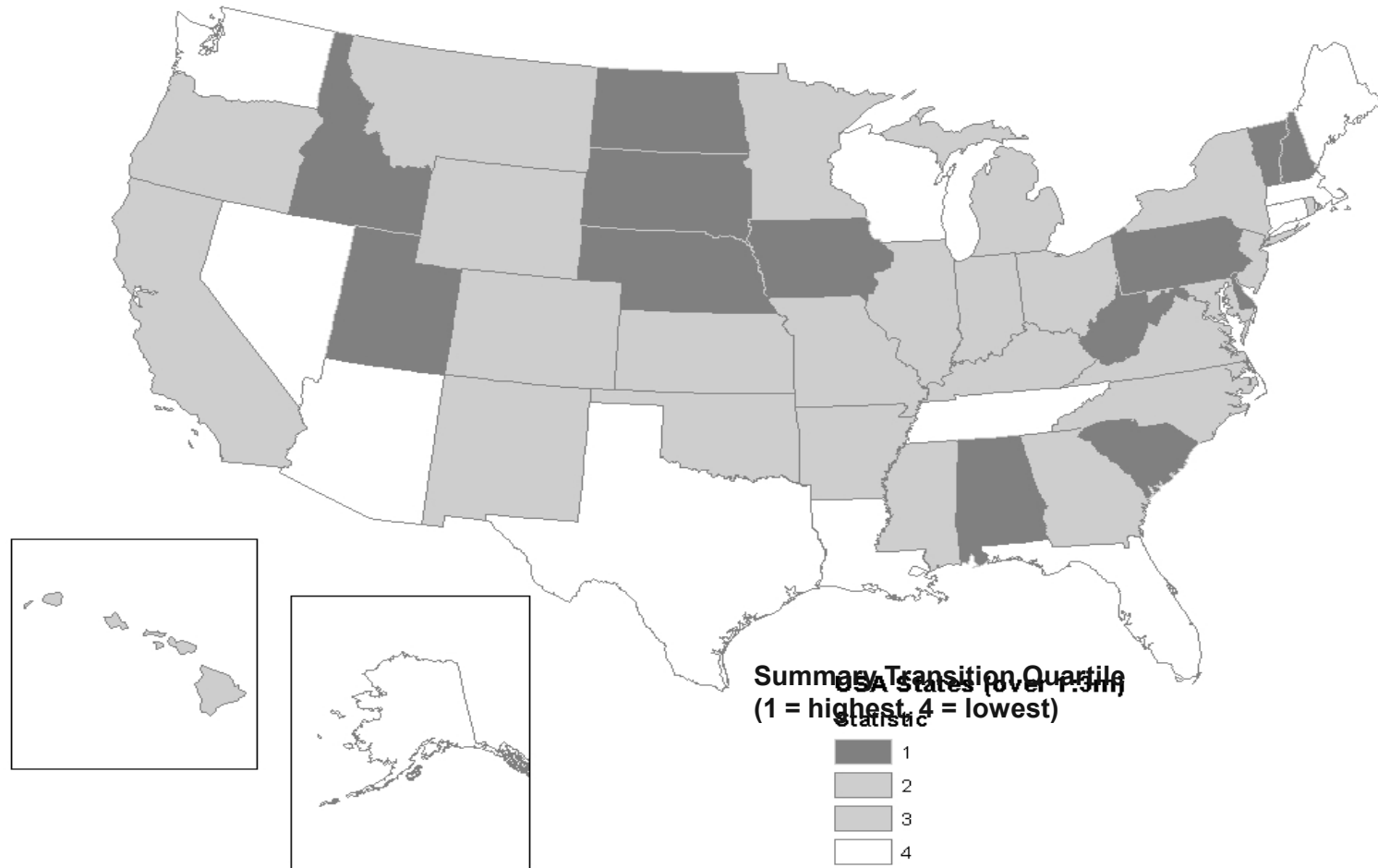
State Variation in Summary Transition Ratio (2)
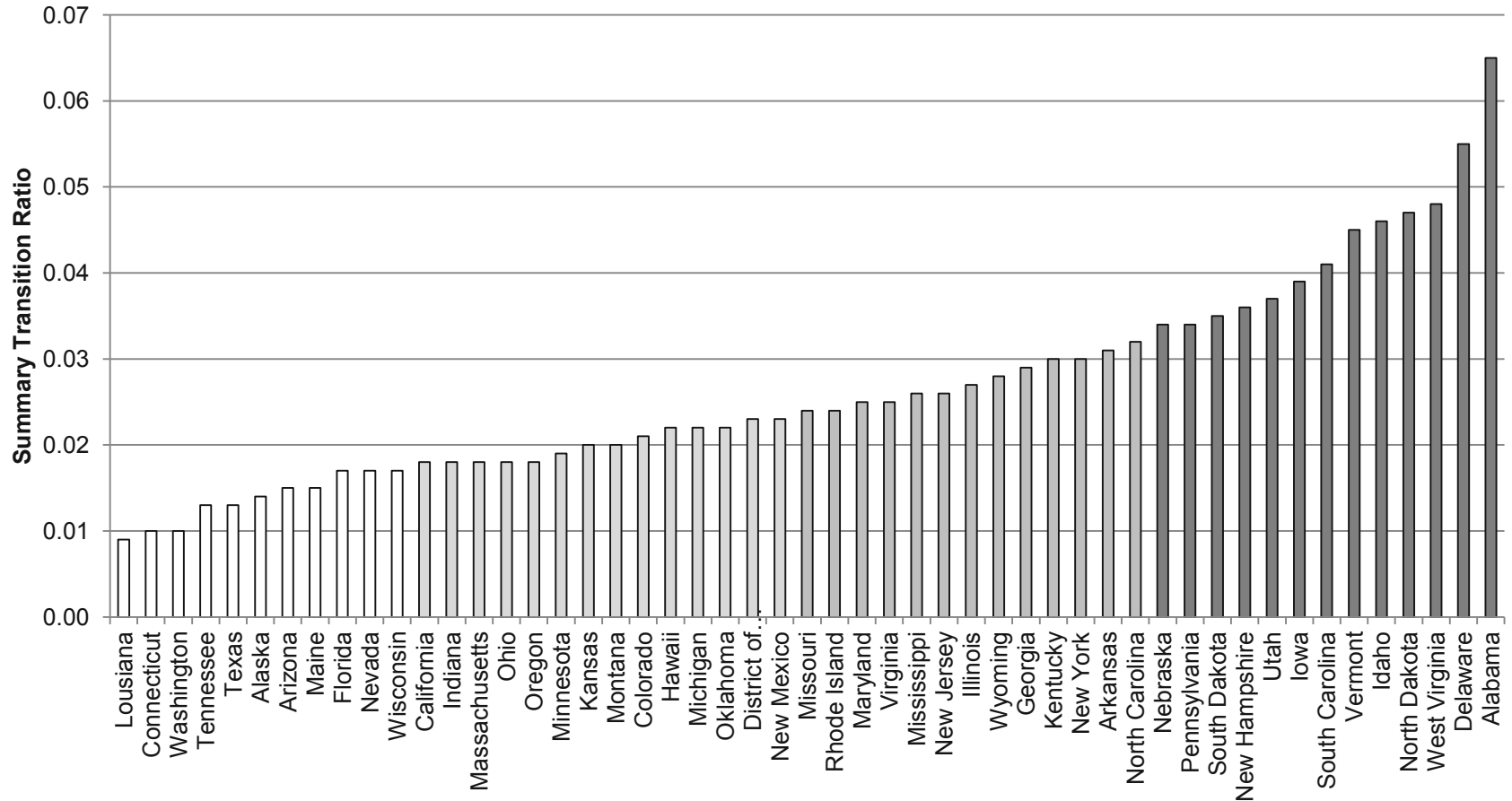
Note: State shading denotes quartile, with the highest quartile shown as dark gray and the lowest quartile shaded white

Second Study—Methods

- **Interviews with two to four staff from eight VR agencies that had goals or staff dedicated to youth**
  - Interviews collected information on current practices, organizational structure, and programs

- **Qualitative comparison of practices that differentiate agencies with high (N = 5) and low (N = 3) transition ratios from first study**

- **Present preliminary findings (final report not yet released)**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Qualitative Findings on Agency Practices

- **All eight agencies we contacted had**
  - Collaborations with other agencies
  - Involvement with secondary schools
  - Targeted programs for youth

- **Challenges include**
  - Potential demand exceeds resources (if all IDEA and 508 youth were to apply to VR)
  - Unclear standards and indicators
  - Limited reach of youth-specific programs

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Comparison of Agencies with High or Low Transition Ratios

- **The five agencies with higher transition ratios were more likely to**

    - Be involved in statewide or local transition collaborations

    - Conduct outreach activities for youth out of high school

    - Have a high proportion of transition-age population who applied at or before age 18

    - Provide multiple programs for youth, including school-based programs and employment programs

Center for STUDYING DISABILITY POLICY

MATHEMATICA Policy Research

Limitations and Considerations

- **First study: Many factors outside an agency's control can influence transition ratios**

  – **Order of selection, resource limitations, proportion of a state's youth with disabilities**

  – **Agencies and communities choose how to apportion resources**

- **Second study: Agency practices are based on a limited number of agencies (and limited number of perspectives from each agency)**

Center for
STUDYING
DISABILITY POLICY

MATHEMATICA
Policy Research

Conclusions

- **Large variation among state agencies in transition ratios**

- **Need for better federal guidance to measure and report on youth**
  - **What should agency goals be?**
  - **What should be measured publicly?**

- **Need more rigorous assessment to determine causality between agency practices and outcomes**

Center for
**STUDYING
DISABILITY POLICY**

MATHEMATICA
Policy Research

Working Paper Available

- **"State Differences in the Vocational Rehabilitation Experiences of Transition-Age Youth with Disabilities"**

  – **Todd Honeycutt, Allison Thompkins, Maura Bardos, and Steven Stern**

  – **http://www.mathematica-mpr.com/publications/PDFs/disability/state_diff_vr_youth_wp.pdf**

Contact Information

**Todd Honeycutt
Center for Studying Disability Policy
Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543-2393
(609) 945-3397**

thoneycutt@mathematica-mpr.com

http://www.DisabilityPolicyResearch.org

The Effect of the SSI Children's Program on Household and Child Outcomes

Manasi Deshpande

MIT

October 15, 2013

Background on SSI Children's Program

- SSI makes transfer payments to poor families with disabled children:

  - Annually $10 billion spent on payments to 1.3 million children, about 10% of children living in poverty.

  - Recent enrollment increase driven by mental conditions other than intellectual disability.

  - SSI children share characteristics with at-risk youth population.

- Recent policy debate:

  - Pro: Transfer payments and health insurance can help poor families care for children.

  - Con: Welfare/disability label may change child's taste for school and work; program may encourage perverse behavior to demonstrate medical eligibility.

Research Question and Methodology

- Question: What is the effect of the SSI children's program on household earnings and unearned income and the long-term outcomes of enrolled children?

- Empirical strategy: Variation in continuing disability reviews (CDRs), which increase a child's likelihood of being removed from SSI.

  - Take advantage of administrative budget cut in childhood CDRs between FY 2004 and FY 2005.

  - Main strategy: Regression discontinuity design using drop in number of childhood CDRs at FY 2004/05 cutoff, with standard test for validity

  - Several alternative strategies for robustness

Data

Supplemental
Security Record
Children
(all kids 2002-2011)

Manasi Deshpande (MIT)   SSI Children   DRC Meeting

Data

```
┌─────────────────────┐
│    OQP records      │
│  (CDR instrument)   │
└─────────────────────┘
           │
┌─────────────────────┐
│    Supplemental     │
│  Security Record    │
│     Children        │
│ (all kids 2002–2011)│
└─────────────────────┘
           │
┌─────────────────────┐
│   DIODS extract     │
│(examiner instrument)│
└─────────────────────┘
```

127

Data

```
        ┌─────────────────────┐
        │    OQP records      │
        │  (CDR instrument)   │
        └─────────────────────┘
                  │
                  │
        ┌─────────────────────┐     ┌─────────────────────┐
        │    Supplemental     │     │    Supplemental     │
        │  Security Record    │─────│  Security Record    │
        │     Children        │     │      Parents        │
        │ (all kids 2002-2011)│     │                     │
        └─────────────────────┘     └─────────────────────┘
                  │
                  │
        ┌─────────────────────┐
        │    DIODS extract    │
        │(examiner instrument)│
        └─────────────────────┘
```

128

Data

```
                                                           ┌─────────────────────┐
                                                           │ Master Earnings File│
                                                           │ (parental earnings) │
                                                           └─────────────────────┘

                                                           ┌─────────────────────┐
                                                           │       Master        │
                                                           │ Beneficiary Record  │
                                                           │ (parental DI receipt)│
                                                           └─────────────────────┘
       ┌──────────────────┐
       │   OQP records    │                                ┌─────────────────────┐
       │ (CDR instrument) │                                │   Supplemental      │
       └──────────────────┘                                │ Security Record     │
                                                           │ (parental and sibling│
       ┌──────────────────┐     ┌──────────────────┐       │   SSI receipt)      │
       │   Supplemental   │     │   Supplemental   │       └─────────────────────┘
       │ Security Record  │─────│ Security Record  │
       │    Children      │     │    Parents       │       ┌─────────────────────┐
       │ (all kids 2002-2011)│  └──────────────────┘       │ 831 records (parental│
       └──────────────────┘                                │    DI and SSI       │
                                                           │   applications)     │
       ┌──────────────────┐                                └─────────────────────┘
       │  DIODS extract   │
       │(examiner instrument)│                             ┌─────────────────────┐
       └──────────────────┘                                │ SSR denials (sibling SSI│
                                                           │   applications)     │
                                                           └─────────────────────┘

                                                           ┌─────────────────────┐
                                                           │     Numident        │
                                                           │    (mortality)      │
                                                           └─────────────────────┘
```

129

Data

Master Earnings File (adult earnings)

Master Beneficiary Record (adult DI receipt)

Supplemental Security Record (adult SSI receipt)

831 records (adult DI and SSI applications)

Numident (mortality)

OQP records (CDR instrument)

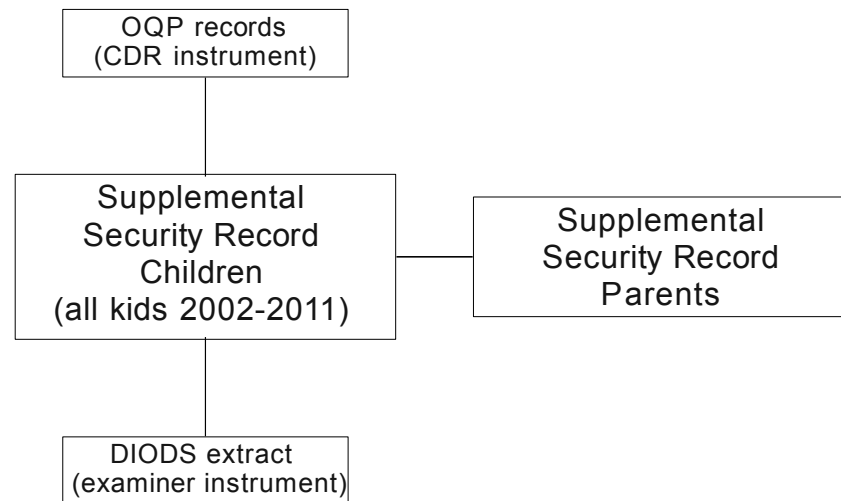Supplemental Security Record Children (all kids 2002-2011)

DIODS extract (examiner instrument)

Supplemental Security Record Parents

Master Earnings File (parental earnings)

Master Beneficiary Record (parental DI receipt)

Supplemental Security Record (parental and sibling SSI receipt)

831 records (parental DI and SSI applications)

SSR denials (sibling SSI applications)

Numident (mortality)

Data

```
┌─────────────────────────┐
│  Master Earnings File   │
│     (adult earnings)    │
└─────────────────────────┘

┌─────────────────────────┐
│   Master  Beneficiary   │
│    Record (adult DI     │
│        receipt)         │
└─────────────────────────┘

┌─────────────────────────┐
│      Supplemental       │
│    Security Record      │
│   (adult SSI receipt)   │
└─────────────────────────┘

┌─────────────────────────┐
│   831 records (adult    │
│      DI and SSI         │
│     applications)       │
└─────────────────────────┘

┌─────────────────────────┐
│       Numident          │
│      (mortality)        │
└─────────────────────────┘

┌─────────────────────────┐
│    Other outcomes       │
│  (education, TANF,      │
│   EITC, Medicaid)       │
└─────────────────────────┘
```

OQP records
(CDR instrument)

Supplemental
Security Record
Children
(all kids 2002-2011)

DIODS extract
(examiner instrument)

Supplemental
Security Record
Parents

Master Earnings File
(parental earnings)

Master
Beneficiary Record
(parental DI receipt)

Supplemental
Security Record
(parental and sibling
SSI receipt)

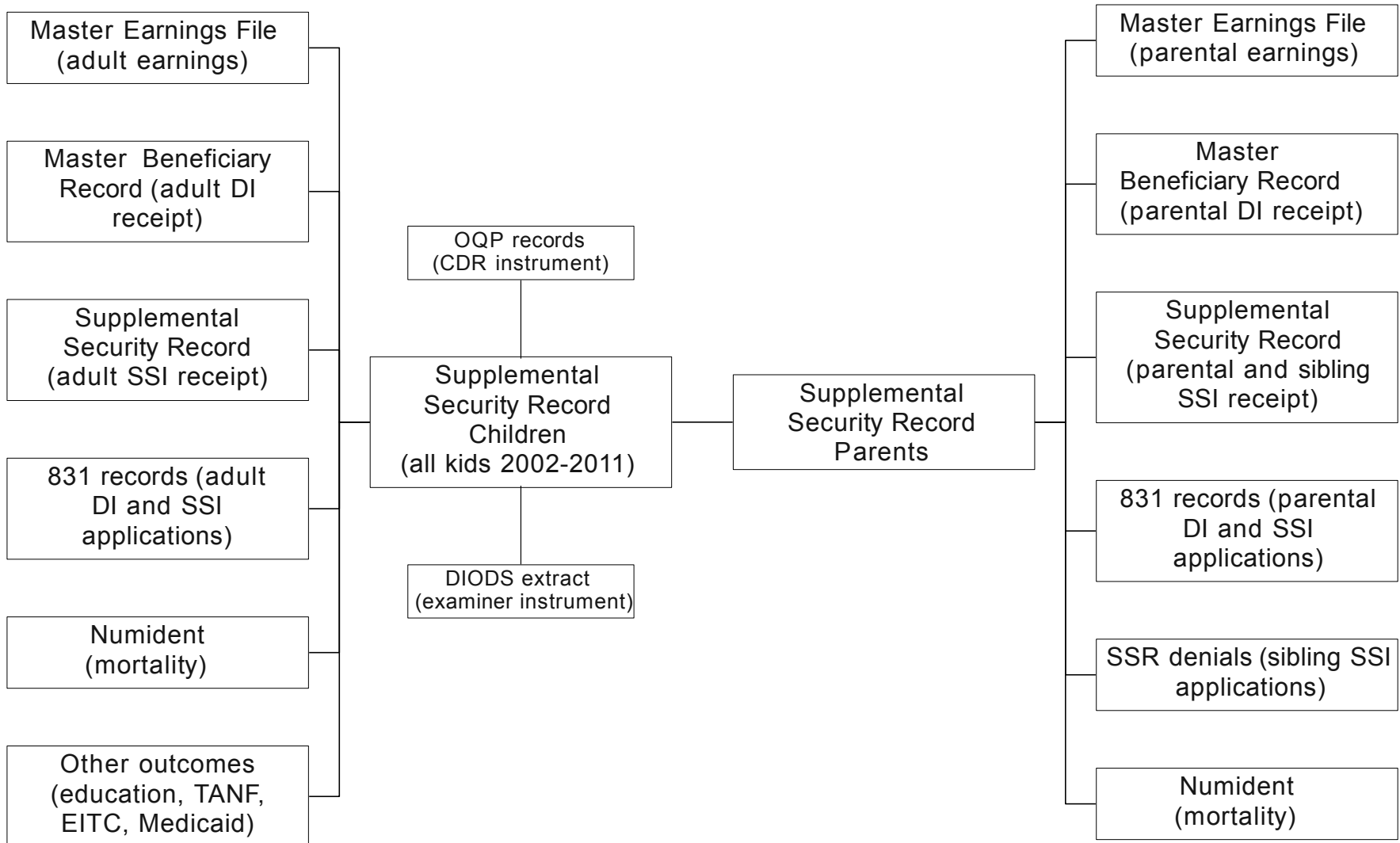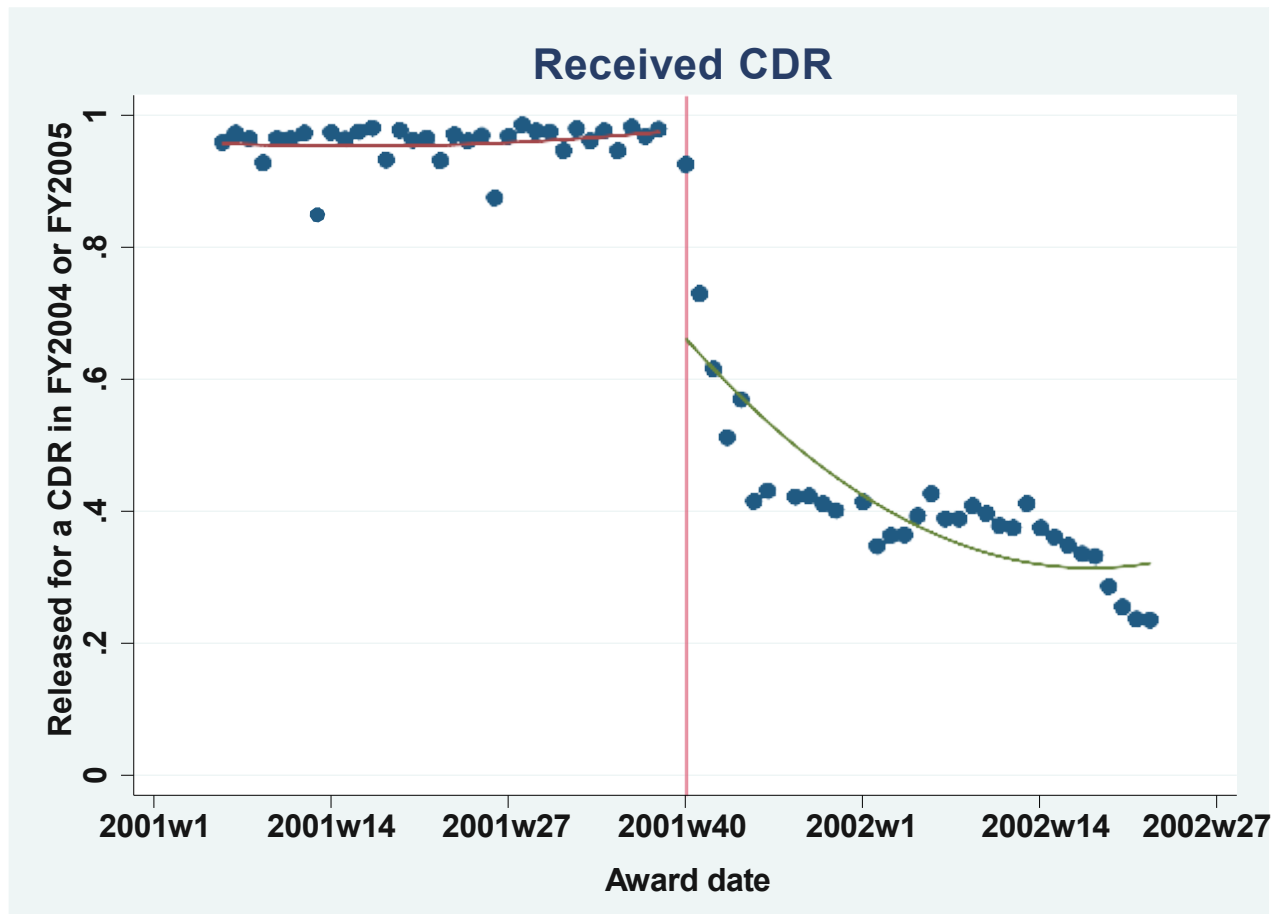831 records (parental
DI and SSI
applications)

SSR denials (sibling SSI
applications)

Numident
(mortality)

Drop in Childhood CDRs at FY Cutoff

Received CDR

Estimate	-0.345***
	(0.0059)

Children who receive CDRs spend less time on SSI...


Post-treatment months on SSI

| Annual estimate | -0.524*** | (0.062) |
| Treatment on treated | -13 | -100% |

...and their families receive less income from SSI program

Post-treatment SSI payment

Released for CDR — Not Released for CDR

Annual estimate   -$327***   ($46.7)
Treatment on treated -$8,250   -100%

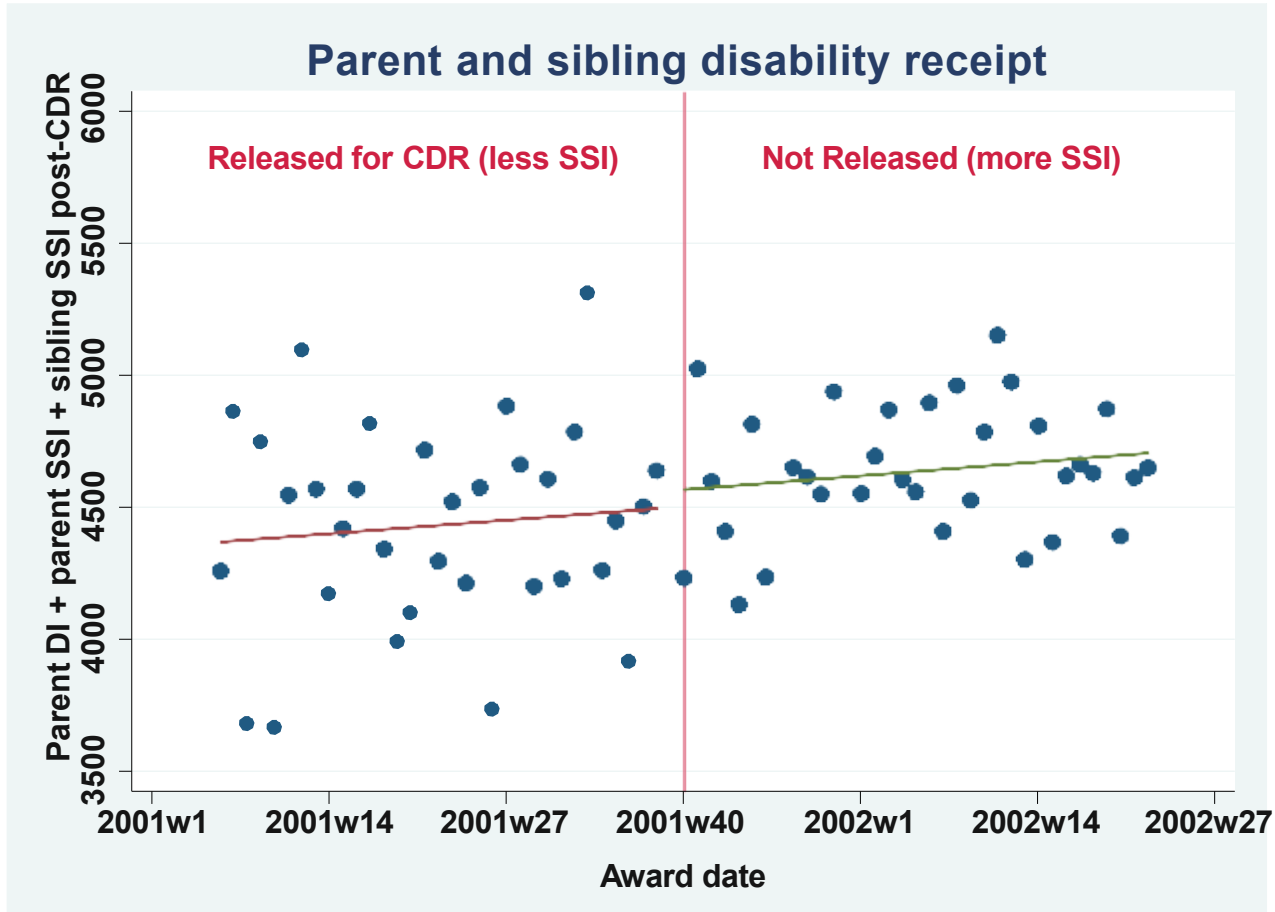# SSI loss results in dramatic increase in parental earnings

Parental earnings

Released for CDR (less SSI)   Not Released (more SSI)
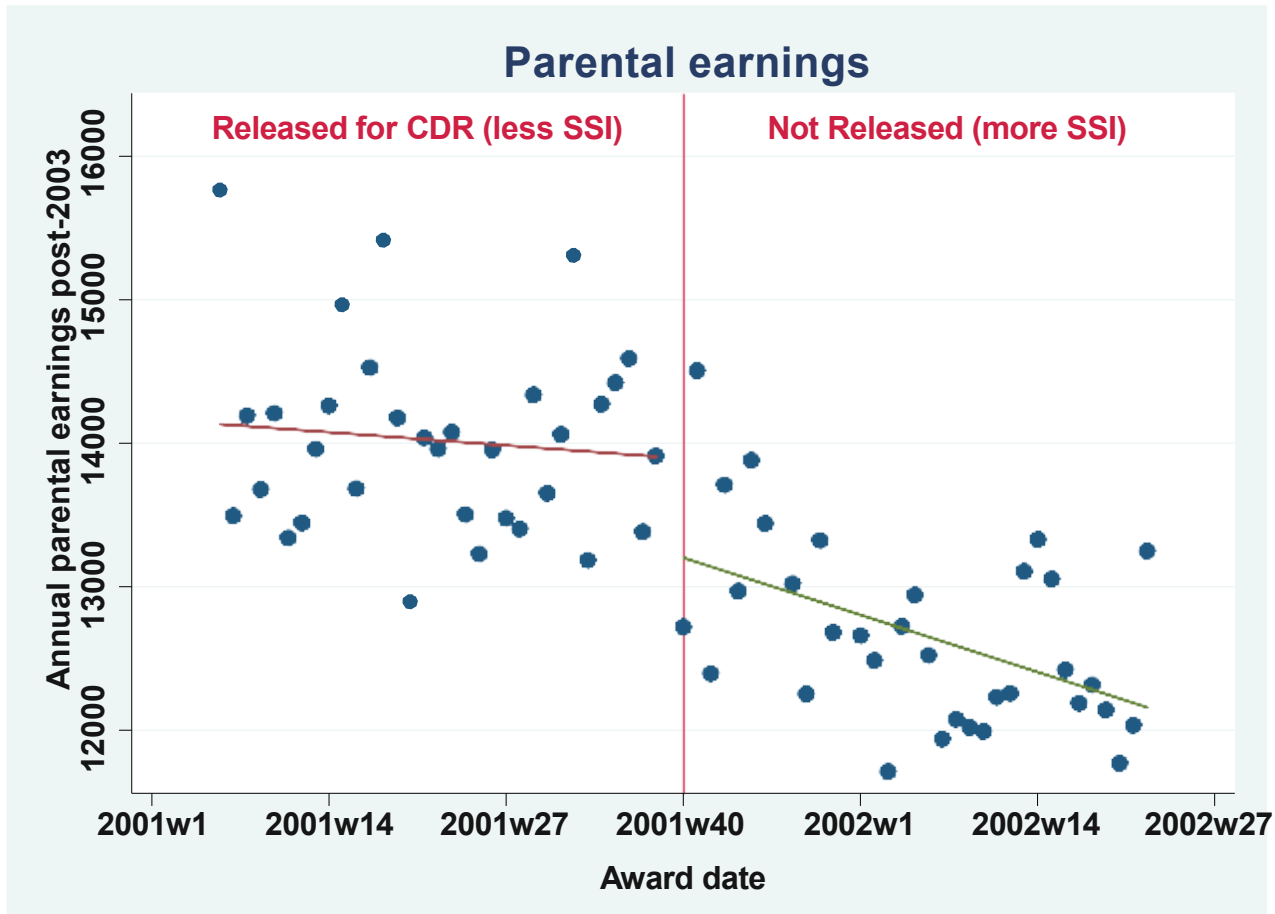
| Annual estimate | $496** | ($202) |
| Treatment on treated | $12,528 | +95% |

135

SSI loss discourages family disability applications...

Parent and sibling disability applications
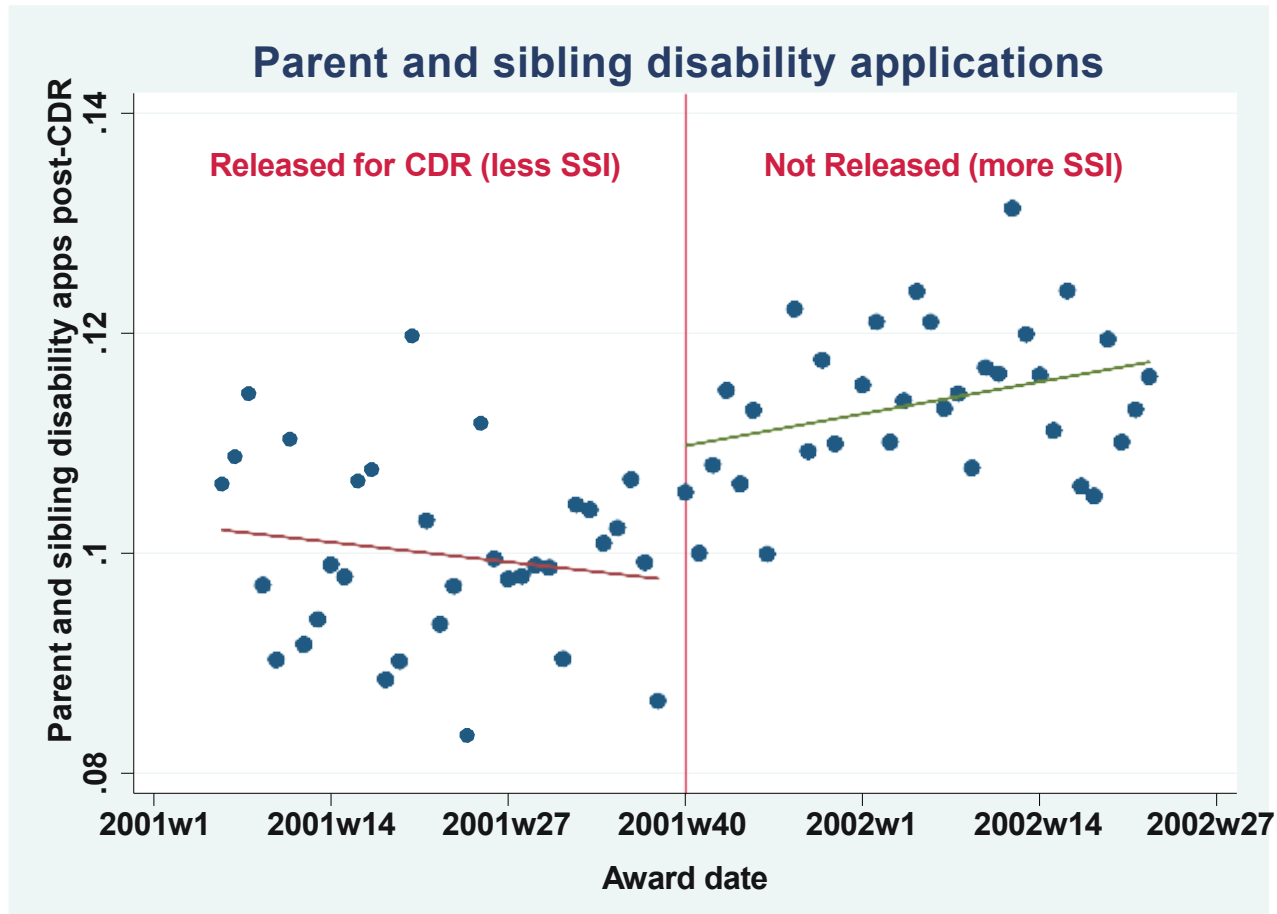
Annual estimate	-0.013***	(0.004)
Treatment on treated	-0.32	-100%

136

…but does not reduce family disability payments

Parent and sibling disability receipt

Released for CDR (less SSI)   **Not Released (more SSI)**

Y-axis: Parent DI + parent SSI + sibling SSI post-CDR (3500–6000)
X-axis: Award date (2001w1, 2001w14, 2001w27, 2001w40, 2002w1, 2002w14, 2002w27)

Annual estimate	**$72.2**	**($132)**
Treatment on treated	$1,822	+40%

137

SSI loss does not reduce total household income
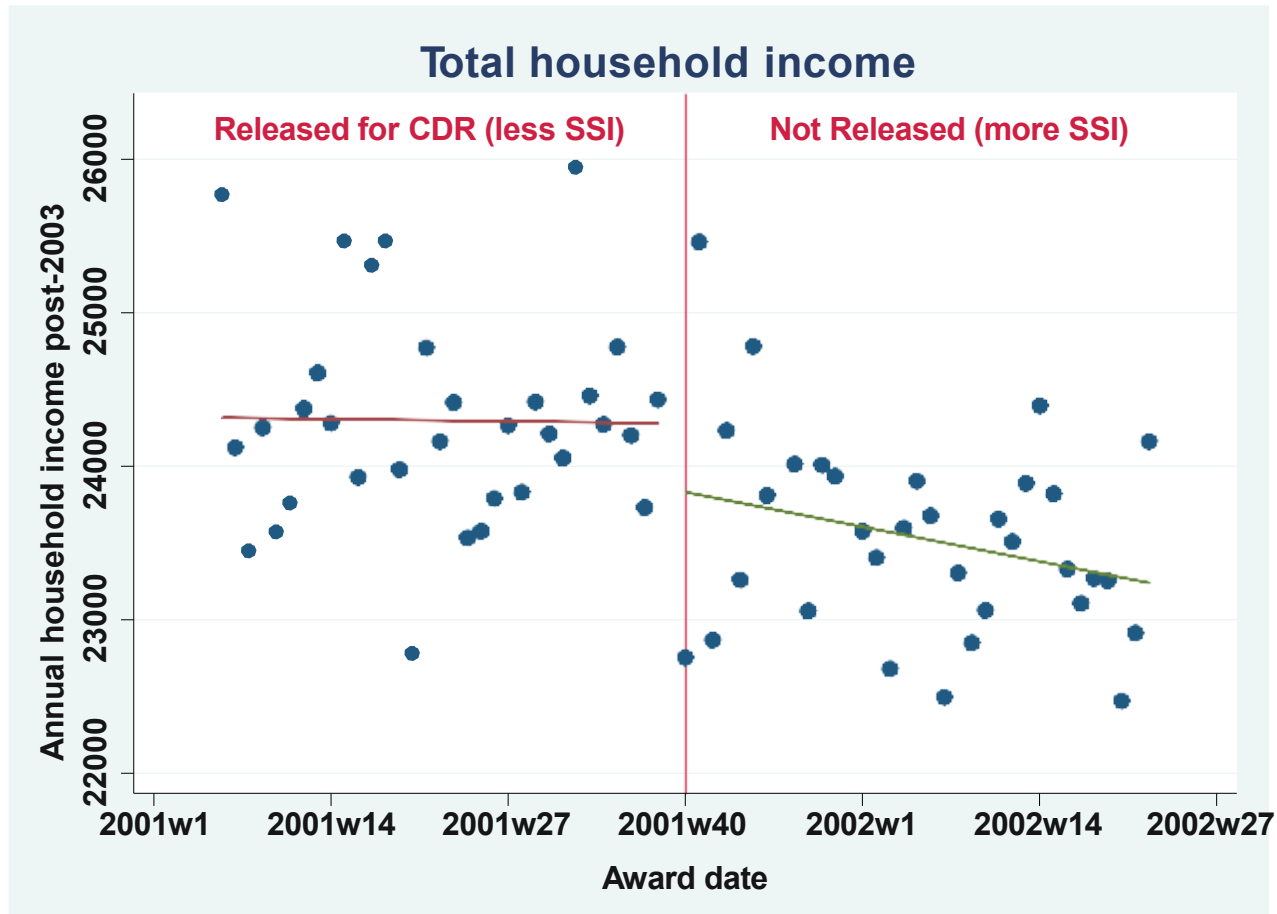
Annual estimate   **$321**   **($220)**
Treatment on treated $8,116   +34%

138

Summary of Findings

- Earnings margin highly responsive to loss of SSI payment.

  - Annual loss of $1000 in child's SSI payment induces annual increase of $600-$1000 in parental earnings.

  - Elasticity estimate much larger than few existing estimates.

- Loss of child's SSI payment discourages disability applications by other family members, but mostly for marginal applicants.

- Family members tend to apply for disability together, suggesting importance of household-level shocks in decision to apply for disability

- High rates of co-application within families

  - 15% of SSI children have a parent or sibling who applies within 60 days of child's application.

  - 65% have a parent or sibling who ever applies .

Policy Implications

- I find that the earnings response is driven largely by an income effect rather than a substitution effect, which could explain low take-up of work incentive programs like Ticket to Work.

- This is a largely positive, not normative, assessment: we cannot infer the merit of the SSI children's program from the large parental earnings response or discouragement of family disability applications

- Need measures of household well-being and long-term outcomes of enrolled children as adults.

  - Future work will evaluate effect of SSI on children's adult earnings, adult DI and SSI application and receipt, and educational achievement.

  - Compare outcomes of children removed via CDR vs. age 18 redeterminations.

Discussant Remarks
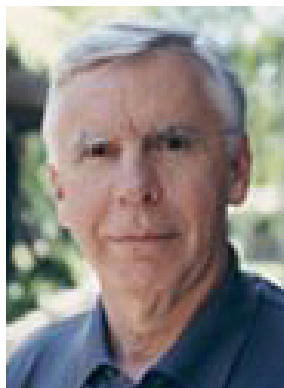
David Wise
Harvard University and NBER

Join Us Tomorrow: Wednesday, October 16

9:45–10:00	In-person check in
10:00–11:45	**Disability-Related Supports and Program Interactions**
11:45–12:30	Lunch (provided by Mathematica)
12:30– 2:15	**Foreign Experience and Lessons Learned Abroad for U.S. Disability Policy**
2:15–2:30	**Closing Remarks**

Center for STUDYING DISABILITY POLICY

NBER
National Bureau of Economic Research