Trends in Disability and the use of Disability Insurance

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Background & Motivation for Study

• SSDI is the most important public support for working age Americans with disabilities

• Several studies have found evidence of worsening health in older working ages (especially among those with less education) and falling (men) or flat (women) labor force participation rates

• Recent decline in population receiving SSDI benefits makes clear that health isn’t all that drives program spending, but if these health trends continue, will we see renewed pressure on SSDI trust fund?
Research questions

• Do self-reported health trends correspond with or diverge from trends in SSDI application and receipt?
• What are trends in health measures that are of most importance to SSDI program?
• If trends point to poorer health, what do they portend for the future of SSDI claiming?
Data

• HRS, 1996-2016
  • Self-reported (ever, recent) application for SSDI and SSI
  • Self-reported (ever, recent) receipt of SSDI and SSI benefits
  • Self-reported functional limitations, and difficulty with 5 ADLs and 3 IADLs, and CES-Depression scale

• NHIS, 1997-2017
  • Self-reported (ever) applications for SSDI and SSI
  • Self-reported functional limitations, help with 6 ADLs and any IADLs, and Kessler 6 distress scale
  • Primarily to validate observed trends and predictive models in HRS, where possible
Methods

• Estimate models of SSDI/SSI application and receipt
  \[ DI_{it} = f(Health_{it}, Demographics_{it}, Year_t) \]

• Simulate SSDI/SSI outcome allowing health to change, but holding other variables constant
  \[ DI^*_{it} = f(Health_{it}, Demographics_0, Year_0) \]
  • This prediction is essentially an index of health weighted by relevance to SSDI outcome

• Compare trends in predicted outcome to actual outcome
Simple models of disability application/award

<table>
<thead>
<tr>
<th>Odds-ratios (n.s.)</th>
<th>Ever Apply</th>
<th>Ever Award</th>
<th>New App</th>
<th>New Awd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRS</td>
<td>NHIS</td>
<td>HRS</td>
<td>NHIS</td>
</tr>
<tr>
<td>Any difficulty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reaching/extending arms up</td>
<td>1.4</td>
<td>1.2</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>lifting/carrying</td>
<td>2.2</td>
<td>1.7</td>
<td>2.1</td>
<td>1.5</td>
</tr>
<tr>
<td>picking a dime from a table (grasp small object)</td>
<td>1.5</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>walking several blocks (1/4 mile)</td>
<td>2.4</td>
<td>2.0</td>
<td>2.5</td>
<td>2.2</td>
</tr>
<tr>
<td>walking one block</td>
<td>1.2</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sitting for 2 hours</td>
<td>1.4</td>
<td>1.3</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>getting up from chair</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>standing for 2 hours</td>
<td>2.0</td>
<td>2.1</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>climbing several flights of stairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>climbing one flight without resting</td>
<td>1.2</td>
<td>1.3</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>stooping/kneeling/crouching</td>
<td>1.3</td>
<td>1.3</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>pushing or pulling large objects</td>
<td>1.8</td>
<td>2.1</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Some difficulty (Needs Help) with Routine Needs</td>
<td>3.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>using a telephone</td>
<td>1.2</td>
<td>1.3</td>
<td>1.1</td>
<td>1.4</td>
</tr>
<tr>
<td>handling money</td>
<td>1.9</td>
<td>1.5</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>taking medication</td>
<td>1.3</td>
<td>1.2</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>shopping</td>
<td>2.0</td>
<td>2.0</td>
<td>1.6</td>
<td>2.0</td>
</tr>
<tr>
<td>preparing meals</td>
<td>1.7</td>
<td>1.3</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Some difficulty (Needs Help) with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>walking across room (getting around in home)</td>
<td>0.9</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
</tr>
<tr>
<td>dressing</td>
<td>1.0</td>
<td>1.1</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>bathing</td>
<td>1.1</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>eating</td>
<td>1.3</td>
<td>0.5</td>
<td>1.3</td>
<td>1.2</td>
</tr>
<tr>
<td>getting in/out bed</td>
<td>0.8</td>
<td>1.3</td>
<td>0.6</td>
<td>1.0</td>
</tr>
<tr>
<td>using toilet</td>
<td>0.9</td>
<td>1.2</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>CESD8&gt;=3</td>
<td>1.5</td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kessler6 &gt; 12 (of 24)</td>
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</tbody>
</table>
Physical Limitation Trends (any difficulty)

Walking
(several blocks for HRS; 3 city blocks for NHIS)

Reach/Extend Arms Up

Stooping/Kneeling/Crouching

Lifting/Carrying
Mental Health (HRS: Depression, NHIS: Distress)

Mental Health Problem
(HRS CESD>=3; NHIS Kessler 6>12)
Trends in Health and Functional Status
Age 55-61, controlling for demographic shifts

• HRS, 1996-2016
  • Increase in most functional limitations (1-2%/year)
  • Increase in difficulty with IADLs (1-4%/year) and ADLs (1-3%/year)
  • Increase in CESD-based depression indicator (0.5%/year)

• NHIS, 1997-2017
  • Increase in functional limitations (1-2%/year)
  • Increase in receiving help with ADLs (2-4%/year) and IADLs (2%/year)
  • Increase in Kessler6-based psychological distress indicator (3.7%/year)
SSA Administrative Data

Share of Population 55-59 with new SSDI awards

- Men
- Women

Share of Population 55-59 currently receiving SSDI

- Men
- Women

Survey Trends in Disability Program Measures

Ever Applied SSDI/SSI

Ever Received SSDI/SSI
Simulations

• Holding all non-health factors constant, what would we expect DI trends to have been, based solely on trends in health variables?
Ever applied to SSDI/SSI, Predicted from changes only in health

<table>
<thead>
<tr>
<th>Survey Year</th>
<th>with Physical FL</th>
<th>with ADL</th>
<th>with IADL</th>
<th>with CESD</th>
<th>with FL/IADL/ADL</th>
<th>with FL/IADL/ADL/CESD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
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<tr>
<td>2000</td>
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<td>2004</td>
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<td>2008</td>
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<td>2012</td>
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<tr>
<td>2016</td>
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</tbody>
</table>
Ever applied to SSDI/SSI

- with Physical FL
- with ADL
- with IADL
- with CESD
- with FL/IADL/ADL
- with FL/IADL/ADL/CESD
Ever received SSDI/SSI

- Actual
- Predicted

Survey Year

with Physical FL

with ADL

with IADL

with CESD

with FL/IADL/ADL

with FL/IADL/ADL/CESD
Currently receiving SSDI/SSI

- **Actual**
- **Predicted**

**with Physical FL**

**with ADL**

**with IADL**

**with CESD**

**with FL/IADL/ADL**

**with FL/IADL/ADL/CESD**

Recently applied to SSDI/SSI
Recently received SSDI/SSI

- Actual
- Predicted
NHIS: Ever applied to SSDI/SSI, Predicted
NHIS: Ever applied to SSDI/SSI

- Actual
- Predicted

Survey Year with FL variables
Survey Year with ADL variables
Survey Year with IADL variable
Survey Year with Kessler6 variable
Survey Year with FL/ADL/IADL variables
Survey Year with All variables
Summary of Results

• Predictions are robust to other controls (demographics and year fixed effects)

• Functional limitations increased over the period and are strongly associated with DI/SSI activity

• They predict increased rates of disability activity,
  • But, the magnitude of the predicted increase is substantially less than actual increase

• Similar story for ADLs, IADLs, and measures of psychological distress
Preliminary Conclusions

• Survey measures point toward worsening health and increased DI & SSI application, awards from mid 1990s-mid 2010s, but *not* decreases observed recently

• Health variables do better job predicting trends in cumulative than recent activity

• Magnitudes of currently observed trends in health are worrisome, ceteris paribus, for DI trust fund balances, but in context of other changes, not so much.
Non-health explanations for DI/SSI trends

• Macroeconomic conditions
• Population aging
• ACA Health Insurance expansion
• SSA administrative and policy changes