Economic Policy Analysis with Overlapping Generations Models

Dr. Richard W. Evans

Intro Slides

Standard Ramsey Infinite Horizon Model

$$\max_{\{c_t\}_{t=1}^{\infty}} E\left[\sum_{t=1}^{\infty} \beta^{t-1} u(c_t)\right]$$

- Subject to budget constraint
- Firms optimize
- Markets clear

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We solve recursively using VFI or PFI

$$V(s_t) = \max_{c_t} u(c_t) + E\left[V(s_{t+1})\right]$$

OG model has finite lives

$$\max_{\{c_{s,t}\}_{s=1}^{S}} E\left[\sum_{s=1}^{S} \beta^{s-1} u(c_{s,s})\right]$$

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Agents finitely lived, but economy infinite

$$V(s_t) = \max_{c_t} u(c_t) + E\left[V(s_{t+1})\right]$$

- This equation has a specific end
- One life doesn't determine path of w_t, r_t

A Visual Description of the OG Model

Birthday	Period					
	$\ldots$	t	$t+1$	$t+2$	$t+3$	$\ldots$
born $t-1$	$\ldots$	$c_{2,t}$				
born t		$c_{1,t}$	$c_{2,t+1}$			
born $t+1$			$c_{1,t+1}$	$c_{2,t+2}$		
born $t+2$				$c_{1,t+2}$	$c_{2,t+3}$	
					$\vdots$	$\ldots$

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  - Shell (1971): theoretical results
  - Ball and Mankiw (2007): optimal policies
- Solow (2006) and Weil (2008) nice surveys

Characteristics of OG framework

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  - PS1
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  - Good for questions of inequality, demographics, and age heterogeneity
  - Macro questions?
  - Tractability?
  - Behavior of 20- or 40-year-old?

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- When is overlapping finite lives a better model?
  - Good for questions of inequality, demographics, and age heterogeneity
  - Macro questions?
  - Tractability?
  - Behavior of 20- or 40-year-old?
- Finite lives certainly realistic
  - 70-year-old behaves differently than 20-year-old

Cool Current: Nishiyama and Smetters (2007)

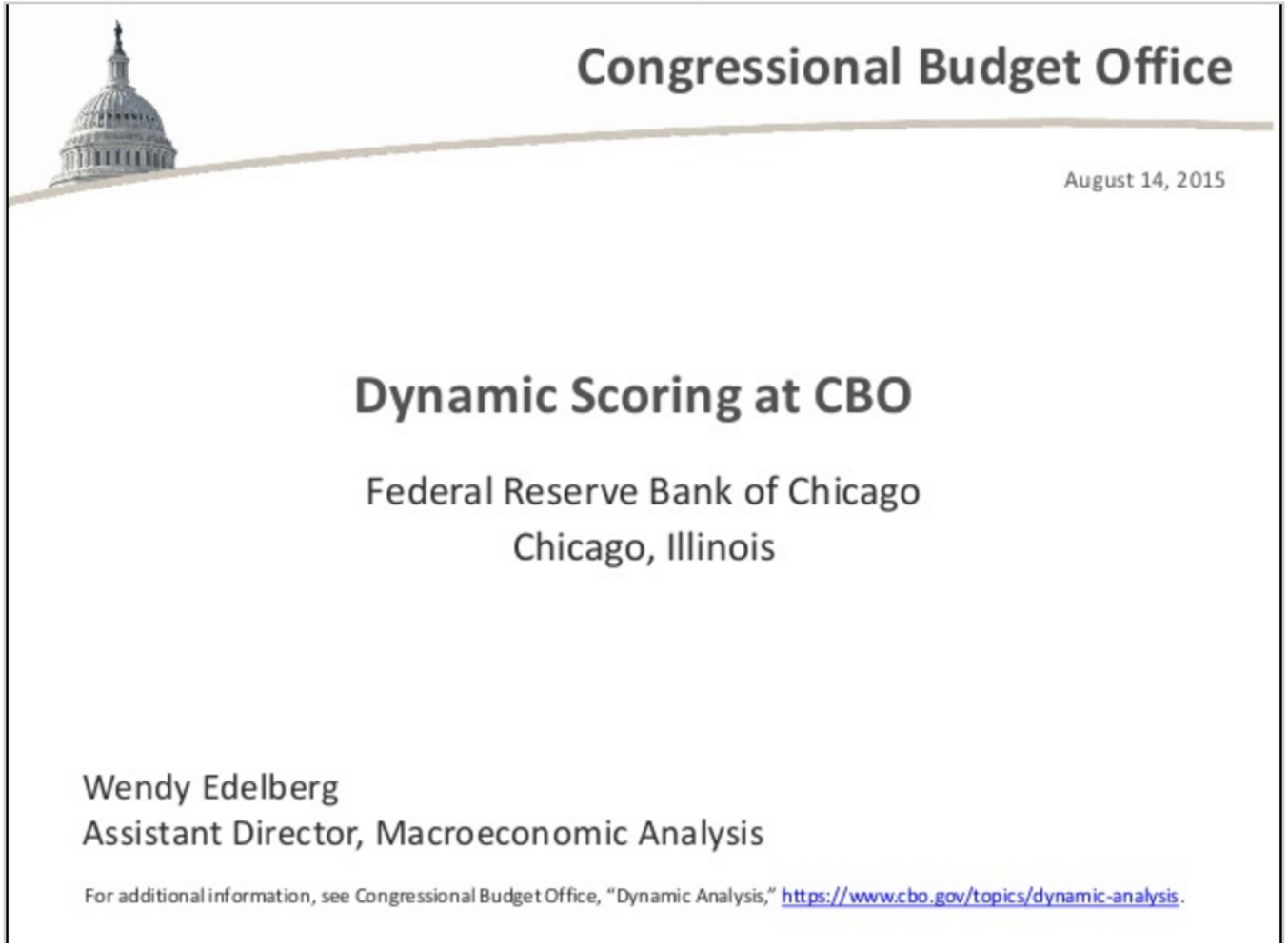
DOES SOCIAL SECURITY PRIVATIZATION PRODUCE EFFICIENCY GAINS?*

SHINICHI NISHIYAMA AND KENT SMETTERS

While privatizing social security can improve labor supply incentives, it can also reduce risk sharing. We analyze a 50% privatization using an overlapping-generations model where heterogeneous agents with elastic labor supply face idiosyncratic earnings shocks and longevity uncertainty. When wage shocks are insurable, privatization produces about $18,100 of extra resources for each future household after all transitional losses have been compensated for with lump-sum taxes. When wages are not insurable, privatization *reduces* efficiency by about $2,400 per future household. We check the robustness of these results to different model specifications as well as policy reforms and arrive at several surprising conclusions. First, privatization performs better in a closed economy, where interest rates decline with capital accumulation, than in an open economy. Second, privatization also performs better when an actuarially fair private annuity market does *not* exist. Third, government matching of private contributions on a progressive basis is not very effective at restoring efficiency and can actually cause harm.

Cool Current: Dynamic Scoring at CBO

https://www.cbo.gov/publication/50730



Congressional Budget Office

August 14, 2015

Dynamic Scoring at CBO

Federal Reserve Bank of Chicago
Chicago, Illinois

Wendy Edelberg
Assistant Director, Macroeconomic Analysis

For additional information, see Congressional Budget Office, "Dynamic Analysis," https://www.cbo.gov/topics/dynamic-analysis.

Cool Current: Dynamic Scoring at JCT

file:///Users/rwe/Downloads/x-3-15.pdf

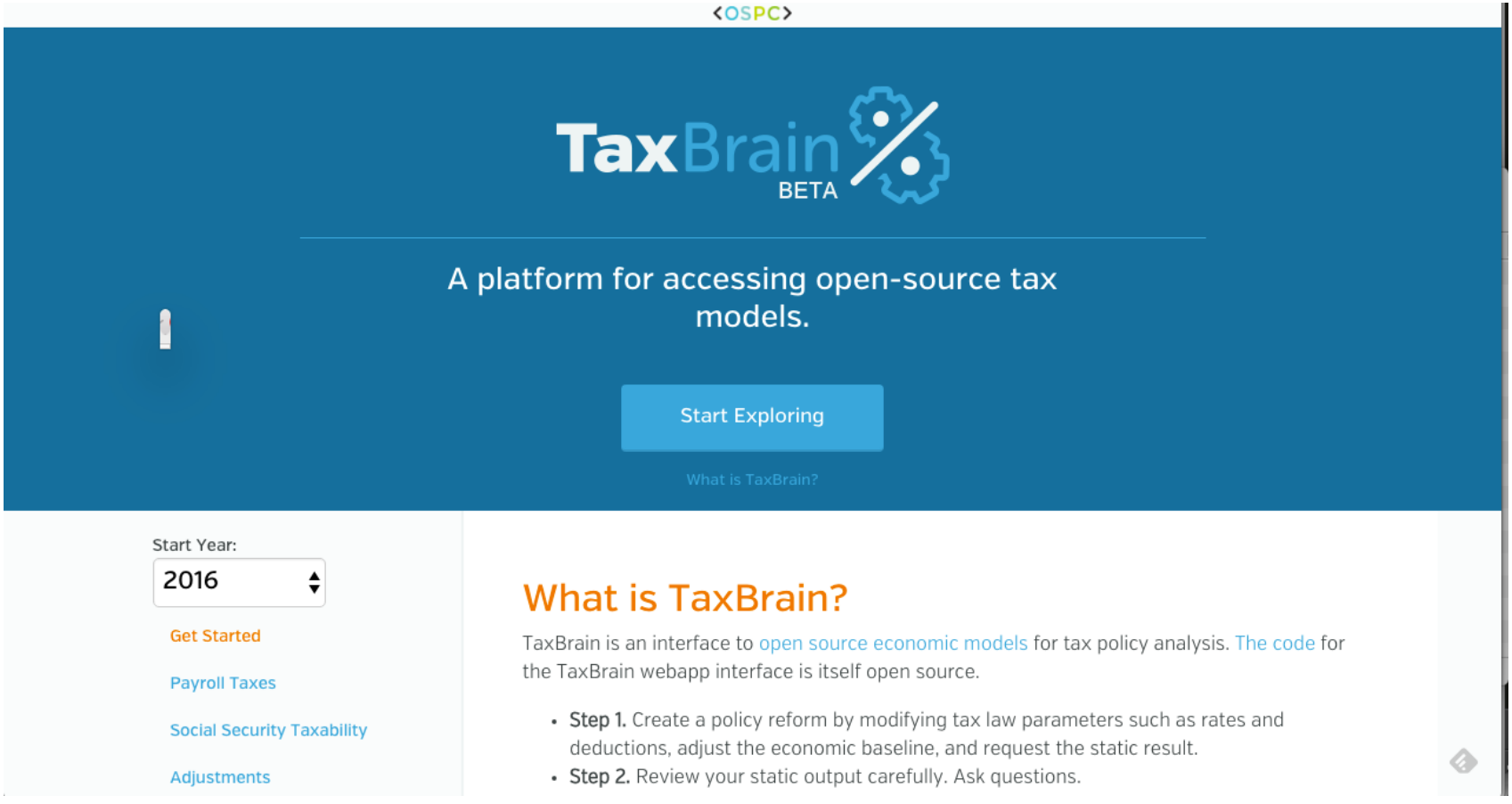
MACROECONOMIC ANALYSIS AT THE JOINT COMMITTEE ON TAXATION AND THE MECHANICS OF ITS IMPLEMENTATION

OUTLINE OF PRESENTATION OF THE JOINT COMMITTEE STAFF AT THE BROOKINGS INSTITUTION PROGRAM "DYNAMIC SCORING: NOW WHAT?"

Prepared by the Staff
of the
JOINT COMMITTEE ON TAXATION

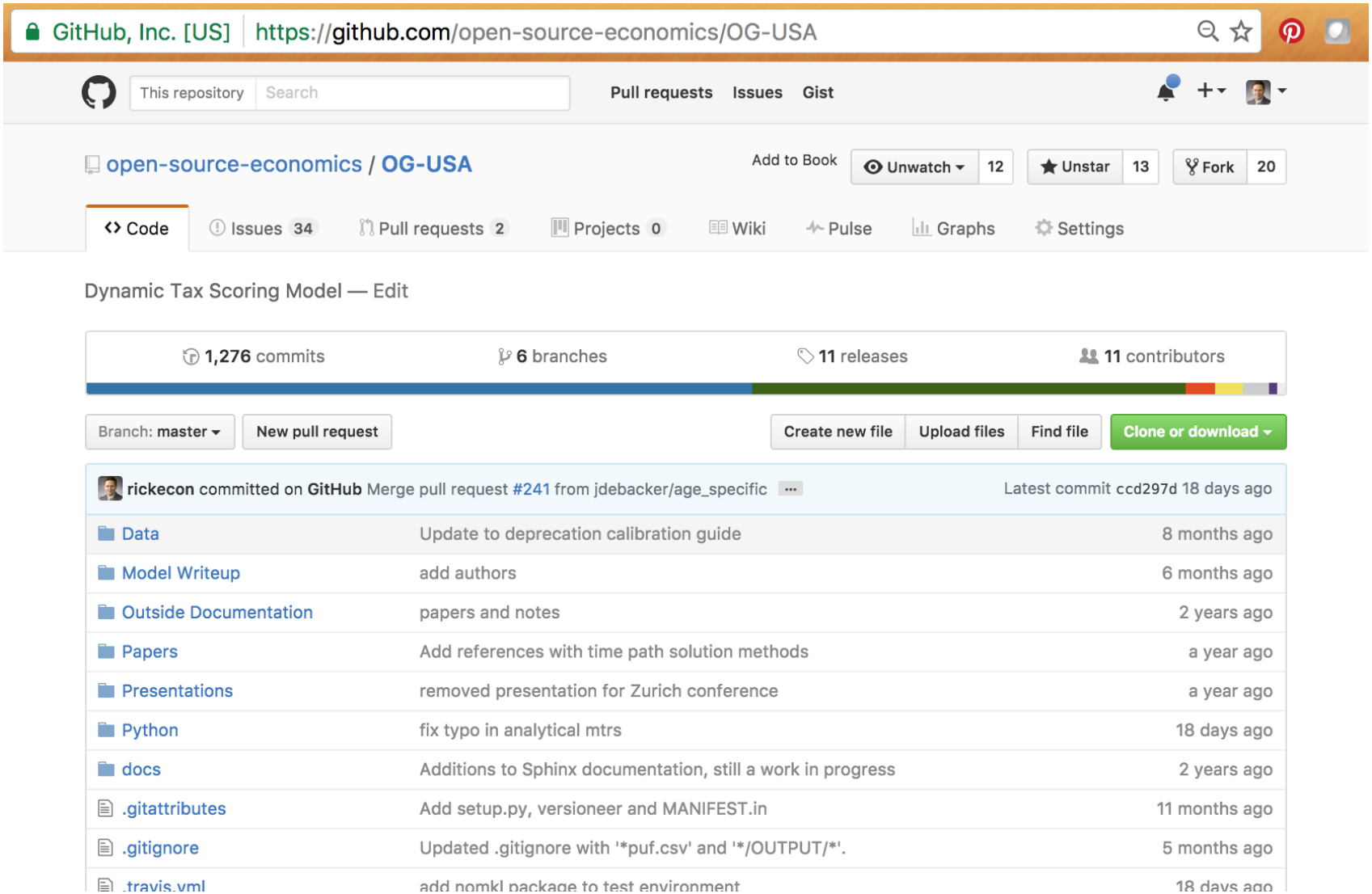
Cool Current: Tax Brain by OSPC

http://www.ospc.org/taxbrain/



Cool Current: OG-USA

https://github.com/open-source-economics/OG-USA/



Outline of the course and syllabus

https://github.com/rickecon/OGcourse_F16