

Economic Policy Analysis with Overlapping Generations Models MACS 40000

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

We solve recursively using VFI or PFI

$$V(x_t) = \max_{c_t} u(c_t) + E[V(x_{t+1})]$$

OG model has finite lives

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

- Subject to budget constraint
- Firms optimize
- Markets clear

Agents finitely lived, but economy infinite

$$V_s(x_t) = \max_{c_t} u(c_t) + E[V_{s+1}(x_{t+1})]$$

- 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					
	...	t	$t + 1$	$t + 2$	$t + 3$...
born $t - 1$...	$c_{2,t}$				
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	...

Some History of the OG framework

- Introduced by Samuelson (1958): monetary application
- Other key papers in the history:
 - Diamond (1965): optimal public debt
 - Shell (1971): theoretical results
 - Ball and Mankiw (2007): optimal policies
- Solow (2006) and Weil (2008) nice surveys

Characteristics of OG framework

- First Fundamental Welfare Theorem does NOT hold, in general
 - Weil (2008) story sketch of proof
 - PS1
 - Is this more realistic than Ramsey model?
- 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: Nishiyama (2015)

Journal of Economic Dynamics & Control 61 (2015) 114–132



Contents lists available at ScienceDirect

Journal of Economic Dynamics & Control

journal homepage: www.elsevier.com/locate/jedc



Fiscal policy effects in a heterogeneous-agent OLG economy with an aging population[☆]



Shinichi Nishiyama

Department of Economics, Lancaster University, Lancaster, LA1 4YX, United Kingdom

ARTICLE INFO

Article history:

Received 24 July 2015

Received in revised form

7 September 2015

Accepted 14 September 2015

Available online 25 September 2015

JEL:

D91

E62

H31

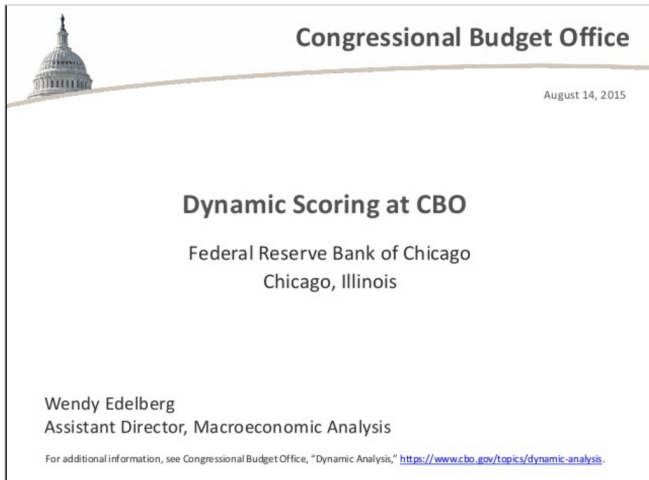
ABSTRACT

This paper incorporates the aging population projected by the U.S. Social Security Administration to a heterogeneous-agent OLG model with idiosyncratic wage shocks and analyzes its effects on individual households, the government budget, and the overall economy. The fiscal gap caused by the demographic change is 2.92% of GDP under the SSA's intermediate projection. The effect of the aging population is large by itself and depends significantly on how the government finances the cost of the demographic change. There is a strong trade-off between efficiency and equity, and this paper quantitatively assesses the pros and cons of stylized fiscal reform plans.

© 2015 Elsevier B.V. All rights reserved.

Cool Current: Dynamic Scoring at CBO

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



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/>

<OSPC>



TaxBrain

BETA

A platform for accessing open-source tax models.

Start Exploring

What is TaxBrain?

Start Year:

2016

Get Started

Payroll Taxes

Social Security Taxability

Adjustments


What is TaxBrain?





TaxBrain is an interface to [open source economic models](#) for tax policy analysis. [The code](#) for the TaxBrain webapp interface is itself open source.


- **Step 1.** Create a policy reform by modifying tax law parameters such as rates and deductions, adjust the economic baseline, and request the static result.
- **Step 2.** Review your static output carefully. Ask questions.

Cool Current: OG-USA




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


[GitHub, Inc. \[US\]](#)
<https://github.com/open-source-economics/OG-USA>


This repository

[Pull requests](#)
[Issues](#)
[Gist](#)









[open-source-economics / OG-USA](#)

[Add to Book](#)
[Unwatch](#) 12
 [Unstar](#) 13
 [Fork](#) 20

[Code](#)
[Issues 34](#)
[Pull requests 2](#)
[Projects 0](#)
[Wiki](#)
[Pulse](#)
[Graphs](#)
[Settings](#)


Dynamic Tax Scoring Model — Edit











 1,276 commits
  6 branches
  11 releases
  11 contributors

Branch: master ▾

[New pull request](#)

[Create new file](#)
[Upload files](#)
[Find file](#)
[Clone or download ▾](#)


rickecon committed on GitHub Merge pull request #241 from jdebacker/age_specific
 Latest commit ccd297d 18 days ago

 Data	Update to deprecation calibration guide	8 months ago
 Model Writeup	add authors	6 months ago
 Outside Documentation	papers and notes	2 years ago
 Papers	Add references with time path solution methods	a year ago
 Presentations	removed presentation for Zurich conference	a year ago
 Python	fix typo in analytical mtrs	18 days ago
 docs	Additions to Sphinx documentation, still a work in progress	2 years ago
 .gitattributes	Add setup.py, versioneer and MANIFEST.in	11 months ago
 .gitignore	Updated .gitignore with '*puf.csv' and '*OUTPUT/*'.	5 months ago
 .travis.yml	add nomkl package to test environment	18 days ago

Outline of the course and syllabus

https://github.com/rickecon/OGcourse_F17

rickecon / OGcourse_F17

Unwatch 1 Star 3 Fork 1

Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights

Economic Policy Analysis with Overlapping Generations Models (Autumn 2017) Edit

9 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

Commit	Message	Time
rickecon Added PS1	Latest commit e4b0134 16 minutes ago	
ProblemSets/PS1	Added PS1	16 minutes ago
Tutorials	Updated Tutorials/README.md	3 days ago
.gitignore	Added .gitignore	4 days ago
README.md	Updated README.md	3 days ago

README.md

MACS 40000: Economic Policy Analysis with Overlapping Generations Models (Autumn 2017)

	Dr. Richard Evans
Email	rwevans@uchicago.edu
Office	250 Saleh Hall