Optimal Public Expenditure with Inefficient Unemployment
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Description of Code

This document describes the code used in the analysis. The code was executed with Matlab R2017a on macOS High Sierra.

- FIGURE3.M produces figure 3.
  - The program first calibrates the sufficient-statistic formulas (23) and (24) to describe the onset of the Great Recession in the United States. The calibration of the two formulas is described in section 4.
  - The program then uses formula (23) to compute optimal stimulus spending and formula (24) to compute the unemployment rate reached under optimal stimulus. The formulas are used under a range of unemployment multipliers and a range of elasticities of substitution between public and private consumption.
  - The program then produces the two panels of figure 3: FIGURE3A.PDF, FIGURE3B.PDF.

- FIGURE4.M produces figure 4.
  - The program first calibrates the matching model with land to US data. The model is described in sections 2.2 and 2.4 and in online appendix A. The calibration is described in online appendix A.
  - The program then computes collections of steady-state equilibria, parameterized by different levels of aggregate demand; these collections represent the different stages of the business cycle. The simulation procedure is described in section 5.
  - The program compares three public-expenditure policies: G/Y is constant at 16.5%, its average value in the United States for 1990-2014; G/Y is given by sufficient-statistic formula (23) (a first-order approximation to the optimal policy); and G/Y is at its optimal level, where it satisfies equation (18).
  - Last the program produces the four panels of figure 4: FIGURE4A.PDF, FIGURE4B.PDF, FIGURE4C.PDF, FIGURE4D.PDF.