1 Update - Oct 16th 2021

1.1 Long-run NPV multipliers table

The table shows $NPVM(\infty)$.

Experiment	AD = 0.5
UI extension	1.56(1.74)
Payroll tax cut	1.16(1.28)
Check	1.50(1.62)

Table 1: Long-run multipliers for new calibration (old calibration)

New discount factors:
DiscFacMeanD : 0.96971 Mean intertemporal discount factor for dropout types
DiscFacMeanH : 0.98628 Mean intertemporal discount factor for high school ty
DiscFacMeanC : 0.98764 Mean intertemporal discount factor for college types
DiscFacSpread : 0.00981 Half-width of uniform distribution of discount factors

Old discount factors:
DiscFacMean : 0.986 Mean intertemporal discount factor
DiscFacSpread : 0.0183 Half-width of uniform distribution of discount factors

Reason: The college / HS groups are large and have relatively large betas, so average MPC in the population has gone down.

1.2 Response of income / consumption in experiments

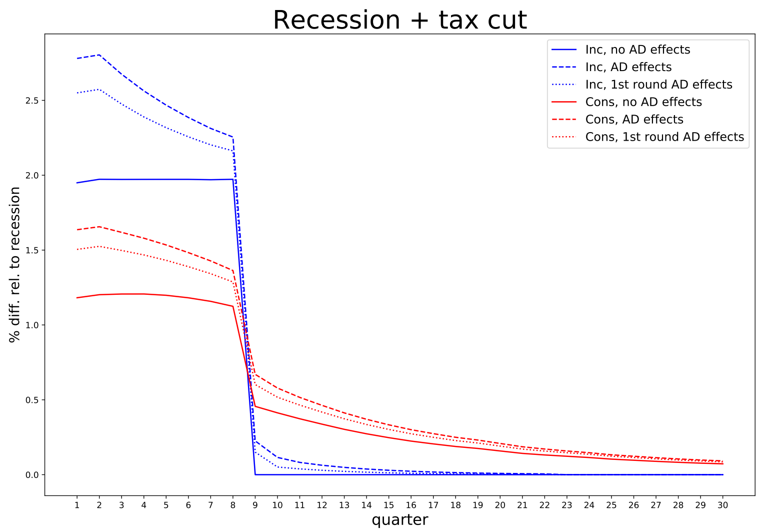

Figure 1

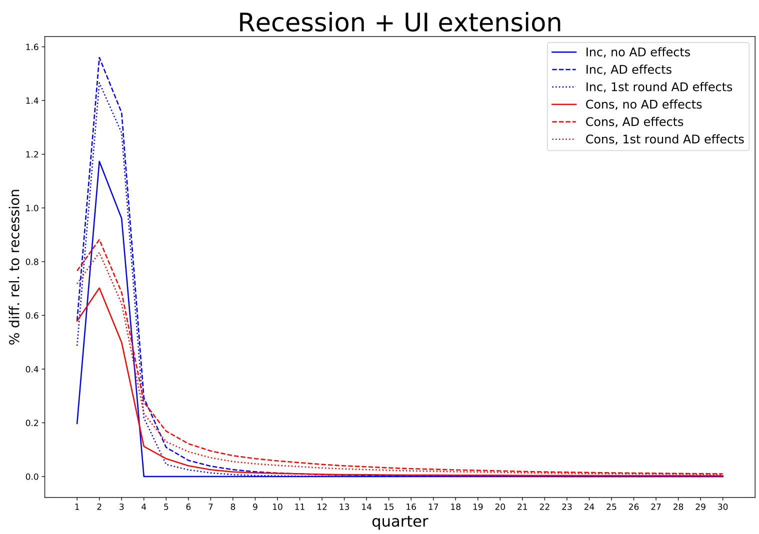

Figure 2

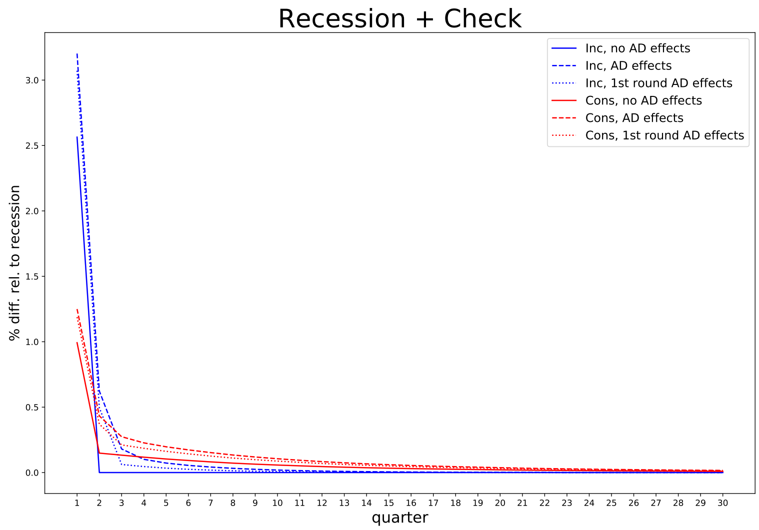

Figure 3

2 Update - Aug 4th 2021

2.1 Experiments

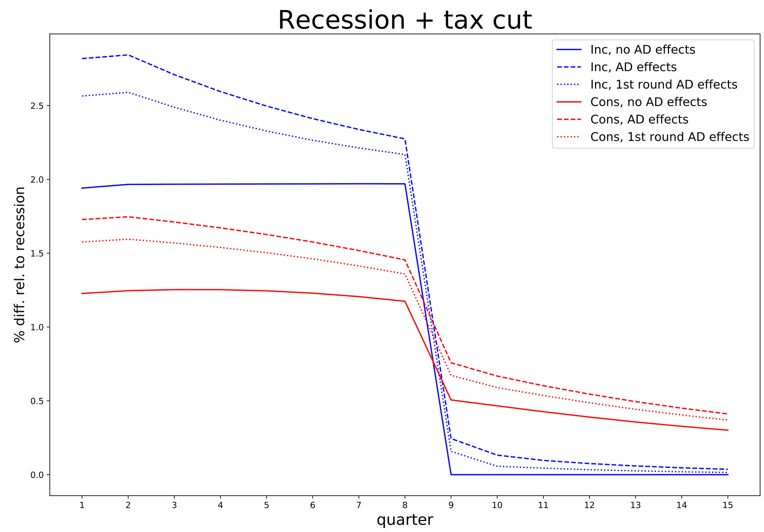

Figure 4

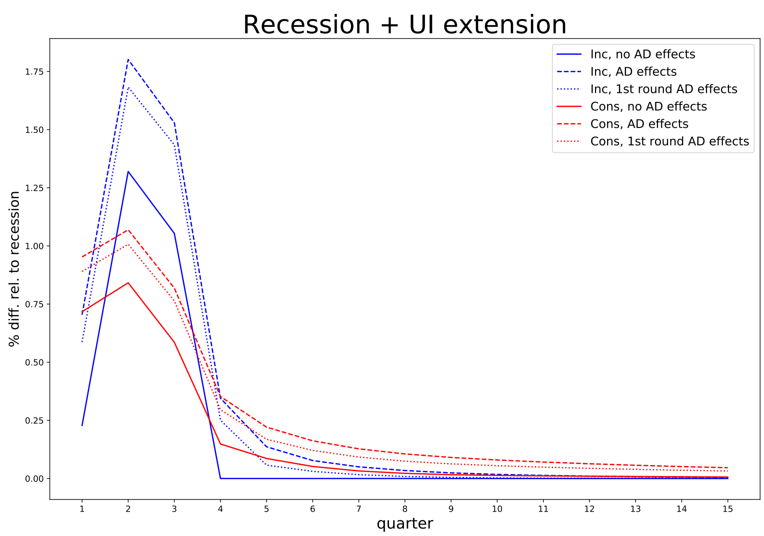

Figure 5

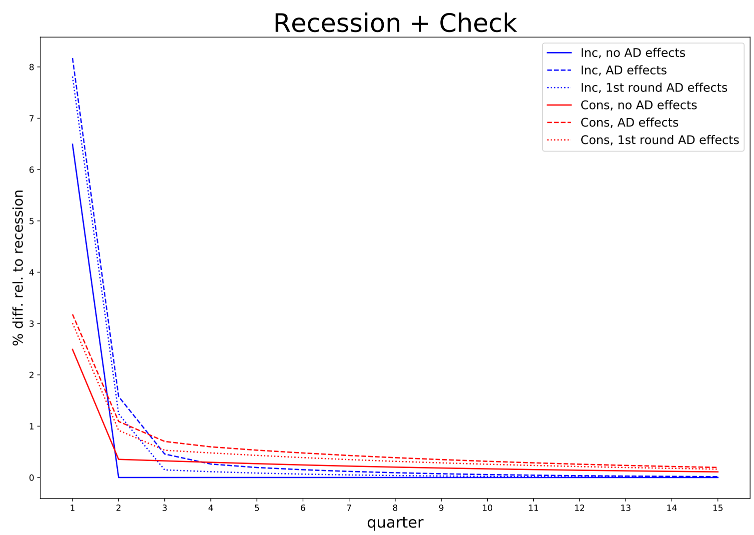

Figure 6

2.2 Multipliers

We can look at three different multipliers

1. Period multiplier: The ratio of additional consumption to policy expenditures at a certain point in time

$$PM(t) = \frac{\Delta C(t)}{\Delta G(t)} \tag{1}$$

where $\Delta X(t)$ is the difference in the variable X between the no-policy and policy scenario at time t.

Useful to investigate at which point in time a policy is most effective

2. Net present value multiplier: The ratio of the NPV of additional consumption to the NPV of policy expenditure up to a certain point in time.

$$NPVM(t) = \frac{NPV(t, \Delta C)}{NPV(t, \Delta G)} \tag{2}$$

where the net present value of a variable X at horizon t is given by

$$NPV(t, X) = \sum_{s=0}^{t} \left(\prod_{i=1}^{s} \frac{1}{R_i} \right) X_s \tag{3}$$

Useful to investigate at which horizons the policy becomes effective

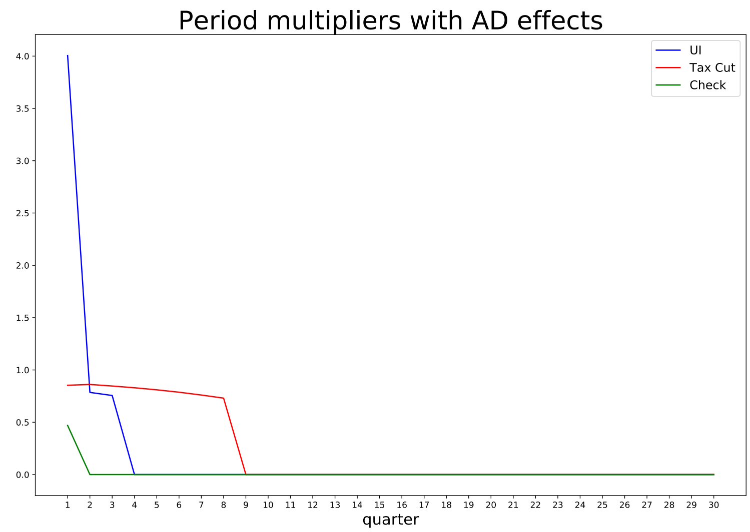

Figure 7

3. Cummulative multiplier: The ratio of the NPV of additional consumption up to time t to the infinite-horizon NPV of policy expenditure

$$CM(t) = \frac{NPV(t, \Delta C)}{NPV(\infty, \Delta G)} \tag{4}$$

Useful to investigate when additional consumption occurs

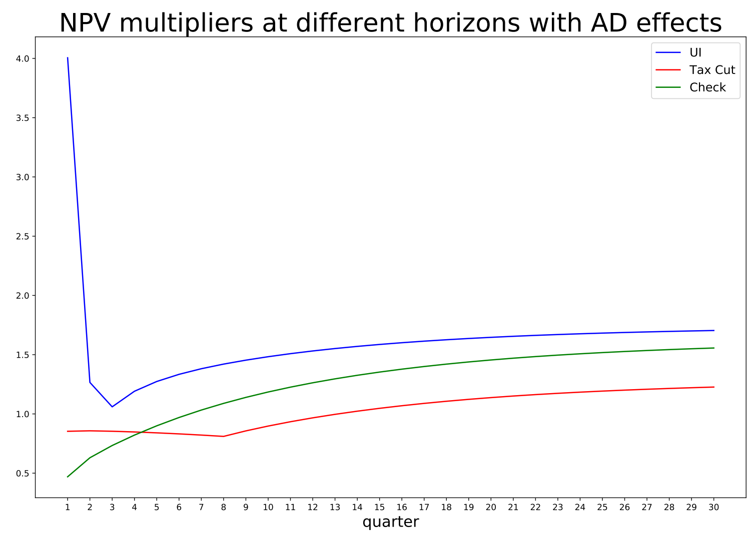

Figure 8: Net present value multipliers at horizon 1 (impact multiplier) to 30

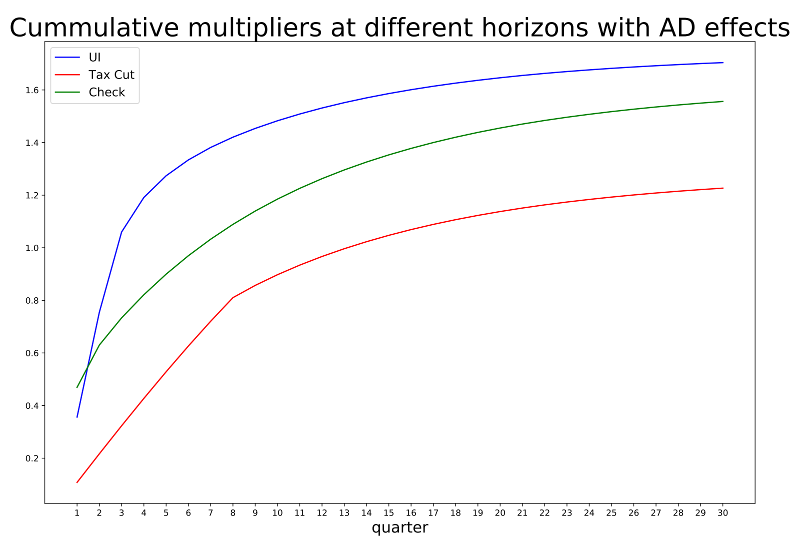

Figure 9

2.3 Long-run NPV multipliers table

The table shows $NPVM(\infty)$.

Experiment	no AD effects	AD = 0.5	AD = 0.5 (1st round)	AD = 0.25	AD = 0.75
Payroll tax cut	1	1.28	1.18	1.10	1.58
UI extension	0.98	1.74	1.51	1.30	2.42
Check	0.97	1.62	1.40	1.23	2.25

Table 2: Long-run multipliers