Fiscal Policy, Wealth Effects and Markups
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Discussion
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Context

Barro and King (1984) show in a neoclassical model that private consumption and the real product wage respond negatively to a wasteful unproductive government spending.

Intuition: \( g \uparrow \Rightarrow NPV (T) \uparrow \Rightarrow Wealth \downarrow \Rightarrow c \downarrow, n \uparrow \Rightarrow w \downarrow \)

Data suggests the opposite: government spending shocks cause private consumption and the real product wage to rise.

Data is consistent with Barro and King (1984)


## Models of government spending

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<th>$L^s$</th>
<th>$L^d$</th>
<th>$L$</th>
<th>$Y$</th>
<th>$W/P$</th>
<th>$c$</th>
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<td>Neoclassical</td>
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<td>Neoclassical with $c,L$ complementarity</td>
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<td>“NewKeynesian”</td>
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Monacelli and Perotti (2009), explore the role of the simple wealth effect (the effect of a negative shock to wealth) on labor supply in a standard neoclassical model and in a newkeynesian model, with KPR and GHH preferences.

1. Constant real wage, flexible nominal prices
2. Constant real wages, fixed prices
3. “Simple” NewKeynesian model
4. Habit persistence
5. Capital accumulation with two alternative types of adjustment cost on capital
6. Empirical evidence on consumption the real wage and the markup
Results

They show that since consumption is a normal good under both preference specifications (KPR and GHH),

A necessary condition for it to increase is that the real wage increases so that by substitution effect hours rise.

A sufficient condition: hours must increase beyond the level needed to pay for the higher government spending. This is achieved in the model by introducing nominal price rigidities and therefore variable markup and wages.
Results

With sticky prices  \[ c_t = A_c g_t, A_c^{KPR} < A_c^{GHH} \]

Habit persistence dampens consumption multipliers

Capital accumulation frictions have powerful implications on both the sign and magnitude of the consumption multiplier

SVAR impulse responses are capable of delivering both positive and negative consumption multipliers depending on the intensity of the wealth effect on labor supply embedded in the specification of preferences
1. The paper assumes a balanced budget:
   consolidated BBR or dG=dT?

2. consumption, output and unemployment multipliers in four cases

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<th>R&gt;0</th>
<th>R hits the zero lower bound</th>
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<td>BB required</td>
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<tr>
<td>BB not required</td>
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3. The paper reviews six variations of the model with the same policy specification. Ensure equilibrium uniqueness
A simple model

\[ U = \int_0^\infty e^{-\rho t}u(c,1-L)dt \]

\[ c + I + \dot{b} + \dot{m} = (R - \pi)b - \pi m + r k + \omega L - (\tau - g) \]

\[ \dot{k} = \varphi(I) - \delta k \]

\[ \int_{t+T}^{t+T} e^{-\rho s} c ds \leq m \]

\[ 0 \leq L \leq 1 \]

\[ u_c, u_l > 0, u_{cc}, u_{ll} < 0, u_{cc} - u_{cl} u_c / u_l < 0, u_{ll} - u_{cl} u_l / u_c < 0 \]

\[ \lim_{t \to \infty} e^{-\int_0^t [R(s) - \pi(s)] ds} \left[ a(t) + k(t) \right] = 0 \]

And standard boundary cond.
A simple model

The investment function

Net Investment is concave in its argument which imply that adjustment costs are convex

\[ \varphi(0) = 0 \]
\[ \varphi'(I) > 0, \varphi''(I) < 0 \]
1. Solve the optimization problem (FOC and dynamics).
2. Linearize near steady state
3. Calibrate to structural parameters
4. Find policy requirements to ensure a unique determination of real allocation
Calibration (as in Basu and Kimball (2002))

\[
\begin{align*}
\zeta(c, L) &\equiv \frac{\partial \ln(w(c, L))}{\partial \ln(c)} = c \frac{u_{cl}}{u_l} - c \frac{u_{cc}}{u_c} \\
\frac{1}{s(c, L)} &\equiv -c \frac{u_{cc}}{u_c} \\
\frac{1}{h(c, L)} &\equiv \frac{\partial \ln(w(c, L))}{\partial \ln(L)} = -L \frac{u_{ll}}{u_l} + L \frac{u_{cl}}{u_c} \\
\lambda &\equiv \frac{u_c}{1 + R} \\
\omega &\equiv \frac{wL}{c}
\end{align*}
\]

\[
\begin{align*}
&\frac{f_k}{k} = \alpha \\
&f_{kk} = -\frac{(1 - \alpha) f_k}{k} \\
&f_{LL} = -\frac{\alpha w}{L} \\
&-f_{LL} \frac{L}{k} = f_{kL}
\end{align*}
\]
It is verified that in a neoclassical version of the model, determinacy regions depend only on $\alpha, \omega, \zeta, h, \sigma$ and the stance of monetary policy.

It is verified that in a neoclassical version of the model, an active response towards inflation and a mute response towards output ensure a unique determination of real allocation and nominal prices.

A similar analysis should be carried out in a NewKeynesian version of the model. (recall that there are additional channels and motion equations)