Discussion of:

Policy at the Zero Bound

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The issue

- The zero lower bound has become a pressing policy concern
  - federal funds rate in the U.S. has been near zero since Dec. 2008
- Other, unconventional policy tools have been used
  - fiscal stimulus, targeted tax credits (housing, autos, etc.), asset purchases
- These tools are costly to use; involve inefficiencies
  - much discussion about the effectiveness of particular tools
- Question here: what is *optimal* policy in this situation?
  - how can one implement efficient allocations?

- Considers a standard New Keynesian model
  - set of tax instruments is fairly "large" (labor & consumption)
- Shows that the efficient allocation can be implemented regardless of the zero lower bound
  - in fact, monetary policy is a redundant tool
- Paper is interesting, and clearly very policy relevant
  - Bullard (St. Louis Fed) recently proposed the Fed buy more long-term assets to avoid being trapped at the zero lower bound
- My discussion: Review the main result in a very simple model
  - then offer some comments/questions

A two-period model

- Preferences: $u(C_1, N_1) + u(C_2, N_2)\,\xi$

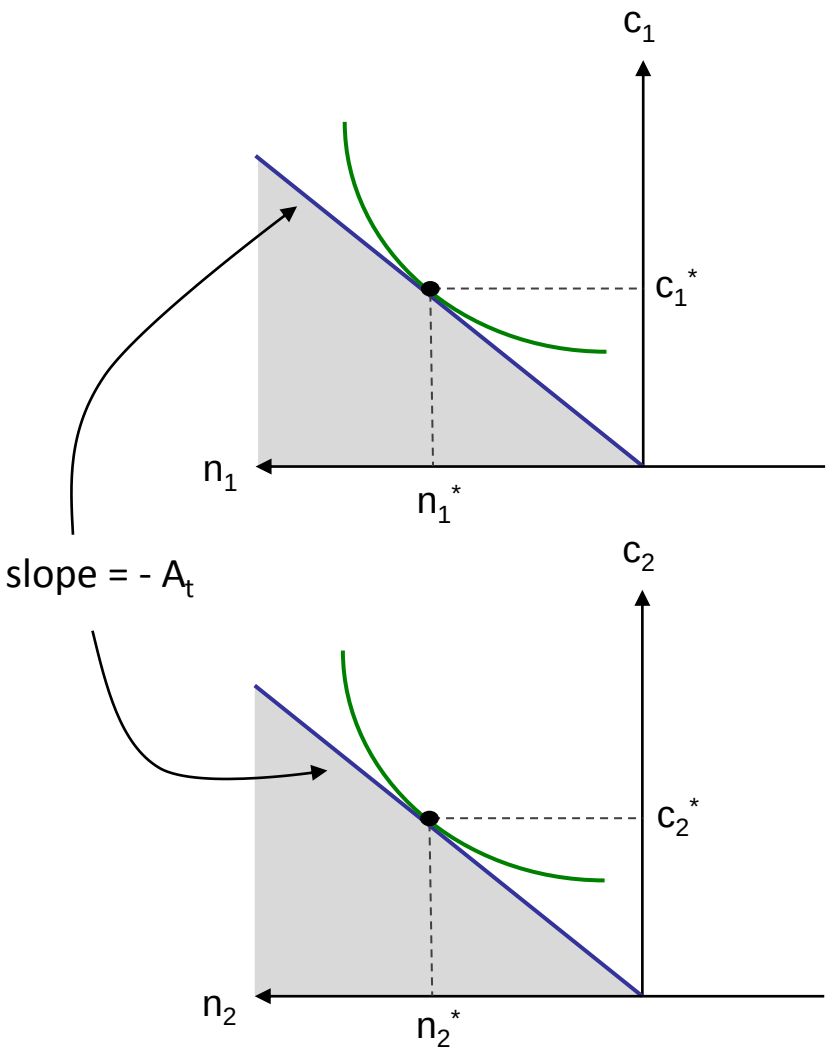
- Technologies: $C_1 \leq A_1 N_1$ and $C_2 \leq A_2 N_2$

- Budget constraints (in current-period dollars):

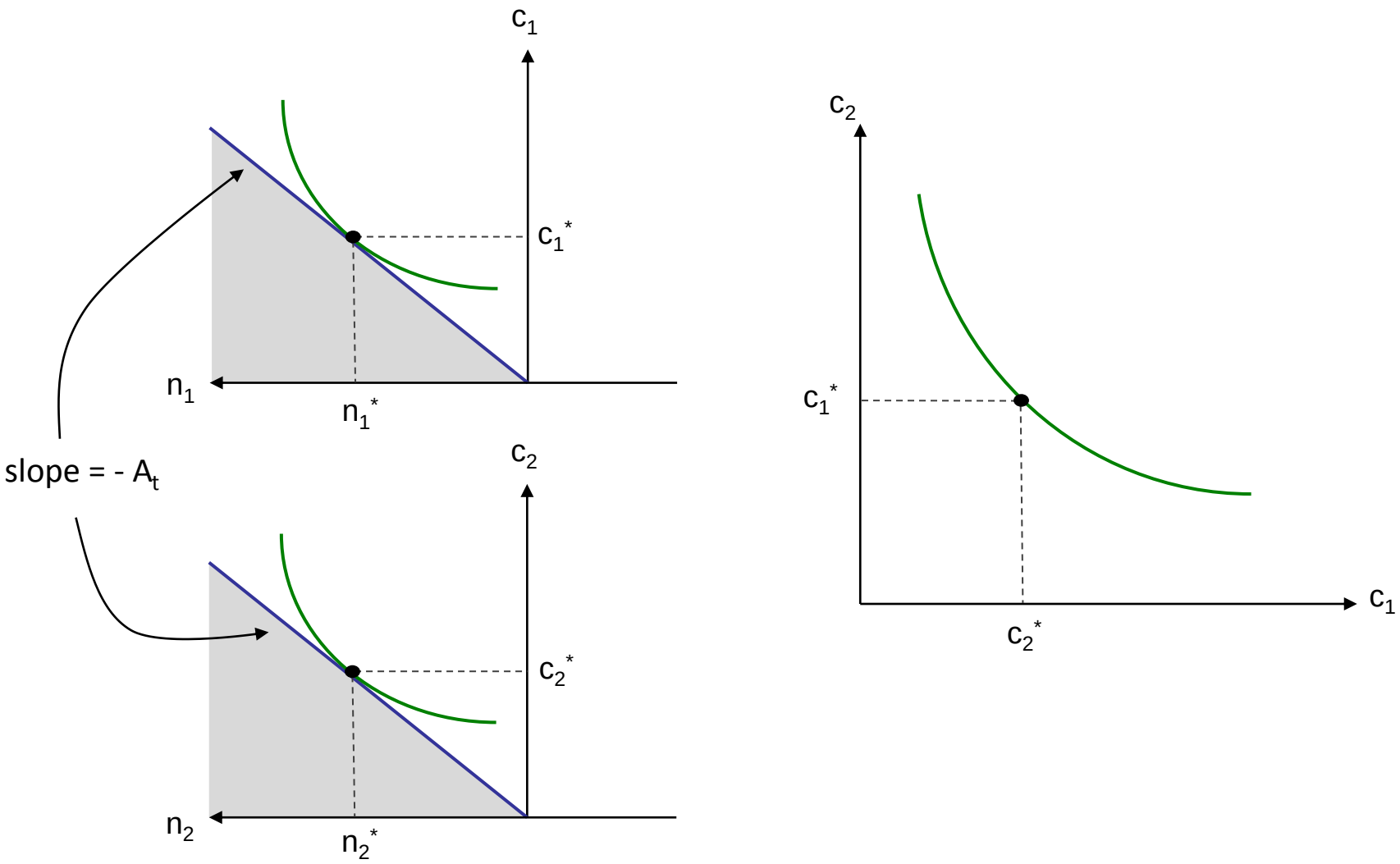
$$(1+\tau_1^c)\,P_1 C_1 \;\leq\; (1-\tau_1^n)\,W_1 N_1 - B$$

$$(1+\tau_2^c)\,P_2 C_2 \;\leq\; (1-\tau_2^n)\,W_2 N_2 + RB$$

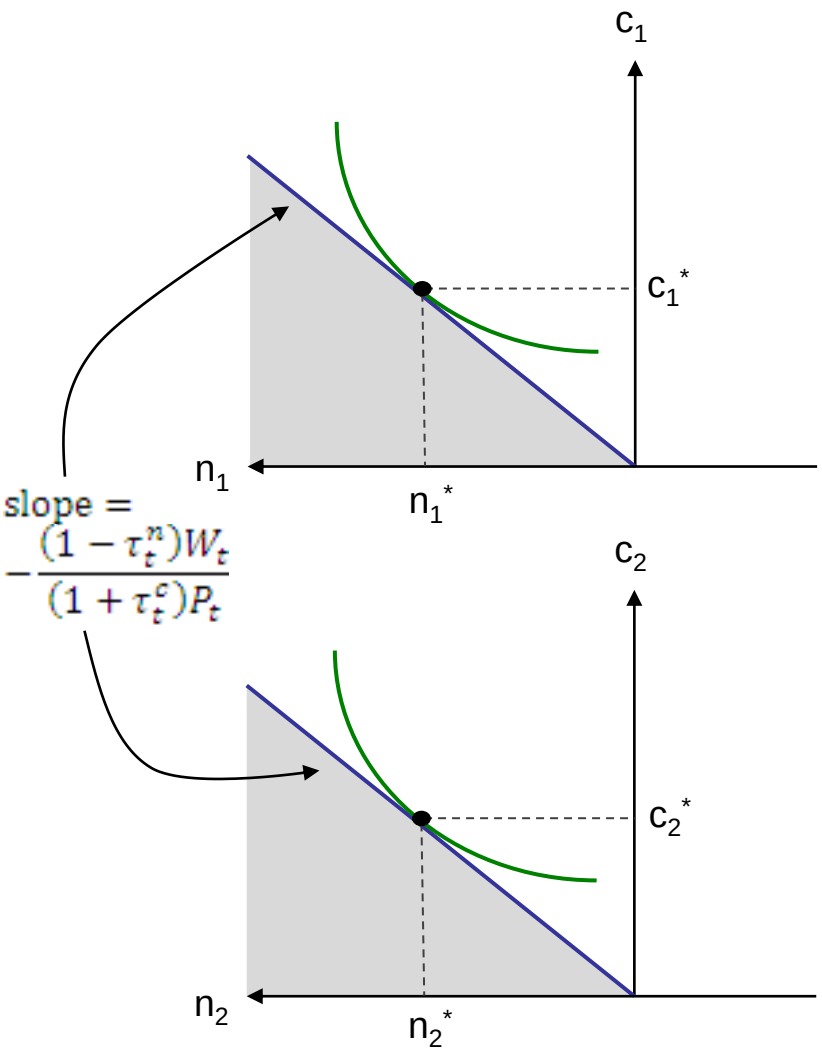
The efficient allocation

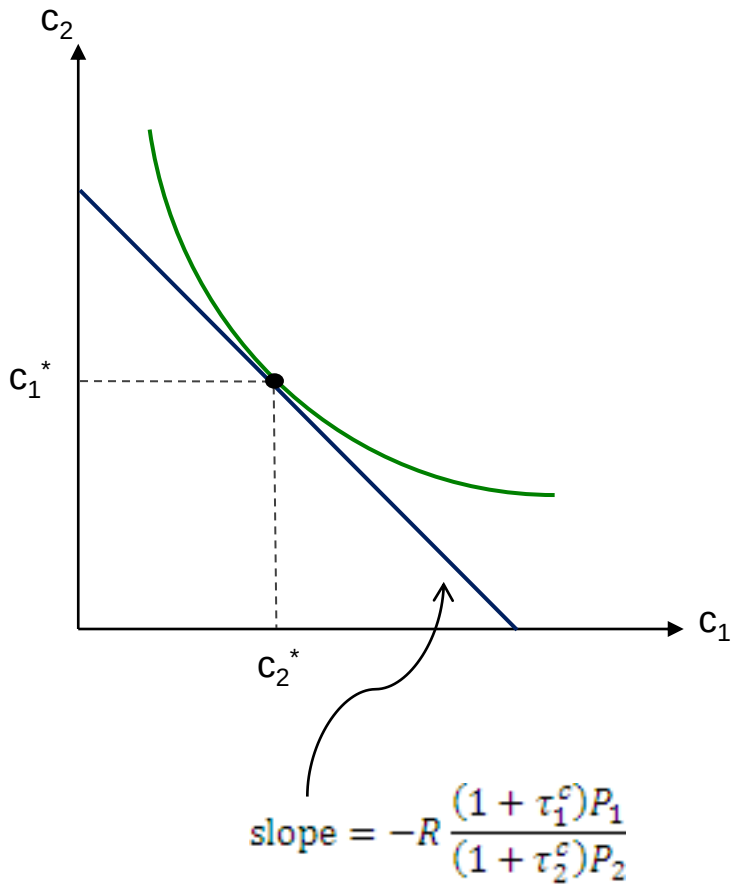


The efficient allocation



In equilibrium





- In equilibrium, prices must be such that

$$R\frac{\left(1+\tau_1^c\right)P_1}{\left(1+\tau_2^c\right)P_2}=\frac{u_c\left(C_1,N_1\right)}{u_c\left(C_2,N_2\right)\xi}$$

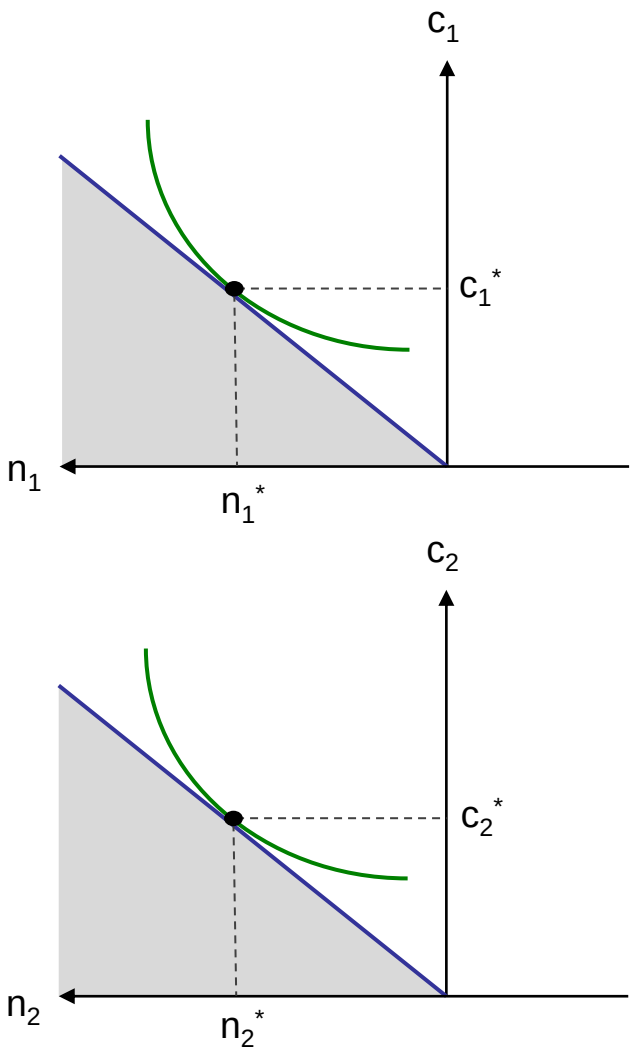
- Note: there are three prices on the LHS (and only one equation)
  - this is the usual nominal indeterminacy in general equilibrium

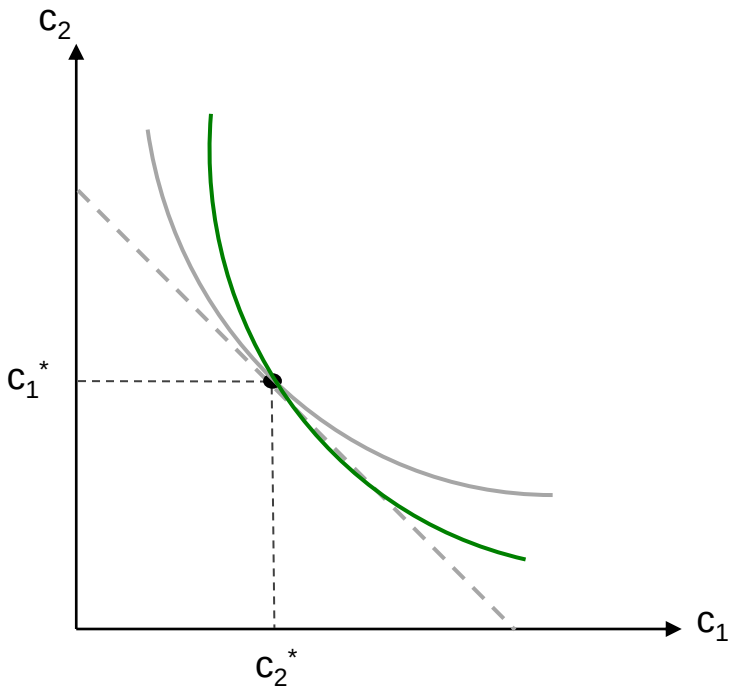
- Assume: central bank can choose R
  - can also normalize $P_1=1$

- Suppose there is a "shock" to intertemporal preferences

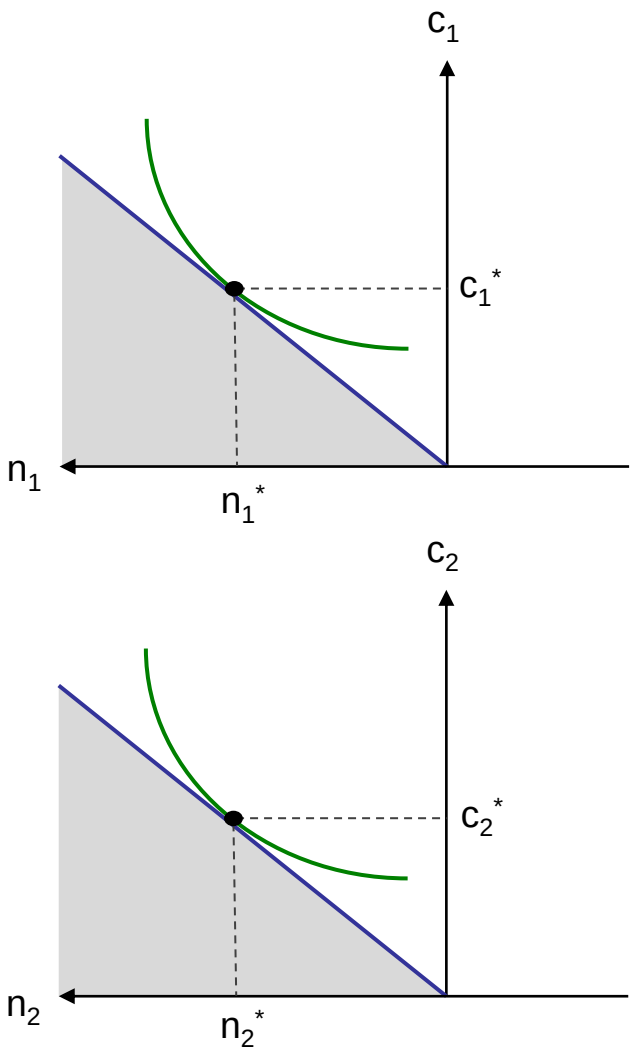
$$\xi\rightarrow\xi'$$

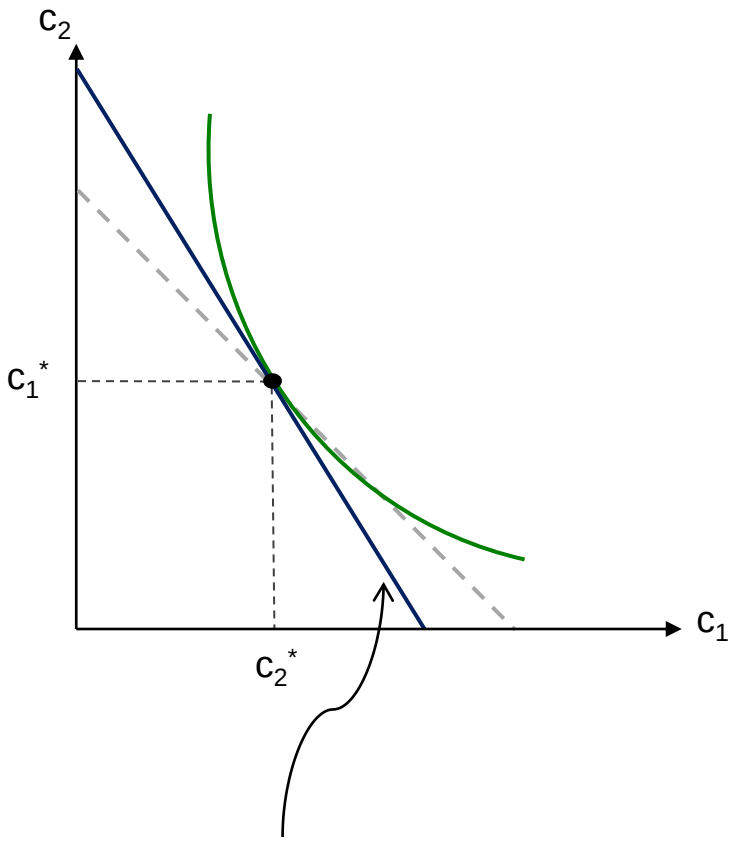
A “shock”





A “shock”


c_1
c_1^*
n_1
n_1^*
c_2
c_2^*
n_2
n_2^*


c_2
c_1^*
c_1
c_2^*
Real relative price must change

- Suppose $\tau_t^c = 0$ in both periods. Equilibrium then requires

$$R' \frac{P_1}{P_2'} = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2)\,\xi'}$$

Sticky prices

- Suppose there is a real resource cost of having $P_2 \neq P_1$

- Then central bank should set

$$R' = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2)\,\xi'}$$

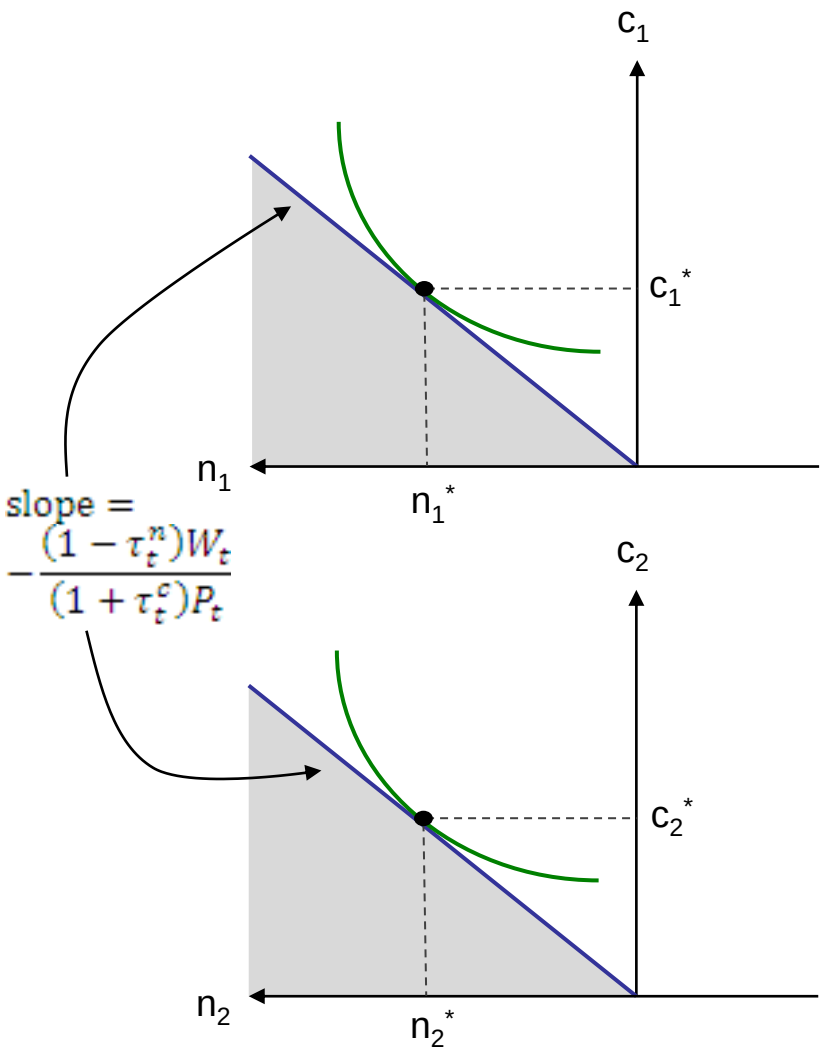
  - this is optimal monetary policy in a New Keynesian framework

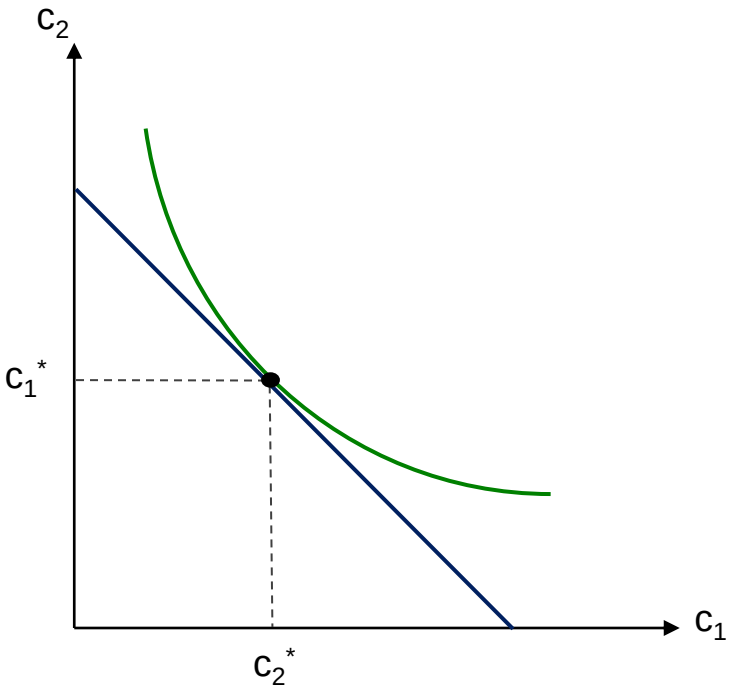
  - central bank changes R to maintain price stability

The zero lower bound

- If agents can hold cash, arbitrage requires $R \geq 1$
- What if $$\frac{u_c(C_1, N_1)}{u_c(C_2, N_2)\,\xi'} < 1?$$
- Monetary policy cannot implement the efficient allocation,
  - P_2 must adjust (which is costly)
- But with time-varying consumption taxes $$R' \frac{\left(1 + \tau_1^{c'}\right) P_1}{\left(1 + \tau_2^{c'}\right) P_2'} = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2)\,\xi'}$$
  - set τ^c so that $P_2' = P_1$

Adjust labor taxes to preserve static efficiency





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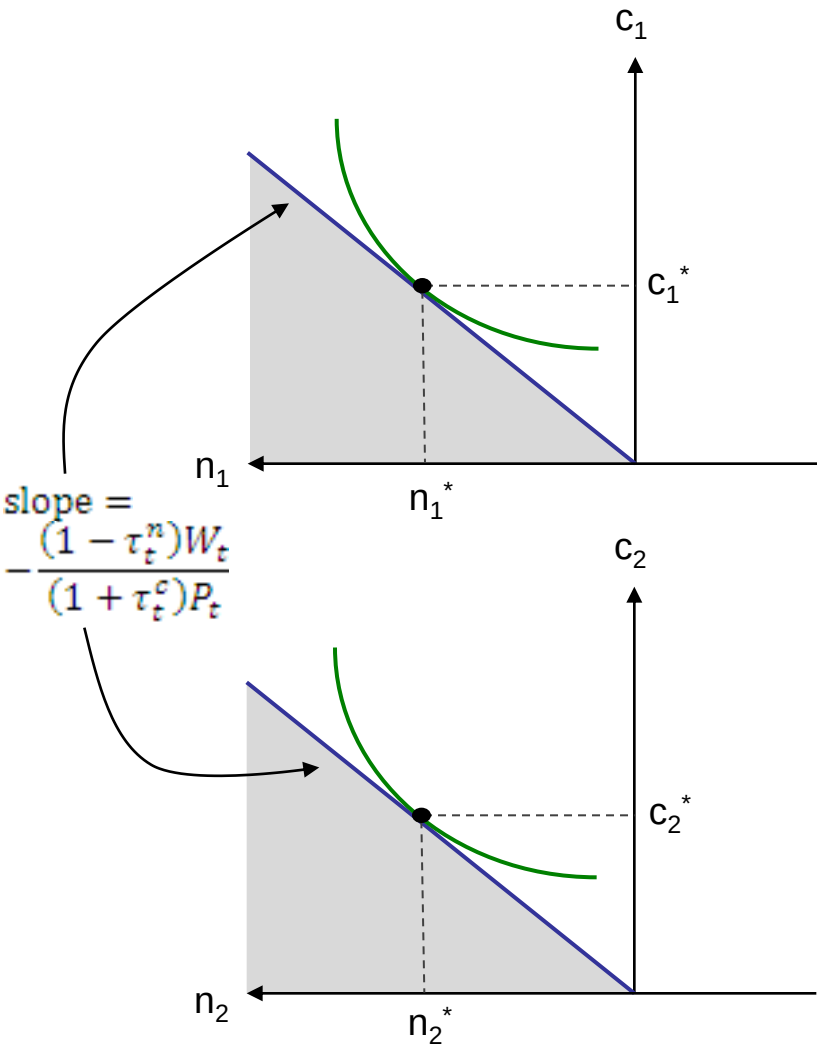

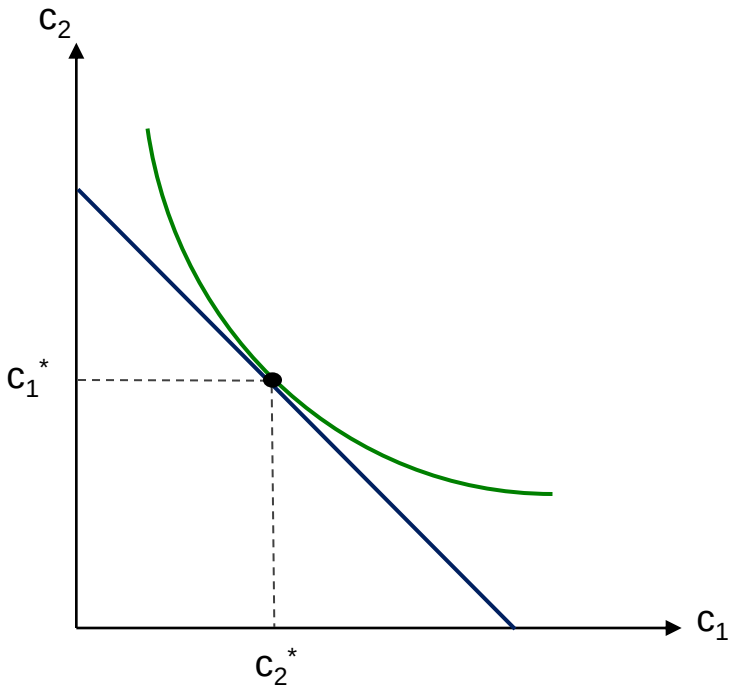

Earlier literature missed this result because it only considered one policy at a time

What else the paper does

- This is all straightforward. What about ...
  - richer production structure? government consumption?
  - many time periods? capital accumulation?
  - multiple steady states and liquidity traps (as in Benhabib *et al.*)?
- The paper shows that none of these matter
  - the intuition from the very simple model carries through
- Conclusion: these "unconventional" policies are unnecessary
  - adjusting tax rates is a better approach

Some Comments/Questions

(1) Which prices are sticky?

- Consumer pays $(1+\tau_t^c)\,P_t$, producer receives P_t
  - which price is costly to change?

- *Consumer* price need to respond to the preference shock
  - if P_t is sticky, tax policy can implement the efficient allocation
  - if $(1+\tau_t^c)\,P_t$ is sticky, it cannot

Q: How important are the details of the price setting process?

- not just the parameters of a Calvo-type rule, but ...
- in general, how does a change in τ_t^c affect consumer/producer prices?

(2) Long term interest rates

- Many unconventional policies aim to reduce long-term interest rates
  - promises to keep short-term rates low for an "extended period"
  - purchases of long-term assets
- Presumably reflects the importance of durable goods
- In principle, consumption taxes can affect long-term rates
  - commit to the entire sequence $\{\tau_s^c\}_{s=t}^T$
- But ... would this be time consistent?
  - how would policy makers respond to future shocks?

Q: Is the optimal policy here time consistent?

Q: Would introducing durable goods change the answer?

  – the model may not be giving some of the unconventional policies a fair chance

- Commitment is also an issue in using monetary policy to lower long-term rates

  – clear example: "extended period" language

- However, this is why we have independent central banks

Q: Could time consistency considerations make unconventional monetary policy more powerful than fiscal policy?

(3) Richness of tax instruments

- While the taxes in the model appear reasonable, they are really quite powerful
  - counting policy instruments and decision margins
- Suppose there are more decision margins
  - home production, other untaxed activity, costly tax avoidance, etc.
- With limited tax instruments, monetary policy (and the zero lower bound) would again be relevant

Q: Would this change the main message?

  - or would you still want to use consumption taxes as shown here?

(4) Limits on tax rates

- The problem with monetary policy is the limit $R \geq 1$

- Fiscal policy is very effective when there are no limits on τ^j

Q: Is this realistic? Or are we giving fiscal policy too much credit?

  - if policy is revenue neutral, τ must be high in some periods

  - if τ is very high, tax evasion may become an issue

Conclusion

- Paper addresses a very important policy issue
  - results are clear, quite general

- Conclusion: these "unconventional" policies are unnecessary
  - adjusting tax rates is a better approach

Q: Does this result survive the introduction of other (realistic) features?
  - if so, the case becomes much stronger