

# Practical Monetary Policy II: Rethinking Central Banking

PhD Course in Monetary  
Economics

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# Overview

- Helicopter money
  - Rethinking central banking
    - ~~Inflation forecast targeting~~
    - Tools and objectives
    - Communication
    - Monetary policy and financial stability
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Helicopter money

# Helicopter money

- In practice, there may be a number of constraints
  - Legal (e.g. Maastricht treaty)
    - Institutions are built to prevent too high inflation
  - Mandate, tools
    - Who decides on dividends?
  - Reputational
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# Buiter (2014) (my unverified interpretation)

- Distractions in Buiter's paper:
  - Cash (think instead of bank reserves paid market interest), deaths, births, production (ignore capital, fix wage)
- Solve

$$\max \int e^{-\theta(v-t)} \ln C(v) dv$$

subject to household budget constraint

$$\frac{\dot{B}(v)}{P(v)} = i(v) \frac{B(v)}{P(v)} + w(v) - \tau(v) - C(v)$$

and no-Ponzi:  $\lim_{v \rightarrow \infty} \frac{B(v)}{P(v)} e^{-\int_t^v r(u) du} = 0$

# Buiter (2014) (my unverified interpretation)

- State (= treasury + central bank)

$$\frac{\dot{B}}{P} = i \frac{B}{P} + G - T$$

- No-Ponzi:

$$\lim_{v \rightarrow \infty} \frac{B(v) - Q(v)}{P(v)} e^{-\int_t^v r(u) du} \leq 0$$

where  $Q$  is bank reserves deposited at the cb (here equal to the quantity of treasury debt held by the cb)

- The key thing here is that the treasury is subject to the no-Ponzi condition, but not the central bank, hence the  $-Q(v)$  term above

# Buiter (2014) (my unverified interpretation)

- Solution implies

$$C(t) = \theta \left[ \int_t^\infty [w - G(v)] e^{-\int_t^v r(u) du} dv + \frac{1}{P(t)} \lim_{v \rightarrow \infty} Q(v) e^{-\int_t^v i(u) du} \right] (*)$$

- If the no-Ponzi condition had applied to the central bank, the last term in (\*) would be zero and the solution would just be that private consumption is determined by the NPV of real income net of government spending

# Liquidity trap? Buiter (2014)

- Suppose that the nominal interest rate is stuck at zero, and expected to be so forever
- Then a permanent increase in  $Q$  (for example a permanent QE) will have to affect something in (\*): government spending can increase, interest rates can change, and/or prices can increase

# QE outside liquidity trap Buiter (2014)

- Suppose that the nominal interest rate is expected to be positive at least in the distant future
  - Then a permanent one-time increase in  $Q$  will *not* affect (\*): the last term is zero
  - The monetary/quantitative expansion must then *grow* with the nominal interest rate to be effective (I think...)
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## Aside: Allow "cash" Buiter (2014)

- In the setup considered by Buiter, a one-off permanent increase in money *will* have effects even outside a liquidity trap
  - This is because he assumes that there is a demand for cash (or non-interest bearing reserves)
  - To implement a permanently higher money supply in any period with a positive interest rate, that interest rate must fall for markets to clear (or demand must increase by some other effect)
  - So permanently raising  $M$  is basically identical to committing to a more expansionary monetary policy in the future (see Eggertsson and Woodford, 2003)
  - But how do you implement something to be permanent? Is it *credible*? Otherwise effectiveness may vanish.
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# Alternative approach: CB equity

- Consider the central bank's dividend policy and strategy for managing its equity
  - If the central bank avoids losses, or if it tries to restore its equity whenever it has suffered losses, **it imposes the no-Ponzi condition on itself**
  - Then its "helicopter drops" will fail
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# Example

- Suppose that the central bank pays its profit flow to the treasury as dividends
  - Suppose that the central bank initially has assets =  $A_0$  and liabilities equal to  $Q_0 + E_0$ . Its per-period profits (and dividends) are  $i(A_0 - Q_0) = iE_0$ , and the NPV of this is  $E_0$ .
  - Suppose that the CB pays an extra dividend, for example  $q = E_0$  so that it has no equity remaining. Its per-period profits will then become zero for all future. The NPV of the dividend and future profits is again  $E_0$ .
  - The NPV of future dividends will thus fall by the same amount as the dividend if the cb sticks to its dividends policy
  - The treasury's (NPV) budget will therefore not be affected
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# Example

- But suppose instead that **the CB continues paying dividends**  $iE_0$  in each period in spite of not making profits. The NPV of all dividends are then  $2E_0$ .
- Equity develops according to  $\dot{E}(t) = iE(t) - iE_0$  and  $E(0) = 0$ , which is solved by  $E(t) = E_0 - E_0 e^{it}$
- This implies that  $\lim_{t \rightarrow \infty} E(t) = -\infty$  and  $\lim_{t \rightarrow \infty} E(t) e^{-it} = -E_0$
- So the CB cannot restore its equity. It will remain "insolvent" forever, also in present-value terms. So it will violate the no-Ponzi condition. But that need not be a problem, at least not in theory...

# Example

- Equation (\*) is helpful to see that this strategy could be effective
- We assume that the cb holds assets constant
- The fall in equity will then correspond to an identical increase in reserves. Reserves will therefore grow at rate  $i$  in the limit.
- Use this in (\*) to see that  $\lim_{t \rightarrow \infty} Q(t) e^{-it} > 0$

# Sweden

- The Riksbank's dividends to the "treasury" are decided by parliament after recommendation from the general council (*not* the executive board)
  - Dividends normally set according to a predetermined rule (80% of profits)
  - If the Riksbank makes losses, e.g. as a consequence of our QE, dividends will be lower in the future
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# Rethinking Central Banking

# Tools and objectives

- The level of the inflation target
  - Other target?
    - Price-level target
    - Nominal GDP
  - Forward guidance and QE also in normal times?
  - Financial stability as an objective?
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# Communication: Why?



Never explain, never excuse

(Montagu Norman, chef för Bank of England 1920-1944)



Since becoming a central banker, I have learnt to mumble with great incoherence. If I seem unduly clear, you must have misunderstood what I said.

(Alan Greenspan, Fed-chef 1987-2006)

# Communication: Why important?

- Clarify monetary policy framework
  - How policy-makers behave and think
  - The reaction function
- Mitigate time-inconsistency problems
  - Consistency of forecasts, policy plans and policy measures can be scrutinized
- Accountability
  - To maintain operational independence



More effective  
transmission  
mechanism

# Communication

- Minutes and transcripts
  - How much should be published?
  - When?
  - Riksbank: Minutes (very close to transcripts) published after two weeks – this is an unusual approach
- How to communicate outside minutes and transcripts
  - For an individual member of a policy committee



# Monetary policy and financial stability

## ■ Macprudential policies

- New frameworks
- New institutions
- ...

SSM  
ESRB  
FSB  
Finansiella stabilitetsrådet

## ■ Microprudential policies

- New regulations

Basel III  
CRR/CRD IV  
Volcker rules  
*Ring fencing: Vickers report, Liikanen proposal*  
Leverage ratios  
LCR NSFR  
GLAC TLAC

# Monetary policy and financial stability: Three views (Smets, 2013)

	MODIFIED JACKSON HOLE CONSENSUS	LEANING AGAINST THE WIND VINDICATED	FINANCIAL STABILITY IS PRICE STABILITY
Monetary policy	<p>Framework largely unchanged</p> <p>Limited effects on credit and risk taking</p> <p>Blunt instrument to deal with imbalances</p>	<p>Financial stability as secondary objective: lengthening of horizon</p> <p>Affects risk-taking</p> <p>“Gets in all of the cracks”</p>	<p>Twin objectives on equal footing</p> <p>Unblocks balance sheet impairments; avoids financial imbalances in upturns</p>
Macro prudential	<p>Granular and effective</p>	<p>Cannot fully address financial cycle; arbitrage</p>	<p>Indistinguishable from monetary policy</p>
Interaction	<p>Limited interaction and easy separation of objectives, instruments, ...</p>	<p>Financial fragility affects monetary transmission are price stability</p>	<p>Financial stability and price stability are intimately interlinked</p>
Issues	<p>Coordination?</p> <p>Lender of last resort?</p>	<p>Coordination?</p> <p>Overburden money policy?</p>	<p>Time inconsistency problems?</p>
Models	<p>Svensson; Collard, Dellas, Diba and Loisel (2012)</p>	<p>Borio; Woodford (2012)</p>	<p>Brunnermeier and Sannikov (2012)</p>