Discussion of Berentsen/Monnet, "Channel Systems"

James Bullard
Federal Reserve Bank of St. Louis

28 March 2008
Penn-FRB Philadelphia Conference

---

1Any views expressed are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of St. Louis, the Federal Open Market Committee, or the Federal Reserve System.
Channel systems for conducting monetary policy

- “Increasingly popular.”
Channel systems for conducting monetary policy

- "Increasingly popular."
- Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.
Channel systems for conducting monetary policy

- “Increasingly popular.”
- Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.
- Not well understood, theoretically speaking.
Channel systems for conducting monetary policy

- “Increasingly popular.”
- Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.
- Not well understood, theoretically speaking.
  - That is, we do not have arrangements that look like channel systems in our models.
Channel systems for conducting monetary policy

- “Increasingly popular.”
- Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.
- Not well understood, theoretically speaking.
  - That is, we do not have arrangements that look like channel systems in our models.
- This paper:
"Increasingly popular."

Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.

Not well understood, theoretically speaking.

That is, we do not have arrangements that look like channel systems in our models.

This paper:

Provide some theory.
Channel systems for conducting monetary policy

- “Increasingly popular.”
- Examples: U.K., Canada, N.Z., ECB, Australia, even the U.S.
- Not well understood, theoretically speaking.
  - That is, we do not have arrangements that look like channel systems in our models.
- This paper:
  - Provide some theory.
  - Try to characterize optimal policy in this setting.
Standing lending facility: supply money overnight at a given lending rate against collateral.
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
3. Interest rate corridor: Difference between the rates on the two facilities.
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
3. Interest rate corridor: Difference between the rates on the two facilities.

1. a.k.a. “spread”
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
3. Interest rate corridor: Difference between the rates on the two facilities.
   1. a.k.a. “spread”
4. Monetary policy:
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
3. Interest rate corridor: Difference between the rates on the two facilities.  
   1. a.k.a. “spread”
4. Monetary policy:  
   1. Change the corridor.
Nature of a channel system

1. Standing lending facility: supply money overnight at a given lending rate against collateral.
2. Standing deposit facility: intermediaries can make overnight deposits to earn a deposit rate.
3. Interest rate corridor: Difference between the rates on the two facilities.
   - a.k.a. “spread”
4. Monetary policy:
   - Change the corridor.
   - No open market operations.
Stylized facts

- Positive corridors (lending rate less deposit rate).
Stylized facts

- Positive corridors (lending rate less deposit rate).
- Typical reaction to changing conditions is to change the entire corridor, that is, changing both the lending and deposit rates at the same time.
Stylized facts

- Positive corridors (lending rate less deposit rate).
- Typical reaction to changing conditions is to change the entire corridor, that is, changing both the lending and deposit rates at the same time.
  - But you could think about changing the width of the corridor.
Stylized facts

- Positive corridors (lending rate less deposit rate).
- Typical reaction to changing conditions is to change the entire corridor, that is, changing both the lending and deposit rates at the same time.
  - But you could think about changing the width of the corridor.
- Money market rates tend to be in the middle of the corridor.
Theory literature has, generally speaking, resisted the trend toward describing monetary policy in terms of short-term, nominal interest rate adjustment.
Theory literature has, generally speaking, resisted the trend toward describing monetary policy in terms of short-term, nominal interest rate adjustment. Instead, the focus has been on alternative paths for the money supply.
Relation to interest rate rules

- Theory literature has, generally speaking, resisted the trend toward describing monetary policy in terms of short-term, nominal interest rate adjustment.
  - Instead, the focus has been on alternative paths for the money supply.
  - This makes it difficult to map the policies advocated in the literature into actual central bank practice.
Theory literature has, generally speaking, resisted the trend toward describing monetary policy in terms of short-term, nominal interest rate adjustment.

Instead, the focus has been on alternative paths for the money supply.

This makes it difficult to map the policies advocated in the literature into actual central bank practice.

Vague idea: Somehow this must be two sides of the same coin?
Relation to interest rate rules

- Theory literature has, generally speaking, resisted the trend toward describing monetary policy in terms of short-term, nominal interest rate adjustment.
  - Instead, the focus has been on alternative paths for the money supply.
  - This makes it difficult to map the policies advocated in the literature into actual central bank practice.
- Vague idea: Somehow this must be two sides of the same coin?
  - ... but it does not seem to be true?
More on the relation to interest rate rules

- This paper does focus on nominal interest rate adjustment.
More on the relation to interest rate rules

- This paper does focus on nominal interest rate adjustment.
- This focus is a valuable contribution all by itself.
More on the relation to interest rate rules

- This paper does focus on nominal interest rate adjustment.
- This focus is a valuable contribution all by itself.
  - It gives us a template for pursuing research ideas in this area.
More on the relation to interest rate rules

- This paper does focus on nominal interest rate adjustment.
- This focus is a valuable contribution all by itself.
  - It gives us a template for pursuing research ideas in this area.
- In the minds of many, interest rate rules are tied up with the disagreeable sticky price assumption.
More on the relation to interest rate rules

- This paper does focus on nominal interest rate adjustment.
- This focus is a valuable contribution all by itself.
  - It gives us a template for pursuing research ideas in this area.
- In the minds of many, interest rate rules are tied up with the disagreeable sticky price assumption.
- But obviously, interest rate rules do not have to be studied in tandem with that assumption.
Features of the environment

- Households face liquidity shocks.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.

Money is essential.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.

- Shocks can be partially insured in a secured money market.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.

- Shocks can be partially insured in a secured money market.

- Additional insurance is provided by the central bank with its borrowing and lending facilities.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.

- Shocks can be partially insured in a secured money market.
- Additional insurance is provided by the central bank with its borrowing and lending facilities.
  - No intermediation. Households have direct access to the facilities and the money market.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.

- Shocks can be partially insured in a secured money market.

- Additional insurance is provided by the central bank with its borrowing and lending facilities.
  - No intermediation. Households have direct access to the facilities and the money market.

- There is a cost of pledging collateral.
Features of the environment

- Households face liquidity shocks.
  - A positive shock for one household is a negative shock for another household.
  - It would be interesting to add aggregate shocks, perhaps a general decline in the value of collateral.

- Shocks can be partially insured in a secured money market.

- Additional insurance is provided by the central bank with its borrowing and lending facilities.
  - No intermediation. Households have direct access to the facilities and the money market.

- There is a cost of pledging collateral.

- Money is essential.
Details of the environment

- Three subperiods
Details of the environment

- Three subperiods
  - Settlement market.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
  - Goods market where shocks are realized and the perishable good is produced and consumed.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
  - Goods market where shocks are realized and the perishable good is produced and consumed.
- Sort of an “expected liquidity preference shock” in the signal idea.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
  - Goods market where shocks are realized and the perishable good is produced and consumed.
- Sort of an “expected liquidity preference shock” in the signal idea.
  - Interesting.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
  - Goods market where shocks are realized and the perishable good is produced and consumed.

- Sort of an “expected liquidity preference shock” in the signal idea.
  - Interesting.
  - The signal may contain all information or no information, but imperfect in general.
Details of the environment

- Three subperiods
  - Settlement market.
  - Money market where the signal of the liquidity shock occurs.
  - Goods market where shocks are realized and the perishable good is produced and consumed.

- Sort of an “expected liquidity preference shock” in the signal idea.
  - Interesting.
  - The signal may contain all information or no information, but imperfect in general.
  - This creates a role for both the money market and the standing facility of the central bank.
More details of the environment

- The threat of default means that loans require collateral.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
  - A stretch.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
  - A stretch.
- Monetary policy is a target rate plus a spread.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
  - A stretch.
- Monetary policy is a target rate plus a spread.
  - The target rate of common parlance is here the average of the rates on the two facilities.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
  - A stretch.
- Monetary policy is a target rate plus a spread.
  - The target rate of common parlance is here the average of the rates on the two facilities.
  - The spread could be changed without changing the target rate, altering allocations.
More details of the environment

- The threat of default means that loans require collateral.
- General, sub-period one goods can be stored and used as collateral.
  - Also interesting.
- Only the central bank can verify the existence of collateral.
  - A stretch.
- Monetary policy is a target rate plus a spread.
  - The target rate of common parlance is here the average of the rates on the two facilities.
  - The spread could be changed without changing the target rate, altering allocations.
  - A key point of this paper.
Analysis with uninformative signals

First analyze the case where the signal contains no information.
Analysis with uninformative signals

- First analyze the case where the signal contains no information.
- This means no trade in the money market.
Analysis with uninformative signals

- First analyze the case where the signal contains no information.
- This means no trade in the money market.
- Agents only hold collateral if its liquidity value is positive.
Analysis with uninformative signals

- First analyze the case where the signal contains no information.
- This means no trade in the money market.
- Agents only hold collateral if its liquidity value is positive.
- Proposition 2. Never optimal to set the width of the corridor to zero.
Analysis with uninformative signals

- First analyze the case where the signal contains no information.
- This means no trade in the money market.
- Agents only hold collateral if its liquidity value is positive.
- Proposition 2. Never optimal to set the width of the corridor to zero.
  - The use of collateral is costly, but increases consumption, so equate cost to benefit at the margin.
Analysis with informative signals.

- $\epsilon$ is small.
Analysis with informative signals.

- $\epsilon$ is small.
- Proposition 5: For $\epsilon < \epsilon_1$ symmetric stationary equilibrium exists.
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
- Optimal spread is decreasing in the rate of return to the collateral.
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
- Optimal spread is decreasing in the rate of return to the collateral.
- Policy can be implemented through corridor shifts or through a change in the spread.
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
- Optimal spread is decreasing in the rate of return to the collateral.
- Policy can be implemented through corridor shifts or through a change in the spread.
  - *Novel.*
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
- Optimal spread is decreasing in the rate of return to the collateral.
- Policy can be implemented through corridor shifts or through a change in the spread.
  - Novel.
  - Do we observe this, is it quantitatively important?
Key results

- Positive spread optimal if the opportunity cost of holding collateral is positive.
- Optimal spread is decreasing in the rate of return to the collateral.
- Policy can be implemented through corridor shifts or through a change in the spread.
  - Novel.
  - Do we observe this, is it quantitatively important?
  - A view of policymakers unwittingly changing policy, since most (nearly all) discussion is in terms of the target rate.
“Interest rate rule” characterizations of optimal monetary policy are incomplete, because policy can be changed by changing the width of the corridor but without changing the target rate at all.
Interpretations

1. "Interest rate rule" characterizations of optimal monetary policy are incomplete, because policy can be changed by changing the width of the corridor but without changing the target rate at all.

2. One needs instead an "interest rate corridor rule."
Interpretations

1. “Interest rate rule” characterizations of optimal monetary policy are incomplete, because policy can be changed by changing the width of the corridor but without changing the target rate at all.

2. One needs instead an "interest rate corridor rule."

3. Details of implementation of an interest rate rule matter for the characterization of optimal monetary policy.