

# Understanding Central Banking in Light of the Credit Turmoil

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Implementing Monetary Policy Post-Crisis: What Have We  
Learned? What Do We Need to Know?

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# Outline

## 1) Deconstructing Central Bank Policies:

- Monetary Policy
- Credit Policy
- Interest on Reserves Policy

## 2) Fiscal Aspects of Central Bank Policies: Mechanics and Effectiveness

## 3) Interplay Between Central Bank Policies and Money Markets

# Deconstructing Central Bank Policies

- **Monetary Policy**: open market operations expand or contract CB “monetary liabilities” by buying or selling Treasury securities
- Monetary policy shows up only as CB liabilities upon consolidation of the CB and Treasury balance sheets
- Prior to the credit turmoil, the Fed satisfied virtually all asset acquisition needs in support of monetary policy by purchasing Treasuries—to avoid carrying credit risk on its balance sheet
- Asset acquisition policy known as “Treasuries only”

# Deconstructing Central Bank Policies (2)

- **Credit Policy**: shifts the composition of the central bank balance sheet (holding CB liabilities fixed) between Treasuries and credit to the private sector or other government entities in the form of loans or security purchases
- **Combination monetary and credit policy**: finances credit policy with CB liabilities
- Late 2008 to April 2009, \$1 trillion of credit extended by the Fed financed with an expansion of bank reserves

# Deconstructing Central Bank Policies (3)

- **Interest on Reserves Policy**: changes interest paid on bank reserves holding fixed monetary policy and credit policy
- Frees interest rate policy from monetary policy
- Enables monetary policy to finance credit policy independently of interest rate policy

# Fiscal Aspects of Central Bank Policies

- **Pure Monetary Policy:**

- Manages interbank interest rate by influencing the spread between interbank rate and interest paid on reserves---by maintaining a “scarcity” of reserves, a positive marginal monetary services yield, and a positive interest opportunity-cost spread to holding reserves
- Reserves scarcity imposes a *tax* reflected in a below market interest on reserves
- CB collects tax on reserves (and currency) as interest on Treasuries
- “Treasuries only” transfers all tax revenue net of interest on reserves and expenses to the Treasury

# Fiscal Aspects of Central Bank Policies (2)

- **Pure Credit Policy:**

- Pure credit policy executed by CB is really debt-financed fiscal policy
- Why? Interest on Treasuries held by CB is returned to the Treasury—  
sale of Treasuries by CB is as if Treasury issued new debt in the  
market
- Pure credit policy interposes government creditworthiness between  
borrowers and lenders
- Puts taxpayer funds at risk; losses reduce CB remittances to Treasury

# Fiscal Aspects of Central Bank Policies (3)

- **Pure Credit Policy (2):**

----Even if CB takes good collateral and assumes negligible credit risk itself, exposes taxpayers to losses if borrower fails subsequently

----A CB whose loans finance the withdrawal of uninsured claimants of an institution that fails subsequently strips that institution of collateral that would be available otherwise to cover the cost of more senior creditors, insured deposits, or government guarantees

----In effect, credit policy is a “Novation” by which the CB inserts the Treasury (taxpayers) between a private lender and borrower, takes out the lender, and transfers the risk of default to more senior creditors or the Treasury (taxpayers)

# Fiscal Aspects of Central Bank Policies (4)

- **Interest on Reserves Policy:**

- Utilizes fiscal instrument—the payment of interest on reserves--to eliminate the *tax* on reserves
- Improves efficiency of payments system
- Could be run with “Treasuries only”
- Relatively small expansion of reserves sufficient to push interbank rate nearly to the interest on reserves floor
- Beyond that, monetary policy free to finance credit policy with little effect on interbank rate

# Interplay Between Central Bank Policies and Money Markets

- Policy rate arbitrage to money market rates
- Monetary policy and money markets
- Credit policy and money markets
- Interest on reserves and money markets

# Policy Rate Arbitrage to Money Market Rates

- Given excess reserves at the margin, interest on reserves (IOR) puts floor on interest opportunity cost of loanable funds for depositories
- US banking system is net borrower in the money market [Why? Efficient bank lending, monopolistic competition, QE, regulation...]
- In equilibrium, banks take up the marginal MM lending (CDs, RPs, wholesale deposits) and use proceeds to earn interest on reserves
- MM rates fall below IOR by enough to cover arbitrage costs including shadow balance sheet cost of the supplementary leverage ratio
- Arbitrage keeps other MM rates aligned up to credit, liquidity, and intermediation cost differentials
- For instance, arbitrage keeps T-bill rates marginally below the interbank rate because interbank borrowing is unsecured, T-bills are safe, actively traded, and yield implicit collateral services

# Monetary Policy and Money Markets

- Since 2008 Fed monetary policy has satiated the demand for reserves, eliminated the scarcity of reserves, and driven the implicit marginal monetary services yield on reserves to zero
- In so doing, monetary policy has eliminated the *tax* on reserves
- Large depository holdings of reserves improve depository liquidity
- Abundant reserves help substitute for private credit flows among banks in the provision of payment services and for Fed daylight credit extended to banks to facilitate the provision of payments
- Elimination of the reserve tax improves depository efficiency and competitiveness with money markets

# Monetary Policy and Money Markets (2)

- Reserve market could be satiated and reserve tax eliminated with only a (few) hundred billion dollars of reserves (instead of \$3 trillion)
- CB could hedge the payment of interest on reserves with T-bills
- More generally, expansionary monetary policy i) uses up depository balance sheet capacity, ii) absorbs Treasury collateral otherwise available to money markets, and iii) raises depository arbitrage costs to money market rates under supplementary leverage ratio constraint
- Given IOR, expansionary monetary policy i) lowers MM rates and ii) raises the cost of funding illiquid securities via money markets

# Credit Policy and Money Markets

- Expansive Fed credit policy essential to preserving the integrity of the payments system, the banking system, and the MMs in credit turmoil of 2008-09
- CB credit policy novation worked by CB selling Treasuries to entities no-longer willing to lend in MMs (including in the interbank market) and CB lending the proceeds to depositories and MM entities no-longer able to borrow at reasonable rates, if at all, in MMs, in part so depositories could refinance their MM clients
- CB credit novation power must be managed carefully: 1) independent CB has the discretion to shift risks to senior creditors, Treasury, and taxpayers without due process, 2) independent CB inclined to implement credit novation policy whenever monetary collapse seems imminent otherwise, and 3) expecting this--depositors, MM investors, and monetary service providers encouraged to expand leveraged depository and MM finance of illiquid assets beyond what would otherwise be thought prudent
- Depository and MM entities with explicit or implicit expectation of CB credit novation policy must be supervised, regulated, and bonded to restrain fragile leveraged depository and MM finance

# Interest on Reserves and Money Markets

- In the United States, large lenders in federal funds market [GSEs and FHLBs] are not eligible to earn interest on balances they hold at the Fed
- So the federal funds rate falls below interest on reserves (IOR) to the point where depositories take up the fed funds lending and use the proceeds to earn IOR
- Factors that limit the power of depository arbitrage to bring the fed funds rate up to IOR: 1) leverage and liquidity requirements, 2) counterparty line limits on unsecured loans to a single bank, 3) adverse perceptions associated with significant overnight borrowing, 4) internal oversight costs, 5) lack of strong competition among banks with access to IOR, and 6) the deposit insurance fee related to the size of the entire balance sheet
- $FF < IOR$  needlessly complicates interest rate policy
- Fed should ask Congress to secure the IOR floor for the fed funds rate by 1) excluding all but depository institutions from lending in the federal funds market or 2) allowing all institutions eligible to lend in the federal funds market to earn interest at the Fed

# Interest on Reserves and Money Markets (2)

- Fed prepared to employ overnight reverse repurchase agreements (ON RRP) to help put a floor under the fed funds rate at or near IOR
- With ON RRP the Fed created a risk-free money market instrument on its balance sheet available to a broad array of MM counterparties, including the GSEs
- By setting the ON RRP rate at IOR with “full allotment,” the Fed could put a floor under the funds rate and help raise other overnight MM interest rates
- In effect, ON RRP at IOR would undercut depository arbitrage by taking up MM loanable funds at a tighter spread than is profitable for depositories
- In so doing, ON RRP at IOR would subsidize arbitrage costs otherwise absorbed by MM rates falling below IOR

# Interest on Reserves and Money Markets (3)

- 1) Should the MM be made to absorb the cost of depository arbitrage in commensurably lower MM rates relative to IOR?
- 2) For instance, the supplemental regulatory leverage ratio (SLR) for US depositories has the potential to raise arbitrage costs between depositories and the MM, especially when the SLR is fully phased in. If the SLR is a socially beneficial means of maintaining a safe and sound banking system, then shouldn't the MM absorb the SLR arbitrage cost in lower MM interest relative to depository interest i) as the price of lighter MM than depository supervision and regulation, ii) as the beneficiary of financial stability, and iii) as a deterrent to excessive MM intermediation?
- 3) Moreover, if the SLR constraint were to bind more tightly at times over the business cycle or with the ebb and flow of financial conditions, then arbitrage costs could fluctuate, too, as would the IOR-MM interest rate spread. For instance, by raising arbitrage costs, a tighter SLR constraint would penalize more severely funds held in the MM relative to funds held in depositories. Could flexibility in the IOR-MM interest spread serve a useful allocative role by penalizing more severely the MM during periods of financial restraint on depository leverage?
- 4) But could complicate the implementation of interest rate policy

# References

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