Actions of Fed, Treasury and GSEs
Some Welfare Consequences

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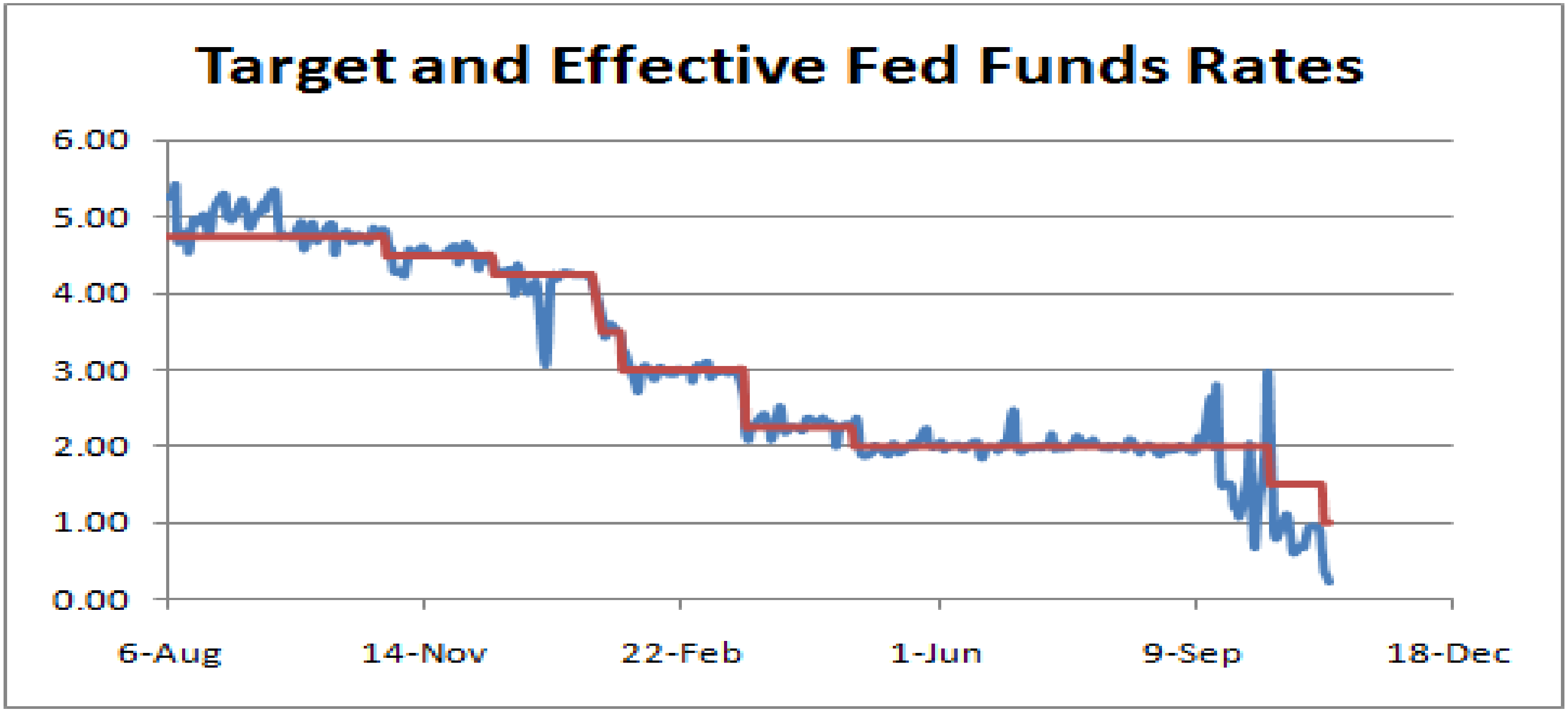
Actions of Fed



1. Target rate slashed from 5.25% to 1% from August 2007 to November 2008.
2. Discount rate penalty slashed from 100 basis points to 25 basis points during Aug '07- Mar '08.
3. Excess Reserves are being remunerated at the rate of Target rate minus 75 basis points since October 6, 2008. Required reserves remunerated at T – 10 basis points.
4. Extended discount window access given to investment banks and GSEs.

Considerably cheaper and wider access to overnight credit against a broad set of collateral.

Actions of Fed

Facility	Purpose	Date
1. Primary Credit Facility (Discount Window).	Provide liquidity on an overnight basis against a broad menu of collateral including mortgage-related collateral.	In place before the crisis. Menu of collateral expanded.
2. Term Auction Facility (TAF).	Under the Term Auction Facility (TAF), the Federal Reserve will auction term funds to depository institutions. All depository institutions that are eligible to borrow under the primary credit program will be eligible to participate in TAF auctions. All advances must be fully collateralized.	December 12, 2007. Term funding to mitigate the failure of ABCP market
3. Primary Dealer Credit Facility (PDCF).	The Primary Dealer Credit Facility (PDCF) is an overnight loan facility that will provide funding to primary dealers in exchange for a specified range of eligible collateral and is intended to foster the functioning of financial markets more generally.	March 16, 2008. Wider access to O/N funding for dealers.

Actions of Fed

Facility	Purpose	Date
4. Term securities lending facility.	Weekly TSLF auctions offer Treasury securities held by the System Open Market Account (SOMA) for loan over a one-month term against program-eligible general collateral.	March 11, 2008. Fed acted to expanded Treasury collateral
5. CP funding facility (CPFF).	Under the CPFF, the Federal Reserve Bank of New York will finance the purchase of highly-rated unsecured and asset-backed commercial paper from eligible issuers via eligible primary dealers.	October 7, 2008. Fed acts as CP investor.
6. Money Market Investor Funding Facility (MMIFF) .	Under the MMIFF, the New York Fed will provide senior secured funding to a series of special purpose vehicles to facilitate an industry-supported private-sector initiative to finance the purchase of eligible assets from eligible investors.	October 21, 2008. Fed acts to shore up money markets.

Actions of Fed & Their Implications for Fed's Balance Sheet

	In millions of dollars				
	Week ending		Week ending		PERCENT
Federal Reserve Banks	12-Nov-08		2-Aug-07		CHANGE
Reserve Bank credit	2,198,204		857,603		156%
Securities held outright	489,601		790,758		-38%
U.S. Treasury (1)	476,446		790,758		-40%
Bills (2)	18,423		277,019		-93%
Notes and bonds, nominal (2)	410,491		474,303		-13%
Notes and bonds, inflation-indexed (2)	41,071		34,828		18%
Inflation compensation (3)	6,460		4,609		40%
Federal agency (2)	13,155		0		
Repurchase agreements (4)	80,000		25,786		210%
Term auction credit	415,302		N/A		
Other loans	322,932		251		
Primary credit	95,380		2		
Secondary credit	89		0		
Seasonal credit	10		249		
Primary dealer and other broker-dealer credit (5)	64,933		N/A		
Asset-backed commercial paper money market					
mutual fund liquidity facility	80,244		N/A		
Other credit extensions	82,275		N/A		
Net portfolio holdings of Commercial Paper					
Funding Facility LLC (6)	249,910		N/A		
TOTAL CREDIT EXTENSION	**1,391,075**				
Net portfolio holdings of Maiden Lane LLC (7)	26,876				
Float	-1,457		-857		
Other Federal Reserve assets	615,041		41,665		
Gold stock	11,041		11,041		
Special drawing rights certificate account	2,200		2,200		
Treasury currency outstanding (8)	38,759		38,574		
Total factors supplying reserve funds	2,250,204		909,418		

Actions of Fed & Their Implications for Fed's Balance Sheet

	Week ended	Week ending
	12-Nov-08	2-Aug-07
Currency in circulation (8)	864,197	812,415
Reverse repurchase agreements (9)	99,686	33,335
Treasury cash holdings	262	292
Deposits with F.R. Banks, other than reserve balances	648,352	11,719
Treasury Supplemental		
Financing		
Total factors, other than reserve balances,		
absorbing reserve funds	1,658,060	897,240
Reserve balances with Federal Reserve Banks	592,144	12,178
	2,250,204	909,418

Fed's balance sheet now involves a) valuation of complex collateral, b) determination of "haircuts" for "hard to value" collateral, and c) more careful monitoring of counterparty default risk.

SOME WELFARE CONSEQUENCES OF FED'S ACTIONS

CREDIT EXTENSION (QUANTITY)	RATE CHARGED	POTENTIAL CONSEQUENCES
1.TAF - 415 Billion.	Small spread over OIS rate.	Term funding against dodgy collateral. November 10th auction of $150 billion for 84-days loan had a stop-out rate of 60 basis points.
2. Primary credit facility - 100 Billion.	1.25%	Dodgy collateral can be used for O/N financing at 1.25%.
3. Other loans (to primary dealers, etc.) – 400 billion.	1.25% plus some additional fees.	Dealer's cost of financing ***far exceeds*** this rate in external capital markets.
4. CP and Money Market Facility – 325 billion.	Inability to place CP in external markets at competitive rates.	

Very little incentive for financial institutions to get rid of their toxic collateral.

BAIL OUTS, BRIDGE LOANS & LEHMAN BROTHERS BANKRUPTCY

UNDERLYING FIRM	ACTION TAKEN	WINNERS AND LOSERS
1. BEAR-STEARNS	Engineered a take-over by JP Morgan. Fed guaranteed a large toxic portfolio.	***All creditors to Bear-Stearns won big***. Equity-holders lost (but probably did better relative to Chapter 11 outcome). Fed's portfolio of Bear collateral has taken a hit.
2. LEHMAN BROTHERS	Allowed to go down into Chapter 11.	Money market collapse after funds "broke the buck". Lehman CP default was a major trigger. Forced the introduction of CPFF and MMIFF by the Fed. ***Creditors to Lehman lost big time.***
3. AIG	Bridge loans at a penalty rate. Another workout in November.	CDS-protection buyers on mortgage-related securities (Goldman Sachs, and other banks) are winners.

Actions with respect to Bear and AIG represented primarily wealth transfers

TREASURY'S COMMITMENTS & WELFARE IMPLICATIONS

UNDERLYING PROGRAM/FIRM	ACTION TAKEN	POTENTIAL COST TO TREASURY
1. Fannie & Freddie:	Conservatorship	$200 TO $250 BILLION.
2. TARP	NONE – MONEY DIVERTED TO RECAPITALIZATION OF BANKS WITH NO CREDIBLE PRE-CONDITIONS.	$700 BILLION. PRIMARILY WEALTH TRANSFER TO CREDITORS OF BANKS.
3. IMPLICIT & EXPLICIT DRAWING RIGHTS TO FED.	DEDICATED TREASURY BORROWING. SUPPLEMENTAL TREASURY FINANCING.	IN EXCESS OF $200 BILLION.
4. POTENTIAL NEED TO ADD TO FDIC CAPITAL?	***OVERALL, INCREMENTAL TREASURY BORROWING MAY EXCEED $1 TRILLION. THIS IS A 25% INCREASE IN THE CURRENT SIZE OF TREASURY MARKETS.***	

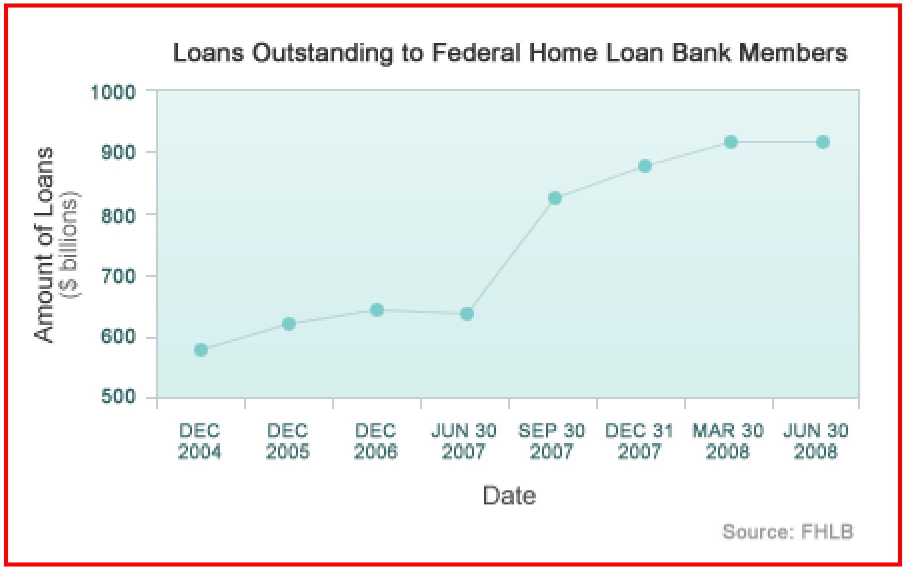
MORE RECENT DEVELOPMENTS

UNDERLYING PROGRAM/FIRM	ACTION TAKEN	FEES & CONSEQUENCES
5. CITIBANK – NOVEMBER 23, 2008.	Guarantee of up to $306 billion assets with CITI to take the first $29 billion of losses. Losses above that level will be shared 90% by the US and 10% by CITI.	Fee for the guarantee: $7 billion of preferred stock at 8% dividends. $4 billion for US and $3 billion of FDIC. Common stock dividends sharply restricted.
6. FED'S ACTION TO BUY $500 BILLION OF MBS FROM FANNIE AND FREDDIE.	TO MAKE MORE MONEY AVAILABLE TO BANKS TO ENGAGE IN MORTGAGE LENDING.	STIMULATING LENDING AND GROWTH.
7. NON-RECOURSE LOAN FACILITY TO BUY ABS. – NOVEMBER 25, 2008.	TO MAKE MONEY AVAILABLE FOR CONSUMER LOANS – CREDIT CARDS, AUTOS, STUDENT LOANS, ETC.	FLOW OF PRIVATE POOL OF CAPITAL TO PROMOTE GROWTH TRADED OFF WITH DEFAULT LOSSES.

Welfare Costs of Treasury's Commitments

Fannie & Freddie:	$250 billion.
Boost Fed's Balance Sheet:	$200 billion.
Bailout funds:	$700 billion.
Other guarantees & Commitments:	$250 billion (rough guess).
Stimulus package:	$800 billion
TOTAL:	**$2.2 trillion.**

GSE's ACTIONS TO EASE ACCESS TO CREDIT FOR FINANCIAL INSTITUTIONS



FHLB expanded its balance sheet from about $600 billion in June 2007 to about $900 billion in June 2008.

Primary beneficiaries are member banks such as countrywide, WAMU, Citi, etc.

Did actions of FHLB prolong the life of potentially insolvent institutions? If so, the "below-market" funding of such institutions represents a welfare loss for Tax payers.

WELFARE IMPLICATIONS OF ACTIONS OF FED & TREASURY

1. Many programs have been introduced (almost on a weekly or monthly basis) to combat the credit crisis. These actions have introduced a great deal of uncertainty in the markets about the response function of Fed and Treasury. Such uncertainty may inhibit the flow of private capital.

2. Actions by the Fed has extended "below-market", deeply discounted credit for overnight and term borrowing by financial institutions against toxic collateral thereby reducing the incentives to sell them and deleverage.

3. Treasury must borrow somewhere in the neighborhood of $2 trillion to fulfill its commitments. This can lead to an escalating cost of borrowing for everyone, making credit scarce for the foreseeable future. It also bodes ill for future inflation, holding other factors fixed. In the long-run this may weaken dollar significantly.

4. By not demanding a debt for equity swap (at least for junior and subordinated debt) before a bailout or recapitalization, some suppliers of risk-capital are being rewarded at the expense of other suppliers by the Treasury.