



Yield Curve Targeting: Past and Present

BMCG 7 February 2017 meeting

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Yield Curve Targeting

Agenda

1/ Experience from Federal Reserve's interest rate pegs and Fed-Treasury Accord of 1951

2/ Bank of Japan's 'Yield Curve Control'

3/ Policy conclusions

The Fed's experiment with interest rate pegs and caps

Timeline of Events: Yield targeting

1932: Glass-Steagall Act of 1932 allowed Fed to count Treasuries among eligible securities to back 60% of Federal Reserve notes

Spring 1935: US Treasury officials concerned by rising bond yields following economic recovery and asks Fed to buy Treasury bonds to stabilize mkt; Fed buys first long-term gov't bonds

1936-1937: Fed undertakes three controversial increases in reserve requirements (August '36, March '37, May '37) to counter growth of excess reserves

April 1937: FOMC began a Treasury asset purchase program to curb rising yields out of concern for value of banks' bond holdings; long-term yields peaked at 2.75%

September 1938: Conference of Reserve banks to develop policy options for wartime; consensus to stabilize Treasury market to avoid repeat of European bond crisis during WWI

September 1939: Fed buys \$500mn Treasury bonds on secondary market following outbreak of war in Europe

March 1942: Following negotiations with US Treasury, Fed agrees to peg 3mo T-bill yields at 3/8 %, with implicit understanding (not official policy) that long rates would not be allowed to exceed 2.5%

1942-1945: With T-bills officially pegged at 0.375% and long-term rates 'unofficially' capped at 2.5%, investors rush into long-end, forcing Fed to defend its policy by selling long-dated Treasuries and having a very short maturity portfolio

Fig. 1: T-bills on Fed's balance sheet expanded sharply and its portfolio duration shortened substantially

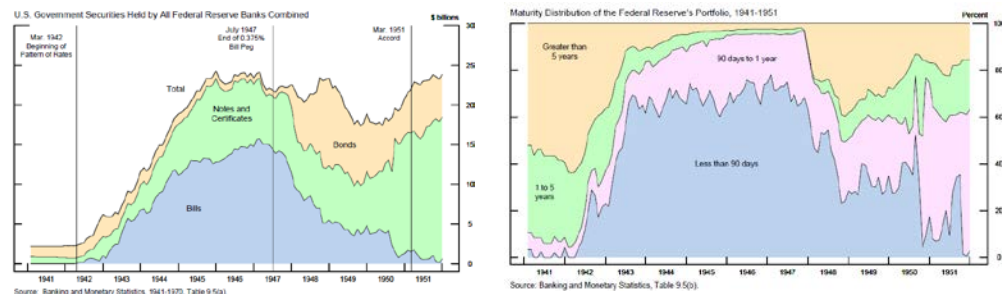
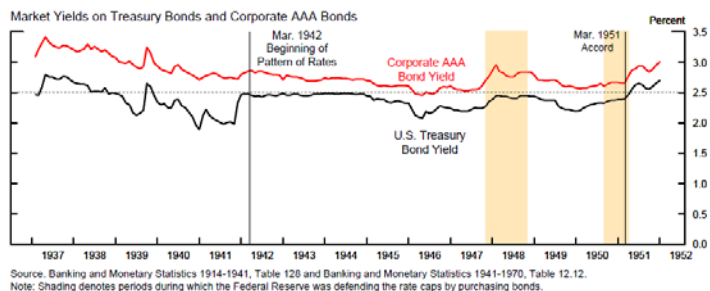
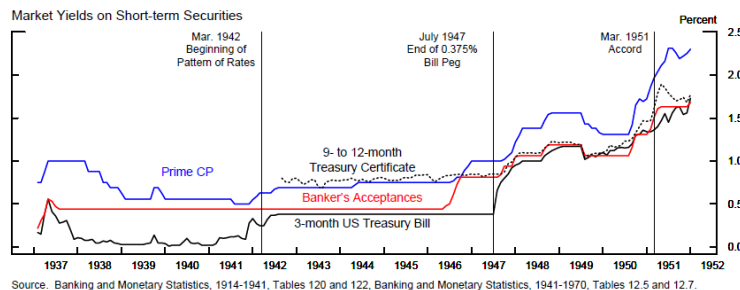


Fig. 2: T-bill target achieved and long-end 'cap' effective



The Fed-Treasury Accord of 1951

Timeline of Events: Inflation and Fed-Treasury Accord

July 1946: End of wartime price controls and European reconstruction lead to rising inflation

July 1947: Concern over inflation leads Fed to abandon 0.375% target for 3-mo T-bills; Fed continues to support 9- and 12-mo bills at 0.75% and long bonds at 2.5%

Nov-Dec 1948: Fed forced to intervene with \$2bn to limit long-end yields, which sold off from 2.24% to 2.39%

August 1948: With inflation rising and increasing Fed asset purchases, Treasury acceded to Fed's demands policy tightening; Fed raises 12-mo bill cap to 1.25%

June 1950: Outbreak of Korean War; Treasury yields rising and Fed forced to accelerate bond purchases

September 1950: Fed 'compelled' to buy most of US Treasury's autumn refunding at 1.25%

March 1951: Fed-Treasury Accord ended direct long-term yield targets at 2.5%

"The Treasury and the Federal Reserve System have reached full accord with respect to debt management and monetary policies to be pursued in furthering their common purpose to assure the successful financing of the Government's requirements and, at the same time, to minimize monetization of the public debt."

End 1951: Treasury long-term yields rise to 2.75%

Fig. 3: Fed faced an inflation problem

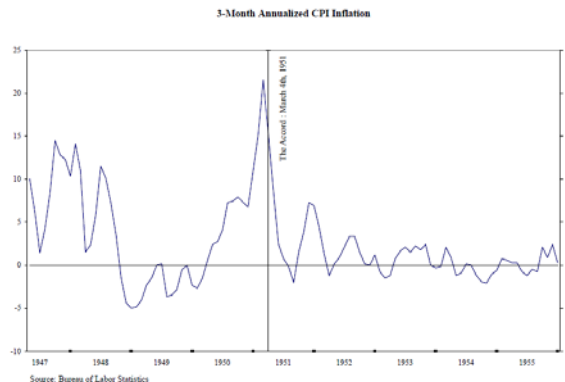
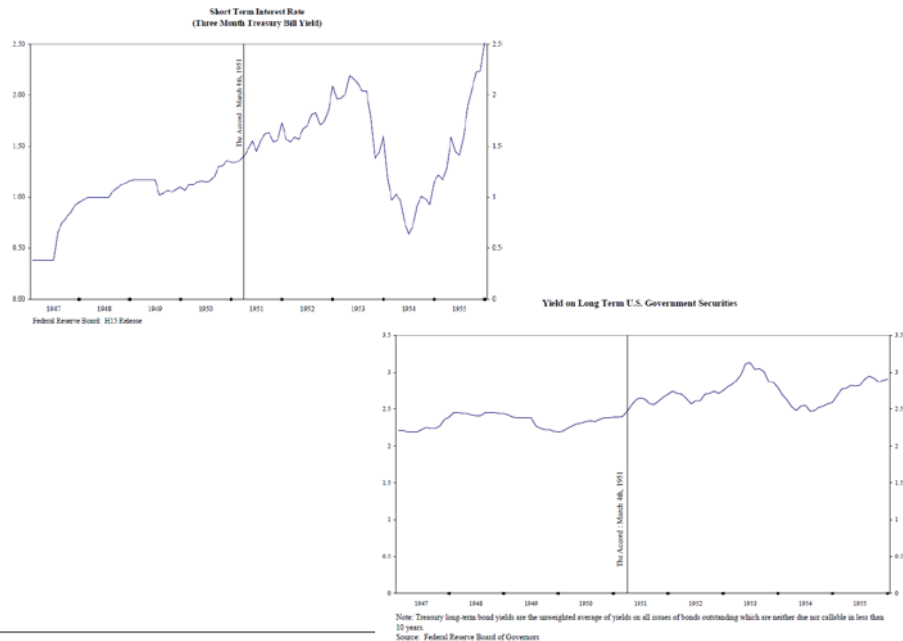


Fig. 4: Yields pre-and post Fed-Treasury Accord



Lessons Learned from Fed's yield curve control

1/ Policy clarity—Fed's foray into yield curve control stemmed from unclear policy objectives

- Financial stability concerns about bank solvency in face of rising bond yields
- Public debt management concerns of placing large amount of Treasuries during wartime
- Monetary policy concerns of excessive tightening of financial conditions

2/ Instrument choice and level—peg the front-end or the long end?

- FOMC set an explicit target for 3mo T-bills at 3/8 %
- There was no formal policy target for long-end rates, but Fed assumed that long-end rates couldn't be allowed to rise more than 200 bps over t-bills.

"There is no convincing explanation of the decision to settle on 2.5%. Britain had pegged consols at 3%, and U.S. officials argued that superior U.S. credit justified somewhat lower rates. Two and a half per cent was close to the rate previously set by the market. It was an even rate, not a "hat size" like 2 3/8% or 2 5/8%. One Treasury official later justified the rate as consistent with the yields required for solvency by life insurance companies." (Murphy, National Debt in War and Transition, 1950, chap. 8)

- Cap and floor? In 1948-49 recession, Fed sold Treasuries b/c never formally committed to preventing rates from falling, thus tightening financial conditions

3/ Central bank independence—

- Fed's operational independence was severely impaired during this episode
- Persistent tensions between US Treasury and Fed; Congressional Committee criticized US Treasury insistence on pegging interest rates

Annex

Bank of Japan's 'Yield Curve Control'

1/ A long BoJ policy evolution...

- Quantitative Easing (QE 1.0)—March 2001
- QE 2.0 with ETFs and JREITs—Oct 2010
- QE 3.0 with open-ended purchases and 2% price stability target—Jan 2013
- 'Quantitative and Qualitative Monetary Easing (QQE 1.0)'—April 2013
- QQE 2.0—October 2014
- QQE with Negative Interest Rate—January 2016
- QQE with Negative Interest Rate and Yield Curve Control—September 2016

2/ BoJ's Yield Curve Control framework

- -0.1% deposit rate
- 10yr JGB yield 'more or less at 0%'
- JGB purchases 'more or less in line with 80tn per year'

3/ Conceptual problems

- Price or quantity target? Can't do both
- Can BoJ credibly commit to 0% 10yr as ceiling? If so, must be willing to buy unlimited JGBs
- Implicit fiscal dominance

4/ Outcome—successful so far

- Not tested by market on floor/ceiling
- Able to satisfy both price and quantity target
- Maintained desired yield curve slope in 10yr+

Fig 5. BoJ buy ~3x net issuance of JGBs

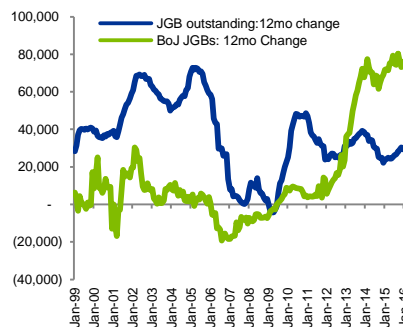


Fig 6. BoJ buys 97% of gross issuance of JGBs

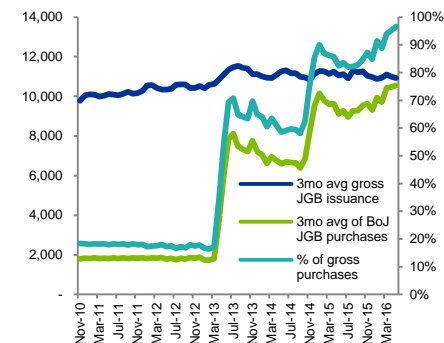
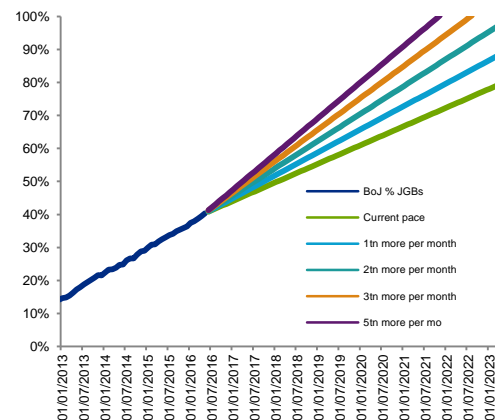


Fig 7. Is BoJ willing to own entire JGB market



BoJ's end game—Helicopter money operation?

➤ Pre Kuroda BoJ

Assets		Liabilities	
Gold	441	Banknotes	86,653
Cash	307	Current deposits	47,244
JGBs	113,677	Other deposits	397
CP	2,053	Gov't deposits	2,267
Corporate bonds	2,915	Repos	15,268
Equities	1,410	Others	584
ETFs	1,469	Provisions	3,237
REITs	111		
Funding for lending program	30,685		
Foreign currency assets	4,848	Equity	
Deposits with agents	2	Paid in capital	0.10
Others	446	Reserves	2,713
Total	158,363		158,363

➤ Today's BoJ

Assets		Liabilities	
Gold	441	Banknotes	95,925
Cash	197	Current deposits	304,908
JGBs	382,672	Other deposits	8,533
CP	1,901	Gov't deposits	21,112
Corporate bonds	3,156	Repos	23
Equities	1,296	Others	343
ETFs	8,591	Provisions	4,472
REITs	320		
Funding for lending program	32,615		
Foreign currency assets	6,489	Equity	
Deposits with agents	147	Paid in capital	0.10
Others	649	Reserves	3,159
Total	438,474		438,474

- Text book Helicopter Money involves BoJ 'extinguishing' its JGB holdings

	Japan Public debt today			Post 'Helicopter'		
	JPY bn	% total	% GDP	JPY bn	% total	% GDP
Central Gov't	1,029,509	85%	205%	646,837	78%	129%
JGBs	917,806	76%	182%	535,133	65%	106%
held by BoJ	382,672	32%	76%	-	0%	0%
Local govt	176,974	15%	35%	176,974	21%	35%
SS funds	4,608	0%	1%	4,608	1%	1%
Gen gov't debt	1,211,090	100%	241%	828,418	100%	165%

- Gov't debt sustainability restored via capital hole in BoJ balance sheet

Assets		Liabilities	
Gold	441	Banknotes	95,925
Cash	197	Current deposits	304,908
JGBs (burned)	-	Other deposits	8,533
CP	1,901	Gov't deposits	21,112
Corporate bonds	3,156	Repos	23
Equities	1,296	Others	343
ETFs	8,591	Provisions	4,472
REITs	320		
Funding for lending program	32,615	Equity	
Foreign currency assets	6,489	Paid in capital	0.10
Deposits with agents	147	Reserves	3,159
Others	649	Neg equity from J (382,672.39)	
Total	55,802		55,802

Yield curve targeting—how to make it work best?

1/ Clear policy framework

- Yield curve control is a form of price level target
- Cannot simultaneously target quantity of assets purchases

2/ Credibility of target

- Forward guidance needs to be consistent with yield target to be credible

3/ Fiscal-monetary cooperation

- As evidenced in US Fed-Treasury experience, important to have ex ante agreement on operational independence and policy objectives