

Does "Money" matter?

- do changes in the nominal supply of money have real consequences

$$\frac{\Delta RGDP}{RGDP} = e \frac{\Delta M_2}{M_2}$$

$e > 0?$

- do changes in real cash balances have real consequences?

$$\frac{\Delta RGDP}{RGDP} = e \left(\frac{\Delta M_2}{M_2} - \frac{\Delta P}{P} \right)$$

$e > 0?$

- recall

theory $\rightarrow Y^{eq} = \frac{b}{h[1-c(1-t)]+k \cdot b} \cdot \left(\frac{\bar{M}}{\bar{P}} \right)$

- is the multiplier zero
- is the multiplier positive

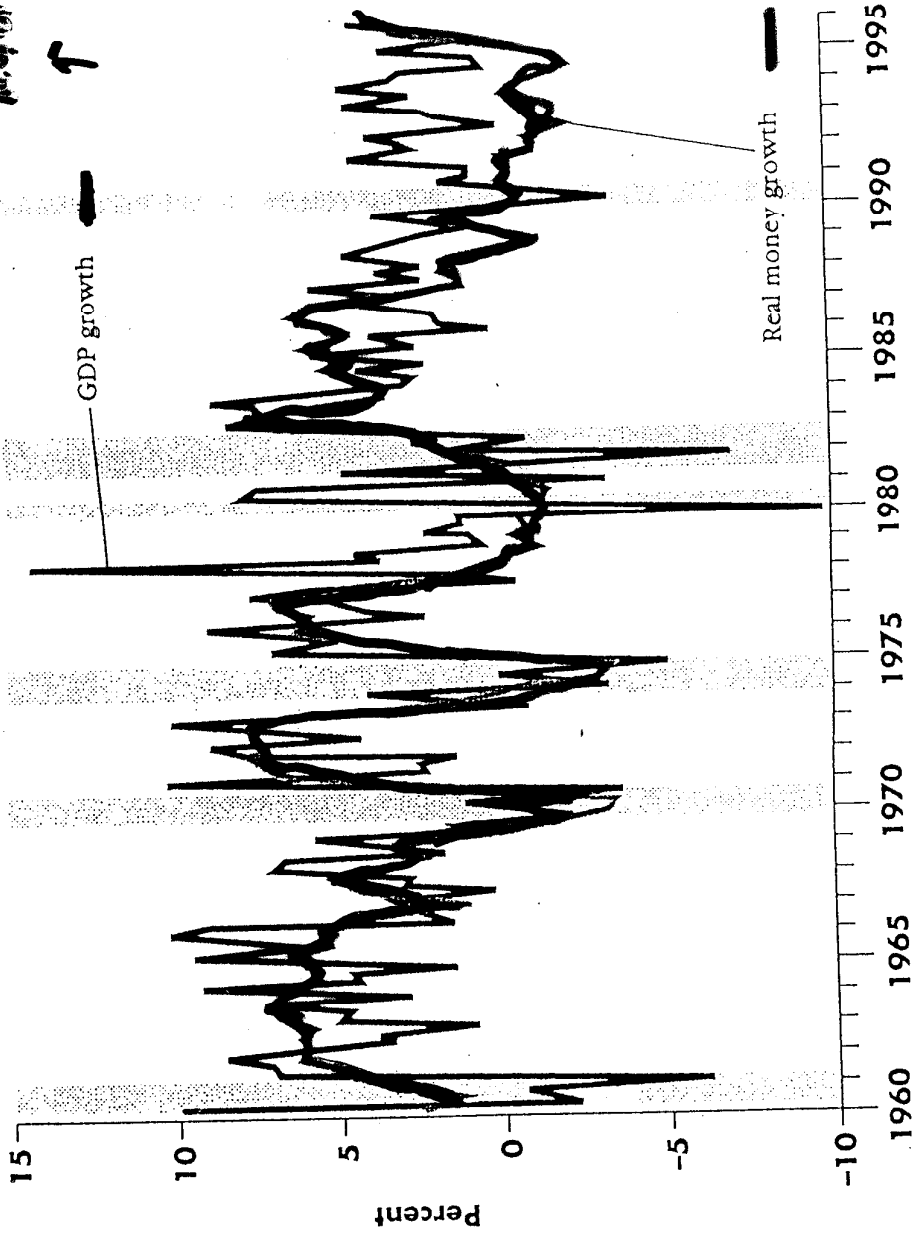
+ u ←

GDP GROWTH (QUARTERLY) AND REAL MONEY GROWTH (OVER PREVIOUS YEAR)

$$\frac{\Delta RGDP}{RGDP} = e \left(\frac{\Delta Y}{Y} - \frac{\Delta P}{P} \right)$$

↑

$e > 0$

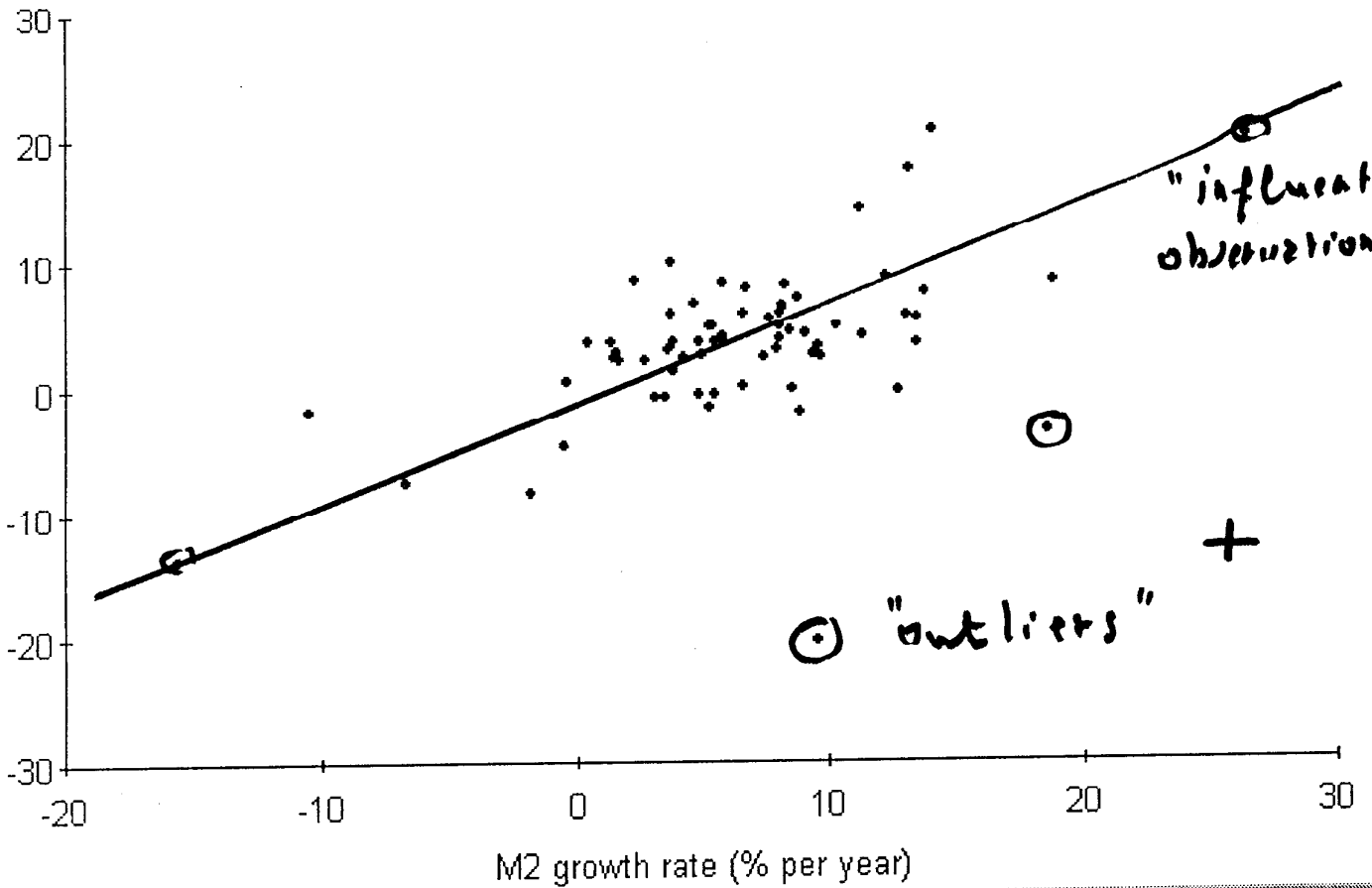


File

The U.S. Economy: 1929-1999

11.3

Real GDP growth rate (% per year)



$$\frac{\Delta \text{RGDP}}{\text{RGDP}} = e \frac{\Delta M_2}{M_2}$$

$$(20 - (-13)) = e (25 - (-17))$$

$$e = \frac{33}{42} = .8$$

$$Y^{ee} = \frac{b^{(+)}}{h^{(+)}(1 - c^{(+)}(1 - c)) + k \cdot b^{(+)} \cdot \left(\frac{\bar{M}}{\bar{P}}\right)}$$

money matters $\rightarrow \Delta Y^{ee} / \Delta \left(\frac{\bar{M}}{\bar{P}}\right) > 0$

policy cases

• monetarist-classical (see text)

• $b \rightarrow \infty$

• $h \rightarrow 0$

$$Y^{ee} = \frac{1}{k} \left(\frac{\bar{M}}{\bar{P}}\right)$$

money matters

$$\rightarrow \Delta Y^{ee} / \Delta \left(\frac{\bar{M}}{\bar{P}}\right) = 1/k$$

• monetarist-classical (generalized version; next page)

\rightarrow • money does not matter

• "Keynesian" view

• $b \rightarrow 0$

• $h \rightarrow \infty$

$$\Delta Y^{ee} / \Delta \left(\frac{\bar{M}}{\bar{P}}\right) = 0$$

money does not matter

Keynes - Monetarist

$$Y^e = \frac{b}{h[1 - c(1-t)] + k \cdot b} \cdot \left(\frac{\bar{M}}{\bar{P}} \right)$$

reinterpret above equation /

- make Y^e exogenous
- make P^e endogenous

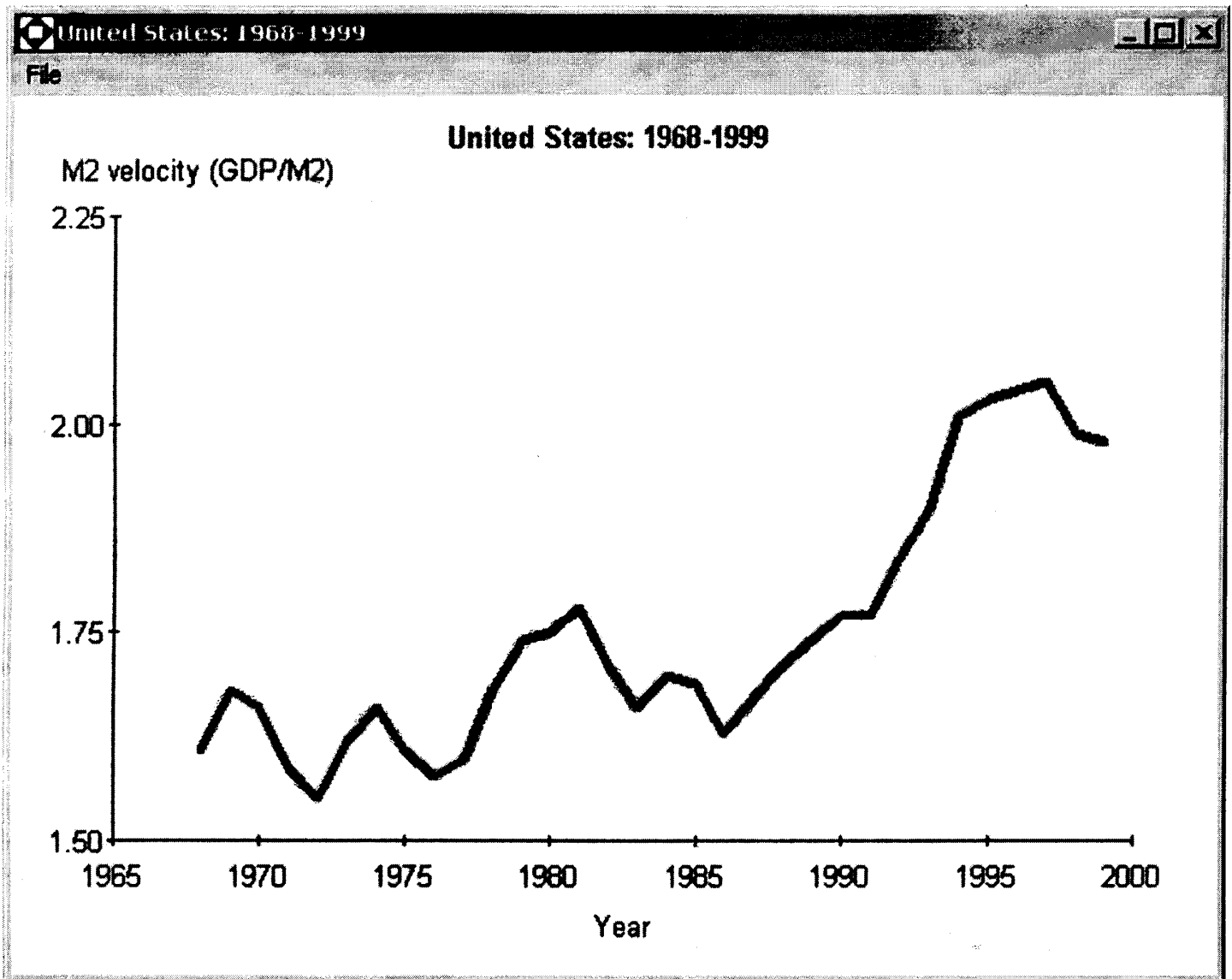
Fisher - Classical

$$P^e = \frac{\left(\frac{b}{h[1 - c(1-t)] + k \cdot b} \right)}{\overline{RGDP}} * \bar{M}$$

income velocity "V" ← Fisher

$$P^e = \frac{V}{\overline{RGDP}} * \bar{M}$$

note $V = \frac{b}{h[1 - c(1-t)] + k \cdot b}$



- What determines v ?

$$v = \frac{b}{k[1 - c(1 - e)] + k \cdot b}$$

- What should Macroeconomists focus on: explanation of variation in v
 - Keynes: Treatise on money $v_1; v_2$.

Are the Fed's actions predictable?

• YES

• very highly positively correlated with

• Capex util.

• NAPM index

• commodity prices

• S+P 500 earnings

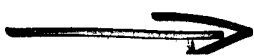
• profits proxy

• if the Fed's actions are predictable
Can monetary policy be effective?

• IS-LM model

• YES

• modern macro (rational expectation hypothesis) + NO



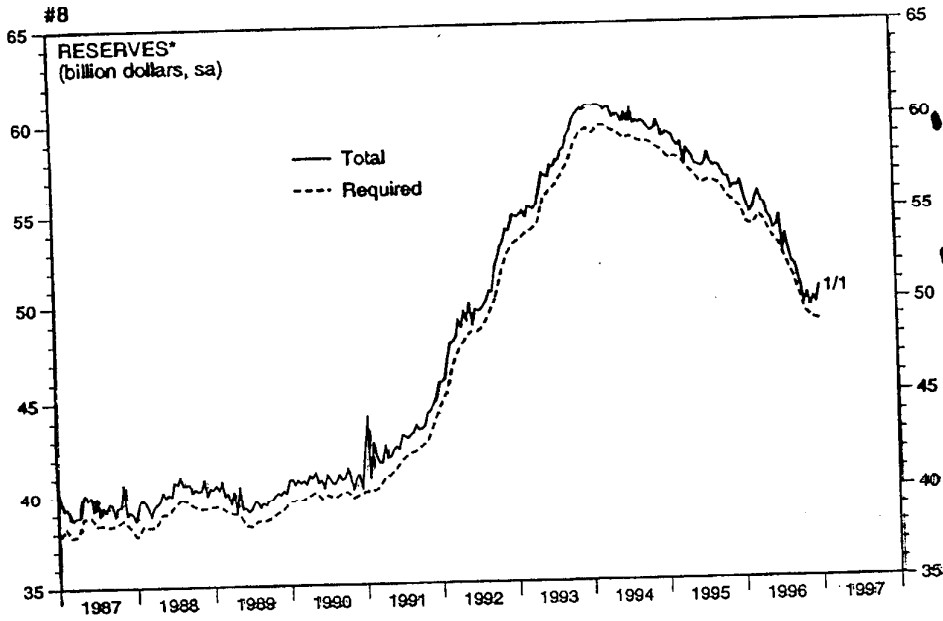
- can you individually profit from the predictability of the Fed's actions?

- you can avoid losses.

- making profits is a more difficult issue.

• 1987-1997

- U.S. Banks were willing leaders
- they created additional checkable deposits
- they increased the supply of money



* Reserves of depository institutions, adjusted for changes in reserve requirements.

Excess Reserves
→ 0
• Banks are fully lent up
• Banks are willing leaders

$$\text{Excess Reserves} = \text{Total} - \text{Required}$$

Assumption For Deposit Expansion:

Excess Reserves → 0

- How does the Fed increase reserves
- how does the Fed temporarily increase excess reserves

Monetary Base

Assets (billions of dollars)		Liabilities (billions of dollars)	
Gold and foreign exchange	21	③ Federal Reserve notes	427
① U.S. government securities	460	Bank's deposits reserves	25
② Loans to banks	0	Other liabilities (net)	29
Total assets	481	Total liabilities (net)	481

Policy action	Policy action
① the Fed <u>buys</u> gov't securities from the public: $\Delta R > 0$	① <u>sell</u> DRLO
② the Fed lowers the discount rate; loans increase: $\Delta R > 0$	② "increased" DRLO
③ the Fed issues more bank notes: $\Delta M > 0$	③ "retired" DRLO

Deutsche Banc Alex. Brown



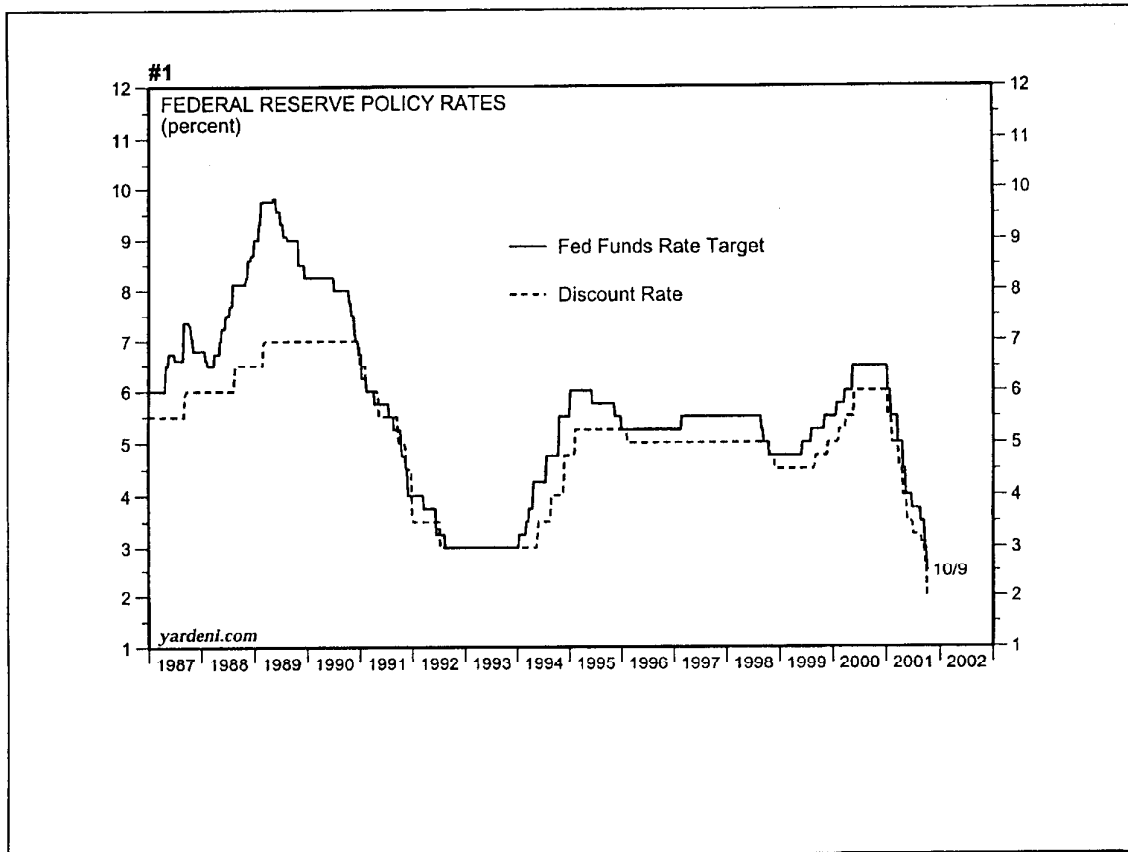
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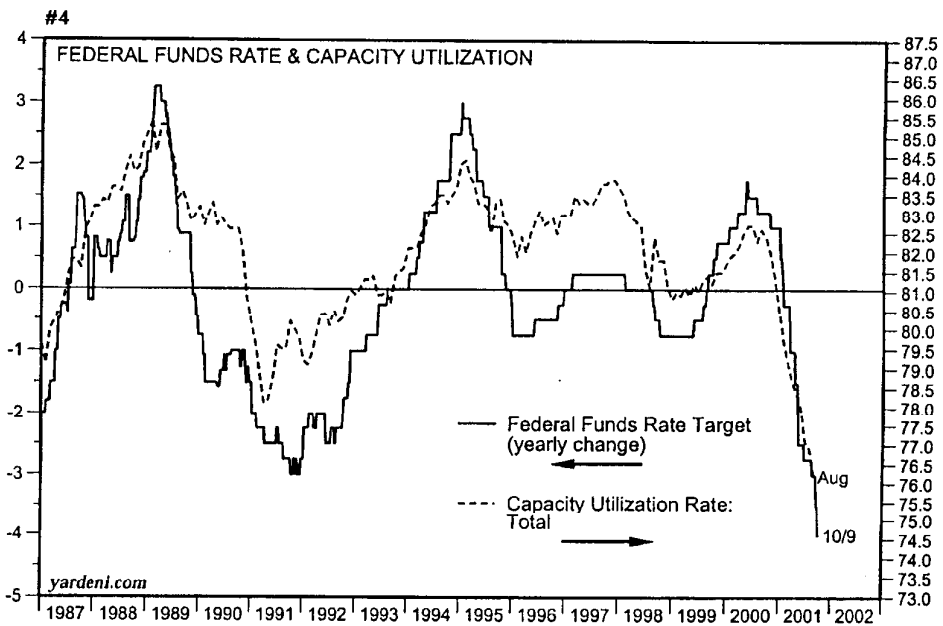
October 9, 2001

FED WATCHER

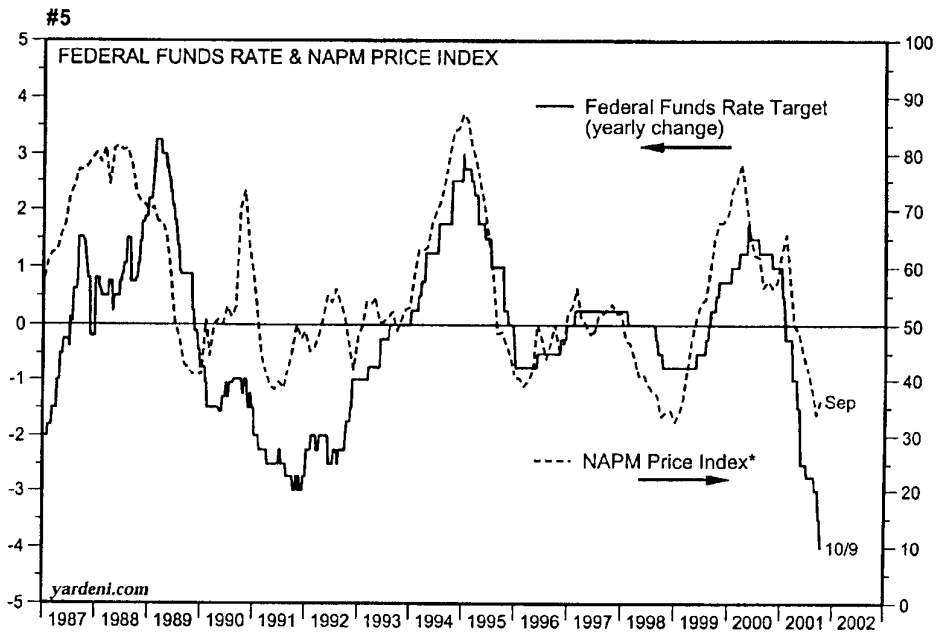


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- Fed Funds Rate Models -



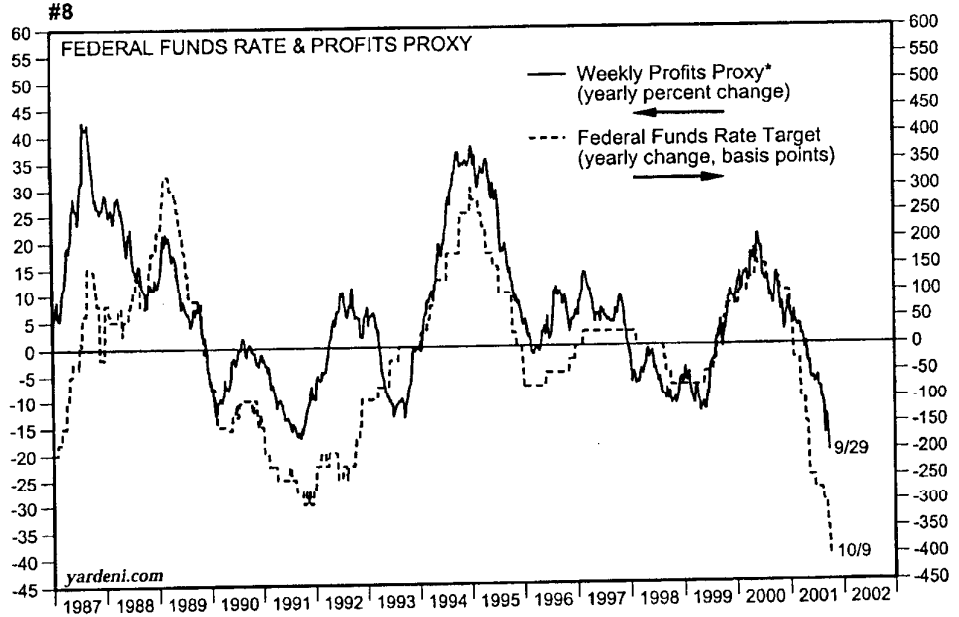
The year-over-year change in the federal funds rate is very highly correlated with both the capacity utilization rate and the NAPM price index.



* National Association of Purchasing Management.

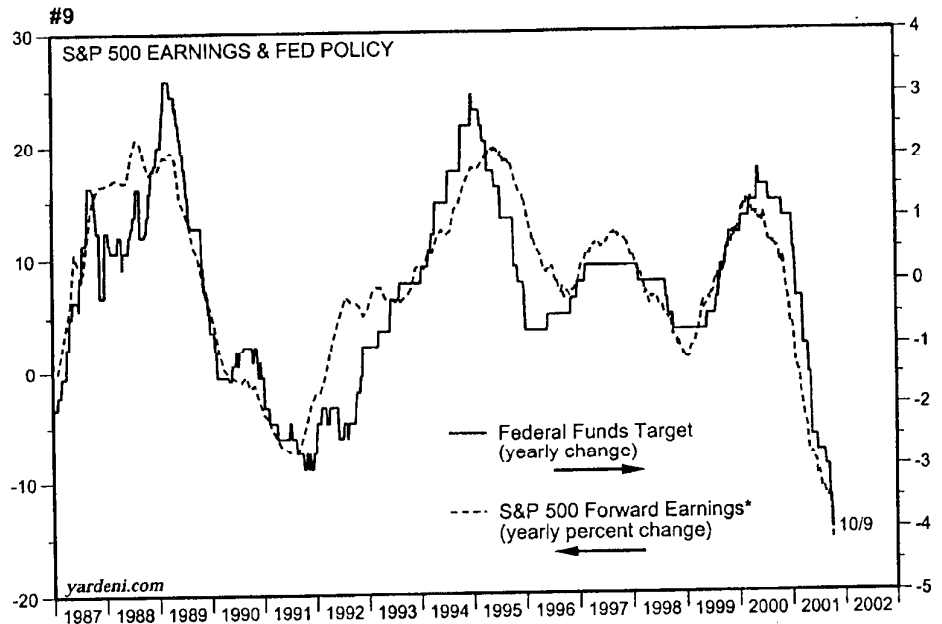
- Fed Funds Rate Models -

Yearly change in federal funds rate target is highly correlated with our Weekly Profits Proxy.



* Business Week's industrial production index multiplied by CRB raw industrials spot price index.

Fed policy is very highly correlated with corporate earnings expectations.



* 52-week forward consensus expected operating earnings per share. Monthly through March 1994, weekly after.
Source: Thomson Financial

- Policy Chronology -

#14: Chronology of Federal Reserve Policy Changes Since 1987

		Date of Change	Days Since Previous Change	Change In Fed Funds	New Rate Levels		
					Fed Funds	Discount	
Tightening:	Duration (in months)	1987 Jan 2	134	13	6	n/c	
	Number of moves:	Apr 30	118	50	6 1/2	n/c	
	Cumul. change in fed funds: 144	May 20	21	25	6 3/4	n/c	
		Jul 2	43	-13	6 5/8	n/c	
		Sep 3	63	25	6 7/8	n/c	
		Sep 4	1	50	7 3/8	6	
		Oct 8	34	-6	7 5/16	n/c	
Easing:	Duration (in months)	Oct 19	11	-25	7 1/16	n/c	
	Number of moves:	Nov 4	16	-25	6 13/16	n/c	
	Cumul. change in fed funds: -81	1988 Jan 28	85	-19	6 5/8	n/c	
		Feb 11	14	-13	6 1/2	n/c	
Tightening:	Duration (in months)	Mar 30	48	25	6 3/4	n/c	
	Number of moves: 15	May 9	40	25	7	n/c	
		May 25	16	25	7 1/4	n/c	
	Cumul. change in fed funds: 331	Jun 22	28	25	7 1/2	n/c	
		Jul 19	27	19	7 11/16	n/c	
		Aug 8	20	6	7 3/4	n/c	
		Aug 9	1	38	8 1/8	6 1/2	
		Nov 10	93	13	8 1/4	n/c	
		Nov 22	12	13	8 3/8	n/c	
		Dec 15	23	31	8 11/16	n/c	
		1989 Jan 5	21	31	9	n/c	
		Feb 9	35	31	9 5/16	n/c	
		Feb 23	14	25	9 9/16	n/c	
	Feb 24	1	19	9 3/4	7		
	May 17	82	6	9 13/16	n/c		
	Easing:	Duration (in months)	Jun 6	20	-25	9 9/16	n/c
		Number of moves: 24	Jul 7	31	-25	9 5/16	n/c
Cumul. change in fed funds: -681			Jul 27	20	-25	9 1/16	n/c
		Aug 22	26	-6	9	n/c	
		Nov 6	76	-50	8 1/2	n/c	
		Dec 20	44	-25	8 1/4	n/c	
		1990 Jul 13	205	-25	8	n/c	
		Oct 29	108	-25	7 3/4	n/c	
		Nov 16	18	-25	7 1/2	n/c	
		Dec 7	21	-25	7 1/4	n/c	
		Dec 18	11	-25	7	6 1/2	
		1991 Jan 8	21	-25	6 3/4	n/c	
Feb 1		24	-50	6 1/4	6		
Mar 8		35	-25	6	n/c		
Apr 30		53	-25	5 3/4	5 1/2		
Aug 6		98	-25	5 1/2	n/c		
Sep 13		38	-25	5 1/4	5		
Oct 30		47	-25	5	n/c		
Nov 6		7	-25	4 3/4	4 1/2		
Dec 6		30	-25	4 1/2	n/c		
Dec 20		14	-50	4	3 1/2		
1992 Apr 9		111	-25	3 3/4	n/c		
Jul 2	84	-50	3 1/4	3			
Sep 4	64	-25	3	n/c			
1993 (None)					n/c		

- Policy Chronology -

#14: Chronology of Federal Reserve Policy Changes Since 1987 (cont.)

		Date of Change		Days Since Previous Change	Change In Fed Funds	New Rate Levels	
						Fed Funds	Discount
Tightening:	Duration (in months)	12	1994 Feb 4	518	25	3 1/4	n/c
	Number of moves:	7	Mar 22	46	25	3 1/2	n/c
	Cumul. change in fed funds:	300	Apr 18	27	25	3 3/4	n/c
			May 17	29	50	4 1/4	3 1/2
			Aug 16	91	50	4 3/4	4
			Nov 15	91	75	5 1/2	4 3/4
			1995 Feb 1	78	50	6	5 1/4
Easing:	Duration (in months)	7	Jul 6	155	-25	5 3/4	n/c
	Number of moves:	3	Dec 19	166	-25	5 1/2	n/c
	Cumul. change in fed funds:	-75	1996 Jan 31	43	-25	5 1/4	5
Tightening:	Duration (in months)	13	1997 Mar 25	419	25	5 1/2	n/c
Easing:	Duration (in months)	2	1998 Sep 29	553	-25	5 1/4	5
	Number of moves:	3	Oct 15	16	-25	5	4 3/4
	Cumul. change in fed funds:	-75	Nov 17	33	-25	4 3/4	4 1/2
Tightening:	Duration (in months)	9	1999 Jun 30	225	25	5	n/c
	Number of moves:	6	Aug 24	55	25	5 1/4	4 3/4
	Cumul. change in fed funds:	175	Nov 16	84	25	5 1/2	5
			2000 Feb 2	78	25	5 3/4	5 1/4
			Mar 21	48	25	6	5 1/2
			May 16	56	50	6.5	6
			2001 Jan 3	231	-50	6	5 1/2
Easing:	Duration (in months)	9	Jan 31	28	-50	5 1/2	5
	Number of moves:	9	Mar 20	48	-50	5	4 1/2
	Cumul. change in fed funds:	-400	Apr 18	29	-50	4 1/2	4
			May 15	26	-50	4	3 1/2
			Jun 27	43	-25	3 3/4	3 1/4
			Aug 21	39	-25	3 1/2	3
			Sep 17	27	-50	3	2 1/2
			Oct 2	15	-50	2 1/2	2

#15: FOMC Meetings and Members

Upcoming FOMC Meetings	Members of the Board of Governors	Federal Reserve Bank Presidents
Nov 06, 2001	Alan Greenspan - <i>Chair</i>	Cathy E. Minehan - <i>Boston</i>
Dec 11, 2001	Roger W. Ferguson, Jr. - <i>Vice Chair</i>	William J. McDonough - <i>New York</i>
Jan 29, 2002	Edward W. Kelly, Jr.	Edward G. Boehne - <i>Philadelphia</i>
Mar 19, 2002	Laurence H. Meyer	Jerry L. Jordan - <i>Cleveland</i>
May 07, 2002	Edward M. Gramlich	J. Alfred Broaddus, Jr. - <i>Richmond</i>
Jun 25, 2002	<i>Vacancy</i>	Jack Guynn - <i>Atlanta</i>
Aug 13, 2002	<i>Vacancy</i>	Michael H. Moskow - <i>Chicago</i>
Sep 24, 2002		William Poole - <i>St. Louis</i>
Nov 06, 2002		Gary H. Stern - <i>Minneapolis</i>
Dec 10, 2002		Thomas M. Hoenig - <i>Kansas City</i>
		Robert T. Parry - <i>San Francisco</i>