Discussion of

"Monetary Policy Communication, Policy Slope, and the Stock Market"

by Andreas Neuhierl and Michael Weber

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The views expressed here are mine and are not representative of the views of Deutsche Bundesbank or the Eurosystem.

Outline

1. Summary
2. Comments/questions
   - When do fed funds futures predict the stock market?
   - Which speeches?
3. Conclusion

Summary of the paper and related literature

High-Level Summary of the Paper

- Authors construct slope factor from fed funds futures measuring changes in expected policy path one to three-months out.
- Slope factor predicts stock returns at the weekly frequency: faster monetary policy easing predicts higher excess returns.
- Slope factor predicts changes in future interest rates and forecast revisions of professional forecasters.
- Tone of speeches by FOMC chair and vice chair and macro news correlate with slope factor, latter cannot explain return predictability.
- Authors conclude that (communication about) monetary policy affects asset prices throughout the year and not only at FOMC meetings.

The Fed and the Stock Market: Selective Literature Review

- Bernanke&Kuttner (JF 2005): Stock market reacts strongly to MP surprises (measured as FFF innovations on FOMC days).
- Lucca&Moench (JF 2015): 80% of cumulative returns in S&P500 between 1994 and 2011 earned in *24 hours before* scheduled FOMC announcements. Same for other developed stock markets. Pre-announcement return independent of sign of policy surprise. No such pre-announcement returns in bonds.
- Neuhierl&Weber (2018): Stock market starts drifting up about 25 days before surprise easings, but not before surprise tightenings.
- ...

What This Paper Adds

- Prior literature has mainly focused on stock market around FOMC announcement days.
- NW show that monetary policy related news affect stock market also outside of FOMC meeting weeks.
- Link the predictive power of fed funds futures changes for the stock market to monetary policy communication via speeches.

Main Regression

- NW run baseline regression:

$$R_{t+1} = \alpha + \beta \widehat{slope}_t + \gamma X_t + \epsilon_{t+1}$$

- where $\widehat{slope}$ the residual in the regression:

$$\Delta ff_{t,3} = -0.00 + 1.17 \Delta ff_{t,1} + \widehat{slope}_t$$

- Find similar results for

$$slope_t = \Delta ff_{t,3} - \Delta ff_{t,1}$$

- Weekly data, 1994-2007.

Slope Predicts Stock Returns Also Outside of FOMC weeks

- In light of Bernanke&Kuttner and Lucca&Moench, does the predictive power only accrue in weeks of FOMC announcements?

	All Weeks	No Meeting Return Week	No Meeting Previous Week	No Meeting in either Week
	(1)	(2)	(3)	(4)
Constant	0.13^{*}	0.23^{***}	0.12^{*}	0.24^{***}
	(0.09)	(0.09)	(0.09)	(0.09)
$Slope_t$	-6.96^{***}	-6.87^{***}	-6.58^{***}	-6.10^{**}
	(1.98)	(2.50)	(2.15)	(2.78)
R_t	-0.09^{**}	-0.08^{*}	-0.08^{*}	-0.09
	(0.05)	(0.06)	(0.06)	(0.07)
R^2	2.61	2.10	2.25	1.74
Nobs	724	606	606	490

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

- **No.** Coefficients similar in weeks without FOMC meeting.

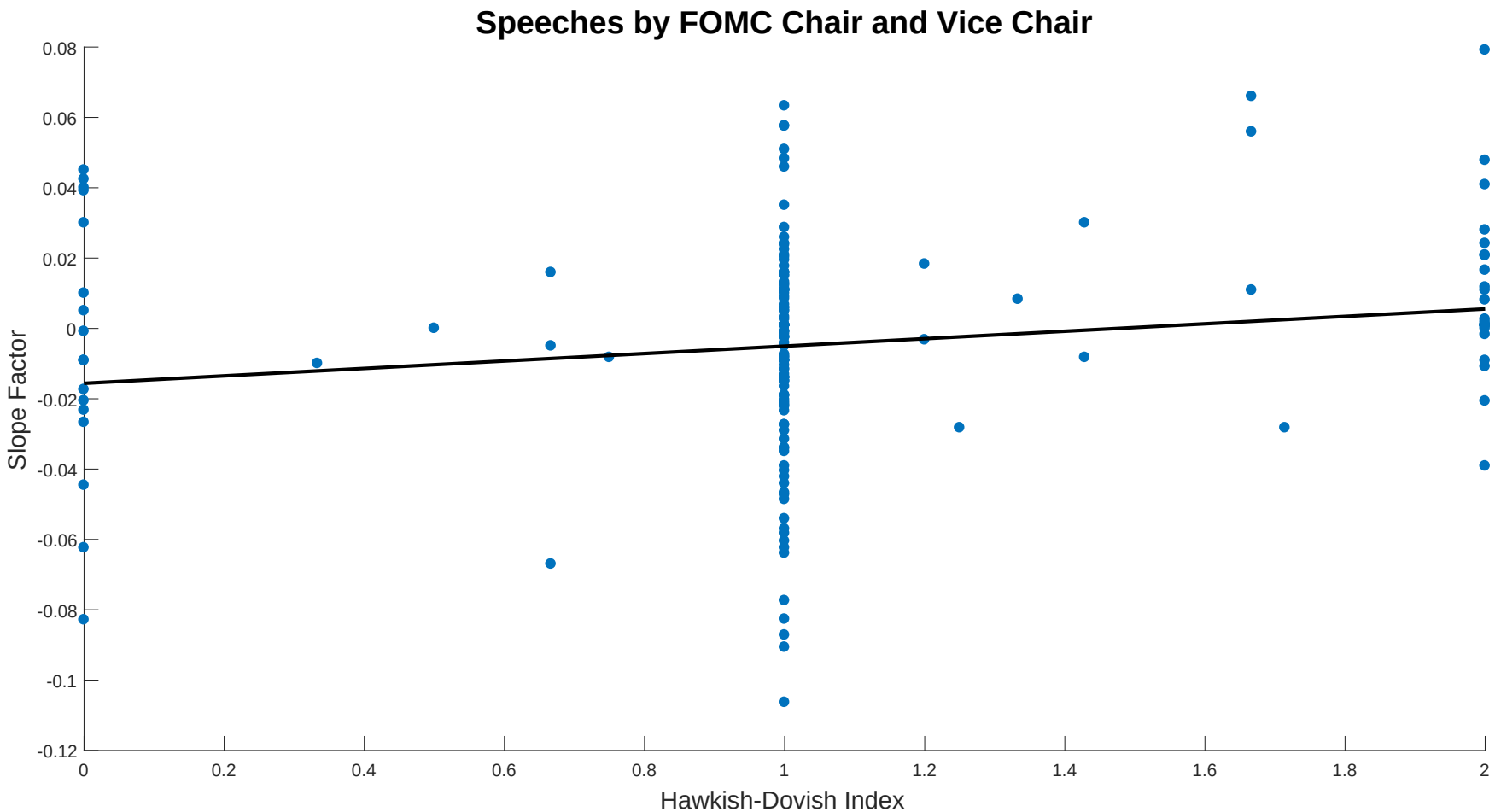
Does Fed communication drive FFF dynamics?

- NW argue that predictability stems from intermeeting communication by Fed officials.
- Construct hawk-dove index ($:= 1 + [\frac{N_H - N_D}{N_H + N_D}]$) based on words in Fed board member speeches; regress slope factor on this index:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	−0.32	−0.13	−1.56***	−0.68**	−1.99*	−0.94	−0.18
	(0.41)	(0.24)	(0.59)	(0.27)	(1.10)	(0.90)	(0.23)
Hawk-Dove Index	0.33		1.06**		1.73**		
	(0.33)		(0.45)		(0.75)		
Hawk		0.09		0.56***		0.61*	0.02
		(0.05)		(0.21)		(0.31)	(0.07)
Dove		−0.09		−0.30*		−0.28*	0.29
		(0.16)		(0.17)		(0.17)	(0.25)
Hawk × Chair							0.43*
							(0.22)
Dove × Chair							−0.68**
							(0.33)
R^2	0.21	0.61	2.98	4.60	12.38	12.35	1.97
Num. obs.	380	380	173	173	43	43	380
Only Speeches by Chair			X	X	X	X	
At least 1 classification					X	X	

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Slope Factor and Tone of FOMC (Vice) Chair Speeches



Comments

Predictive power of slope factor appears stable over time

	1994-2007	1994-2002	1988-2007	1988-2002
	(1)	(2)	(3)	(4)
Constant	0.13*	0.11	0.14**	0.12*
	(0.09)	(0.11)	(0.07)	(0.08)
$Slope_t$	−6.96***			
	(1.98)			
R_t	−0.09**	−0.06	−0.09**	−0.07*
	(0.05)	(0.06)	(0.04)	(0.05)
$Slope_{1994-2002}$		−8.05***		
		(2.32)		
$Slope_{1988-2007}$			−4.63***	
			(1.56)	
$Slope_{1988-2002}$				−4.96***
				(1.62)
R^2	2.61	2.85	1.75	1.65
Nobs	724	463	995	734

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

But taking a closer look shows that ...

- Goyal & Welch (RFS 2008) have popularized a simple but powerful tool to characterize subsample stability in predictive equity premium regressions. Compare cumulative sum of squared errors of predictive regression

$$R_{t+1} = \alpha + \beta \widehat{slope}_t + \epsilon_{t+1}$$

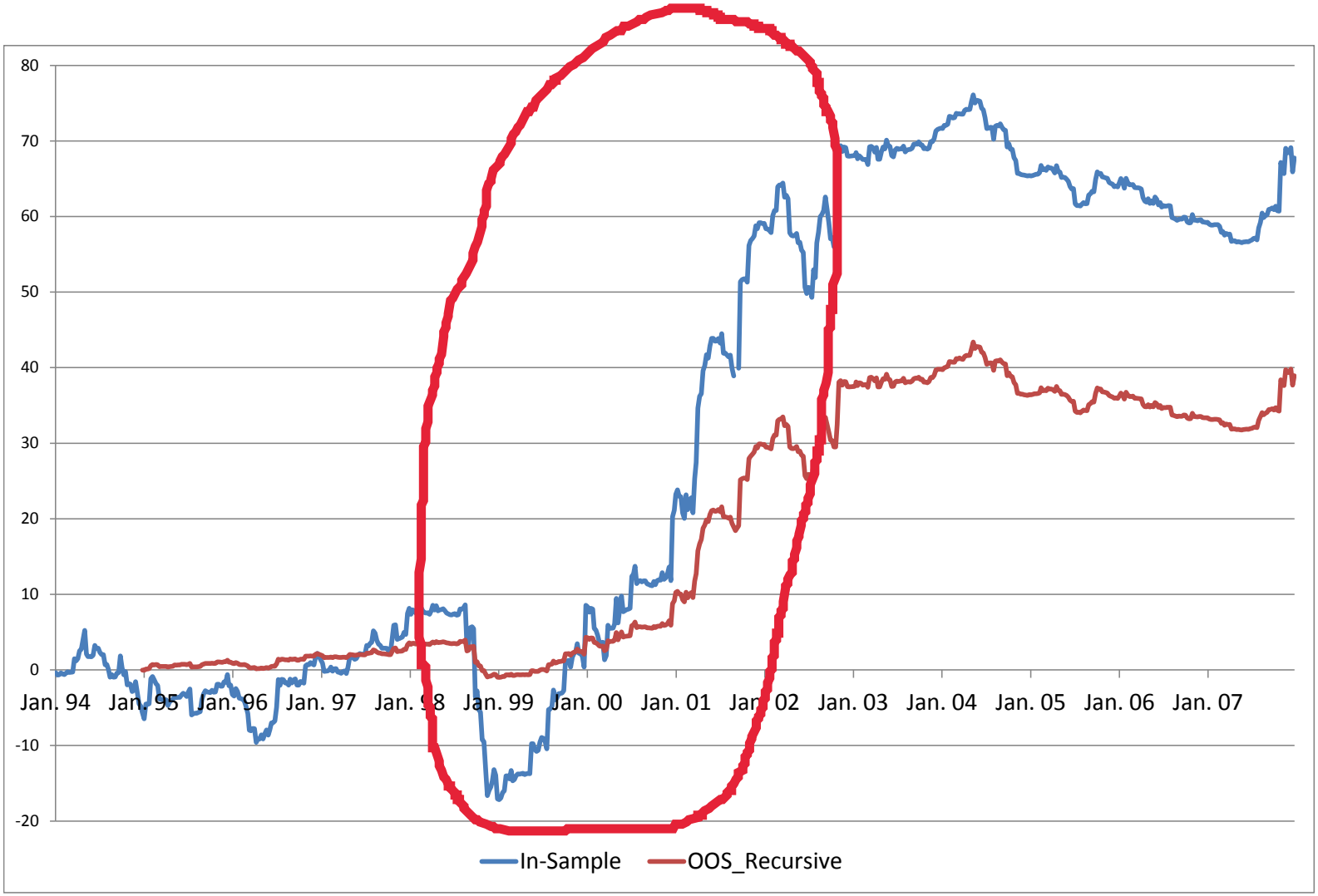
with "naive" benchmark

$$R_{t+1} = \mu_R + \epsilon_{N,t+1}$$

Then plot

$$\sum_{s=1}^{T} (\epsilon_{N,s}^2 - \epsilon_s^2)$$

... predictive power entirely due to 1999-2001!



A different subsample analysis than in the paper

- I reestimate the baseline regression (using *slope* instead of $\widehat{slope}$) over different subsamples. Newey-West t-stats in brackets:

$$
\begin{aligned}
R_{t+1|t} &= \hat{\alpha} + \hat{\beta} slope_t + \gamma R_t \\
&= 0.12 - 6.77 slope_t - 0.08 R_t \quad (1994 - 2007) \\
&= [1.37] \quad [-3.35] \quad [-2.06] \\
&= 0.31 - 2.16 slope_t - 0.02 R_t \quad (1994 - 1998) \\
&= [2.51] \quad [-0.97] \quad [-0.25] \\
&= 0.06 - 3.33 slope_t - 0.15 R_t \quad (2002 - 2007) \\
&= [0.49] \quad [-0.77] \quad [-2.32] \\
&= 0.18 - 1.83 slope_t - 0.10 R_t \quad (1994 - 1998, 2002 - 2007) \\
&= [1.91] \quad [-1.26] \quad [-1.92] \\
&= -0.15 - 19.09 slope_t - 0.03 R_t \quad (1999 - 2001) \\
&= [0.64] \quad [-4.80] \quad [-0.39]
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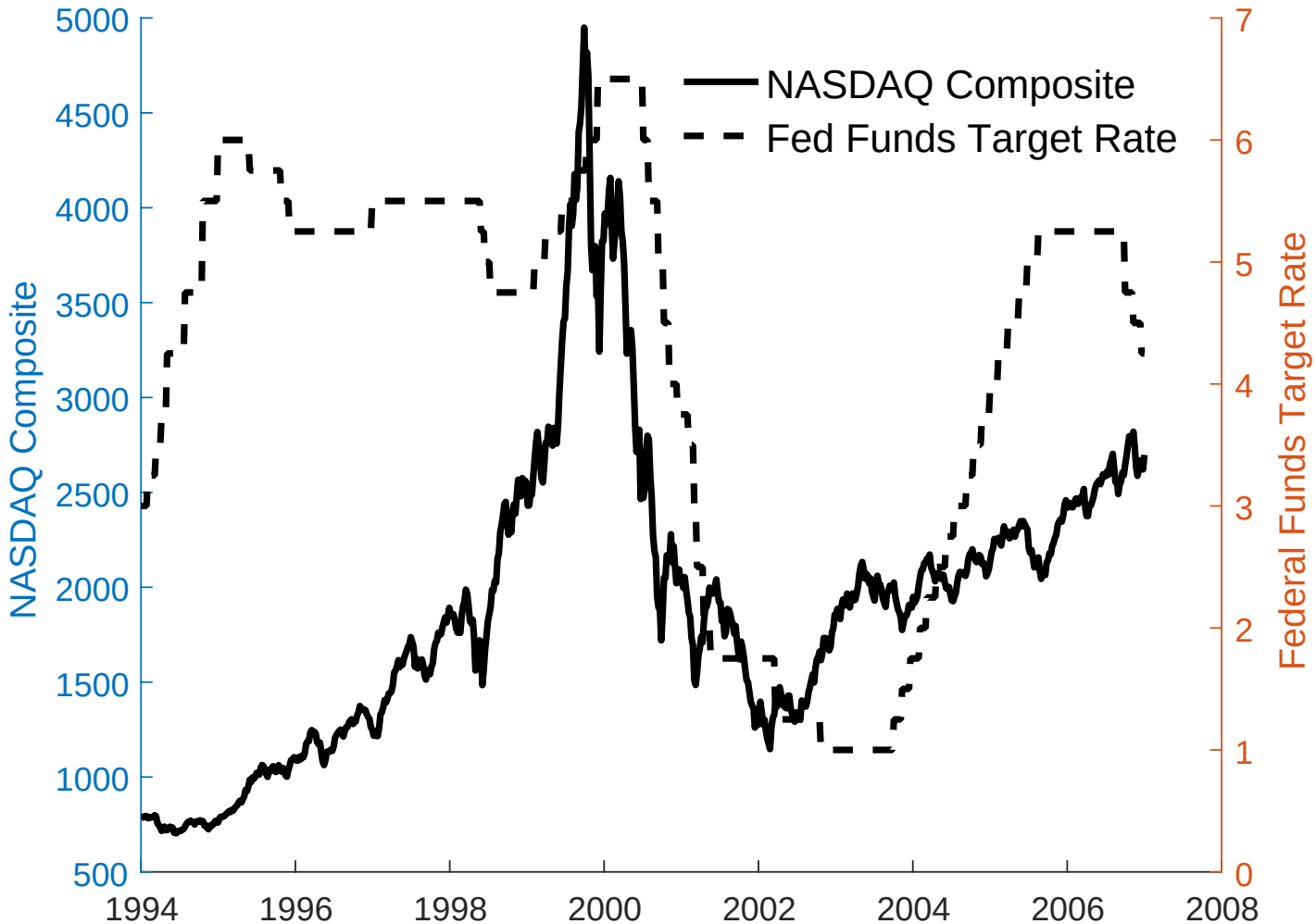
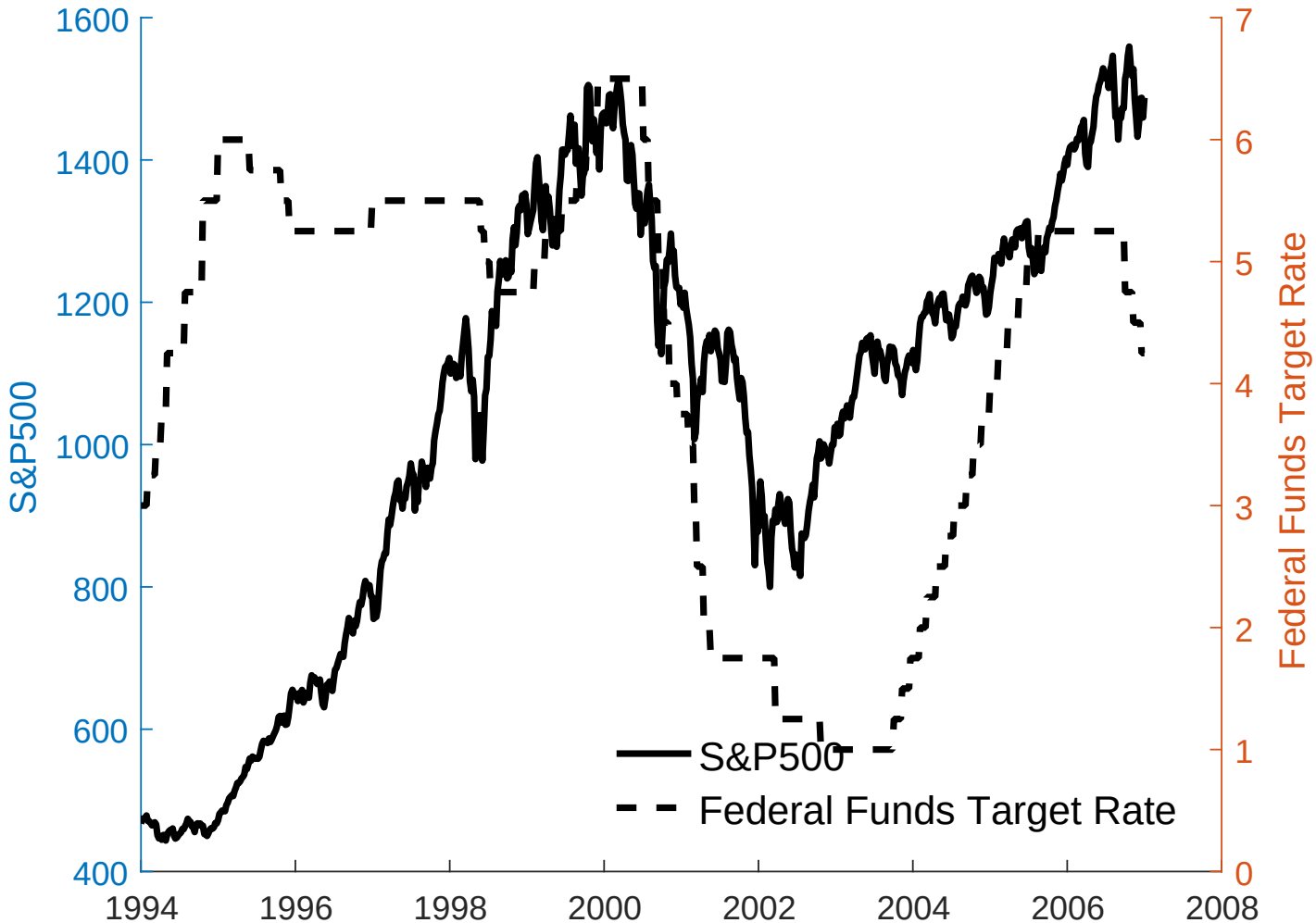
What happened between 1999-2001?

- Dotcom bubble and bust, short recession, 9/11:

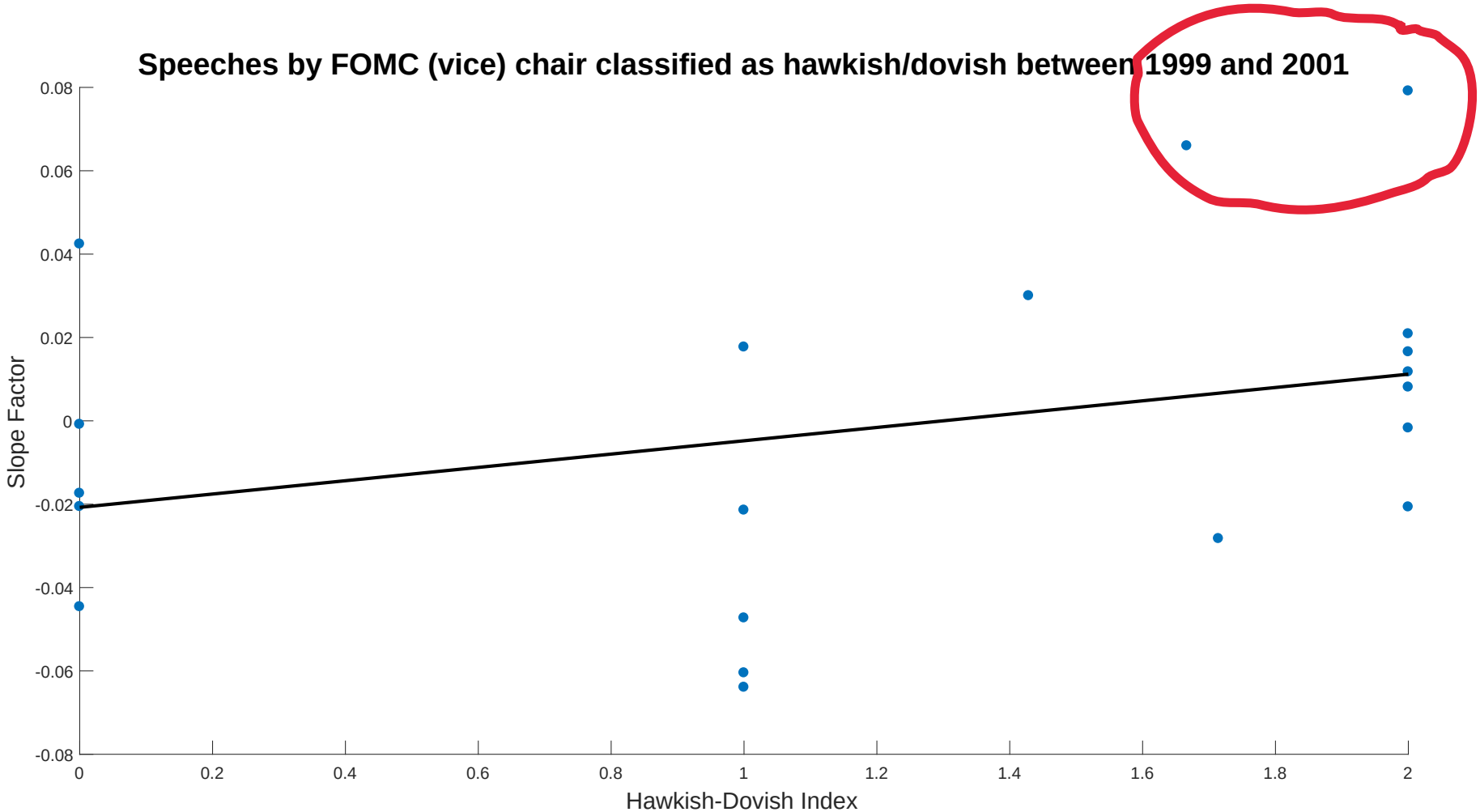


What happened between 1999-2001?

- Less pronounced, but also visible in large cap stocks:



How much do Fed (vice) chair speeches affect rate expectations during this period?



Two speeches drive this correlation

Alan Greenspan, April 5, 2000: "Technological innovation and the economy", White House Conference on the New Economy, D.C.

As I have argued previously, a substantial part of the excess growth of demand over potential supply owes to a wealth effect... The rise in stock prices ... has created a marked increase in purchasing power ... The persuasive evidence that the wealth effect is contributing to the risk of imbalances in our economy, however, does not imply that the most straightforward way to restore balance in financial and product markets is for monetary policy to target asset price levels. Leaving aside the deeper question of whether asset price targeting is an appropriate governmental function, there is little, if any, evidence that monetary policy aimed at achieving that goal would be successful.

Two speeches drive this correlation

Richard Ferguson, May 9, 2000: "Conversation with Leaders of the 'New Economy"', New Economy Forum, Haas School of Business, UC Berkeley

... uncertainty about productivity trends is a major challenge in the design and implementation of monetary policy... Even in a period of some uncertainty, monetary policy authorities have an important responsibility to remain vigilant with regard to inflationary pressures. Since in the long run there is no tradeoff between unemployment and inflation, we know that keeping inflation low and stable and maintaining an obvious stance of vigilance vis a vis inflation, so that inflation expectations are also relatively low, is the main value that a central bank can add to this equation.

How hawkish are these speeches?

- I don't interpret these speeches as particularly hawkish.
- Let's look at the stock market:

Date	SP500 Open	SP500 Close	Return
April 5, 2000	1495	1487	-0.49%
April 6, 2000	1487	1501	0.94%
April 7, 2000	1501	1516	1.00%
...			
May 9, 2000	1424	1412	-0.85%
May 10, 2000	1412	1383	-2.06%
May 11, 2000	1383	1407	1.79%

- No strong response. It would be useful to show that the tone of Fed speeches and commentary about it directly moves fed funds futures and the stock market, esp. from 1999 to 2001.

Conclusion

Conclusion

- Interesting paper documenting that changes in near-term policy rate expectations predict stock returns. Links these changes in policy rate expectations to tone of Fed governors' speeches.
- The predictability is limited to the sample 1999-2001. During that period, mainly two speeches drive the correlation between tone and fed funds futures.
- More conclusive evidence would be welcome regarding their impact on the stock market.
- Nice read, recommend to take a look.