Macro-Active Bond Mutual Funds

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Based on joint work with Jun Pan and Shiwen Tian from SAIF

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Active Management

- **Equity:** Firm valuation, earnings announcements. . .
  - Macro news has little explanatory power for equity (e.g., Roll, 1988)
  - Affect both discount rate and cash flow news
- **Bond:** Fed, monetary policy, inflation, unemployment. . .
  - Treasury price movements are mainly driven by macro news
  - e.g., Fleming and Remolona (1999); Balduzzi, Elton, and Green (2001)

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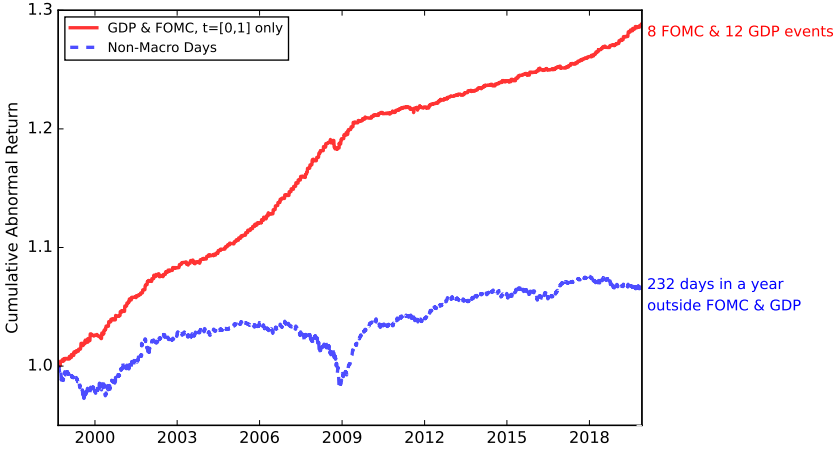
Flow into Active Funds

- **Equity:** Net outflow from active funds into passive index funds and ETF
- **Bond:** Continuous inflow into active bond funds, \$3 out of \$4.7 Trillion is active

Preview of Main Results

Macro Day vs. Non-Macro Day Fund Performance

- Bond funds outperform on important macro announcements such as FOMC and GDP.



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The Source of Funds' Macro-Day Alpha

- Past macro-day winners continue to outperform in the future
- Stronger for funds with higher idiosyncratic risk taking
- Stronger on announcements with bigger disagreement and bigger surprise

Yield Curve Prediction

- Fund duration change can predict FOMC-day yield curve change
- Stronger than predicted by fed fund futures, economists survey, and other yield curve predictors

Macro-Day Alpha

- Evaluating Fund Macro-Day Performance:

$$R_t - r_t^f = \alpha^{\text{non-Macro}} + \boxed{\alpha^{\text{Macro+}} \textbf{Macro}_t} + \beta^{\text{L}}(R_t^{\text{Level}} - r_t^f) + \beta^{\text{S}}(R_t^{\text{Slope30}} - r_t^f) + \beta^{\text{C}}(R_t^{\text{Slope10}} - r_t^f) + \beta^{\text{Stock}}(R_t^{\text{Stock}} - r_t^f) + \varepsilon_t$$

- $\alpha^{\text{Macro+}}$ captures the extra alpha earned on macro announcement days

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- $\alpha^{\text{Macro+}}$ captures the extra alpha earned on macro announcement days
- Bond factors: PCA of 2-, 5-, 10-, and 30-year daily returns of Barclay US Treasury indices

Bond Factors' Portfolio Weights

	Level	Slope30	Slope10
Variance Explained	95.32%	4.25%	0.35%
2 Year	3.95%	28.54%	104.19%
5 Year	14.26%	62.69%	86.25%
10 Year	27.63%	55.84%	**-122.80%**
30 Year	54.16%	**-47.07%**	32.36%

Macro-Day Alpha

- We focus on ten major U.S. macro announcements:

Macro Announcements	Relevance Score	# Events	Treasury	Equity
Nonfarm Payrolls	99.21	256	-18.185***	3.209
FOMC	97.64	171	-5.630**	-11.229
GDP	96.85	255	-4.020*	-4.006
Consumer Price Index	96.06	256	-2.838	-8.607
ISM manufacturing index	95.28	256	-12.246***	18.485**
Michigan Consumer Sentiment Index	94.49	247	-3.352*	-2.941
Consumer Confidence Index	93.7	256	-4.090**	-2.069
Durable Goods Orders	92.91	256	-2.115	8.751
Retail Sales	92.13	223	-8.251***	20.719**
New Home Sales	91.34	254	-3.495**	-1.229

Macro-Day Alpha

$$R_t - r_t^f = \alpha^{\text{non-Macro}} + \alpha^{\text{Macro+}} \textbf{Macro}_t + \beta^{\text{L}}(R_t^{\text{Level}} - r_t^f) + \beta^{\text{S}}(R_t^{\text{Slope30}} - r_t^f) + \beta^{\text{C}}(R_t^{\text{Slope10}} - r_t^f) + \beta^{\text{Stock}}(R_t^{\text{Stock}} - r_t^f)$$

	Government	IG	HY	Muni	Equity	Barclay UST	Barclay AGG
FOMC	1.099**	0.599	0.439	0.940	0.855	0.321	0.344
	[2.06]	[0.82]	[0.45]	[1.52]	[1.06]	[1.24]	[0.80]
GDP	2.463***	2.772***	5.289***	1.942***	2.303***	-0.164	-0.154
	[4.65]	[4.06]	[4.50]	[3.05]	[3.26]	[-0.71]	[-0.50]
Confidence	0.814*	1.191**	2.931***	2.100***	0.477	-0.147	-0.487
	[1.81]	[2.18]	[3.20]	[3.62]	[0.71]	[-0.66]	[-1.47]
NonFarm Payroll	-0.140	-0.038	-1.195**	-0.733*	0.171	-0.364	0.281
	[-0.34]	[-0.07]	[-2.04]	[-1.73]	[0.26]	[-1.28]	[0.79]
CPI	-0.317	-0.745	-0.885	-0.441	-0.065	-0.451*	-0.566
	[-0.88]	[-1.47]	[-1.54]	[-0.97]	[-0.10]	[-1.85]	[-1.47]
Sentiment	0.737	0.308	0.539	-0.194	0.657	-0.380	-0.351
	[1.46]	[0.77]	[0.83]	[-0.49]	[1.10]	[-1.50]	[-1.17]
Durable Goods	0.216	0.512	-1.256	-0.380	-0.395	0.030	0.167
	[0.56]	[1.10]	[-1.41]	[-0.97]	[-0.50]	[0.14]	[0.56]
Retail Sales	0.173	0.048	0.470	-0.128	-0.610	-0.226	-0.102
	[0.34]	[0.11]	[0.74]	[-0.34]	[-0.86]	[-1.06]	[-0.37]
New Housing Sales	0.790	0.655	0.911	0.565	0.038	0.305	0.135
	[1.56]	[1.39]	[1.29]	[1.37]	[0.05]	[1.20]	[0.41]
Factor, Controls	Y	Y	Y	Y	Y	Y	Y
Observations	5,326	4,752	4,752	4,752	5,326	5,326	4,752
R-squared	0.897	0.855	0.809	0.822	0.987	0.984	0.953

Placebo Macro-Day Alpha

- Match each **macro day** with a **non-macro day** that has the closest return distributions (e.g., market return or factor returns)
- On placebo macro days, funds fail to outperform.

Fund Alpha on Placebo Macro Days

	FOMC		GDP	
	Alpha	t-stat	Alpha	t-stat
(a) Match by Level, Slope30, Slope10	-0.32	[-0.58]	-0.41	[-1.03]
(b) Match by Level, Slope30, Slope10, Stock	0.60	[1.15]	-0.19	[-0.44]
(c) Match by Treasury	-0.44	[-1.09]	-0.48	[-1.36]

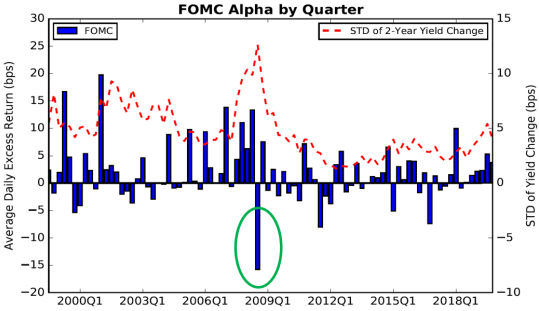
What Contributes to the Macro-Day Alpha?

- **Cross-Fund Heterogeneity**
  - Past Macro-Day Performance
  - Activeness
- **Time-Series Variation**
  - Mis-Prediction at the Lehman Moment
  - Disagreement and Surprise
- **Yield Curve Prediction**
  - Duration change can predict FOMC-day yield change
  - Predictability is only significant for active funds
  - Dominates other predictors: fed fund futures, forward-spot spread (Fama and Bliss, 1987), γ factor (Cochrane and Piazzesi, 2005)

Cross-Fund Variation – Performance Persistence and Activeness

	FOMC Alpha			GDP Alpha		
Past Macro-Day Alpha	0.782***		0.537**	1.820***		1.689***
	[3.09]		[2.19]	[7.59]		[7.08]
Past Non-Macro Alpha	-0.070		-0.016	0.083		0.233*
	[-0.31]		[-0.08]	[0.48]		[1.65]
Idiosyncratic Vol		0.794***	0.702***		1.330***	0.916***
		[2.88]	[2.69]		[5.37]	[3.86]
Systematic Vol		-0.316	-0.186		-0.368	-0.230
		[-1.15]	[-0.74]		[-1.03]	[-0.68]
Intercept	1.137**	1.146**	1.144**	3.617***	3.619***	3.621***
	[2.04]	[2.05]	[2.05]	[7.77]	[7.76]	[7.77]
Observations	60,722	60,722	60,722	90,845	90,845	90,845
R-squared	8.3%	13.3%	19.1%	10.8%	12.2%	20.3%
Number of groups	166	166	166	248	248	248

Time-Series Variation – Mis-Prediction at the Lehman Moment



Return on Sep. 15, 2008 (Lehman Default)		
Fund	Government	Equity
89.6	130.2	-457.3

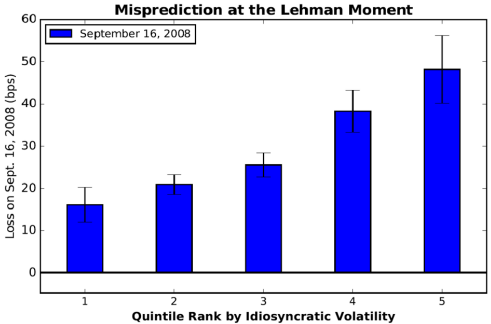
Return on Sep. 16, 2008 (FOMC)		
Fund	Government	Equity
-35.9	-18.8	151.2

The New York Times

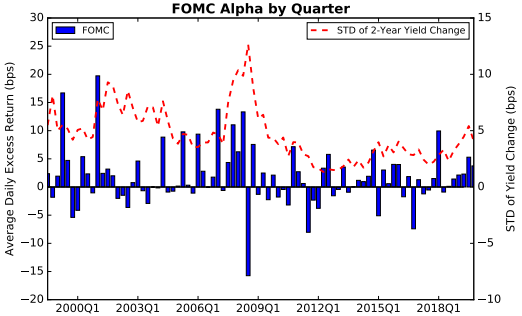
Fed Misread Crisis in 2008, Records Show

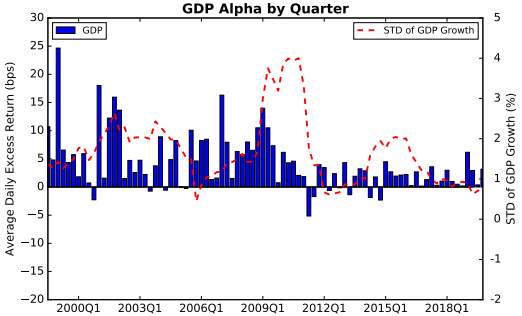
WASHINGTON — On the morning after Lehman Brothers filed for bankruptcy in 2008, most Federal Reserve officials still believed that the American economy would keep growing despite the metastasizing financial crisis.

The hundreds of pages of transcripts, based on recordings made at the time, reveal the ignorance of Fed officials about economic conditions during the climactic months of the financial crisis. Officials repeatedly fretted about overstimulating the economy, only to realize time and again that they needed to redouble efforts to contain the crisis.



Time-Series Variation – Disagreement and Surprise





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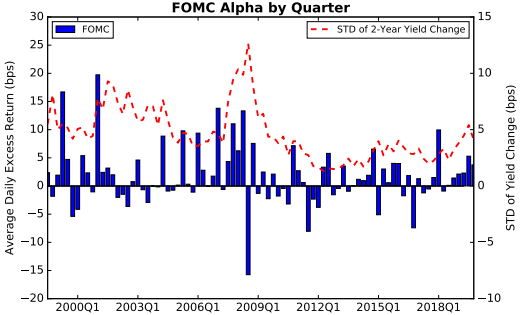
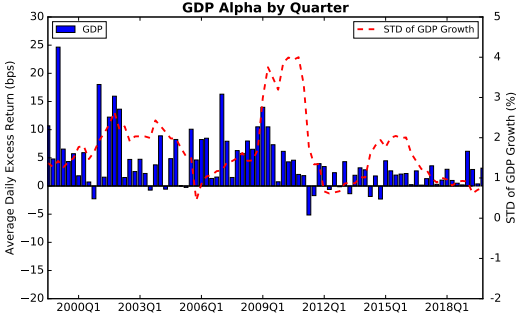
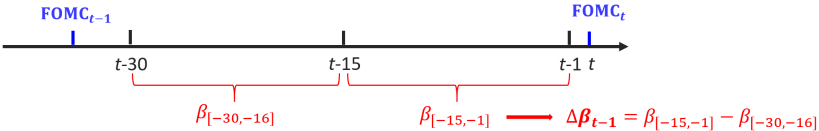




		Disagreement	|Surprise|	|Treasury|	|Level|	|Slope30|	|Slope10|
FOMC	Coeff.	0.656**	0.973**	1.081*	0.994**	0.075	0.973*
	t-stat	[2.29]	[2.16]	[1.70]	[2.08]	[0.13]	[1.86]
GDP	Coeff.	1.520***	0.960*	2.189***	2.080***	1.439**	2.187***
	t-stat	[3.13]	[1.72]	[3.84]	[4.28]	[2.20]	[3.12]

Predicting FOMC-Day Yield Change

$$\Delta \mathbf{Yield}_{\mathbf{t}}^{\mathbf{FOMC}} = a + b \times \Delta \beta_{\mathbf{t-1}} + \varepsilon_t$$



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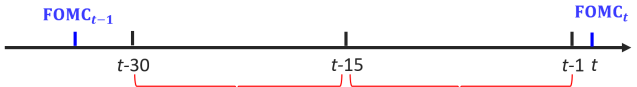
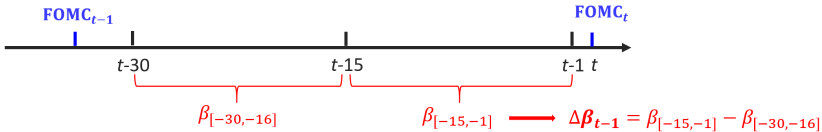
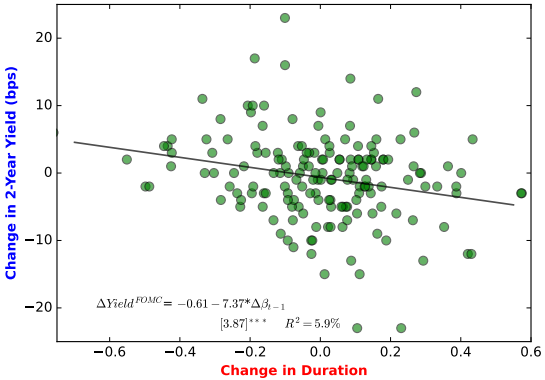


		Inactive	2	3	4	**Active**	**Active-Inactive**
2 Year	Coeff.	4.64	1.918	-3.933	-6.137*	**-5.913*** **	**-7.419*** **
	t-stat	[0.67]	[0.58]	[-1.19]	[-1.72]	**[-3.14]**	**[-3.85]**
	R2	0.3%	0.1%	0.6%	1.4%	**3.9%**	**5.2%**
5 Year	Coeff.	6.939	0.115	-5.421	-7.492**	**-7.602*** **	**-8.915*** **
	t-stat	[0.97]	[0.03]	[-1.63]	[-1.98]	**[-3.12]**	**[-3.34]**
	R2	0.4%	0.0%	0.8%	1.4%	**4.2%**	**5.0%**
10 Year	Coeff.	8.189	2.98	-1.824	-2.318	**-5.907** **	**-7.694*** **
	t-stat	[1.28]	[0.74]	[-0.64]	[-0.72]	**[-2.54]**	**[-3.00]**
	R2	0.7%	0.2%	0.1%	0.2%	**3.0%**	**4.4%**
30 Year	Coeff.	9.380*	5.765	3.178	3.993	**-2.267**	**-4.179***
	t-stat	[1.73]	[1.61]	[1.23]	[1.21]	**[-1.15]**	**[-1.94]**
	R2	1.5%	1.1%	0.5%	0.8%	**0.7%**	**2.1%**

Predicting FOMC-Day Yield Change

$$\Delta \text{Yield}_t^{\text{FOMC}} = a + b \times \Delta\beta_{t-1} + \varepsilon_t$$





Predicting FOMC-Day Yield Change

$$\mathbf{\Delta Yield_t^{FOMC}} = a + b \times \mathbf{X} + c \times \mathbf{\Delta \beta_{t-1}} + \varepsilon_t$$

Dep. Var: Change in 2 Year Yield on FOMC						
	X		$\Delta\beta_{t-1}$			
	Coeff.	t-stat	Coeff.	t-stat	R2	Nobs
X=Forward$^{2Year}_{t-1}$ (Fama and Bliss, 1987)	-0.914	[-0.90]			0.6%	170
	-1.219	[-1.22]	-7.765***	[-3.90]	6.2%	170
X=γ_{t-1} (Cochrane and Piazzesi, 2005)	-0.140	[-0.39]			0.1%	170
	-0.311	[-0.86]	-7.671***	[-3.90]	5.5%	170
X=Survey Forecast$_{t-1}$	0.021	[0.89]			0.7%	170
	0.020	[0.90]	-7.378***	[-3.82]	5.8%	170
X=Fed Fund Futures$_{t-1}$	0.012	[0.86]			0.5%	170
	0.010	[0.77]	-7.331***	[-3.77]	5.6%	170
X=Announcement Surprise$_t$ (Kuttner, 2001)	0.503**	[2.44]			7.9%	170
	0.480**	[2.41]	-6.883***	[-3.62]	12.4%	170

Other Tests and Robustness Checks

- **Alternative Specifications** Alternative Specifications
  - Alternative factors, time-varying beta, benchmark adj. return, stale pricing...
- **Is the Strategy Tradable?** Net Fee Performance
  - Restrict to funds without front- and back-end loads
  - Buy macro-active funds one day before macro announcements and sell them after announcements
  - Macro-active funds outperform by 4.6 bps on macro announcement days.
- **Do Investors Learn about Fund Macro Skills?** Investor Flow
  - No, investors divert flow to macro-active funds around 2-3 days AFTER the macro announcement

Conclusions

Bond fund managers possess superior skills in processing macro relevant information

- A Tale of Two-Day Effect:
  - Macro-Day Alpha: Positive and Persistent
  - Non-Macro-Day Alpha: Insignificant
  - Duration change can predict announcement-day yield change
- Contribute to bond mutual fund literature
  - Huang and Wang (2014), Chen, Ferson, and Peters (2010), Choi et al. (2021), etc.
- Absence of alpha for equity funds; Presence of alpha for bond funds
  - Risk for equity but opportunity for bond: Savor and Wilson (2013), Hu et al. (2021)

Appendix – Summary Statistics

Government bond funds statistics								Turnover								
								Govt funds					Other funds			
Year	#Fund	TNA ($Million)	Age (Months)	Flow (%)	Expense (%)	Ret (bps)	STD (bps)	**Least Active**	2	3	4	**Most Active**	**Equity**	**HY**	**IG**	**Muni**
1998	495	178	188	2.42	1.08	2.75	30.48	1.77	1.21	1.39	2.01	2.20	1.12	1.00	1.41	0.42
1999	480	179	192	-0.04	1.08	-0.12	25.29	1.31	1.27	1.45	1.63	2.74	1.12	0.92	1.43	0.48
2000	466	160	201	-0.84	1.08	4.29	23.19	1.39	1.62	1.66	1.53	3.51	1.16	0.91	1.66	0.43
2001	433	183	215	2.88	1.08	3.01	29.71	1.33	1.65	1.84	2.31	3.01	1.16	1.07	2.04	0.35
2002	409	238	223	3.43	1.05	3.68	24.39	1.52	1.71	1.77	1.80	2.52	1.16	1.02	1.95	0.33
2003	392	288	230	-0.08	1.05	1.07	24.77	1.33	1.71	1.91	1.95	2.71	1.05	1.03	2.00	0.32
2004	389	248	233	-1.39	1.06	1.52	21.06	1.16	1.50	1.65	1.76	1.72	0.93	0.84	1.80	0.26
2005	377	228	235	-0.91	1.05	1.07	18.60	1.31	1.63	1.61	1.46	1.36	0.88	0.73	1.66	0.27
2006	362	210	238	-1.02	1.04	1.74	17.58	1.32	1.56	1.63	1.83	1.77	0.87	0.75	1.55	0.29
2007	348	206	239	0.02	1.02	2.82	22.09	1.24	1.28	1.68	2.46	4.48	0.88	0.75	1.62	0.30
2008	351	247	235	1.86	1.00	2.39	37.81	1.76	1.55	1.55	3.22	5.81	1.04	0.68	1.85	0.33
2009	382	288	225	0.33	1.00	1.37	28.24	1.97	1.62	2.11	2.56	2.77	0.99	0.80	1.92	0.26
2010	388	334	221	0.15	0.99	2.18	22.94	1.81	1.77	1.89	1.87	2.83	0.88	0.81	1.88	0.22
2011	390	347	216	0.09	0.98	2.57	22.58	1.95	2.01	2.11	2.22	2.24	0.87	0.78	1.97	0.24
2012	382	395	214	-0.32	0.96	1.16	15.47	1.96	2.59	2.77	2.78	1.66	0.85	0.78	1.83	0.24
2013	367	374	214	-2.25	0.95	-0.70	19.03	1.40	2.49	2.76	3.13	2.55	0.78	0.80	1.69	0.25
2014	351	318	212	-0.87	0.96	1.77	14.60	1.55	2.15	2.22	3.66	2.62	0.75	0.72	1.62	0.23
2015	348	334	208	-0.48	0.94	0.38	19.63	1.38	2.04	2.84	2.73	4.99	0.77	0.68	1.60	0.22
2016	338	368	204	-0.08	0.89	0.67	17.13	1.41	2.17	2.23	2.87	3.02	0.77	0.71	1.55	0.27
2017	336	327	198	-1.01	0.85	0.90	15.10	1.08	1.75	1.88	1.26	1.86	0.71	0.72	1.41	0.29
2018	321	338	193	-0.38	0.82	0.33	15.88	1.14	1.85	1.94	1.73	1.10	0.70	0.65	1.39	0.31
2019	317	390	191	-0.31	0.81	2.24	18.30	1.00	2.14	2.99	3.04	1.30	0.70	0.71	1.49	0.29
All	846	284	216	-0.02	0.99	1.65	22.42	1.45	1.81	2.02	2.27	2.69	0.91	0.81	1.70	0.30

Appendix – Macro-Day Performance Conditional on Activeness

	Government bond mutual funds				
	Least Active	2	3	4	**Most Active**
FOMC	-0.345	0.465	0.925*	1.207**	3.893***
	[-0.77]	[1.05]	[1.79]	[2.01]	[3.97]
GDP	0.694*	2.160***	2.332***	3.136***	3.604***
	[1.83]	[5.72]	[5.31]	[6.17]	[4.33]
Confidence	-0.517	0.503	1.234***	1.492***	1.743**
	[-1.39]	[1.37]	[2.88]	[3.01]	[2.15]
NonFarm Payroll	0.818**	-0.482	-0.502	-0.29	-0.534
	[2.21]	[-1.31]	[-1.17]	[-0.59]	[-0.66]
CPI	0.33	-0.064	-0.543	-0.441	-1.039
	[0.88]	[-0.17]	[-1.26]	[-0.88]	[-1.27]
Sentiment	0.922**	0.627	0.825*	1.031**	0.134
	[2.40]	[1.64]	[1.85]	[2.00]	[0.16]
Durable Goods	0.338	-0.266	0.167	0.354	0.435
	[0.86]	[-0.68]	[0.37]	[0.67]	[0.50]
Retail Sales	0.173	0.289	0.163	0.278	0.439
	[0.43]	[0.72]	[0.35]	[0.52]	[0.50]
New Housing Sales	0.151	0.659*	0.438	0.609	0.529
	[0.38]	[1.68]	[0.96]	[1.15]	[0.61]
Factors, Controls	Y	Y	Y	Y	Y
Observations	5,305	5,305	5,305	5,305	5,305
R-squared	0.81	0.882	0.878	0.873	0.862

Appendix – Funds' Risk Taking on Macro and Non-Macro days

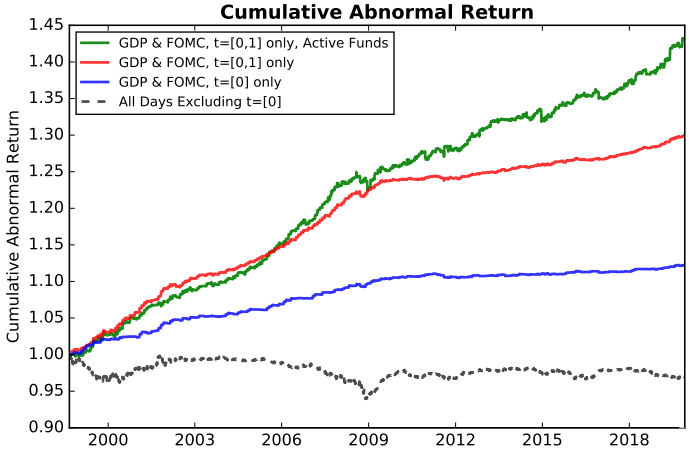
Risk Taking for Active Funds				
	Excess Return	Alpha	Systematic Volatility	Idiosyncratic Volatility
FOMC	5.781**	2.967***	32.23	11.36
	[2.21]	[3.60]		
GDP	9.598***	5.156***	31.18	11.09
	[4.62]	[7.07]		
Confidence	6.051***	1.870***	29.13	9.12
	[3.17]	[3.44]		
NonFarm Payroll	-2.39	-0.10	37.15	9.91
	[-0.99]	[-0.16]		
CPI	1.25	-1.496**	29.71	10.15
	[0.64]	[-2.37]		
Sentiment	1.13	0.42	28.75	10.66
	[0.58]	[0.63]		
Durable Goods	-1.38	0.971*	25.08	8.69
	[-0.83]	[1.82]		
Retail Sales	-1.34	-0.66	30.55	10.95
	[-0.62]	[-0.85]		
New Housing Sales	1.36	0.87	25.78	9.91
	[0.78]	[1.37]		
Non-macro days	0.827*	0.10	25.58	9.85
	[1.73]	[0.60]		

Appendix – Alternative Specifications

Macro-Day Alpha under Alternative Specifications

	FOMC		GDP		Non-Macros	
	Alpha	t-stat	Alpha	t-stat	Alpha	t-stat
Baseline Specification	1.24**	[2.23]	3.95***	[7.36]	0.06	[0.61]
(a) Event-Specific Beta	1.84***	[3.39]	3.99***	[7.35]	0.09	[0.82]
(b) 2Yr+10Yr+30Yr+Stock	1.36**	[2.54]	3.97***	[7.42]	0.06	[0.58]
(c) Level+Slope30+Slope10+Stock+Mortgage	1.26**	[2.55]	3.85***	[7.87]	-0.01	[-0.14]
(d) Level+Slope30+Slope10+Stock+TIPS	1.16**	[2.09]	3.85***	[7.20]	0.07	[0.65]
(e) Level+Slope30+Slope10+Stock+Mortgage+TIPS+Agency	0.92**	[2.05]	3.79***	[7.87]	-0.07	[-0.88]
(f) Benchmark Adj. Ret	0.91**	[2.22]	3.64***	[8.13]	-0.19**	[-2.44]
(g) Net Fee Return	1.24**	[2.23]	3.95***	[7.38]	-0.16	[-1.52]

Investing with Macro-Day Alpha



- Use net-expense fund returns
- Restrict to funds without front- or back-end loads (around 50% of our sample).
- Buy macro-active funds one day before GDP and FOMC and exit after announcements, hold [0,1]
- Annualized Sharpe ratio of 1.52; Abnormal return accumulates to 43.3% from 1998 to 2019.

Appendix – Do Investors Learn about Fund Macro Skills?

	FOMC		GDP		Other 8 Macros	
D(t = -3)	0.673	1.137	0.997	1.267	-1.905**	-1.829**
	[0.31]	[0.52]	[0.56]	[0.69]	[-2.65]	[-2.75]
D(t = -2)	2.853	3.178	0.182	0.526	-0.698	-0.701
	[1.19]	[1.33]	[0.11]	[0.29]	[-1.02]	[-1.03]
D(t = -1)	1.110	1.052	-1.656	-1.694	-2.364	-2.323
	[0.50]	[0.47]	[-0.95]	[-0.97]	[-1.56]	[-1.42]
D(t = 0)	2.331	2.388	-2.724	-3.132	0.360	0.316
	[1.04]	[1.09]	[-1.40]	[-1.51]	[0.21]	[0.21]
D(t =1)	0.264	0.440	1.278	0.454	1.052	0.964
	[0.12]	[0.19]	[0.64]	[0.20]	[1.04]	[1.08]
D(t =2)	-0.517	-0.410	5.883***	4.793**	-2.206**	-2.225**
	[-0.22]	[-0.17]	[2.89]	[2.08]	[-2.57]	[-2.42]
Factors	Y	Y	Y	Y	Y	Y
Controls	N	Y	N	Y	N	Y
Observations	1,196	1,196	1,781	1,781	14,246	14,246
R-squared	0.002	0.029	0.008	0.025	0.003	0.019

Appendix – Importance of Macro Announcements

	Factor Returns					Yield Change			
	Stock	Government Bond	Level	Slope30	Slope10	2 year	5 year	10 year	30 year
GDP	-4.006	-4.020*	-5.925	-3.872**	-0.696	1.010**	0.964**	0.746*	0.256
	[-0.53]	[-1.95]	[-1.22]	[-2.53]	[-0.75]	[2.47]	[2.18]	[1.77]	[0.63]
FOMC	-11.229	-5.630**	-6.781	-8.607***	-1.654	1.905**	1.674**	0.949	0.171
	[-0.72]	[-2.44]	[-1.32]	[-2.91]	[-1.14]	[2.32]	[2.22]	[1.60]	[0.38]
Manufacturing	18.485**	-12.246***	-26.268***	-3.811**	-0.989	2.491***	2.735***	2.535***	2.025***
	[2.12]	[-6.50]	[-6.25]	[-2.51]	[-1.30]	[5.95]	[6.24]	[6.22]	[6.08]
Confidence	-2.069	-4.090**	-10.069**	0.427	-1.289*	0.869**	1.025**	0.927**	0.842**
	[-0.15]	[-2.16]	[-2.36]	[0.32]	[-1.95]	[2.48]	[2.49]	[2.23]	[2.38]
NonFarm Payroll	3.209	-18.185***	-33.887***	-10.008***	-3.091***	3.821***	4.118***	3.308***	2.285***
	[0.38]	[-7.63]	[-7.06]	[-4.56]	[-3.17]	[7.23]	[7.09]	[6.77]	[6.48]
CPI	-8.607	-2.838	-4.978	-1.231	-0.904	0.418	0.528	0.404	0.218
	[-0.78]	[-1.37]	[-1.01]	[-0.79]	[-0.93]	[1.06]	[1.12]	[0.83]	[0.52]
Sentiment	-2.941	-3.352*	-7.407	-2.745*	2.423**	0.442	0.906**	0.927**	0.606
	[-0.34]	[-1.86]	[-1.62]	[-1.88]	[2.53]	[1.30]	[2.21]	[2.26]	[1.62]
Durable Goods	8.751	-2.115	-4.29	-1.03	-0.508	0.415	0.576	0.528	0.359
	[1.36]	[-0.99]	[-0.97]	[-0.66]	[-0.95]	[0.76]	[1.02]	[1.08]	[0.96]
Retail Sales	20.719**	-8.251***	-19.286***	-2.776*	-1.099	1.754***	2.106***	2.032***	1.544***
	[2.18]	[-5.17]	[-4.76]	[-1.68]	[-1.26]	[5.62]	[5.37]	[5.30]	[4.83]
New Housing Sales	-1.229	-3.495**	-7.852**	-0.692	0.451	0.323	0.638*	0.742**	0.700**
	[-0.20]	[-2.10]	[-2.25]	[-0.62]	[0.89]	[1.00]	[1.67]	[2.11]	[2.48]