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Prevalence of COVID-19 in the United States: Evidence from the Panel Study of Income Dynamics



Guangming Han, J. Paul Smith*, J. Scott Smith, H. Todd Smith
 PBC School of Finance at Tsinghua University
 Shanghai Advanced Institute of Finance at Shanghai Jiao Tong University and CAFR
 Sloan School of Management at MIT, CAFR, and NBER
 Sloan School of Management at MIT and NBER

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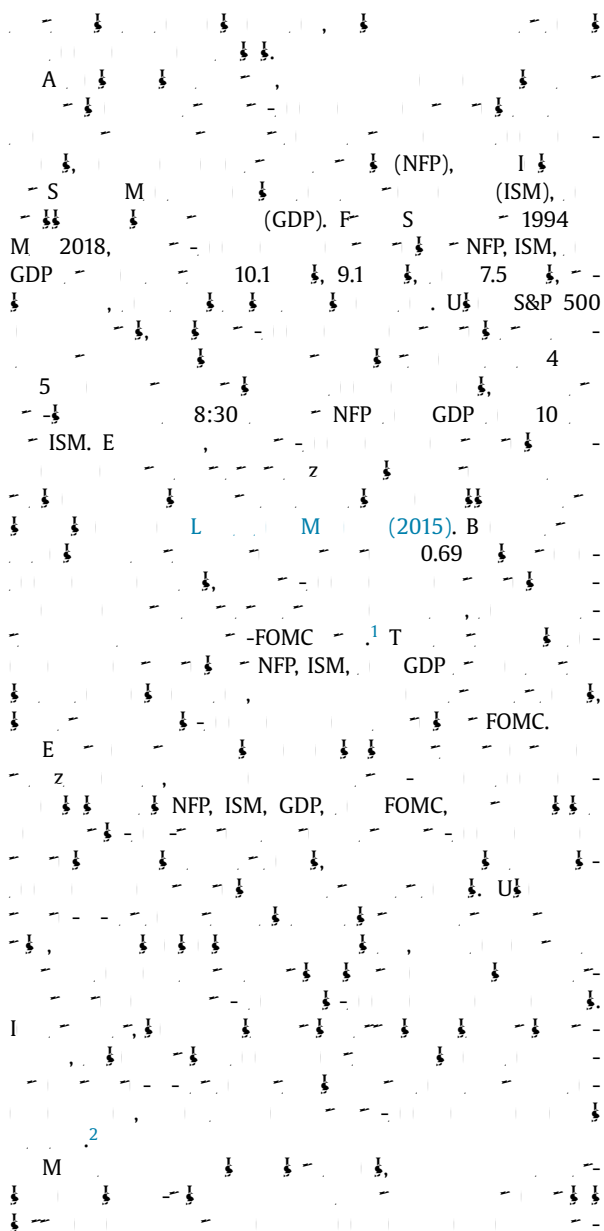
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ABSTRACT

This paper uses the Panel Study of Income Dynamics (PSID) to examine the prevalence of COVID-19 in the United States. We find that the prevalence of COVID-19 is higher for individuals who are older, have lower income, and are less educated. We also find that the prevalence of COVID-19 is higher for individuals who are in the health care industry, have a chronic condition, and are less healthy. Our findings suggest that the impact of COVID-19 is not uniform across the population, and that certain groups are more vulnerable to the disease. We also find that the Federal Reserve's (FOMC) response to the pandemic, including its monetary policy, has had a significant impact on the prevalence of COVID-19. Specifically, we find that the FOMC's response to the pandemic has led to a decrease in the prevalence of COVID-19, particularly for individuals who are older, have lower income, and are less educated.

* A. Smith is the corresponding author. E-mail: smith@mit.edu.



4443986 177.194 T (2015) T 8 14.99 49 TJ 0 T /F2 1 T 6.3761 0 0 6.3387772.23861 177.194 T () TJ 0.0001 T /F1 1 T 7.9701 0 0 7.93761 5238

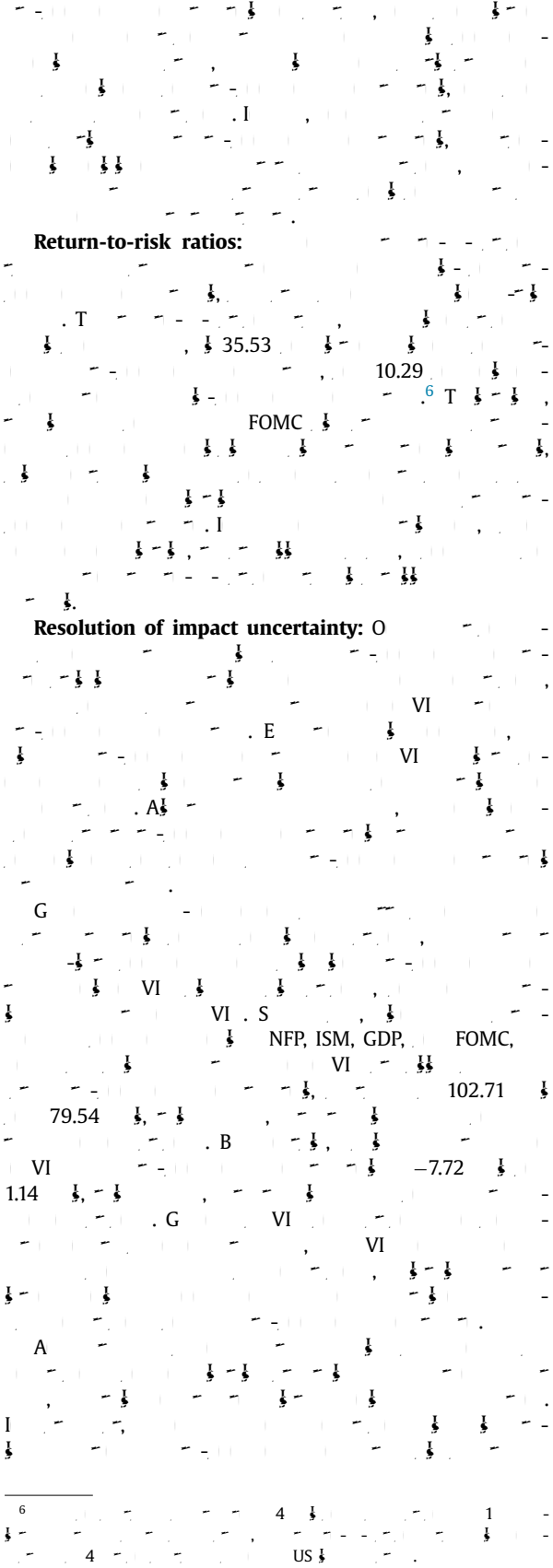
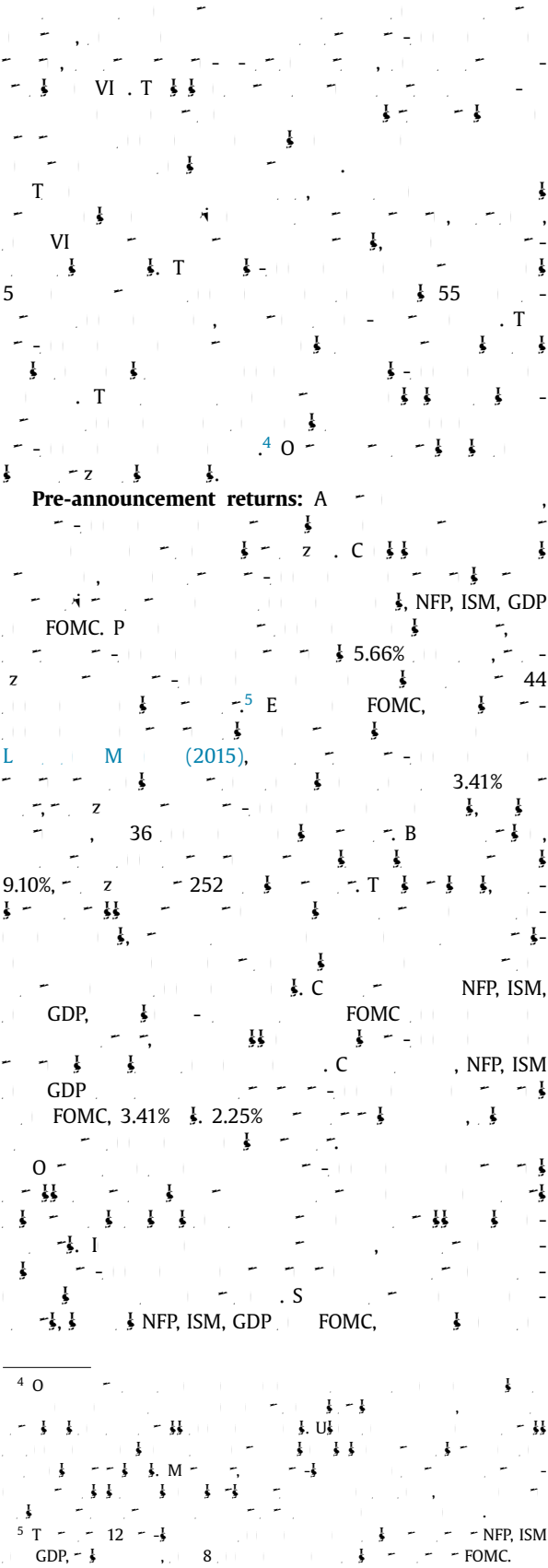


Figure 1 is a 3D scatter plot showing the distribution of 1000 simulated data points. The axes are labeled I, VI, and B. The points are clustered in several regions, with labels indicating specific values: 0.92, 4.09, 3.01, and C. The plot is a perspective view of a rectangular prism.

37

- C -8()14 () TJ /F2 1 T 6.3761 0 0 6.37170 90.5731 139.473 T () TJ -0.0113 T /F1 1 T

- -3 781 T . . . 1(.) TJ 0 T /F2 1 T 6.3761 0 40 6.555 0 4.914619278.781 T

– – – – – ,

M
(I , , M (1973), M (1976)
, B (2004) C (2002)). F
/ 251 1TJ 0.0001 T /F1 11 T 7.9701 0 0 7.9701 220.805 680.697 T 833()TJ 0.0001 T TJ 0 T

$$T = \frac{1}{\sigma^2} \left(\lambda - \lambda_0 \right)$$

Investors

$$T = \frac{1}{\sigma^2} \left(\lambda - \lambda_0 \right)$$

$$\alpha > 0$$

$$\lambda < \frac{2}{\alpha^2}$$

$$\sigma^2$$

Time line

$$t = 0: I = \frac{1}{\sigma^2} \left(\lambda - \lambda_0 \right)$$

$$t = 1: I = \frac{1}{\sigma^2} \left(\lambda - \lambda_0 \right)$$

p 22

T
 $D + \sigma \varepsilon_1$, σ
 ε_1 , $t = 1$. T
 $\delta) \sigma^2$, α , ε_2 , $(1 - \delta) \sigma^2$.
 Solution for date 0 S

$$J_1 = - \left\{ -\alpha \left[W_0 + \theta_0 (D + \sigma \varepsilon_1 - \alpha (1 - \delta) \sigma^2 - P_0) + \frac{1}{2} \alpha (1 - \delta) \sigma^2 \right] \right\}, \quad (9)$$

$W_1 = W_0 + \theta_0 (P_1 - P_0)$.
 R
 σ^2 , λ_0 , λ , δ . T
 ε_1 , 0, $E J_1$, σ :

$$E J_1 | \sigma = - \left\{ -\alpha \left[W_0 + \theta_0 (D - P_0) \right] + \alpha^2 \left[\frac{1}{2} (1 - \delta) - (1 - \delta) \theta_0 - \frac{1}{2} \delta \theta_0^2 \right] \sigma^2 \right\} \quad (10)$$

$$\equiv - \left\{ -\alpha \left[W_0 + \theta_0 (D - P_0) \right] + \alpha^2 Q(\theta_0, \delta) \sigma^2 \right\}, \quad (10')$$

$$Q(\theta_0, \delta) \equiv \frac{1}{2} (1 - \delta) - (1 - \delta) \theta_0 - \frac{1}{2} \delta \theta_0^2, \quad (11)$$

σ^2 , θ_0 , σ^2 :

$$\begin{aligned} E J_1 &= E E J_1 | \sigma \\ &= -e^{-\alpha W_0 + \theta_0 (D - P_0)} \int_{\lambda_0}^{\infty} e^{-\alpha^2 Q(\theta_0, \delta) x} \frac{1}{\lambda} e^{-\frac{x - \lambda_0}{\lambda}} dx \\ &= -e^{-\alpha W_0 + \theta_0 (D - P_0) - \alpha^2 Q(\theta_0, \delta) \lambda_0} \frac{1}{1 + \alpha^2 \lambda Q(\theta_0, \delta)}, \quad (12) \end{aligned}$$

$$1 + \alpha^2 Q(\theta_0, \delta)$$

$$= 1 + \alpha^2 \lambda \left[\frac{1}{2} (1 - \delta) - (1 - \delta) \theta_0 - \frac{1}{2} \delta \theta_0^2 \right] > 0. \quad (13)$$

I, $\theta_0 = 1$, α

$$T = \frac{1}{\lambda} \left(\frac{1}{\lambda} \right) \quad (17)$$

$$V \sigma^2 = \lambda^2 \cdot S$$

$$VI$$

$$VI$$

$$I$$

$$VI$$

2.4. Return and variance

$$0 \quad 1 \quad 1 \quad 2. D$$

$$R_t = P_t - P_{t-1}, \quad t = 1, 2. \quad (18)$$

$$P = \frac{1}{\lambda} \left(\frac{1}{\lambda} \right) \quad (19)$$

$$E R_1 = \alpha \delta (\lambda_0 + \lambda) + \frac{\frac{1}{2} \alpha^3 \lambda^2}{1 - \frac{1}{2} \alpha^2 \lambda} > 0, \quad (19)$$

$$V R_1 = \delta (\lambda_0 + \lambda) + \alpha^2 (1 - \delta)^2 \lambda^2. \quad (19)$$

$$E R_2 = \alpha (1 - \delta) (\lambda_0 + \lambda) > 0, \quad (20)$$

$$V R_2 = (1 - \delta) (\lambda_0 + \lambda) + \alpha^2 (1 - \delta)^2 \lambda^2. \quad (20)$$

$$F = \frac{1}{\lambda} \left(\frac{1}{\lambda} \right) \quad (20)$$

$$B = \frac{1}{\lambda} \left(\frac{1}{\lambda} \right) \quad (20)$$

$$(1 - \delta) (\lambda_0 + \lambda),$$

$$(\cdot, \varepsilon_2). I$$

$$\sigma^2, \quad \lambda^2. F$$

• T $\frac{1}{\lambda}$ $\frac{1}{\lambda}$ $\frac{1}{\lambda}$ & - - - - -
- - - - - 0. A - - - - -
- - - - - λ $\frac{1}{\lambda}$ TJ/F2 1 Tf 6.3761 0 0 6.3761 225.0264 586.5014-553.034.Tm .rio1 1 Tf 7.9701 0 0 7.9701 76.2375 544.7323 95m 0 34.Tm .rio
z - - - - - 0. A - - - - - z
 λ - - - - - 0 $\frac{1}{\lambda}$ - - - - -
• T $\frac{1}{\lambda}$ - - - - - $\frac{1}{\lambda}$ & - - - - -
- - - - - 0 1 - - - - - D - - - - -
- - - - - σ $\frac{1}{\lambda}$ - - - - -
 $\frac{1}{\lambda}$ I - - - - - , - - - - -
 $\frac{1}{\lambda}$ $\frac{1}{\lambda}$, $\frac{1}{\lambda}$ - - - - - δ .
• T $\frac{1}{\lambda}$ - - - - - $\frac{1}{\lambda}$ & - - - - -
- - - - - 1 $\frac{1}{\lambda}$ - - - - -

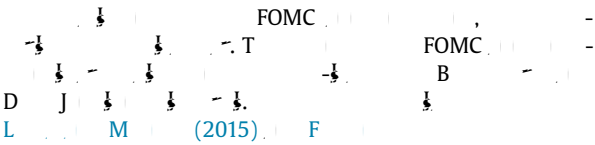
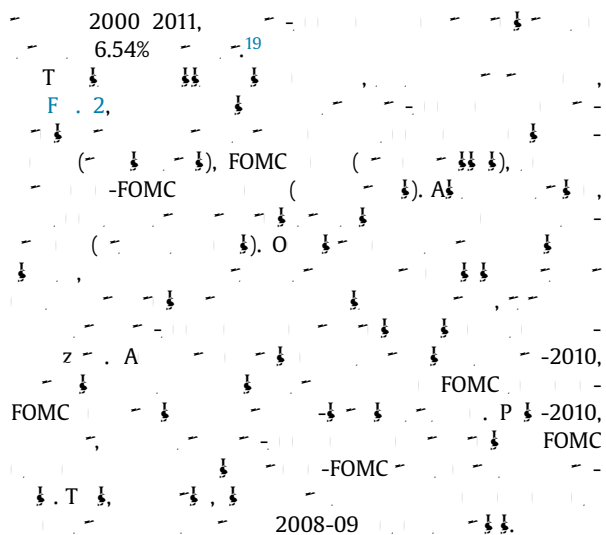
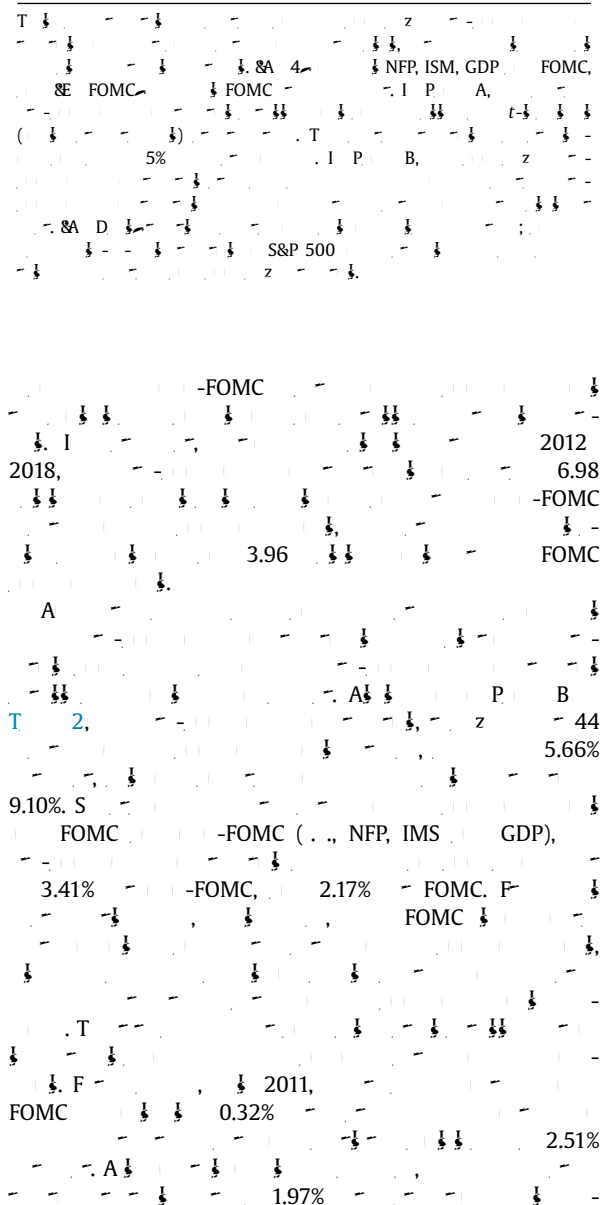


Table 2

Panel A: Post-announcement return per year (in percent)		M - A		A D	
		A 4	E FOMC	FOMC	(- -)
P	A: P				()
1994–2000		16.00	9.60	35.81	6.95
		4.22	2.17	5.55	2.62
2001–2011		14.87	10.88	35.55	0.78
		4.58	3.16	4.27	0.30
2012–2018		7.02	6.98	3.96	5.14
		2.54	2.27	0.74	2.62
1994–2018		12.86	9.48	27.14	3.61
		6.49	4.40	5.95	2.39

Panel B: Pre-announcement return per year (in percent)				
1994–2000	7.04	3.46	2.86	17.51
2001–2011	6.54	3.92	2.84	1.97
2012–2018	3.09	2.51	0.32	12.95
1994–2018	5.66	3.41	2.17	9.10
#	44	36	8	252



4.2. Return-to-variance ratios

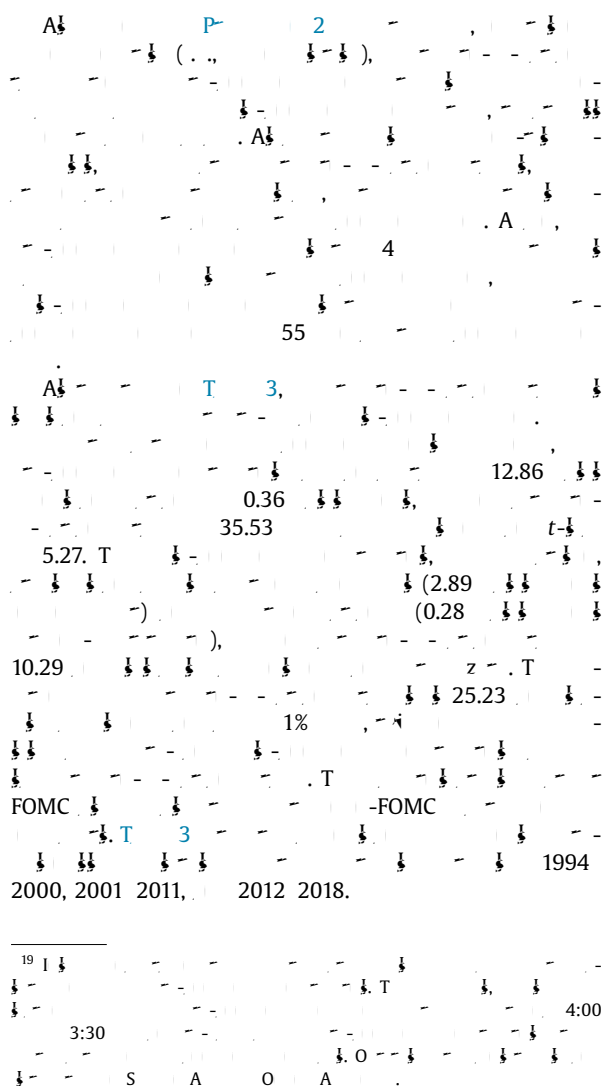


Table 3

	P = -A		P = -A		P = -A		P = -P
	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	R	V	R/V	R	V	R/V	R/V
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All 4 Macro	12.86	0.36	35.53	2.89	0.28	10.29	25.23
	6.49		5.27	1.66		1.65	2.75
Ex FOMC	9.15	0.35	26.38	2.03	0.24	8.56	17.82
	4.20		3.49	1.13		1.12	1.66
FOMC Only	27.14	0.40	68.58	6.19	0.45	13.82	54.75
	5.95		5.41	1.28		1.28	3.28
Subperiods for All 4 Macro							
1994-2000	16.00	0.28	56.73	4.48	0.38	11.84	44.89
	4.22		3.71	1.02		1.00	2.33
2001-2010	15.22	0.47	32.27	1.83	0.32	5.70	26.57
	4.54		3.52	0.66		0.66	3.43
2011-2018	7.63	0.26	29.22	3.32	0.16	6.52	20.21
	2.62		2.46	1.44		1.40	1.61

SA 4 M - NFP, ISM, GDP FOMC 8D.380MCT 1,5-7(F2 1 T 6.3761 0 0 6.3761 188.65464 495.81247T) TJ -0.0065 T

Table 4

	A	M	E	FOMC	FOMC O				
	H	L	H - L	H	L	H - L	H	L	H - L
P A: R	ΔVI	S	P-A	ΔVI					
Pre-Announcement Period									
R	85.97	0.17	85.80	81.22	-8.70	89.92	100.39	9.23	91.16
	12.05	0.05	11.69	10.35	-1.73	8.26	8.50	2.48	9.60
ΔVI	-1.32	0.31	-1.63	-1.07	0.46	-1.53	-1.57	0.11	-1.68
	-16.98	6.27	-15.53	-9.77	5.86	-9.14	-14.05	1.96	-13.41
Post-Announcement Period									
R	0.34	5.80	-5.46	11.15	1.35	9.80	-5.87	9.19	-15.06
	0.05	1.89	-0.80	1.72	0.43	1.38	-0.56	1.67	-1.22
ΔVI	-0.20	-0.22	0.02	-0.11	-0.07	-0.04	-0.32	-0.39	0.07
	-2.20	-5.76	0.22	-1.00	-1.53	-0.37	-1.89	-6.43	0.49
	All 4 Macro			Ex FOMC			FOMC Only		
	H (ΔVI)	L (ΔVI)	H - L (ΔVI)	H (ΔVI)	L (ΔVI)	H - L (ΔVI)	H (ΔVI)	L (ΔVI)	H - L (ΔVI)
Panel B: Pre-Announcement Returns, Double-Sorted by Pre-Announcement ΔVI	ΔVol								
H (ΔV)	102.71	-7.72	110.43	72.33	-19.53	91.86	126.71	28.14	98.57
	7.17	-0.58	5.53	6.18	-1.14	2.96	4.35	2.38	3.64
L (ΔV)	79.54	1.14	78.40	84.18	-6.18	90.36	89.45	6.75	82.70
	10.14	0.35	9.21	8.64	-1.30	8.18	7.48	1.49	7.14
H-L (ΔV)	23.16	-8.86		-11.86	-13.35		37.26	21.39	
	1.53	-0.92		-0.65	-1.04		1.38	1.82	
A	ΔVI	ΔV	V	ΔVI	ΔV	P A	P B	ΔVI	ΔV
(ΔV)	NFP, ISM, GDP	FOMC	FOMC	FOMC	FOMC	FOMC	FOMC	FOMC	FOMC
T	1994	1994	1994	1994	1994	1994	1994	1994	1994
	5%								

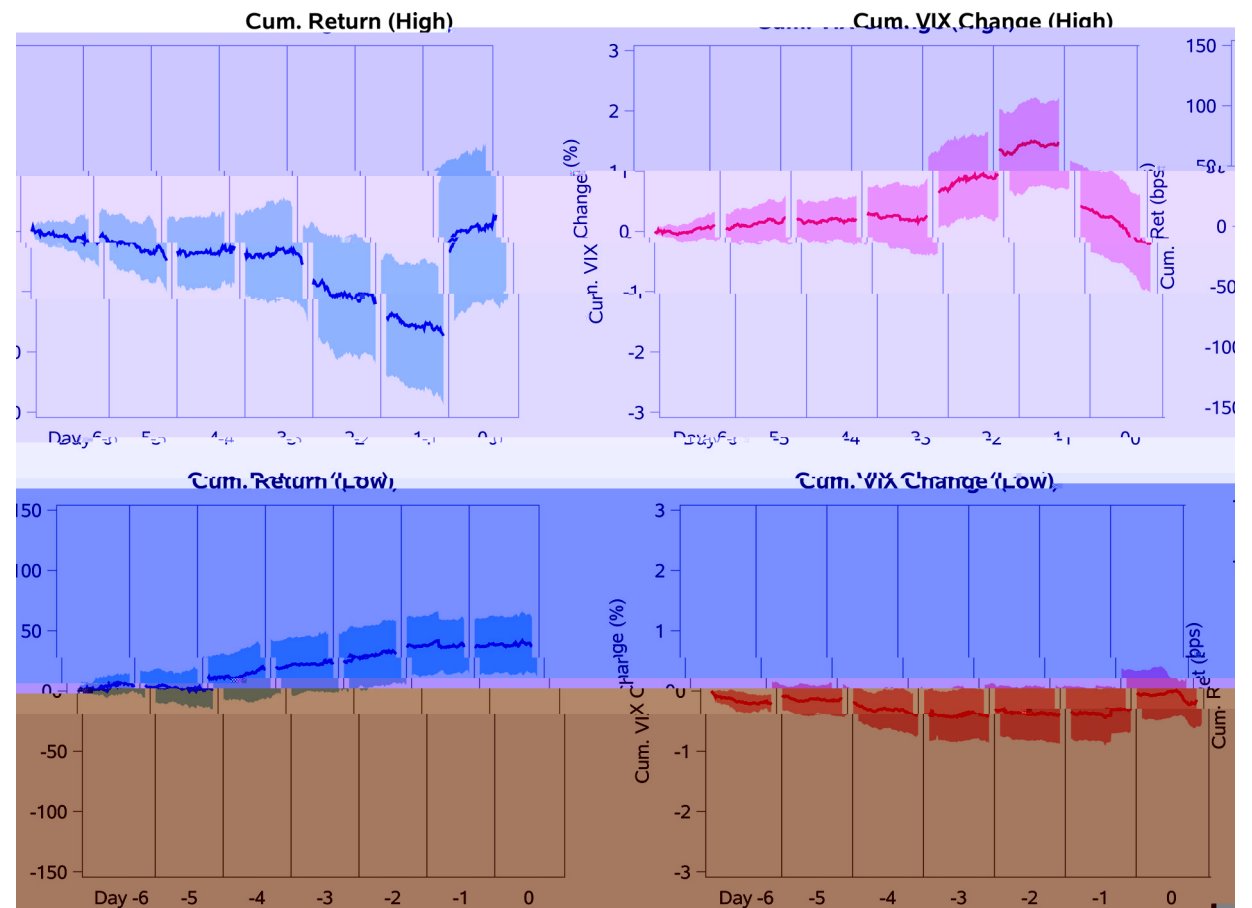


Fig. 3. A C R V I C H L U M A D M (NFP, ISM, GDP, FOMC) 20% V I 95% T S 1994 M 2018.

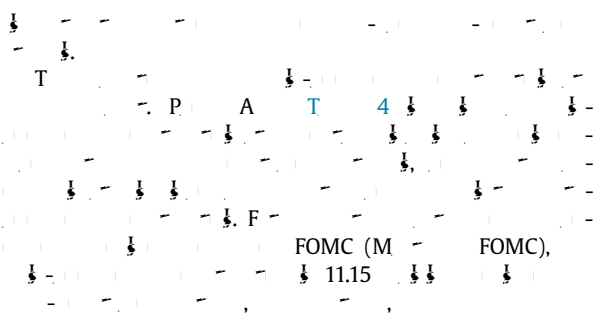
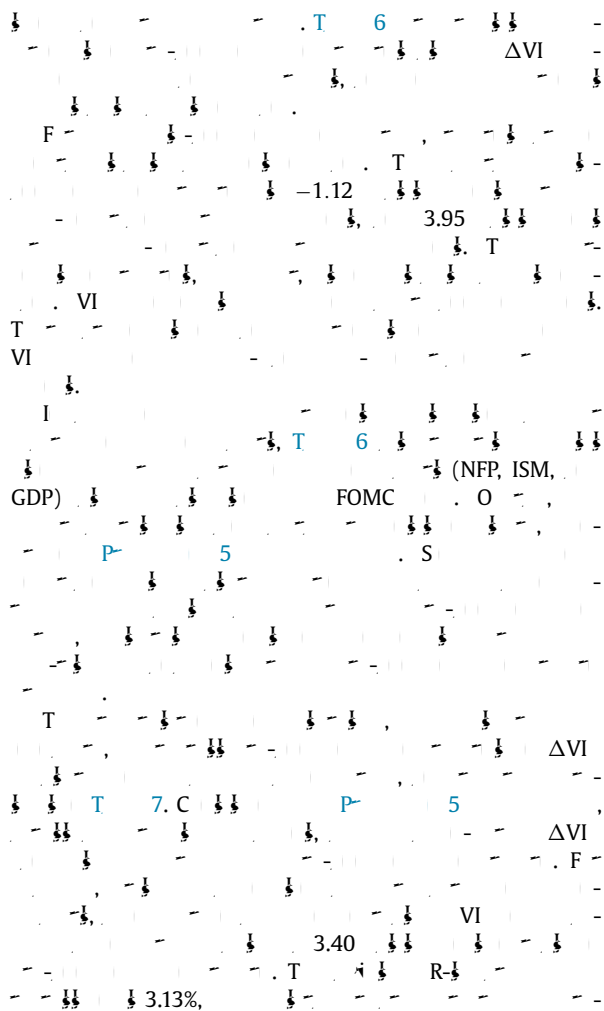
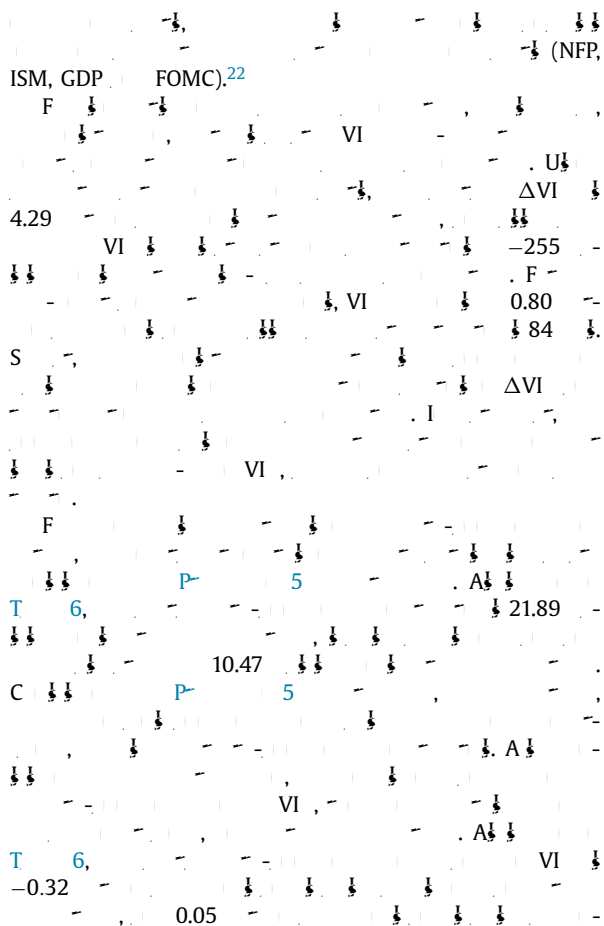


Table 5
M $\frac{1}{2}$ P $\frac{1}{2}$ -A $\frac{1}{2}$ R $\frac{1}{2}$

Table 6

M	H	U	U	A	-P	ΔVI	A 4 M			E FOMC			FOMC O		
							H	L	H-L	H	L	H-L	H	L	H-L
A															
R							-254.73	83.69	-338.42	-247.05	80.19	-327.24	-283.59	95.32	-378.91
							-15.41	12.13	-21.07	-13.29	10.56	-18.38	-7.31	5.82	-9.95
ΔVI (1/100)							4.29	-0.80	5.09	4.10	-0.85	4.95	5.15	-0.56	5.71
							20.21	-10.54	27.54	18.67	-9.86	24.19	8.51	-3.61	13.27
P-A															
R							21.89	10.47	11.42	16.95	7.09	9.86	43.65	23.01	20.64
							4.05	5.11	2.35	2.89	3.12	1.84	3.33	4.96	1.82
ΔVI							-0.32	0.05	-0.38	-0.12	0.23	-0.34	-0.60	-0.12	-0.48
							-2.10	1.00	-2.86	-0.62	2.63	-1.74	-2.53	-2.04	-2.82
P-A															
R							-1.12	3.95	-5.07	-0.33	2.66	-2.99	-3.09	8.51	-11.60
							-0.25	2.11	-1.18	-0.07	1.39	-0.67	-0.26	1.60	-0.96
ΔVI							-0.13	-0.24	0.11	0.09	-0.12	0.21	-0.39	-0.37	-0.02
							-1.35	-6.55	1.26	0.65	-3.19	2.06	-2.68	-5.82	-0.13

ΔH (1/100) = ΔH (1/100) - ΔH (1/100) (1994 M 2018).
 ΔL (1/100) = ΔL (1/100) - ΔL (1/100) (1994 M 2018).
 ΔVI (1/100) = ΔVI (1/100) - ΔVI (1/100) (1994 M 2018).
 ΔP (1/100) = ΔP (1/100) - ΔP (1/100) (1994 M 2018).
 ΔA (1/100) = ΔA (1/100) - ΔA (1/100) (1994 M 2018).
 ΔU (1/100) = ΔU (1/100) - ΔU (1/100) (1994 M 2018).
 ΔS (1/100) = ΔS (1/100) - ΔS (1/100) (1994 M 2018).
 ΔT (1/100) = ΔT (1/100) - ΔT (1/100) (1994 M 2018).
 ΔF (1/100) = ΔF (1/100) - ΔF (1/100) (1994 M 2018).
 ΔC (1/100) = ΔC (1/100) - ΔC (1/100) (1994 M 2018).
 ΔR (1/100) = ΔR (1/100) - ΔR (1/100) (1994 M 2018).
 ΔI (1/100) = ΔI (1/100) - ΔI (1/100) (1994 M 2018).
 ΔO (1/100) = ΔO (1/100) - ΔO (1/100) (1994 M 2018).
 ΔZ (1/100) = ΔZ (1/100) - ΔZ (1/100) (1994 M 2018).



²² U = 80, NFP, 93, ISM, 77, GDP, 51, FOMC, I.

Table 8

A 4 M		E FOMC		FOMC O	
H	L	H - L	H	L	H - L
P A: R	$\Delta V V, S$	P - A	$\Delta V I$		
$\Delta V I$	-1.32	0.31	-1.63	-1.07	0.46
	-16.98	6.27	-15.53	-9.77	5.86
R	85.97	0.17	85.80	81.22	-8.70
	12.05	0.05	11.69	10.35	-1.73
$\Delta V V$	-2.34	-0.59	-1.75	3.39	0.03
	-2.60	-1.14	-1.57	1.50	0.04
P B: R	$\Delta V I, S$	P - A	$\Delta V V$		
$\Delta V V$	-8.66	1.69	-10.35	-7.90	2.27
	-16.04	6.89	-18.47	-12.08	7.80
R	27.43	10.27	17.16	14.00	9.18
	5.28	4.61	3.33	2.80	3.67
$\Delta V I$	-0.20	0.05	-0.25	0.30	0.12
	-1.78	0.80	-1.99	2.10	1.26

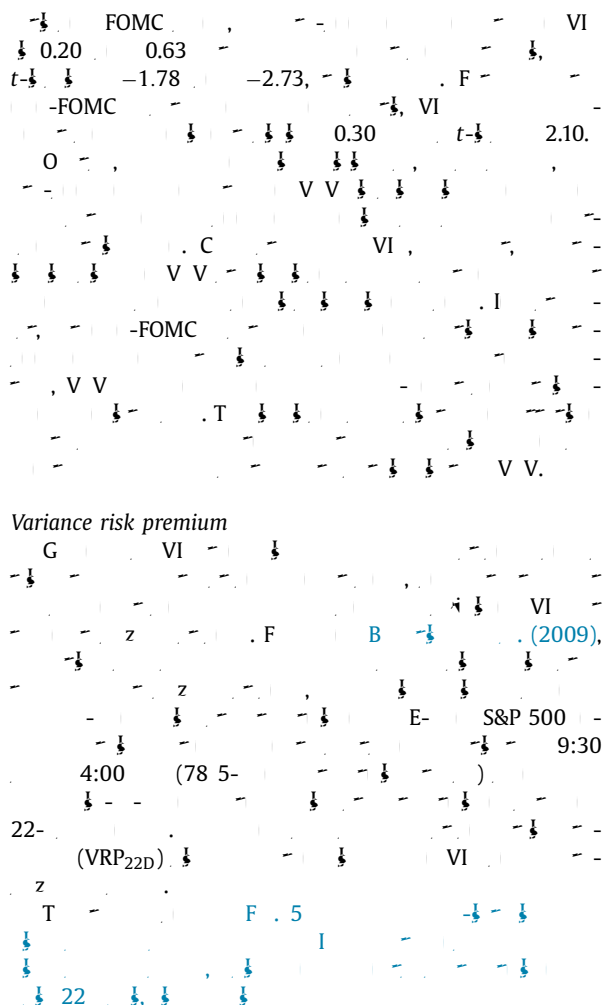
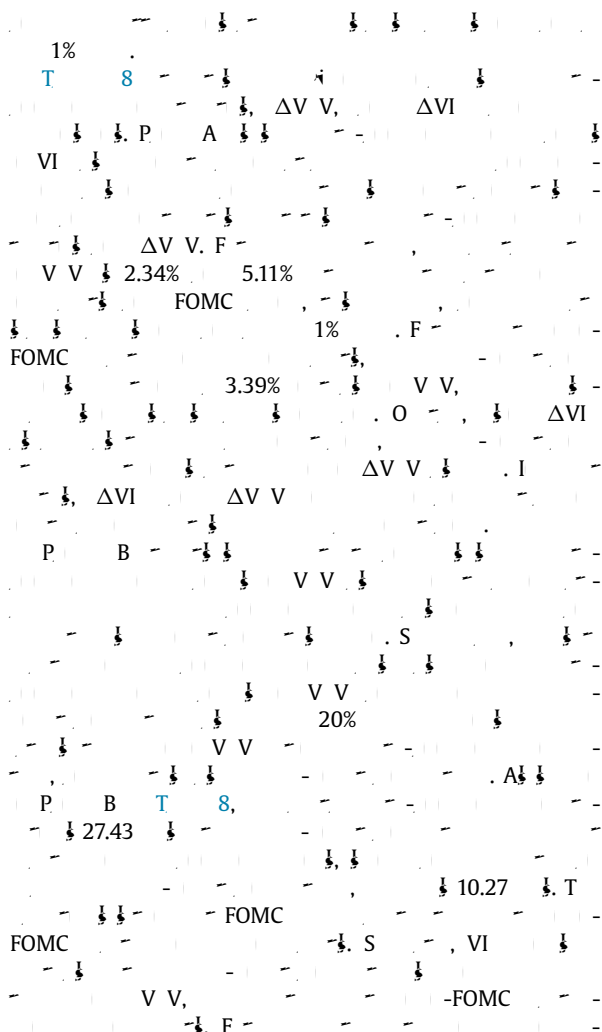


Table 11

P	R	ΔVI	VI	B	-	.
			R			ΔVI
ΔVI	-6, -1	2.96***	0.33	-0.07***	-0.02**	
		3.60	0.40	-6.87	-2.04	
ΔVI	-6, -1 $\times$ M		5.43**		-0.09**	
			1.99		-2.43	
ΔVI	-6, -1 $\times$ HVI		6.69*		-0.13**	
			1.69		-2.30	
M			15.44***		-0.32***	
			3.76		-6.17	
HVI			13.85		-0.23	
			0.63		-0.61	
C		3.60**	-0.76	0.00	0.09***	
		2.48	-0.46	0.01	3.91	
A	R-S (%)	0.64	1.65	2.07	4.08	
O		5972	5972	5971	5971	
D			S&P 500		VI	
			VI		SM	
			NFP, ISM, GDP		FOMC	
			VI		HVI	
			VI		η	0.3, R
			ΔVI		ΔVI	-6, -1
					ΔVI	T
			N			T
			S			1994
						M
						2018.

T

M



$$E R_1 = \alpha \lambda_0 + \frac{\alpha \lambda}{1 - \frac{1}{2} \alpha^2 \lambda} - \alpha(1 - \delta) E \sigma^2$$

$$= \delta \alpha (\lambda_0 + \lambda) + \frac{\frac{1}{2} \alpha^3 \lambda^2}{1 - \frac{1}{2} \alpha^2 \lambda} > 0, \quad (A.2)$$

$$V R_1 = V \sigma \varepsilon_1 - \alpha(1 - \delta) \sigma^2 = E \left[\sigma \varepsilon_1 - \alpha(1 - \delta) \sigma^2 \right]$$

$$- (E \sigma \varepsilon_1 - \alpha(1 - \delta) \sigma^2)^2$$

$$= \delta (\lambda_0 + \lambda) + \alpha^2 (1 - \delta)^2 \lambda^2. \quad (A.3)$$

$$E R_2 = E \sigma \varepsilon_2 + \alpha(1 - \delta) \sigma^2 = \alpha(1 - \delta) (\lambda_0 + \lambda) > 0, \quad (A.4)$$

$$V R_2 = V \sigma \varepsilon_2 + \alpha(1 - \delta) \sigma^2 = E \left[\sigma \varepsilon_2 + \alpha(1 - \delta) \sigma^2 \right]$$

$$- (E \sigma \varepsilon_2 + \alpha(1 - \delta) \sigma^2)^2$$

$$= (1 - \delta) (\lambda_0 + \lambda) + \alpha^2 (1 - \delta)^2 \lambda^2, \quad (A.5)$$

Deriving Proposition 3

$$(19) \quad (20), \quad \lambda, \quad 2/\alpha^2,$$

$$T \quad \lambda^*, \quad \lambda$$

$$F, E R_1 > E R_2$$

$$\frac{\frac{1}{2} \alpha^3 \lambda^2}{1 - \frac{1}{2} \alpha^2 \lambda} > (1 - 2\delta) \alpha (\lambda_0 + \lambda). \quad (A.6)$$

$$S \quad \delta \in [0, 1], \quad \lambda$$

$$\frac{\frac{1}{2} \alpha^3 \lambda^2}{1 - \frac{1}{2} \alpha^2 \lambda} > \alpha (\lambda_0 + \lambda). \quad (A.7)$$

$$N, \quad RVR_1 > RVR_2,$$

$$F, \quad RVR_2 = \frac{\alpha (\lambda_0 + \lambda)}{(\lambda_0 + \lambda) + \alpha^2 (1 - \delta) \lambda^2} < \alpha. \quad (A.8)$$

$$M, \quad RVR_1 = \frac{\alpha \delta (\lambda_0 + \lambda) + \frac{1}{2} \alpha^3 \lambda^2 / (1 - \frac{1}{2} \alpha^2 \lambda)}{\delta (\lambda_0 + \lambda) + \alpha^2 (1 - \delta)^2 \lambda^2}. \quad (A.9)$$

$$A, \quad RVR_1, \quad \delta$$

$$\delta, \quad RVR_1 > RVR_2$$

$$\frac{\frac{1}{2} \alpha^3 \lambda^2 / (1 - \frac{1}{2} \alpha^2 \lambda)}{(\lambda_0 + \lambda) + \alpha^2 \lambda^2} > \alpha. \quad (A.10)$$

$$R, \quad \lambda$$

$$\frac{\frac{1}{2} \alpha^3 \lambda^2}{1 - \frac{1}{2} \alpha^2 \lambda} - \alpha^3 \lambda^2 > \alpha (\lambda_0 + \lambda). \quad (A.11)$$

$$C, \quad (A.7), \quad (A.11), \quad (A.11),$$

$$\lambda \left(\frac{\frac{1}{2} \alpha^4 \lambda^2 - 1}{1 - \frac{1}{2} \alpha^2 \lambda} \right) > \lambda_0. \quad (A.12)$$

$$N, \quad \lambda:$$

$$\frac{\sqrt{2}}{\alpha^2} < \lambda < \frac{2}{\alpha^2} \quad (A.13)$$

$$(4), T, \quad -\lambda, \quad (A.13),$$

$$\lambda \left(\frac{\frac{1}{2} \alpha^4 \lambda^2 - 1}{1 - \frac{1}{2} \alpha^2 \lambda} \right) = \frac{\frac{1}{2} \lambda (\alpha^2 \lambda + \sqrt{2}) (\alpha^2 \lambda - \sqrt{2})}{1 - \frac{1}{2} \alpha^2 \lambda}$$

$$> \frac{(2/\alpha^2) (\alpha^2 \lambda - \sqrt{2})}{1 - \frac{1}{2} \alpha^2 \lambda}. \quad (A.14)$$

$$T, \quad (A.12)$$

$$\frac{(2/\alpha^2) (\alpha^2 \lambda - \sqrt{2})}{1 - \frac{1}{2} \alpha^2 \lambda} > \lambda_0, \quad (A.15)$$

$$\lambda > \frac{\sqrt{2}/\alpha^2 + \lambda_0/2}{1 + \alpha^2 \lambda_0/4} = \frac{\sqrt{2}}{\alpha^2} + \frac{(2 - \sqrt{2}) \lambda_0}{4 + \alpha^2 \lambda_0} \equiv \lambda^* (\lambda_0). \quad (A.16)$$

$$T, \quad P, \quad 3, \quad \lambda^* (\lambda_0) \in [\sqrt{2}/\alpha^2, 2/\alpha^2].$$

Supplementary material

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References

- A, H., B, R., 2018. R, 86, 1383–1430.
- A, H., B, R., H., L.J., 2021. I, A, P, A, D.
- B, G., C, C., 1997. E, J. F., 52, 2003–2049.
- B, R., A., 2004. R, J. F., 59, 1481–1509.
- B, M., L., A., M., P., 2019. M, B, M, P.
- B, G., G., 2000. A, R, F., S., 13, 1–42.
- B, H., F., T., V., C., 2021. D, U.S. T, R, F, S., 34, 3403–3455.
- B, G., H., J., T., 2016. C, J. F., E., 121, 496–520.
- B, F., 1976. S, I, P, 1976 M, B, E, S, S, A, S, DC, 177–181.
- B, T., T., G., H., 2009. E, R, F., S., 22, 4463–4492.
- B, T., T., V., 2011. T, J. F., 66, 2165–2211.
- B, F., S., P., M., 2020. O, R, F., 24, 263–304.
- C, J., G., S., P., C., T., R., 2018. A, J. F., E., 128, 202–233.
- C, J., H., L., 1992. N, J. F., E., 31, 281–318.

- C - , P., , L., 2006. A
C - , P., , L., 2009. V -
1311 1341.
C - , A.A., 1982. T
C - , A., M - , A., V - , A., 2019. S
FOMC
D - , P., M - , S., S - , C., 2006. S
Q - , A - , 41, 381 406.
D - B - , I., G - , S., L., A., R - , z, M., 2017. T
- J. F - , E - , 123, 225 250
E - , R., G - , T., H - , C., 2019. M - T - 100% E P -
- H - M - R - E - M - A
D - ?
F - , A., M - , C., S - , J., 2018. M - A
S - M -
F - , M., P - z - , M., 2005. M - P - T - T -
F - , K.R., S - , G., S - , R.F., 1987. E
- J. F - , E - , 19, 3 29.
G - , T., K - , A., , M., 2018. T D - P - FOMC A -
D - P -
G - , R., J., D., S - , , 2019. A - , U - , R - P -
H - , B., 2019. D - I - A - A - P -
H - , H., , J., 1995. D -
- R - F - S - , 8, 919 972.
H - , G., , P - , J., , J., 2017. E -
- J. F - , E - , 126,
399 421.
J - , G., P - , G., Q - , , 2019. P -
K - , A., S - , A., S - , G., , M.H., 2019. P -
- U.S.
- J. F - , Q - , A - , 54, 449 479.
L - , T., 2020. P - R -
L - , H., T - , G., 2021. R - FOMC R - P -
L - , D., P - , C., S - , S., 2019. A -
- J. F - , E - , 134, 192 213.
L - , D., M - , E., 2015. T - FOMC
70, 329 371.
L - , D., M - , E., 2018. T P - FOMC A - D - M - R -
E - L - S - E - 20181116 - F - R -
B - N -
M - , R.C., 1973. A -
41, 867 887.
M - , R.C., 1976. O -
- J. F - , E - , 3, 125 144.
P - , J., 2002. T -
- J. F - , E - , 63, 3 50.
S - , T., 2011. E -
- J. I - F - M - J - M - 21, 107 126.
S - , P., , M., 2013. H -
- ? E -
F - , Q - , A - , 48, 343 375.
T - , V., 2010. V -
R - F - S - 23, 345 383.
- , J.A., , 2019. A M - T - D - N - A -
P -
G., 2001. T -
14, 837 859.