

MIDAS-QR GARCH-MIDAS 2012 2020
16
MIDAS-QR
VaR
VaR VaR
MIDAS-QR GARCH-MIDAS

0

VaR

VaR

VaR

GARCH

71973098
1969.1-

wangzhouw@163.com
200234

1994.6-

100

19821838269

100

13524423239

wei-pengfei@outlook.com
200234

254

VaR

VaR

VaR

VaR

VaR

GARCH-MIDAS

MIDAS-QR

22

1

VaR

GARCH

GARCH

GARCH

Bollerslev ^[1] 1986

GARCH

Engle ^[2] 2008

GARCH

GARCH-MIDAS

GARCH-MIDAS

GARCH-MIDAS

^[3] 2017

GARCH

GDP

^[4] 2018

GARCH

GARCH

M-Realized GARCH

M-

Realized GARCH

Realized GARCH

^[5] 2019

GARCH-MIDAS

GARCH

Ghysels ^[6] 2016

MIDAS-QR

^[7] 2020

MIDAS-QR

300

10

MIADS-QR

GARCH-MIDAS

MIDAS-QR

GARCH-MIDAS

GARCH-MIDAS

GARCH-MIDAS

VaR

MIDAS-QR

VaR

GARCH-MIDAS

GARCH-MIDAS

GSVaR

GLVaR

MIDAS-QR

QVaR

VaR

VaR

MIDAS

MIDAS-

QR

MIDAS

$$q_\alpha(r_{t,n}) = \beta_0 + \beta_1 Z_{t-1}(k)$$

1

$$Z_{t-1}(k) = \sum_{d=0}^D \psi(k) x_{t-1-d}$$

2

n

n

22

D

1

0.05

MIDAS-QR

$$QVaR_t = q_{0.05}(r_{t,22})$$

3

QVaR_t

t

MIDAS-QR

GARCH-MIDAS

GARCH

GARCH-MIDAS

GARCH-MIDAS

$$r_{it} = u + \sqrt{\tau_t g_{it}} \varepsilon_{it}, \quad \varepsilon_{it} | \Phi_{i-1,t} \sim N(0,1)$$

4

$$g_{i,t} = (1 - \alpha - \beta) + \alpha \frac{(r_{i-1,t} - u)^2}{\tau_t} + \beta g_{i-1,t} \quad 5$$

$$\tau_t = m + \theta \sum_{k=1}^K \psi_k(w_1, w_2) V_{t-k} \quad 6$$

$$\psi_k(w, 1) = \frac{(1 - k/K)^{w-1}}{\sum_{j=1}^K (1 - j/K)^{w-1}} \quad 7$$

$$V_t = \sum_{i=1}^N r_{it}^2 \quad 8$$

4	GARCH-MIDAS	r_{it}	t	i	
	τ_{it}	V_t		$\psi_k(w)$	k
		g_{it}		g_{it}	GARCH 1,1

GARCH-MIDAS

$$LLF = -\frac{1}{2} \sum_{t=1}^T \left[\ln(2\pi) + \ln g_t(\Phi) \tau_t(\Phi) + \frac{(r_t - u)^2}{g_t(\Phi) \tau_t(\Phi)} \right] \quad (9)$$

VaR

	GARCH-MIDAS			$GSVaR_{i,t}$	
GARCH-MIDAS		$GSVaR_{i,t}$	10	11	
		$GSVaR_{i,t} \approx -F^{-1}(0.05) \sqrt{g_{i,t} \tau_{i,t}} - u$	(10)		
		$GLVaR_{i,t} \approx -F^{-1}(0.05) \tau_{i,t} - u$	(11)		
	4	q	,	q	0.05
t		t		i	

$$F = \frac{\sum_{t=1}^N I(r_t < VaR_t)}{N} \quad (12)$$

N r_t t

VaR

2010 9 30

2019 12 31 16

13 16

0

2016

$$r_{m,t} = \frac{\sum_{i=1}^N w_{i,t} r_{i,t}}{\sum_{j=1}^N w_{j,t}} \quad (13)$$

$r_{m,t}$ t $w_{i,t}$ i t

$r_{m,t}$ i t

GARCH-MIDAS

GSVaR

GLVaR

MIDAS-QR

QVaR

GARCH-MIDAS

GSVaR

GLVaR

MIDAS-QR

QVaR

$$mr_t = \sum_{j=1}^{22} r_{t+j} \quad (14)$$

mr_t t

1-2

_____ DCC-GARCH
 _____, 2016(09):90-99.

[J].

1

100

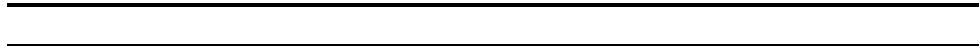
10 50

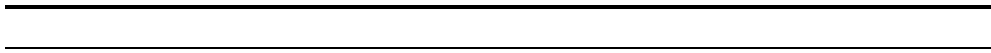
VaR

GARCH-MIDAS

VaR

			6	7	8		N	3
K	5	GARCH-MIDAS					3	





*** p 1% ** p 5% * p 10%

4 0.05

MIDAS-QR

GARCH-MIDAS GSVaR
 GLVaR MIDAS-QR QVaR
 GSVaR GLVaR QVaR

5



14.189 9.715
 10.574 2.033
 10.529 0.542
 6.914 2.350
 8.857 5.739
 4.293 4.835
 7.592 2.847
 1.356 0.226
 10.303 3.796



LVaR 22

5 GSVaR 5%
 GSVaR 10% GSVaR
 1% 5% GLVaR 5%

