Number of Extra Measurement Days = 0 0.85 0.88 0.89 0.85 0.87 0.88 0.89 0.86 88.0 0.89 0.5 -(983)(985)(981)(976)(975)(974)(987)(981)0.85 0.85 0.85 0.84 0.85 0.86 0.86 0.87 0.87 0.87 0.45 -(969)(959)(953)(950)(963)(964)(966)(969)(960)(974)8.0 0.81 0.81 0.85 0.82 0.82 8.0 0.84 0.84 0.84 0.4 -(946)(930)(944)(927)(941)(941)(946)(942)(932)(946)0.78 0.81 0.78 0.82 8.0 0.79 0.79 0.81 0.81 8.0 0.35 -(886)(875)(880)(880)(868)(878)(883)(899)(873)(863)

Inthetic Volatility Forecast Outperformance of Unadjusted GARCH Forecast

0.73 0.74 0.76 0.78 0.76 0.75 0.79 8.0 0.78 0.78 0.3 -(796)(802)(815)(791)(812)(812)(787)(810)(807)(809)0.72 0.72 0.76 0.74 0.74 0.74 0.75 0.75 0.76 0.75 0.25 -(682)(667)(685)(684)(686)(665)(689)(692)(682)(676)0.7 0.69 0.7 0.69 0.71 0.71 0.71 0.74 0.72 0.74 0.2 -

M21 Volatility Shock Mean (526)(517)(500)(542)(532)(547)(572)(536)(531)(522)0.65 0.69 0.67 0.65 0.66 0.65 0.67 0.64 0.64 0.66 0.15 -(358)(382)(378)(376)(411)(385)(385)(377)(365)(358)0.54 0.59 0.58 0.61 0.67 0.63 0.64 0.67 0.62 0.64 0.1 -(207)(207)(222)(226)(217)(215)(218)(221)(230)(238)0.61 0.53 0.65 0.52 0.61 0.67 0.54 0.55 0.6 0.53 0.05 -(101)(96)(120)(121)(116)(123)(112)(108)(121)(98)0.46 0.63 0.48 0.55 0.49 0.63 0.43 0.51 0.68 0.58 0 -(50)(43)(49)(45)(43)(51)(44)(45)(48)(41)-0.5 -0.4 -0.9 -0.7 -0.8 -0.6 -0.3 -0.2 _0.1 <u>-1</u> M1 Level Shock Mean

Success Proportion 8.0 0.7 0.6 0.5

Number of Extra Measurement Days = 1

0.86

0.86

0.5 -

0.85

0.86

	(980)	(982)	(981)	(978)	(982)	(986)	(986)	(979)	(982)	(981)
15 -	0.84	0.83	0.85	0.86	0.83	0.86	0.87	0.86	0.86	0.86
1 5 =	(973)	(971)	0.85 (971)	(959)	(963)	(959)	(973)	(973)	(976)	(966)
	0.83	0.8	0.82 (932)	0.83	0.82	0.81	0.85	0.85	0.84	0.81
.4 -	(944)	(925)	(932)	(935)	(918)	(942)	(929)	(943)	(946)	(941)

88.0

36 0.4 6)0.4 1) 8.0 0.78 8.0 0.79 8.0 8.0 0.8 0.78 0.78 0.81 0.35 -(889)(879)(875)(873)(879)(875)(898)(873)(882)(884)

Inthetic Volatility Forecast Outperformance of Unadjusted GARCH Forecast

0.88

0.87

0.87

0.86

0.89

M21 Volatility Shock Mean 0.76 0.74 0.76 0.79 0.79 0.79 0.78 0.77 0.78 0.77 0.3 -(795)(807)(808)(818)(806)(792)(818)(800)(815)(787)0.74 0.71 0.72 0.73 0.76 0.71 0.72 0.73 0.74 0.72 0.25 -(680)(689)(675)(707)(677)(675)(688)(677)(667)(723)0.71 0.73 0.66 0.7 0.69 0.71 0.7 0.69 0.72 0.73 0.2 -(536)(540)(537)(555)(516)(537)(550)(530)(542)(555)

0.65 0.66 0.59 0.65 0.64 0.68 0.64 0.64 0.67 0.64 0.15 -(352)(373)(373)(377)(371)(385)(388)(358)(376)(374)0.57 0.58 0.56 0.6 0.64 0.56 0.63 0.63 0.6 0.64 0.1 -(241)(222)(214)(233)(217)(242)(223)(214)(219)(230)0.63 0.63 0.57 0.59 0.65 0.56 0.62 0.61 0.59 0.56 0.05 -(103)(123)(126)(105)(105)(109)(96)(91)(96)(118)0.43 0.55 0.64 0.64 0.62 0.62 0.54 0.51 0.55 0.63 0 -(51)(38)(42)(44)(47)(45)(48)(41)(49)(35)-0.5 -0.6 -0.1 -0.9 -0.8 -0.4-0.3 -0.2 <u>-1</u> -0.7M1 Level Shock Mean

Success Proportion 0.8 0.7 0.6 0.5

Inthetic Volatility Forecast Outperformance of Unadjusted GARCH Forecast

(981)

0.85

(978)

0.87

(983)

0.87

(981)

0.88

0.88

(984)

0.85

(982)

0.83

(979)

0.85

(986)

0.85

0.5 -

0.45

M21 Volatility Shock Mean

(974)

0.85

(978)

0.86

0.40	(969)	(962)	(963)	(968)	(968)	(967)	(979)	(975)	(976)	(973)		
0.4 -	0.82 (939)	0.85 (943)	0.84 (918)	0.83 (933)	0.82 (937)	0.82 (942)	0.84 (936)	0.82 (943)	0.82 (940)	0.83 (945)		
0.35 -	0.78 (878)	0.8 (882)	0.79 (893)	0.78 (887)	0.81 (892)	0.82 (893)	0.8 (877)	0.81 (879)	0.82 (879)	0.81 (893)		
0.3 -	0.77 (798)	0.76 (786)	0.77 (808)	0.79 (787)	0.77 (809)	0.77 (790)	0.78 (802)	0.77 (802)	0.76 (834)	0.78 (813)	Suc	cess Proportion 0.8
0.25 -	0.71 (677)	0.71 (687)	0.72 (686)	0.71 (700)	0.72 (704)	0.74 (691)	0.73 (684)	0.75 (699)	0.76 (680)	0.76 (699)		0.7
0.2 -	0.67 (536)	0.66 (535)	0.67 (520)	0.69 (534)	0.66 (535)	0.7 (516)	0.68 (540)	0.69 (541)	0.71 (512)	0.71 (558)		0.5
0.15 -	0.64 (373)	0.65 (364)	0.63 (369)	0.61 (399)	0.71 (375)	0.62 (354)	0.65 (383)	0.65 (383)	0.64 (386)	0.69 (372)		
0.1 -	0.59 (236)	0.58 (231)	0.6 (237)	0.59 (212)	0.66 (233)	0.64 (228)	0.64 (220)	0.6 (235)	0.62 (216)	0.6 (227)		
0.05 -	0.63 (107)	0.6 (101)	0.54 (110)	0.5 (121)	0.59 (110)	0.64 (106)	0.6 (114)	0.54 (102)	0.63 (115)	0.63 (113)		
0 -	0.64 (45)	0.66 (35)	0.65 (51)	0.52 (48)	0.53 (49)	0.63 (35)	0.59 (44)	0.69 (48)	0.49 (47)	0.43 (42)		
	– 1	-0.9	-0.8	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1		

M1 Level Shock Mean

Number of Extra Measurement Days = 3 0.85 0.86 0.86 0.87 0.87 0.87 0.89 0.89 0.87 0.87 0.5 -(980)(980)(982)(976)(984)(981)(986)(974)(981)0.85 0.83 0.84 0.84 0.85 0.86 0.85 0.86 0.86 0.86 0.45 -

Inthetic Volatility Forecast Outperformance of Unadjusted GARCH Forecast

(971)(964)(967)(967)(961)(968)(970)(977)(956)(967)0.81 0.81 0.83 0.8 0.84 0.83 0.83 0.84 0.82 8.0 0.4 -(932)(933)(919)(939)(947)(939)(944)(933)(923)(928)0.79 0.78 0.77 0.79 0.78 0.82 0.81 0.79 0.83 0.81 0.35 -(892)(869)(871)(872)(876)(900)(880)(901)(858)(889)M21 Volatility Shock Mean 0.76 0.75 0.76 0.76 0.77 0.78 0.76 0.76 0.75 0.77 0.3 -(796)(807)(818)(800)(811)(798)(796)(799)(803)(780)0.72 0.71 0.74 0.73 0.75 0.74 0.72 0.75 0.73 0.77 0.25 -(693)(714)(669)(691)(686)(688)(691)(682)(671)(702)0.65 0.67 0.66 0.73 0.67 0.72 0.69 0.72 0.71 0.71 0.2 -(536)(527)(524)(515)(526)(521)(524)(543)(549)(555)0.62 0.65 0.67 0.66 0.67 0.61 0.62 0.68 0.71 0.65 0.15 -(364)(364)(372)(363)(381)(359)(367)(349)(379)(381)0.61 0.65 0.57 0.58 0.63 0.63 0.61 0.63 0.59 0.66 0.1 -

(192)

0.51

(112)

0.49

(41)

<u>-1</u>

0.05 -

0 -

(207)

0.59

(105)

0.44

(43)

-0.9

(223)

0.59

(110)

0.62

(42)

-0.8

(223)

0.6

(98)

0.41

(46)

-0.7

(227)

0.52

(120)

0.52

(50)

-0.6

(232)

0.56

(102)

0.57

(56)

-0.5

M1 Level Shock Mean

(229)

0.59

(108)

0.49

(45)

-0.4

(230)

0.54

(98)

0.51

(57)

-0.3

(231)

0.57

(109)

0.54

(37)

-0.2

(189)

0.58

(124)

0.61

(38)

_0.1

Success Proportion 8.0 0.7 0.6 0.5

Inthetic Volatility Forecast Outperformance of Unadjusted GARCH Forecast

(980)

(969)

0.45

(44)

-0.3

0.54

(35)

_0.1

0.72

(43)

-0.2

(982)

Number of Extra Measurement Days = 4 0.85 0.85 0.87 0.87 0.88 0.87 0.9 0.87 0.89 0.5 -

(983)

(985)

(982)

0.85

(973)0.83

(942)0.81

(870)

0.76

(797)

0.73

(694)

0.7

(554)

0.67

(363)0.6

(209)0.59

(111)

0.52

(48)

-1

0.56

(48)

-0.9

0.51

(37)

-0.8

0.61

(56)

-0.7

0.57

(47)

-0.6

M1 Level Shock Mean

0.57

(42)

-0.5

0.36

(50)

-0.4

0.45 -

0.4 -

0.35 -

0.3 -

0.25 **-**

0.2 -

0.15 -

0.1 -

0.05 -

0 -

M21 Volatility Shock Mean

(979)

0.83	0.84	0.85	0.85	0.85	0.87	0.86	0.89	0.85			
(969)	(964)	(962)	(968)	(962)	(970)	(972)	(966)	(965)			
0.83	0.82	0.82	0.83	0.84	0.84	0.85	0.82	0.85			
(934)	(930)	(938)	(929)	(936)	(951)	(948)	(937)	(931)			
0.79	0.78	0.82	8.0	0.82	0.81	0.81	0.8	0.83			
(897)	(886)	(879)	(896)	(875)	(865)	(900)	(885)	(881)			
0.78	0.75	0.77	0.75	0.79	0.74	0.74	0.79	0.77	Su	ccess Proportion	
(810)	(794)	(799)	(815)	(816)	(794)	(790)	(807)	(797)		0.9	
0.72	0.73	0.74	0.7	0.74	0.76	0.74	0.77	0.74		0.7	
(697)	(682)	(686)	(684)	(688)	(709)	(658)	(687)	(652)		0.6	
0.68	0.66	0.7	0.7	0.66	0.67	0.71	0.71	0.69		0.5	
(534)	(537)	(526)	(528)	(542)	(525)	(561)	(515)	(545)		0.4	
0.62	0.67	0.64	0.66	0.69	0.63	0.68	0.67	0.69			
(349)	(389)	(358)	(365)	(373)	(362)	(386)	(377)	(374)			
0.63	0.64	0.62	0.69	0.62	0.63	0.62	0.64	0.62			
(211)	(215)	(208)	(235)	(247)	(225)	(218)	(234)	(215)			
0.58	0.52	0.63	0.65	0.67	0.59	0.64	0.64	0.64			
(107)	(107)	(111)	(111)	(84)	(121)	(98)	(115)	(103)			

0.9