

Web Appendix

The Role of Equity Funds in the Financial Crisis Propagation

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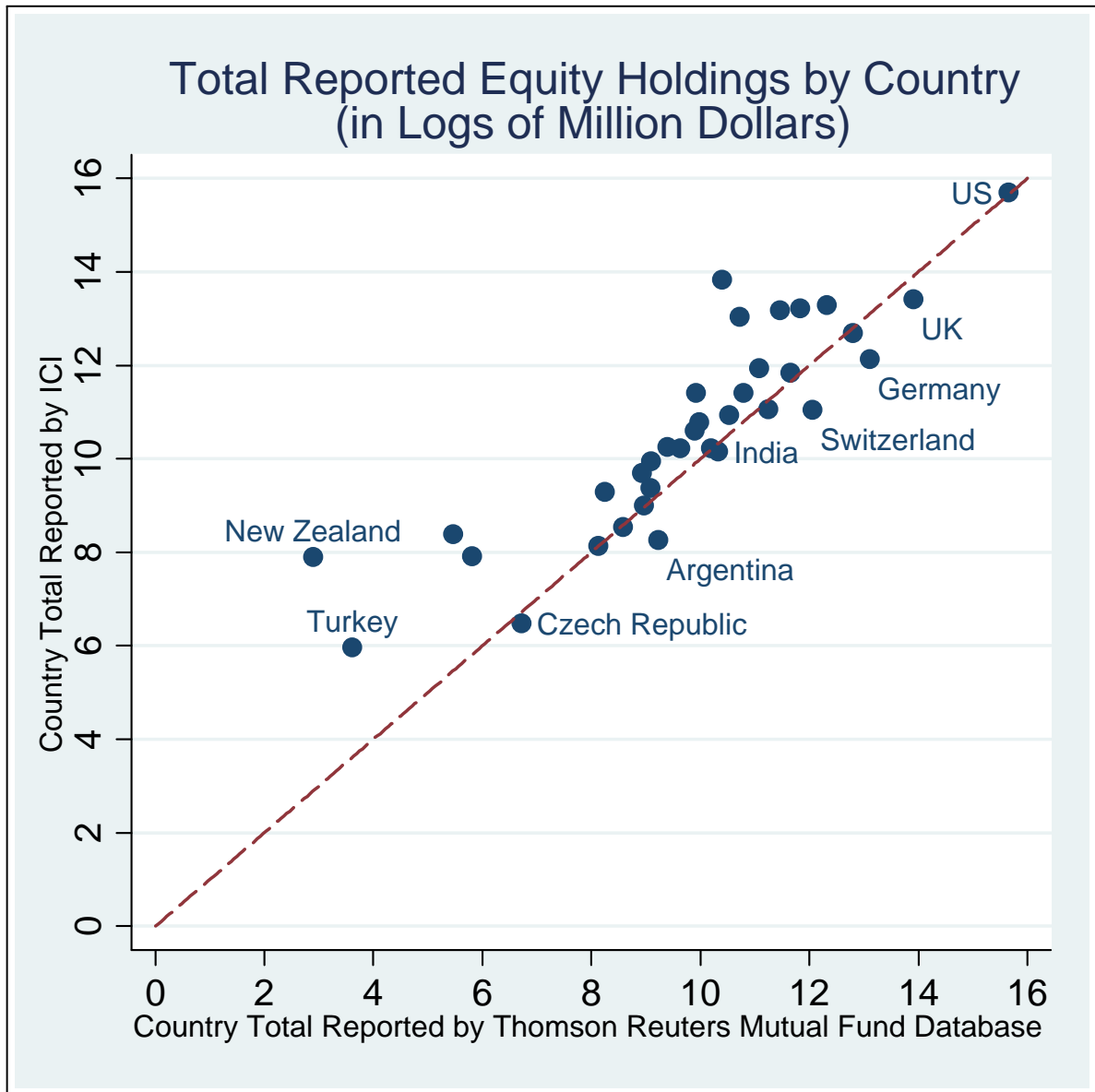


Figure 1: Aggregate equity holdings of reporting funds by country according to the Investment Company Industry (ICI) and Thomson Reuters mutual fund database. Thomson reports equity positions of both balanced and pure equity funds, while the ICI data only covers pure equity funds.

Table A1: Quantile Regressions for Cumulative Stock Return Regressions with Liquidity Controls

Reported are quantile regressions for the cumulative (weekly) stock returns starting from June 29, 2007, to November 7, 2008, and February 27, 2009. The dummy variable D_{dist} (marking the 15% of stocks with the highest exposure to distressed funds) and the dummy variable D_{share} (marking the 15% of stocks with the highest funds share) are the same as in Table 2. The dummy variable D_{liq} marks the 15% most liquid stocks, where the liquidity measure is calculated as $(1 - \beta)$ and β is the proportion of zero daily returns. The last two columns use $(1 - \beta)$ instead of β as the liquidity control variable. Their explanatory power is reported for the 25%, 50%, 75%, 90%, and 95% quantile of the cumulative stock returns. All regressions include industry fixed effects. Reported in brackets are the t-values based on bootstrapped standard errors.

		Cumulative Risk-Adjusted Returns					
		U.S. Stocks		U.S. Stocks		U.S. Stocks	
		Nov. 2008	Feb. 2009	Nov. 2008	Feb. 2009	Nov. 2008	Feb. 2009
Liquidity Control		none				$(1 - \beta)$	
Quantile 25%		<hr/>					
		0 066	0 037	0 040	0 024	0 074	0 052
		[1 82]	[1 03]	[1 12]	[0 80]	[2 39]	[1 50]
		0 184	0 188	0 078	0 072	0 177	0 188
		[5 64]	[5 61]	[2 21]	[3 47]	[5 50]	[7 39]
	or $(1 - \beta)$			0 187	0 184	-0 008	-0 026
				[4 75]	[6 71]	[-0 22]	[-0 99]
Quantile 50%		<hr/>					
		0 009	-0 007	-0 041	-0 051	0 017	0 003
		[0 19]	[-0 14]	[-1 07]	[-0 95]	[0 48]	[0 08]
		0 202	0 254	0 063	0 096	0 206	0 255
		[4 09]	[6 01]	[1 36]	[2 61]	[5 74]	[6 06]
	or $(1 - \beta)$			0 260	0 317	-0 028	-0 044
				[7 79]	[6 74]	[-0 83]	[-1 20]
Quantile 75%		<hr/>					
		-0 157	-0 236	-0 235	-0 265	-0 144	-0 228
		[-2 24]	[-2 61]	[-3 13]	[-2 93]	[-3 02]	[-2 35]
		0 075	0 316	0 038	0 157	0 115	0 357
		[0 92]	[3 78]	[0 58]	[1 62]	[2 09]	[3 95]
	or $(1 - \beta)$			0 195	0 331	-0 182	-0 176
				[2 83]	[3 87]	[-1 65]	[-1 38]
Quantile 90%		<hr/>					
		-0 696	-0 829	-0 696	-0 874	-0 659	-0 768
		[-4 21]	[-7 72]	[-4 11]	[-3 76]	[-4 27]	[-4 91]
		-0 056	0 188	0 029	0 184	0 215	0 302
		[-0 31]	[1 02]	[0 17]	[0 68]	[1 67]	[1 67]
	or $(1 - \beta)$			-0 102	0 059	-1 018	-0 344
				[-0 63]	[0 30]	[-1 69]	[-0 82]
Quantile 95%		<hr/>					
		-1 140	-1 552	-0 899	-1 552	-0 968	-1 465
		[-4 23]	[-4 91]	[-3 33]	[-4 25]	[-4 03]	[-4 51]
		-0 438	-0 058	-0 190	0 113	0 108	0 266
		[-1 39]	[-0 21]	[-0 62]	[0 34]	[0 43]	[0 86]
	or $(1 - \beta)$			-0 608	-0 173	-2 600	-0 939
				[-1 92]	[-0 40]	[-2 40]	[-0 84]
		3 562	3 525	3 540	3 504	3 540	3 504
Q25%	²	0 058	0 049	0 063	0 055	0 058	0 049
Q50%	²	0 042	0 044	0 047	0 050	0 042	0 044
Q75%	²	0 036	0 043	0 038	0 045	0 038	0 043
Q90%	²	0 083	0 113	0 084	0 112	0 090	0 113
Q95%	²	0 161	0 195	0 159	0 196	0 177	0 200

Table A2: OLS Regressions for Cumulative Stock Returns with Added Risk Factors

Panel A reproduces the baseline results for U.S. stocks reported in Table 4. Panels B and C include additional control variables of domestic and international market betas and size betas, respectively. Panel D controls for all 8 betas.

Panel A: Baseline Results for U.S. Stocks (Table 4)					
Cumulative Risk-Adjusted Returns (by)					
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.118 [-4.59]				
		-0.127 [-3.44]	-0.169 [-2.82]	-0.084 [-1.85]	0.001 [0.02]
	0.079 [3.04]	0.167 [4.34]	0.150 [2.28]	0.186 [3.84]	0.174 [3.69]
	3.813	3.722	3.612	3.494	3.269
²	0.026	0.050	0.012	0.028	0.037
Added Risk Factors	no	no	no	no	no
	no	no	no	no	no
	no	no	no	no	no
	no	no	no	no	no
Panel B: Market Betas as Added Controls					
Cumulative Risk-Adjusted Returns (by)					
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.121 [-4.95]				
		-0.127 [-3.50]	-0.146 [-2.71]	-0.066 [-1.64]	0.013 [0.34]
	0.054 [2.14]	0.149 [3.91]	0.153 [2.53]	0.125 [2.86]	0.141 [3.08]
	3.813	3.722	3.612	3.494	3.269
²	0.098	0.078	0.158	0.244	0.139
Added Risk Factors	yes	yes	yes	yes	yes
	no	no	no	no	no
	no	no	no	no	no
	no	no	no	no	no

Table A2 (Continued)

Panel C: SMB Betas as Added Controls					
	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.079 [-0.328]				
		-0.092 [-0.260]	-0.162 [-0.273]	-0.125 [-0.283]	-0.041 [-0.098]
	0.126 [0.18]	0.224 [0.03]	0.275 [0.42]	0.221 [0.73]	0.207 [0.62]
	3.813	3.722	3.612	3.494	3.269
²	0.134	0.111	0.090	0.110	0.115
Added Risk Factors					
	no	no	no	no	no
	yes	yes	yes	yes	yes
	no	no	no	no	no
	no	no	no	no	no
Panel D: Market, SMB, HML, and MOM Betas as Added Controls					
	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.087 [-0.451]				
		-0.089 [-0.307]	-0.120 [-0.247]	-0.092 [-0.243]	-0.055 [-0.155]
	0.086 [0.34]	0.148 [0.69]	0.116 [0.16]	0.079 [0.84]	0.052 [0.26]
	3.813	3.722	3.612	3.494	3.269
²	0.414	0.384	0.356	0.342	0.330
Added Risk Factors					
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes

Table A3: Fund Ownership Distribution by Stock Type

We report the distribution of the number of U.S. funds holding a U.S. stock (columns (1)-(3)), an exposed U.S. stock (columns (4)-(6)), or a non-exposed U.S. stock (columns (7)-(9)) in June 2007. We distinguish between all funds owners, exposed funds owners, and non-exposed funds owners, respectively. Fund exposure is measured by the return loss of a fund due to ownership in financial stocks over the one-year period from July 2007 to June 2008. We exclude from the sample funds those funds that invest more than 75% of capital in the banking sector. The 15% of funds with the largest fund exposure are marked as exposed funds and the remaining 85% as non-exposed funds.

	All U.S. Stocks			Exposed U.S. Stocks			Non-Exposed U.S. Stocks		
	All Fund Owners	Exp. Fund Owners	Non-Exp. Fund Owners	All Fund Owners	Exp. Fund Owners	Non-Exp. Fund Owners	All Fund Owners	Exp. Fund Owners	Non-Exp. Fund Owners
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Percentile									
p1	1	0	1	6	1	5	1	0	1
p5	1	0	1	35	4	30	1	0	1
p10	2	0	2	66	6	57	1	0	1
p25	10	1	9	122	11	107	5	0	5
p50	56	5	51	187	20	166	21	2	19
p75	164	14	149	315	36	273	70	5	64
p90	290	32	260	490	82	419	148	10	137
p95	428	59	370	626	111	529	203	13	191
p99	738	141	625	996	219	802	312	25	299
N	4 366	4 366	4 366	1 439	1 439	1 439	2 927	2 927	2 927
Mean	115	14	101	244	34	210	51	4	47
SD	156.5	28.1	132.9	198.1	41.7	163.6	70.5	5.2	66.6
Skewness	2.8	5.2	2.5	2.0	3.3	1.9	2.4	2.7	2.4
Kurtosis	14.6	41.2	12.5	9.0	17.9	8.3	10.3	14.2	10.5

Table A4: OLS Regressions for Cumulative Stock Returns with Additional Control Variables

Using the U.S. results in Table 4 as the baseline model (Panel A), Panel B includes an additional control variable of receivable-to-sales ratio. Panel C controls for the price-to-book ratio. Panel D controls for the leverage ratio. Panel E controls for the short term debt-to-asset ratio. Panel F controls for the dividend yield. Panel G controls for all variables included in the previous panels. The price-to-book ratio are based on the data in June 2007 from Datastream. The receivable-to-sales ratio, leverage, short-term (S.T.) debt-to-asset ratio, and dividend yield are based on the latest fiscal year-end data prior to July 2007 available in the Compustat database. Leverage refers to the total debt-to-asset ratio.

Panel A: Baseline Results for U.S. Stocks (Table 4)					
Cumulative Risk-Adjusted Returns (by)					
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.118 [-4.59]				
		-0.127 [-3.44]	-0.169 [-2.82]	-0.084 [-1.85]	0.001 [0.02]
	0.079 [3.04]	0.167 [4.34]	0.150 [2.28]	0.186 [3.84]	0.174 [3.69]
	3.813	3.722	3.612	3.494	3.269
²	0.026	0.050	0.012	0.028	0.037
Panel B: Control for Receivables-to-Sales Ratio					
Cumulative Risk-Adjusted Returns (by)					
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.110 [-3.78]				
		-0.124 [-3.35]	-0.199 [-3.27]	-0.091 [-1.94]	-0.019 [-0.44]
	0.083 [3.00]	0.174 [4.34]	0.242 [3.56]	0.249 [5.03]	0.238 [4.99]
Receivable-to-Sales	-0.001 [-2.18]	-0.002 [-3.15]	-0.004 [-3.99]	-0.001 [-1.24]	-0.001 [-1.56]
	3.084	3.006	2.925	2.856	2.740
²	0.035	0.073	0.027	0.052	0.070
Panel C: Control for Price-to-Book Ratio					
Cumulative Risk-Adjusted Returns (by)					
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0.120 [-4.19]				
		-0.130 [-3.50]	-0.187 [-3.08]	-0.077 [-1.63]	0.000 [-0.01]
	0.072 [2.62]	0.172 [4.35]	0.193 [2.85]	0.225 [4.51]	0.208 [4.33]
Price-to-Book	0.000 [-0.31]	0.000 [-0.49]	0.000 [-0.38]	0.000 [-0.18]	-0.001 [-2.40]
	3.359	3.292	3.192	3.126	2.965
²	0.035	0.067	0.019	0.042	0.062

Table A4 (Continued)
Panel D: Control for Leverage

		Cumulative Risk-Adjusted Returns (by)				
		Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)		- 0 108 [- 3 68]				
			- 0 126 [- 3 37]	- 0 172 [- 2 83]	- 0 062 [- 1 33]	0 001 [0 03]
		0 089 [3 25]	0 183 [4 54]	0 253 [3 74]	0 234 [4 74]	0 225 [4 62]
Leverage		0 122 [1 82]	0 241 [2 43]	- 0 343 [- 2 32]	- 0 210 [- 1 79]	- 0 197 [- 1 73]
		3 077	3 000	2 917	2 851	2 733
2		0 037	0 080	0 027	0 051	0 065

Panel E: Control for Short Term Debt-to-Asset Ratio

		Cumulative Risk-Adjusted Returns (by)				
		Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)		- 0 108 [- 3 75]				
			- 0 118 [- 3 22]	- 0 188 [- 3 09]	- 0 077 [- 1 63]	- 0 003 [- 0 07]
		0 083 [3 05]	0 174 [4 38]	0 235 [3 47]	0 233 [4 69]	0 214 [4 43]
S.T. Debt-to-Asset		- 0 158 [- 0 78]	- 0 292 [- 1 14]	- 1 180 [- 3 21]	- 0 491 [- 1 36]	- 0 882 [- 3 29]
		3 119	3 041	2 958	2 892	2 770
2		0 035	0 076	0 027	0 047	0 068

Panel F: Control for Dividend Yield

		Cumulative Risk-Adjusted Returns (by)				
		Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)		- 0 105 [- 3 62]				
			- 0 121 [- 3 29]	- 0 192 [- 3 16]	- 0 082 [- 1 74]	- 0 013 [- 0 29]
		0 087 [3 19]	0 184 [4 65]	0 264 [3 96]	0 247 [5 00]	0 234 [4 89]
Dividend Yield		- 0 247 [- 0 91]	- 0 426 [- 1 39]	- 0 450 [- 1 98]	- 0 039 [- 0 16]	0 021 [0 10]
		3 141	3 060	2 977	2 910	2 788
2		0 035	0 076	0 024	0 048	0 065

Table A4 (Continued)

Panel G: Control for All Firm Characteristics

	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007 2)	-0 115 [- 3 80]				
		-0 133 [- 3 48]	-0 173 [- 2 80]	-0 059 [- 1 23]	0 005 [0 10]
	0 072 [2 56]	0 163 [3 90]	0 212 [3 00]	0 228 [4 42]	0 213 [4 24]
Receivable-to-Sales	0 009 [0 65]	-0 004 [- 0 40]	-0 008 [- 0 46]	0 011 [0 49]	-0 006 [- 0 55]
Price-to-Book	0 000 [0 38]	-0 001 [- 0 36]	0 000 [0 27]	0 004 [1 60]	0 001 [0 62]
Leverage	0 180 [2 28]	0 333 [2 84]	-0 289 [- 1 71]	-0 255 [- 1 77]	-0 145 [- 1 11]
S.T. Debt-to-Asset	-0 400 [- 1 87]	-0 650 [- 2 36]	-0 933 [- 2 25]	-0 440 [- 1 13]	-0 857 [- 2 86]
Dividend Yield	-0 213 [- 0 76]	-0 393 [- 1 24]	-0 513 [- 2 07]	-0 091 [- 0 41]	-0 005 [- 0 02]
	2 879	2 807	2 733	2 684	2 582
2	0 043	0 089	0 036	0 057	0 077

Table A5: OLS Regressions for Cumulative Stock Returns with Different Fund Exposure Cutoffs

Using the U.S. results in Table 4 as the baseline model (Panel A), Panels B and C use a return cutoff of, respectively, 0% and -0.5% instead of -1% to define fund exposure.

Panel A: Baseline Results for U.S. Stocks (Table 4)					
	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007-2)	-0.118 [-4.59]				
		-0.127 [-3.44]	-0.169 [-2.82]	-0.084 [-1.85]	0.001 [0.02]
	0.079 [3.04]	0.167 [4.34]	0.150 [2.28]	0.186 [3.84]	0.174 [3.69]
²	3.813 0.026	3.722 0.050	3.612 0.012	3.494 0.028	3.269 0.037
Panel B: with 0% return cutoff					
	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007-2)	-0.074 [-2.49]				
		-0.121 [-2.75]	-0.184 [-2.60]	-0.051 [-0.95]	0.039 [0.78]
	0.059 [2.06]	0.177 [3.91]	0.180 [2.35]	0.172 [3.06]	0.147 [2.72]
²	3.813 0.023	3.722 0.050	3.612 0.011	3.494 0.028	3.269 0.037
Panel C: with -0.5% return cutoff					
	Cumulative Risk-Adjusted Returns (by)				
	Dec. 2007	June 2008	Dec. 2008	June 2009	Dec. 2009
(2007-2)	-0.102 [-3.58]				
		-0.118 [-2.95]	-0.180 [-2.71]	-0.044 [-0.88]	0.043 [0.93]
	0.075 [2.69]	0.170 [4.10]	0.169 [2.34]	0.165 [3.15]	0.146 [2.88]
²	3.813 0.024	3.722 0.050	3.612 0.012	3.494 0.028	3.269 0.037