Table C.1: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$SP \nRightarrow h_{S\&P500}$	0.1377	0.7107	0.0465	0.8293
$SP \nRightarrow h_{Wheat\ 1}$	11.1196	9e-04***	38.0902	0***
$SP \nRightarrow h_{Wheat\ 2}$	10.5923	0.0012***	38.1092	0***
$SP \nRightarrow h_{Wheat\ 3}$	18.7426	0***	33.4092	0***
$SP \nRightarrow h_{Wheat\ 4}$	4.3195	0.0381**	25.4415	0***
$h_{S\&P500} \nRightarrow SP$	0.0038	0.951	0.8849	0.3472
$h_{Wheat\ 1} \nRightarrow SP$	0.2514	0.6163	0.036	0.8495
$h_{Wheat\ 2} \nRightarrow SP$	0.0334	0.8551	0.4265	0.5139
$h_{Wheat\ 3} \nRightarrow SP$	0.0137	0.9068	0.0069	0.934
$h_{Wheat\ 4} \nRightarrow SP$	0.0305	0.8615	1.1292	0.2883

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.2: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.6979	0.4039	0.4269	0.5137
$IR \nRightarrow h_{KC\ Wheat\ 1}$	0.0295	0.8637	0.3998	0.5274
$IR \nRightarrow h_{KC\ Wheat\ 2}$	0.212	0.6454	1.0279	0.3109
$IR \nRightarrow h_{KC\ Wheat\ 3}$	0.2288	0.6326	1.6676	0.1969
$IR \nRightarrow h_{KC\ Wheat\ 4}$	0.022	0.8822	4.9303	0.0267**
$h_{S\&P500} \nRightarrow IR$	0.0286	0.8657	0.8064	0.3695
$h_{KC\ Wheat\ 1} \nRightarrow IR$	0.2087	0.648	0.9992	0.3178
$h_{KC\ Wheat\ 2} \nRightarrow IR$	0.5236	0.4696	0.4435	0.5056
$h_{KC\ Wheat\ 3} \nRightarrow IR$	0.0428	0.8362	0.0082	0.9281
$h_{KC\ Wheat\ 4} \nRightarrow IR$	0.408	0.5233	0	0.997

Note:
The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

* $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

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Table C.3: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	1.2711	0.26	3.7968	0.0517*
$IR \nRightarrow h_{Corn\ 1}$	0.0341	0.8535	0.2511	0.6164
$IR \nRightarrow h_{Corn\ 2}$	0.2721	0.6021	0.288	0.5917
$IR \nRightarrow h_{Corn\ 3}$	1.6521	0.1992	0.0536	0.817
$IR \nRightarrow h_{Corn\ 4}$	1.124	0.2895	0.3682	0.5442
$h_{S\&P500} \nRightarrow IR$	0.0104	0.919	2.8446	0.0921*
$h_{Corn\ 1} \nRightarrow IR$	0.133	0.7155	1.3886	0.239
$h_{Corn\ 2} \nRightarrow IR$	0.1097	0.7407	1.5915	0.2075
$h_{Corn\ 3} \nRightarrow IR$	0.5417	0.462	3.4086	0.0652*
$h_{Corn\ 4} \nRightarrow IR$	1.9148	0.167	0.6159	0.4328

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.4: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	4e-04	0.9837	1.4377	0.2309
$IR \nRightarrow h_{Soybean\ 1}$	1.78	0.1827	3.47	0.0628*
$IR \nRightarrow h_{Soybean\ 2}$	2.4997	0.1144	4.4202	0.0358**
$IR \nRightarrow h_{Soybean\ 3}$	0.0052	0.9428	5.7252	0.0169**
$IR \nRightarrow h_{Soybean\ 4}$	0.0019	0.9652	2.1352	0.1443
$h_{S\&P500} \nRightarrow IR$	0.0221	0.8818	0.4142	0.52
$h_{Soybean\ 1} \nRightarrow IR$	0.37	0.5432	0	0.9989
$h_{Soybean\ 2} \nRightarrow IR$	1.5962	0.207	0.035	0.8517
$h_{Soybean\ 3} \nRightarrow IR$	3.1099	0.0784*	0.1338	0.7146
$h_{Soybean\ 4} \nRightarrow IR$	4.5715	0.0329**	0.3691	0.5437

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatility and speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.5: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	1.959	0.1622	2.3582	0.125
$IR \nRightarrow h_{Soybean\ oil\ 1}$	0.4892	0.4846	4.924	0.0268**
$IR \nRightarrow h_{Soybean\ oil\ 2}$	1.4662	0.2265	3.93	0.0478**
$IR \nRightarrow h_{Soybean\ oil\ 3}$	4.0184	0.0455**	3.8282	0.0507*
$IR \nRightarrow h_{Soybean\ oil\ 4}$	6.3101	0.0123**	5.5599	0.0186**
$h_{S\&P500} \nRightarrow IR$	0.1734	0.6772	2.9571	0.0859*
$h_{Soybean\ oil\ 1} \nRightarrow IR$	0.39	0.5325	0.0052	0.9424
$h_{Soybean\ oil\ 2} \nRightarrow IR$	0.2011	0.654	0.0066	0.9353
$h_{Soybean\ oil\ 3} \nRightarrow IR$	0.2203	0.639	0.0499	0.8233
$h_{Soybean\ oil\ 4} \nRightarrow IR$	0.5917	0.4421	0.127	0.7217

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.6: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	2.2601	0.1333	0.0451	0.8319
$IR \nRightarrow h_{Oats\ 1}$	0.0233	0.8788	3.7464	0.0533*
$IR \nRightarrow h_{Oats\ 2}$	1.0486	0.3063	2.4771	0.1159
$IR \nRightarrow h_{Oats\ 3}$	0.485	0.4864	2.5853	0.1082
$h_{S\&P500} \nRightarrow IR$	0.0015	0.9692	0.2509	0.6165
$h_{Oats\ 1} \nRightarrow IR$	0.7478	0.3875	0.1548	0.6941
$h_{Oats\ 2} \nRightarrow IR$	1.9659	0.1614	0.3089	0.5785
$h_{Oats\ 3} \nRightarrow IR$	0.4807	0.4884	0.4138	0.5202

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

* $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.7: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{SP500}$	0.3172	0.5736	1.21	0.2717
$IR \nRightarrow h_{MPLS\ Wheat\ 1}$	0.1893	0.6637	0.245	0.6208
$IR \nRightarrow h_{MPLS\ Wheat\ 2}$	1.4204	0.234	0.0386	0.8443
$IR \nRightarrow h_{MPLS\ Wheat\ 3}$	1.6065	0.2056	0.1314	0.7171
$IR \nRightarrow h_{MPLS\ Wheat\ 4}$	0.8042	0.3703	0.1831	0.6688
$h_{SP500} \nRightarrow IR$	0.6425	0.4232	0.2411	0.6235
$h_{MPLS\ Wheat\ 1} \nRightarrow IR$	0.5771	0.4479	0.1782	0.673
$h_{MPLS\ Wheat\ 2} \nRightarrow IR$	0.6275	0.4287	0.2005	0.6544
$h_{MPLS\ Wheat\ 3} \nRightarrow IR$	0.8077	0.3693	0.5085	0.476
$h_{MPLS\ Wheat\ 4} \nRightarrow IR$	0.4875	0.4854	0.04	0.8415

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.8: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.1621	0.6873	0.0033	0.9542
$IR \nRightarrow h_{Soybean\ meal\ 1}$	5.3949	0.0205**	0.0029	0.9574
$IR \nRightarrow h_{Soybean\ meal\ 2}$	5.0594	0.0249**	0.1628	0.6867
$IR \nRightarrow h_{Soybean\ meal\ 3}$	5.619	0.0181**	0.404	0.5252
$IR \nRightarrow h_{Soybean\ meal\ 4}$	4.0904	0.0436**	0.9364	0.3335
$h_{S\&P500} \nRightarrow IR$	0.949	0.3304	0.0078	0.9297
$h_{Soybean\ meal\ 1} \nRightarrow IR$	0.638	0.4248	0.0132	0.9085
$h_{Soybean\ meal\ 2} \nRightarrow IR$	1.9763	0.1603	0.0067	0.9349
$h_{Soybean\ meal\ 3} \nRightarrow IR$	4.1275	0.0427**	0.0085	0.9264
$h_{Soybean\ meal\ 4} \nRightarrow IR$	3.7947	0.0519*	0.0388	0.844

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.9: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{SP500}$	1.5674	0.2112	0.109	0.7414
$IR \nRightarrow h_{Rough\ rice\ 1}$	0.0216	0.8831	0.2365	0.6269
$IR \nRightarrow h_{Rough\ rice\ 2}$	1.4773	0.2248	0.5645	0.4527
$IR \nRightarrow h_{Rough\ rice\ 3}$	0.2849	0.5937	1.4209	0.2336
$h_{SP500} \nRightarrow IR$	0.1076	0.7431	0.2999	0.5841
$h_{Rough\ rice\ 1} \nRightarrow IR$	0.1352	0.7133	0.0021	0.9637
$h_{Rough\ rice\ 2} \nRightarrow IR$	1.3188	0.2514	0.3686	0.544
$h_{Rough\ rice\ 3} \nRightarrow IR$	0.7979	0.3722	0.6545	0.4187

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatility and speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.10: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.2638	0.6077	4.0101	0.0456**
$IR \nRightarrow h_{Coffee\ 1}$	0.0017	0.9673	0.6828	0.4089
$IR \nRightarrow h_{Coffee\ 2}$	0.0977	0.7547	0.7	0.403
$IR \nRightarrow h_{Coffee\ 3}$	0.506	0.4772	0.6852	0.408
$IR \nRightarrow h_{Coffee\ 4}$	0.2891	0.591	0.8398	0.3597
$h_{S\&P500} \nRightarrow IR$	4.3659	0.0371**	0.2967	0.5861
$h_{Coffee\ 1} \nRightarrow IR$	0.0279	0.8674	2.2692	0.1324
$h_{Coffee\ 2} \nRightarrow IR$	0.0066	0.9351	2.2716	0.1321
$h_{Coffee\ 3} \nRightarrow IR$	0.0021	0.9635	2.3509	0.1256
$h_{Coffee\ 4} \nRightarrow IR$	0.0074	0.9315	2.2411	0.1348

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.11: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	2e-04	0.989	1.1124	0.2919
$IR \nRightarrow h_{Sugar\ 1}$	1.6395	0.2009	0.0186	0.8915
$IR \nRightarrow h_{Sugar\ 3}$	0.0015	0.9696	0.0239	0.8772
$IR \nRightarrow h_{Sugar\ 4}$	0.8376	0.3605	0.1632	0.6864
$h_{S\&P500} \nRightarrow IR$	0.8014	0.3711	0.1293	0.7193
$h_{Sugar\ 1} \nRightarrow IR$	0.4949	0.482	1.0138	0.3143
$h_{Sugar\ 3} \nRightarrow IR$	0.6456	0.422	0.1686	0.6815
$h_{Sugar\ 4} \nRightarrow IR$	0.6953	0.4047	0.5382	0.4634

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

* $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.12: Granger causality test between conditional volatility and speculation index (robustness)

| | Pre-financialisation | | Financialisation | |
Null Hypothesis	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.0104	0.9189	4.2492	0.0396**
$IR \nRightarrow h_{Cocoa\ 1}$	0.0145	0.9043	4e-04	0.9835
$IR \nRightarrow h_{Cocoa\ 2}$	0.2479	0.6188	1.8133	0.1785
$IR \nRightarrow h_{Cocoa\ 3}$	0.8371	0.3606	1.9103	0.1673
$IR \nRightarrow h_{Cocoa\ 4}$	0.8034	0.3705	0.9362	0.3335
$h_{S\&P500} \nRightarrow IR$	0.3221	0.5706	0.5133	0.4739
$h_{Cocoa\ 1} \nRightarrow IR$	0.6622	0.4161	4.2035	0.0407**
$h_{Cocoa\ 2} \nRightarrow IR$	0.4552	0.5002	5.1645	0.0233**
$h_{Cocoa\ 3} \nRightarrow IR$	0.1847	0.6675	5.3871	0.0205**
$h_{Cocoa\ 4} \nRightarrow IR$	0.0357	0.8501	4.4194	0.0358**

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.13: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	1e-04	0.9933	1.0334	0.3097
$IR \nRightarrow h_{Cotton\ 1}$	2.649	0.1042	0.1138	0.736
$IR \nRightarrow h_{Cotton\ 2}$	3.0114	0.0832*	1.6872	0.1943
$IR \nRightarrow h_{Cotton\ 3}$	2.4067	0.1214	4.1084	0.043**
$IR \nRightarrow h_{Cotton\ 4}$	4.6341	0.0318**	3.4395	0.064*
$h_{S\&P500} \nRightarrow IR$	0.3441	0.5577	0.4252	0.5145
$h_{Cotton\ 1} \nRightarrow IR$	0.3057	0.5806	0.0202	0.887
$h_{Cotton\ 2} \nRightarrow IR$	2.2193	0.1368	0.0962	0.7566
$h_{Cotton\ 3} \nRightarrow IR$	0.1811	0.6706	1e-04	0.9918
$h_{Cotton\ 4} \nRightarrow IR$	0.9153	0.3391	0.0306	0.8611

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

* $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.14: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	5.2833	0.0219**	0.8537	0.3558
$IR \nRightarrow h_{Orange\ juice\ 2}$	0.5497	0.4588	3.7767	0.0523*
$IR \nRightarrow h_{Orange\ juice\ 3}$	1.1423	0.2856	3.8795	0.0492**
$IR \nRightarrow h_{Orange\ juice\ 4}$	0.0971	0.7555	5.2366	0.0224**
$IR \nRightarrow h_{Orange\ juice\ 5}$	0.0018	0.9658	5.7591	0.0166**
$h_{S\&P500} \nRightarrow IR$	1.5128	0.2192	0.0147	0.9034
$h_{Orange\ juice\ 2} \nRightarrow IR$	0.006	0.9381	1.3089	0.2529
$h_{Orange\ juice\ 3} \nRightarrow IR$	0.0232	0.8791	0.6968	0.4041
$h_{Orange\ juice\ 4} \nRightarrow IR$	0.011	0.9166	1.0343	0.3094
$h_{Orange\ juice\ 5} \nRightarrow IR$	0.0094	0.9227	1.0561	0.3044

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.15: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.0344	0.853	0.0212	0.8844
$IR \nRightarrow h_{Lumber\ 1}$	0.3568	0.5505	0	0.9973
$IR \nRightarrow h_{Lumber\ 2}$	2.2688	0.1326	0.0201	0.8872
$h_{S\&P500} \nRightarrow IR$	0.5991	0.4392	0.0482	0.8264
$h_{Lumber\ 1} \nRightarrow IR$	0.5334	0.4655	2.4345	0.1191
$h_{Lumber\ 2} \nRightarrow IR$	0.0054	0.9414	0.7187	0.3968

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.16: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.7877	0.3752	8.9811	0.0028***
$IR \nRightarrow h_{Live\ cattle\ 1}$	0.6535	0.4192	0.3964	0.5292
$IR \nRightarrow h_{Live\ cattle\ 2}$	0.1768	0.6743	0.0507	0.8219
$IR \nRightarrow h_{Live\ cattle\ 3}$	2.0723	0.1505	0.1939	0.6598
$IR \nRightarrow h_{Live\ cattle\ 4}$	0.5081	0.4763	4.731	0.0299**
$h_{S\&P500} \nRightarrow IR$	0.0373	0.8468	0.0709	0.7902
$h_{Live\ cattle\ 1} \nRightarrow IR$	0.0158	0.9	2.5863	0.1082
$h_{Live\ cattle\ 2} \nRightarrow IR$	0.0325	0.857	4.9264	0.0267**
$h_{Live\ cattle\ 3} \nRightarrow IR$	0.1974	0.657	7.6041	0.006***
$h_{Live\ cattle\ 4} \nRightarrow IR$	1.4427	0.2302	4.1813	0.0412**

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.17: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \not\Rightarrow h_{S\&P500}$	0.0606	0.8057	1.2379	0.2662
$IR \not\Rightarrow h_{Feeder\ cattle\ 1}$	0.0534	0.8174	1.4773	0.2245
$IR \not\Rightarrow h_{Feeder\ cattle\ 2}$	0.1062	0.7446	1.3763	0.2411
$IR \not\Rightarrow h_{Feeder\ cattle\ 3}$	0.2675	0.6052	1.6739	0.1961
$IR \not\Rightarrow h_{Feeder\ cattle\ 4}$	0.1076	0.743	2.7411	0.0982*
$h_{S\&P500} \not\Rightarrow IR$	1.0944	0.2959	0.127	0.7216
$h_{Feeder\ cattle\ 1} \not\Rightarrow IR$	1.0805	0.299	0.0154	0.9013
$h_{Feeder\ cattle\ 2} \not\Rightarrow IR$	1.1096	0.2926	0.1396	0.7088
$h_{Feeder\ cattle\ 3} \not\Rightarrow IR$	2.3101	0.1291	2e-04	0.9884
$h_{Feeder\ cattle\ 4} \not\Rightarrow IR$	0.7892	0.3747	0.6545	0.4187

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\not\Rightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.18: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.0046	0.9461	0.968	0.3255
$IR \nRightarrow h_{Heating\ oil\ 1}$	0.479	0.4891	2.5158	0.1131
$IR \nRightarrow h_{Heating\ oil\ 2}$	1.2205	0.2697	2.7101	0.1001
$IR \nRightarrow h_{Heating\ oil\ 3}$	0.7393	0.3902	2.8641	0.091*
$IR \nRightarrow h_{Heating\ oil\ 4}$	0.9521	0.3296	3.6602	0.0561*
$h_{S\&P500} \nRightarrow IR$	0.7922	0.3738	0.6904	0.4063
$h_{Heating\ oil\ 1} \nRightarrow IR$	1.4116	0.2353	0.2106	0.6464
$h_{Heating\ oil\ 2} \nRightarrow IR$	0.4086	0.5229	0.0757	0.7833
$h_{Heating\ oil\ 3} \nRightarrow IR$	0.1885	0.6643	0.0105	0.9183
$h_{Heating\ oil\ 4} \nRightarrow IR$	0.4116	0.5214	0	0.9962

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

* $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.19: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	1.8281	0.1769	0.1153	0.7342
$IR \nRightarrow h_{Natural\ gas\ 1}$	1.5143	0.219	0.0169	0.8965
$IR \nRightarrow h_{Natural\ gas\ 2}$	5.139	0.0238**	0.0768	0.7818
$IR \nRightarrow h_{Natural\ gas\ 3}$	2.6558	0.1037	1.3266	0.2497
$IR \nRightarrow h_{Natural\ gas\ 4}$	2.167	0.1416	1.5312	0.2163
$h_{S\&P500} \nRightarrow IR$	0.6899	0.4065	0.1532	0.6956
$h_{Natural\ gas\ 1} \nRightarrow IR$	0.3856	0.5349	1.0253	0.3116
$h_{Natural\ gas\ 2} \nRightarrow IR$	1.0426	0.3076	0.5627	0.4534
$h_{Natural\ gas\ 3} \nRightarrow IR$	0.7751	0.379	0.4247	0.5148
$h_{Natural\ gas\ 4} \nRightarrow IR$	0.7199	0.3965	1.1333	0.2874

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.20: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.5896	0.4429	0.0129	0.9098
$IR \nRightarrow h_{Gold\ 1}$	12.2889	5e-04***	0.6041	0.4372
$IR \nRightarrow h_{Gold\ 2}$	12.3623	5e-04***	0.0398	0.842
$IR \nRightarrow h_{Gold\ 3}$	12.4843	4e-04***	0.754	0.3855
$IR \nRightarrow h_{Gold\ 4}$	14.3992	2e-04***	0.3697	0.5434
$h_{S\&P500} \nRightarrow IR$	0.9286	0.3356	4e-04	0.9836
$h_{Gold\ 1} \nRightarrow IR$	3.657	0.0563*	0	0.9951
$h_{Gold\ 2} \nRightarrow IR$	3.7362	0.0537*	0.1781	0.6731
$h_{Gold\ 3} \nRightarrow IR$	3.8059	0.0516*	0.2043	0.6514
$h_{Gold\ 4} \nRightarrow IR$	3.5506	0.06*	0	0.9974

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatilityand speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.

Table C.21: Granger causality test between conditional volatility and speculation index (robustness)

Null Hypothesis	Pre-financialisation		Financialisation	
	F Statistic	p-value	F Statistic	p-value
$IR \nRightarrow h_{S\&P500}$	0.3229	0.5701	2.8752	0.0903*
$IR \nRightarrow h_{Copper\ 1}$	1.2237	0.2691	9.0731	0.0027***
$IR \nRightarrow h_{Copper\ 2}$	0.6404	0.4239	10.1161	0.0015***
$IR \nRightarrow h_{Copper\ 3}$	0.2945	0.5876	12.7651	4e-04***
$IR \nRightarrow h_{Copper\ 4}$	0.2249	0.6355	10.7818	0.0011***
$h_{S\&P500} \nRightarrow IR$	1.7693	0.184	1.0983	0.2949
$h_{Copper\ 1} \nRightarrow IR$	0.082	0.7748	0.3254	0.5685
$h_{Copper\ 2} \nRightarrow IR$	0.8539	0.3558	0.0939	0.7593
$h_{Copper\ 3} \nRightarrow IR$	0.8463	0.358	0.1338	0.7146
$h_{Copper\ 4} \nRightarrow IR$	1.339	0.2477	0.2957	0.5867

Note:

The table reports the results of the Granger causality test between the first differences of conditional volatility and the first differences of speculation index during pre-financialisation period and financialisation period. *CV* and *SI* represent conditional volatility and speculation index respectively. Speculation index is measured by $\frac{Non\text{-}commercial\ Long\ Position}{Total\ Open\ Interest}$ following Robles and Von Braun (2010).

[*] $\nRightarrow$ means "does not Granger-cause ". ***,**, and * denote statistical significance at 1%, 5%, and 10% level.