

7/30/09 8:42 AM

## The Morning Email: Eurodollar Correlations & R-Squared

### Table of Contents

- Pg 1 EDs vs. Treasuries
- Pg 2 EDs vs. Index Futures, Energy, Metals, & German Bond Futures
- Pg 3 EDs vs. Specialty Spreads
- Pg 4 EDs vs. Currencies
  
- Pg 5 EDs vs. ED Pack & Bundles
- Pg 6 EDs vs. ED Calendar Spreads
- Pg 7 ED Calendar Spreads vs. ED Packs & Bundles
- Pg 8 ED Calendar Flvs vs. ED Packs & Bundles
- Pg 9
  
- Pg 10

One contract may be correlating with another but does that mean there's causation. You must ask, "is one causing the other?"

That's what the R-Squared is for. Read R-Squared as follows: let's say, CLA and DJIA have an R-Squared of 0.44. That means there's a 44% chance that one is causing the market movement of the other.

You will always see a positive number for the R-Squared. If a correlation is a (negative) number, for example, (87.9) that means the two commodities are mirroring each other, not correlating. For example, today (which is 06/06/2007) the RBA and DJIA have a (87.9)% correlation. The R-Squared is 0.77. Therefore the two instruments are mirroring each other 88% of the time, and there's a 77% chance that one is causing the other.

### **Conditionally formatted cells:**

**If there's an R-Squared equal to or greater than 80%, then, the cell will turn BLUE. That tells us that there's an 80% chance that one of the instruments is causing the other to move. --Thanks, Jim**

Want something added? Let me know: [jgoulding@ghco.com](mailto:jgoulding@ghco.com)

**Disclaimer:** All information within this newsletter is meant for internal use at GH Trader's LLC, only. All information has been recorded to the best of my ability. This material is based upon information that I consider reliable, but I do not represent that it is accurate or complete.

	TU	Z3N	FV	TY	ZB	2Y Yld	3Y Yld	5Y Yld	7Y Yld	10Y Yld	30Y Yld			
EDAU09	-49	-47	-39	-31	-5	66	60	56	47	32	14	Correlations	Whites	
EDAZ09	54	57	59	64	62	-35	-46	-46	-50	-53	-46			Reds
EDAH10	89	91	88	87	67	-80	-87	-85	-83	-76	-57			
EDAM10	95	96	92	89	67	-89	-94	-92	-88	-79	-57		Greens	
EDAU10	96	97	93	90	66	-91	-95	-93	-89	-80	-57			
EDAZ10	94	95	91	88	65	-88	-93	-91	-87	-78	-57		Blues	
EDAH11	90	92	88	87	67	-83	-89	-87	-85	-78	-59			
EDAM11	85	88	86	86	69	-76	-84	-83	-82	-78	-62		Golds	
EDAU11	82	86	85	87	73	-71	-81	-81	-82	-80	-67			
EDAZ11	80	85	85	89	78	-68	-79	-81	-83	-84	-73		Whites	
EDAH12	79	84	86	90	82	-67	-78	-81	-85	-87	-77			
EDAM12	78	83	87	92	86	-65	-77	-81	-86	-90	-82		Reds	
EDAU12	78	83	88	94	91	-64	-77	-82	-88	-93	-86			
EDAZ12	76	81	89	95	95	-61	-75	-82	-89	-95	-89		Greens	
EDAH13	75	80	88	95	96	-60	-73	-81	-89	-96	-91			
EDAM13	73	78	88	94	97	-58	-72	-80	-89	-96	-92	Blues		
EDAU13	73	78	88	94	98	-58	-72	-80	-89	-96	-93			
EDAZ13	73	78	88	94	98	-57	-71	-80	-90	-97	-93	Golds		
EDAH14	72	77	87	94	98	-56	-70	-79	-89	-96	-93			
EDAM14	69	74	85	92	99	-54	-68	-77	-88	-96	-94	R - Squared	Whites	
EDAU09	24	22	15	9	0	44	35	32	22	10	2			
EDAZ09	29	32	35	41	38	13	21	21	25	28	21			
EDAH10	79	83	77	75	45	64	75	72	68	58	32		Reds	
EDAM10	90	93	85	80	44	79	88	85	78	63	32			
EDAU10	92	95	86	80	44	83	91	87	80	64	33		Greens	
EDAZ10	88	91	82	78	43	78	87	83	76	61	33			
EDAH11	81	85	78	76	44	68	79	76	71	60	35		Blues	
EDAM11	73	78	73	74	48	58	71	69	67	60	38			
EDAU11	68	74	72	76	54	51	66	66	67	65	45		Golds	
EDAZ11	64	71	72	78	61	46	63	65	69	70	53			
EDAH12	63	70	74	81	67	44	61	66	72	76	60		Whites	
EDAM12	61	69	75	84	74	42	60	66	74	81	67			
EDAU12	61	69	78	88	83	41	59	68	78	86	74		Reds	
EDAZ12	58	66	79	90	90	38	56	67	80	90	80			
EDAH13	56	64	78	90	93	36	54	65	80	92	83	Greens		
EDAM13	54	61	77	89	95	33	52	64	79	92	85			
EDAU13	53	61	77	89	96	33	51	64	80	93	86	Blues		
EDAZ13	53	60	77	89	97	33	51	64	80	93	87			
EDAH14	52	59	75	88	97	32	49	63	79	93	87	Golds		
EDAM14	48	55	73	85	98	29	46	60	77	92	88			

	Mini			Nymex Crude	Gold Futures	Eurex			Correlations		
	S&Ps	Dow (5\$)	Nasdaq			Bund	Bobl	Schatz			
EDAU09	52	52	54	-26	-59	-3	-14	-52			Whites
EDAZ09	1	6	-2	15	27	36	36	17			
EDAH10	-37	-31	-41	28	61	41	46	50			
EDAM10	-50	-45	-54	27	66	44	50	60			Reds
EDAU10	-53	-48	-56	26	66	45	51	63			
EDAZ10	-47	-41	-50	29	66	41	47	58			
EDAH11	-39	-33	-42	-42	63	40	45	53			
EDAM11	-33	-26	-35	26	57	41	46	48			Greens
EDAU11	-31	-24	-32	19	50	45	49	48			
EDAZ11	-32	-24	-32	12	45	50	54	50			
EDAH12	-34	-26	-34	6	41	55	59	54			
EDAM12	-37	-29	-37	-2	35	61	65	58	Blues		
EDAU12	-43	-35	-43	-11	29	69	72	63			
EDAZ12	-48	-40	-47	-20	22	76	79	68			
EDAH13	-51	-43	-49	-25	17	80	82	71			
EDAM13	-52	-45	-51	-29	14	82	84	72			

	Mini			Nymex Crude	Gold	Eurex			R - Squared		
	S&Ps	Dow (5\$)	Nasdaq			Bund	Bobl	Schatz			
EDAU09	27	27	30	7	35	0	2	27			Whites
EDAZ09	0	0	0	2	7	13	13	3			
EDAH10	14	10	16	8	38	17	21	25			
EDAM10	25	20	29	7	43	20	25	37			Reds
EDAU10	29	23	32	7	43	20	26	40			
EDAZ10	22	17	25	8	44	17	22	34			
EDAH11	15	11	18	18	40	16	21	28			
EDAM11	11	7	12	7	33	17	21	23			Greens
EDAU11	10	6	10	4	25	20	24	23			
EDAZ11	10	6	11	1	20	25	29	25			
EDAH12	12	7	12	0	16	31	35	29			
EDAM12	14	8	14	0	12	38	42	33	Blues		
EDAU12	19	12	18	1	8	47	52	40			
EDAZ12	23	16	22	4	5	58	62	47			
EDAH13	26	18	24	6	3	63	67	50			
EDAM13	27	20	26	9	2	67	71	52			

	EURUSD	EURJPY	USDJPY	ZT	ZF	ZN	ZB	2Y Yld	5Y Yld	10Y Yld	30Y Yld	Spread Ratio
ZF - ED7	33.2	-58.5	-78.8	72.7	81.8	76.9	80.1	-67.2	-78.2	77.8	57.0	10:12
5yr - ED7	37.4	-57.9	-82.1	75.9	79.3	62.3	75.0	-78.6	-85.0	74.8	53.7	1:12
5yr - RedPk	-23.9	-35.2	-11.3	-5.8	11.4	26.9	11.9	-93.7	-2.3	19.6	11.7	1:3 or 4

Correlations

	EURUSD	EURJPY	USDJPY	ZT	ZF	ZN	ZB	2Y Yld	5Y Yld	10Y Yld	30Y Yld
ZF - ED7	11.0	34.2	62.1	52.8	67.0	59.2	64.2	45.1	61.2	60.6	32.5
5yr - ED7	14.0	33.5	67.5	57.6	62.9	38.8	56.3	61.8	72.2	55.9	28.8
5yr - RedPk	5.7	12.4	1.3	0.3	1.3	7.2	1.4	87.7	0.1	3.8	1.4

R - Squared

Do not use this page unless you know the spread equation I used. This is a specialty page. These spreads are designed specifically for individual traders.

Always feel free to send me a spread you'd like to follow and I'll enter it on this page.

	Cash Markets						US \$ Index	Futures					Correlations
	EURUSD	EURJPY	EURGBP	EURCHF	USDJPY	GBPUSD		US Dollar	Euro	Yen	Swiss	Canadian	
EDAU09	-32	21	-41	69	46	4	28	37	-52	-38	-61	35	
EDAZ09	62	12	32	-24	-37	51	-52	-42	34	46	36	-3	
EDAH10	84	-6	65	-73	-72	43	-71	-64	68	76	77	-29	
EDAM10	84	-13	70	-83	-79	37	-69	-64	72	81	83	-40	
EDAU10	83	-16	71	-85	-81	34	-69	-63	72	83	84	-43	
EDAZ10	84	-12	71	-82	-78	36	-71	-65	72	81	83	-37	
EDAH11	82	-10	68	-77	-75	38	-71	-65	68	79	79	-30	
EDAM11	79	-9	63	-70	-72	40	-68	-61	63	76	73	-25	
EDAU11	75	-14	59	-67	-71	38	-62	-55	55	77	67	-26	
EDAZ11	70	-19	53	-65	-72	38	-56	-49	49	77	62	-28	
EDAH12	66	-24	49	-64	-73	38	-50	-44	45	79	58	-32	
EDAM12	61	-30	44	-63	-75	36	-44	-37	39	80	54	-36	
EDAU12	57	-37	41	-63	-78	34	-37	-30	34	82	50	-44	
EDAZ12	51	-44	36	-61	-79	32	-29	-22	28	83	44	-51	
EDAH13	47	-49	33	-60	-79	29	-24	-16	23	84	41	-55	
EDAM13	44	-52	30	-59	-79	27	-20	-12	20	84	38	-57	

	Cash Markets						US \$ Index	Futures					R - Squared
	EURUSD	EURJPY	EURGBP	EURCHF	USDJPY	GBPUSD		US Dollar	Euro	Yen	Swiss	Canadian	
EDAU09	10	4	17	48	21	0	8	13	27	15	37	12	
EDAZ09	38	1	10	6	14	26	28	17	12	21	13	0	
EDAH10	70	0	42	53	52	19	51	41	46	58	59	9	
EDAM10	70	2	49	69	62	14	48	41	52	66	69	16	
EDAU10	68	3	51	73	65	11	47	40	52	69	71	18	
EDAZ10	70	2	50	67	61	13	50	42	52	66	69	13	
EDAH11	68	1	46	59	56	14	50	42	47	62	62	9	
EDAM11	63	1	40	49	51	16	46	38	39	58	53	6	
EDAU11	56	2	34	45	51	14	38	30	31	59	44	7	
EDAZ11	49	4	28	42	52	14	31	24	24	60	38	8	
EDAH12	44	6	24	41	54	14	25	19	20	62	34	10	
EDAM12	38	9	20	39	56	13	20	14	15	64	29	13	
EDAU12	33	14	17	40	60	11	14	9	12	68	25	20	
EDAZ12	26	20	13	38	62	10	9	5	8	69	20	26	
EDAH13	22	24	11	36	63	8	6	3	5	70	17	30	
EDAM13	19	27	9	35	63	7	4	1	4	70	15	33	

Read the last page

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
EDAU09	-10	-30	-11	-8	-25	-19	-16	-15	-15
EDAZ09	86	74	83	75	78	81	81	79	79
EDAH10	99	99	96	84	100	99	97	100	93
EDAM10	97	99	92	82	99	97	95	92	92
EDAU10	95	99	91	81	98	96	94	91	91
EDAZ10	96	100	93	82	99	98	95	92	92
EDAH11	98	100	96	84	100	99	97	93	93
EDAM11	98	99	98	87	99	100	98	95	95
EDAU11	98	97	99	90	98	99	99	96	96
EDAZ11	96	95	100	93	96	99	99	98	98
EDAH12	94	94	100	95	94	98	99	99	99
EDAM12	92	91	99	97	92	96	99	99	99
EDAU12	90	89	98	99	89	94	98	99	99
EDAZ12	86	85	95	100	85	91	96	98	98
EDAH13	83	82	93	100	83	88	94	97	97
EDAM13	80	79	91	100	80	86	92	96	96

Correlations

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
EDAU09	1	9	1	1	6	4	3	2	2
EDAZ09	74	55	69	56	61	66	65	62	62
EDAH10	99	98	91	71	99	98	93	99	87
EDAM10	93	99	85	67	98	94	90	84	84
EDAU10	91	98	82	66	97	93	88	83	82
EDAZ10	93	100	86	67	99	95	90	84	84
EDAH11	96	100	91	71	100	98	93	87	87
EDAM11	97	98	95	75	98	99	96	90	90
EDAU11	95	94	98	81	95	99	97	93	93
EDAZ11	92	91	100	87	92	98	98	96	96
EDAH12	89	88	100	91	89	96	98	97	97
EDAM12	85	84	99	95	85	93	98	98	98
EDAU12	80	79	95	98	80	88	96	99	99
EDAZ12	74	72	90	100	73	82	91	96	96
EDAH13	69	67	86	100	68	77	88	94	94
EDAM13	65	63	83	99	64	73	84	92	92

R - Squared

	WR1	WR2	WR3	WR4	WG1	WG2	WG3	WG4	RG1	RG2	RG3	RG4	Correlations
EDAU09	50	-30	-11	-8	27	22	22	-32	-69	-69	-46	-24	
EDAZ09	-58	74	83	75	-76	-76	-74	-60	-47	-27	-19	-8	
EDAH10	-94	99	96	84	-98	-95	-93	-41	-3	17	13	9	
EDAM10	-99	99	92	82	-97	-93	-91	-31	14	31	21	12	
EDAU10	-99	99	91	81	-96	-93	-90	-29	18	34	23	13	
EDAZ10	-98	100	93	82	-98	-94	-92	-32	11	30	21	13	
EDAH11	-96	100	96	84	-99	-96	-94	-40	0	20	14	10	
EDAM11	-92	99	98	87	-99	-98	-95	-48	-11	9	5	4	
EDAU11	-90	97	99	90	-99	-99	-97	-56	-19	0	-4	-5	
EDAZ11	-87	95	100	93	-98	-99	-98	-63	-24	-7	-13	-14	
EDAH12	-86	94	100	95	-97	-99	-99	-68	-25	-11	-19	-22	
EDAM12	-84	91	99	97	-96	-98	-99	-71	-27	-15	-25	-29	
EDAU12	-82	89	98	99	-93	-97	-98	-73	-25	-17	-30	-36	
EDAZ12	-78	85	95	100	-89	-94	-96	-76	-24	-19	-35	-44	
EDAH13	-76	82	93	100	-87	-91	-94	-76	-24	-21	-38	-48	
EDAM13	-74	79	91	100	-84	-89	-93	-78	-24	-23	-41	-52	

	WR1	WR2	WR3	WR4	WG1	WG2	WG3	WG4	RG1	RG2	RG3	RG4	R - Squared
EDAU09	25	9	1	1	7	5	5	10	48	47	21	6	
EDAZ09	34	55	69	56	58	58	55	36	22	8	4	1	
EDAH10	88	98	91	71	96	91	86	16	0	3	2	1	
EDAM10	97	99	85	67	93	87	83	9	2	10	5	1	
EDAU10	99	98	82	66	92	86	81	8	3	12	6	2	
EDAZ10	97	100	86	67	95	89	84	10	1	9	4	2	
EDAH11	92	100	91	71	98	93	88	16	0	4	2	1	
EDAM11	86	98	95	75	99	95	91	23	1	1	0	0	
EDAU11	80	94	98	81	98	97	94	32	4	0	0	0	
EDAZ11	76	91	100	87	97	98	97	40	6	0	2	2	
EDAH12	74	88	100	91	95	98	98	46	7	1	4	5	
EDAM12	70	84	99	95	92	97	98	51	7	2	6	8	
EDAU12	67	79	95	98	87	93	96	54	6	3	9	13	
EDAZ12	61	72	90	100	80	88	92	57	6	4	12	19	
EDAH13	58	67	86	100	75	84	89	58	6	4	15	23	
EDAM13	54	63	83	99	71	80	86	60	6	5	17	27	

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
WR1	-91	-97	-87	-78	-96	-93	-90	-88	-87
WR2	-91	-98	-88	-77	-96	-94	-91	-87	-87
WR3	-96	-100	-95	-83	-99	-98	-96	-92	-92
WR4	-74	-69	-83	-72	-70	-77	-77	-75	-75
WG1	-74	-99	-98	-89	-98	-99	-98	-96	-96
WG2	-94	-96	-99	-93	-96	-98	-99	-98	-98
WG3	-91	-93	-99	-95	-93	-97	-98	-98	-98
WG4	-43	-37	-65	-76	-39	-51	-60	-51	-65
RG1	-7	4	-24	-24	1	-10	-14	-10	-16
RG2	12	24	-8	-20	21	8	0	-6	-6
RG3	9	16	-16	-36	14	1	-10	-19	-19
RG4	6	10	-18	-45	9	-3	-16	-26	-26

Correlations

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
WR1	83	94	76	60	92	87	82	77	76
WR2	83	95	77	59	93	88	82	76	76
WR3	92	99	90	69	98	97	92	85	85
WR4	55	47	69	52	49	59	59	56	56
WG1	55	97	96	78	97	99	96	92	92
WG2	88	92	99	87	92	97	98	96	96
WG3	83	87	98	91	87	94	97	97	97
WG4	19	14	42	58	15	26	36	26	43
RG1	1	0	6	6	0	1	2	1	3
RG2	2	6	1	4	4	1	0	0	0
RG3	1	3	2	13	2	0	1	3	4
RG4	0	1	3	20	1	0	2	7	7

R - Squared

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
FCAL1	-96	-100	-94	-85	-99	-98	-96	-93	-93
FCAL2	-97	-100	-96	-86	-100	-99	-99	-95	-94
FCAL3	-97	-98	-99	-92	-98	-100	-100	-98	-98
FCAL4	-91	-89	-99	-92	-95	-98	-99	-97	-97
FCAL21	-91	-89	-99	-95	-90	-95	-97	-97	-97
FCAL22	-86	-83	-96	-98	-85	-91	-95	-97	-97
FCAL23	-83	-81	-95	-99	-95	-89	-94	-95	-97
FCAL24	-80	-79	-92	-99	-80	-86	-92	-80	-96

Correlations

	Packs				Bundles				
	Wht Pak	Red Pak	Green Pak	Blue Pak	2yr	3yr	4yr	5yr - 1	5yr -2
FCAL1	93	100	88	71	99	96	92	87	87
FCAL2	94	100	92	74	99	98	98	89	89
FCAL3	94	96	98	85	97	99	99	96	96
FCAL4	83	78	97	86	91	97	97	95	95
FCAL21	83	78	97	90	80	89	94	94	94
FCAL22	75	70	93	96	72	82	90	93	93
FCAL23	70	66	90	98	90	78	88	90	93
FCAL24	65	62	85	99	63	74	85	63	91

R - Squared

Concerning Packs: Formula for packs =  $((EDAA9+EDAA10+EDAA11+EDAA12)/4)$

Where the number in the equation, ie EDAA9, represents the 9th Eurodollar contract **not** including serials. The 9th contract is always GREEN 1. EDAA12 represent GREEN 4 or the 12th Eurodollar contract, etc.

BUNDLES are priced the same way. HOWEVER, there are two-types of 5y bundles. I've labeled them 5y -1 and 5y-2. The first is priced like all the other bundles. The 2nd is the 5yr bundle futures contract that expires quarterly (symbol = Y5 on CQG). This 2nd contract trades more than the regular 5yr bundles.

#### CALENDAR SPREADS:

WR1 = White 1 contract and the RED 1 contract.

WG1 = White 1 contract and the Green 1 contract

RG1 = GREEN 1 contract and the RED 1 contract

The formula used to determine the yield is 100-longer duration minus 100-shorter duration

#### CALENDAR FLYs

FCAL1 = White 1, Red 1, Green 1

FCAL2 = White 2, Red 2, Green 2

FCAL3 = White 3, Red 3, Green 3

FCAL4 = White 4, Red 4, Green 4

FCAL21 = RED 1, Green 1, Blue 1

FCAL22 = RED 2, Green 2, Blue 2

FCAL23 = RED 3, Green 3, Blue 3

FCAL24 = RED 4, Green 4, Blue 4

**IMPORTANT!!** Example for the formula used to determine the calendar fly is :  $(SEP11)+((SEP10)*2)-(SEP09)$

Why is this important? Because if you switch the order, say, SEP09 and SEP11, then the "+" and "-" operators, it changes the correlation equation.

I set all the spreads from highest duration to lowest duration, then, added the bullet to the highest duration, then, subtracted the lowest duration wing.







