

## **The Morning Email: TERM TEDS & Dirty TEDS**

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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.

Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	107.4844	107.155	1.492	1.89
ZF	113.8125	113.260	2.299	4.20
ZN	115.2031	115.065	3.552	6.48
2y	100.938	100.3000	1.495	1.83
5y	102.694	102.2220	2.537	4.55
10y	103.359	103.1150	3.590	8.04

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.335	2.665	53	0.145	DEC	
EDAH09	97.660	2.340	144	0.394	MAR	White Pack
EDAM09	97.675	2.325	235	0.643	JUN	
EDAU09	97.650	2.350	326	0.892	SEP	
EDAZ09	97.500	2.500	417	1.142	DEC	
EDAH10	97.390	2.610	508	1.391	MAR	Red Pack
EDAM10	97.130	2.870	599	1.640	JUN	
EDAU10	96.780	3.220	690	1.890	SEP	
EDAZ10	96.360	3.640	781	2.139	DEC	
EDAH11	96.125	3.875	872	2.388	MAR	Green Pack
EDAM11	95.925	4.075	963	2.638	JUN	
EDAU11	95.775	4.225	1061	2.906	SEP	
EDAZ11	95.675	4.325	1152	3.155	DEC	
EDAH12	95.700	4.300	1243	3.405	MAR	Blue Pack
EDAM12	95.635	4.365	1334	3.654	JUN	
EDAU12	95.570	4.430	1425	3.903	SEP	
EDAZ12	95.490	4.510	1516	4.153	DEC	
EDAH13	95.485	4.515	1607	4.402	MAR	Gold Pack
EDAM13	95.440	4.560	1698	4.651	JUN	
EDZU13	95.250	4.750	1880	5.150	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.469	-10.625	9758.000	Pack Prices
Red Pack	2.859	-5.000	9720.000	
Green Pack	4.049	-2.750	9604.625	
Blue Pack	4.464	-1.875	9564.500	
Gold Pack	4.671	0.500	9544.500	

Red pack is a 2yr proxy  
 Gold pack is a 10yr proxy  
 Red /Gold is a 2/10 proxy  
 Blue pack is a 5yr proxy  
 Blue/Gold is a 5/10 proxy

Notes

\* Futures use CTD for Last Yield

IF : '#VALUE!', then, no quote being provided by exchange.

If color of cell is orange, it's simply a 'note' for me.

**How many ways can you hedge the TED? Let me count...there's lots and lots, like:**

- 1 Regression
  - 2 Engineered
  - 3 Strip with and without Stubs
  - 4 Convexity Bias
  - 5 Weighted
  - 6 Unweighted
- and more...

Most of us are interested in the *unweighted hedge* which is simply a curve trade hedge. There are so many ways to hedge the TED trade that I can't possibly list them all.

If you email me and ask for a specific hedge, I'll get it to you.

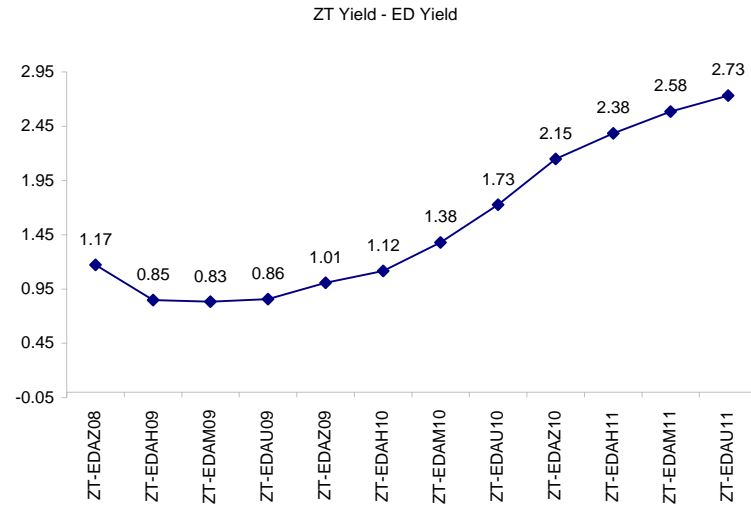
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **Correlations (Important)**

Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based on yield than price.

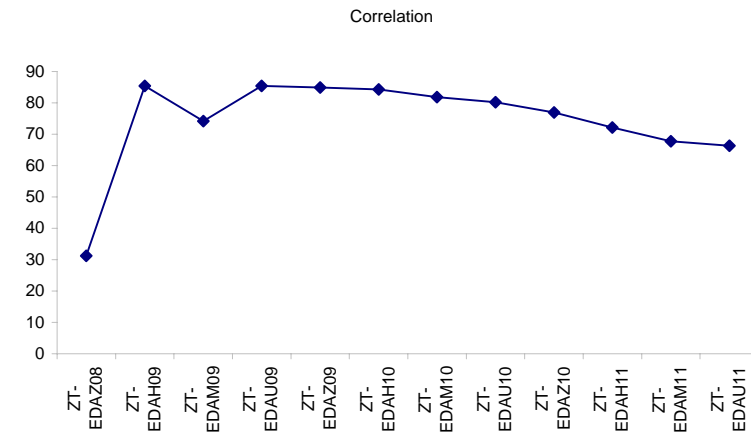
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.149	1.17	ZT-EDAZ08	31.193
EDAH09	9.824	0.85	ZT-EDAH09	85.421
EDAM09	9.809	0.83	ZT-EDAM09	74.179
EDAU09	9.834	0.86	ZT-EDAU09	85.421
EDAZ09	9.984	1.01	ZT-EDAZ09	84.859
EDAH10	10.094	1.12	ZT-EDAH10	84.276
EDAM10	10.354	1.38	ZT-EDAM10	81.854
EDAU10	10.704	1.73	ZT-EDAU10	80.224
EDAZ10	11.124	2.15	ZT-EDAZ10	76.931
EDAH11	11.359	2.38	ZT-EDAH11	72.159
EDAM11	11.559	2.58	ZT-EDAM11	67.719
EDAU11	11.709	2.73	ZT-EDAU11	66.286

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS (Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



ED Duration as Fraction of year				ZT Duration	Spread Duration
EDAZ08	0.145	1.89	1.75	ZT-EDAZ08	
EDAH09	0.394	1.89	1.50	ZT-EDAH09	
EDAM09	0.643	1.89	1.25	ZT-EDAM09	
EDAU09	0.892	1.89	1.00	ZT-EDAU09	
EDAZ09	1.142	1.89	0.75	ZT-EDAZ09	
EDAH10	1.391	1.89	0.50	ZT-EDAH10	
EDAM10	1.640	1.89	0.25	ZT-EDAM10	
EDAU10	1.890	1.89	0.00	ZT-EDAU10	
EDAZ10	2.139	1.89	(0.25)	ZT-EDAZ10	
EDAH11	2.388	1.89	(0.50)	ZT-EDAH11	
EDAM11	2.638	1.89	(0.75)	ZT-EDAM11	
EDAU11	2.906	1.89	(1.02)	ZT-EDAU11	

The farther away from 0 the spread duration is the riskier the trade.

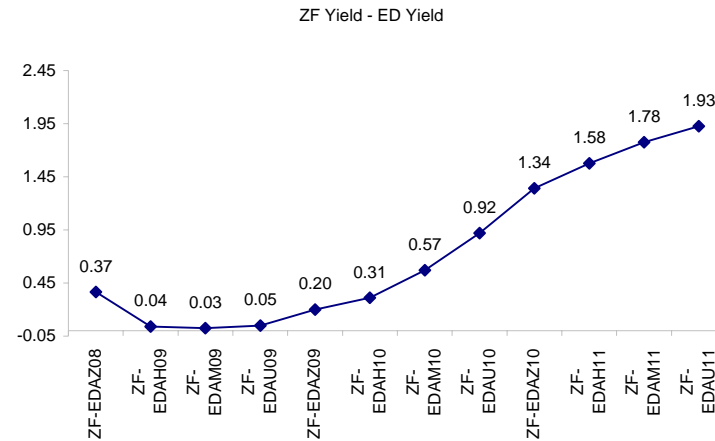


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	16.478	0.37	ZF-EDAZ08	55.806
EDAH09	16.153	0.04	ZF-EDAH09	34.436
EDAM09	16.138	0.03	ZF-EDAM09	69.762
EDAU09	16.163	0.05	ZF-EDAU09	82.307
EDAZ09	16.313	0.20	ZF-EDAZ09	88.120
EDAH10	16.423	0.31	ZF-EDAH10	90.787
EDAM10	16.683	0.57	ZF-EDAM10	93.007
EDAU10	17.033	0.92	ZF-EDAU10	95.083
EDAZ10	17.453	1.34	ZF-EDAZ10	97.059
EDAH11	17.688	1.58	ZF-EDAH11	97.871
EDAM11	17.888	1.78	ZF-EDAM11	97.204
EDAU11	18.038	1.93	ZF-EDAU11	96.879

Price = Outright Decimal Price - Euro Contract Price

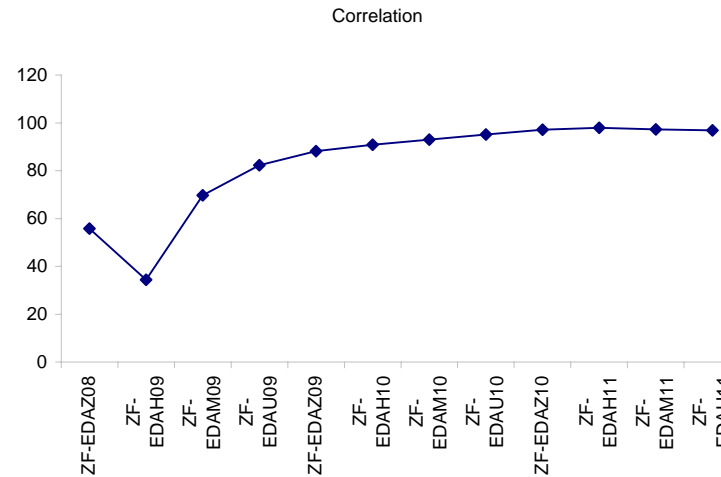
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAZ08	0.145	4.20	4.05	ZF-EDAZ08	
EDAH09	0.394	4.20	3.80	ZF-EDAH09	
EDAM09	0.643	4.20	3.55	ZF-EDAM09	
EDAU09	0.892	4.20	3.30	ZF-EDAU09	
EDAZ09	1.142	4.20	3.05	ZF-EDAZ09	
EDAH10	1.391	4.20	2.80	ZF-EDAH10	
EDAM10	1.640	4.20	2.55	ZF-EDAM10	
EDAU10	1.890	4.20	2.31	ZF-EDAU10	
EDAZ10	2.139	4.20	2.06	ZF-EDAZ10	
EDAH11	2.388	4.20	1.81	ZF-EDAH11	
EDAM11	2.638	4.20	1.56	ZF-EDAM11	
EDAU11	2.906	4.20	1.29	ZF-EDAU11	

The farther away from 0 the spread duration is the riskier the trade.

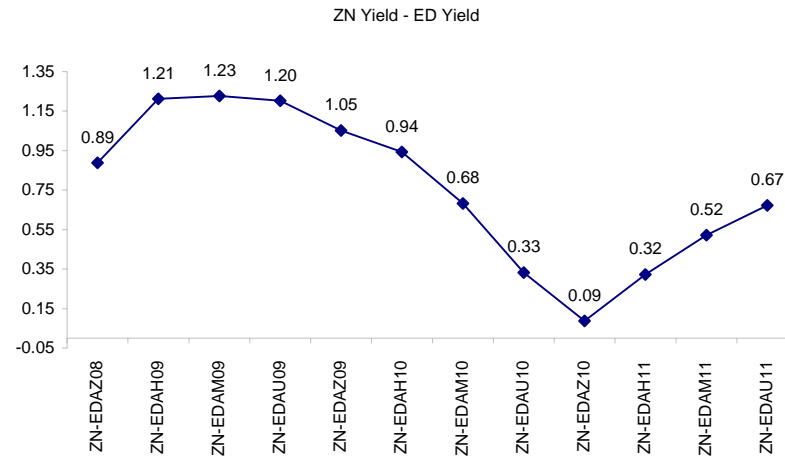


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	17.868	0.89	ZN-EDAZ08	42.457
EDAH09	17.543	1.21	ZN-EDAH09	22.248
EDAM09	17.528	1.23	ZN-EDAM09	39.591
EDAU09	17.553	1.20	ZN-EDAU09	53.631
EDAZ09	17.703	1.05	ZN-EDAZ09	64.189
EDAH10	17.813	0.94	ZN-EDAH10	69.645
EDAM10	18.073	0.68	ZN-EDAM10	93.007
EDAU10	18.423	0.33	ZN-EDAU10	95.083
EDAZ10	18.843	0.09	ZN-EDAZ10	97.059
EDAH11	19.078	0.32	ZN-EDAH11	97.871
EDAM11	19.278	0.52	ZN-EDAM11	97.204
EDAU11	19.428	0.67	ZN-EDAU11	96.879

Price = Outright Decimal Price - Euro Contract Price

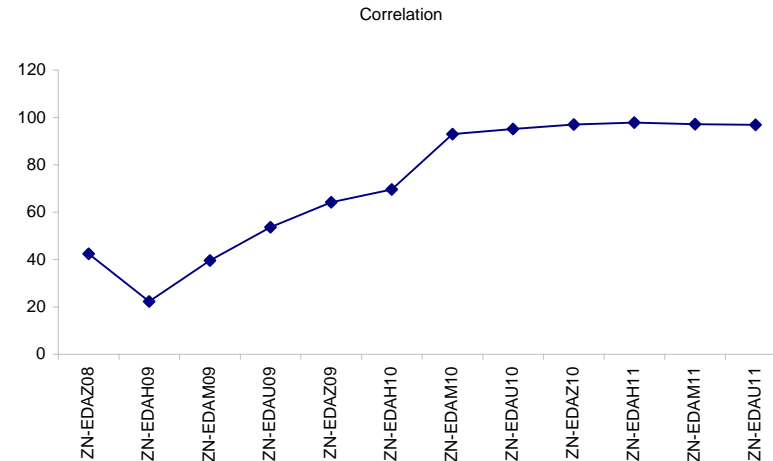
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.145	6.48	6.33	ZN-EDAZ08		
EDAH09	0.394	6.48	6.09	ZN-EDAH09		
EDAM09	0.643	6.48	5.84	ZN-EDAM09		
EDAU09	0.892	6.48	5.59	ZN-EDAU09		
EDAZ09	1.142	6.48	5.34	ZN-EDAZ09		
EDAH10	1.391	6.48	5.09	ZN-EDAH10		
EDAM10	1.640	6.48	4.84	ZN-EDAM10		
EDAU10	1.890	6.48	4.59	ZN-EDAU10		
EDAZ10	2.139	6.48	4.34	ZN-EDAZ10		
EDAH11	2.388	6.48	4.09	ZN-EDAH11		
EDAM11	2.638	6.48	3.84	ZN-EDAM11		
EDAU11	2.906	6.48	3.57	ZN-EDAU11		

The farther away from 0 the spread duration is the riskier the trade.

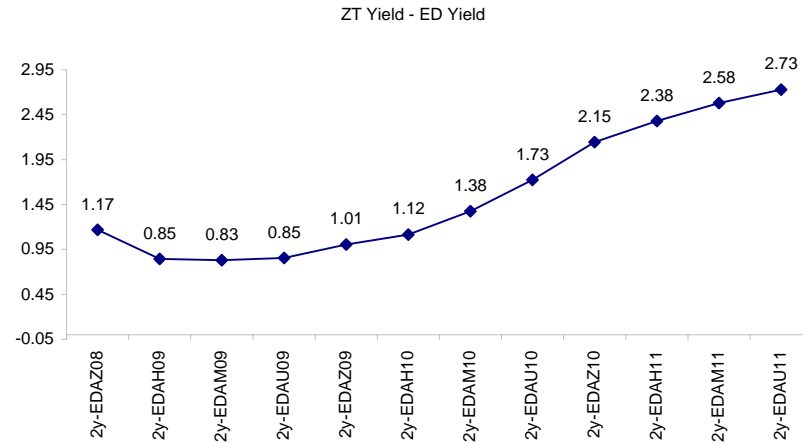


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.602	1.17	2y-EDAZ08	22.057
EDAH09	3.277	0.85	2y-EDAH09	25.306
EDAM09	3.262	0.83	2y-EDAM09	-1.446
EDAU09	3.287	0.85	2y-EDAU09	-21.741
EDAZ09	3.437	1.01	2y-EDAZ09	-28.259
EDAH10	3.547	1.12	2y-EDAH10	-30.770
EDAM10	3.807	1.38	2y-EDAM10	-33.823
EDAU10	4.157	1.73	2y-EDAU10	-37.968
EDAZ10	4.577	2.15	2y-EDAZ10	-43.780
EDAH11	4.812	2.38	2y-EDAH11	-48.747
EDAM11	5.012	2.58	2y-EDAM11	-51.228
EDAU11	5.162	2.73	2y-EDAU11	-52.989

Price = Outright Decimal Price - Euro Contract Price

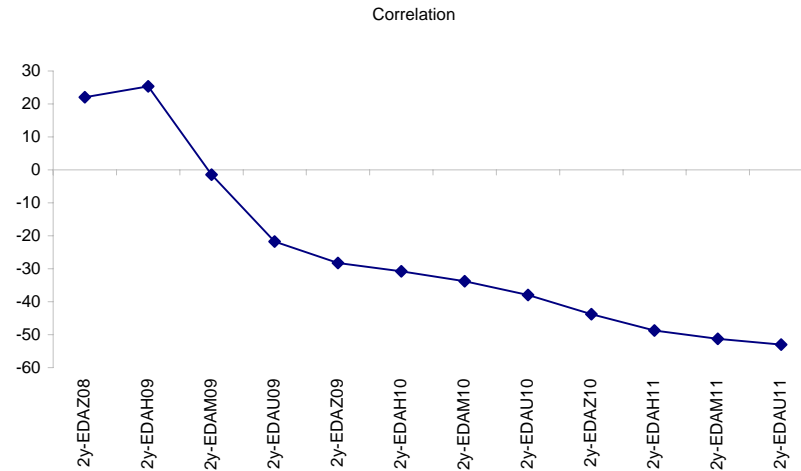
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days.



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.145	1.83	1.68	2y-EDAZ08	
EDAH09	0.394	1.83	1.43	2y-EDAH09	
EDAM09	0.643	1.83	1.18	2y-EDAM09	
EDAU09	0.892	1.83	0.93	2y-EDAU09	
EDAZ09	1.142	1.83	0.68	2y-EDAZ09	
EDAH10	1.391	1.83	0.43	2y-EDAH10	
EDAM10	1.640	1.83	0.18	2y-EDAM10	
EDAU10	1.890	1.83	(0.06)	2y-EDAU10	
EDAZ10	2.139	1.83	(0.31)	2y-EDAZ10	
EDAH11	2.388	1.83	(0.56)	2y-EDAH11	
EDAM11	2.638	1.83	(0.81)	2y-EDAM11	
EDAU11	2.906	1.83	(1.08)	2y-EDAU11	

The farther away from 0 the spread duration is the riskier the trade.

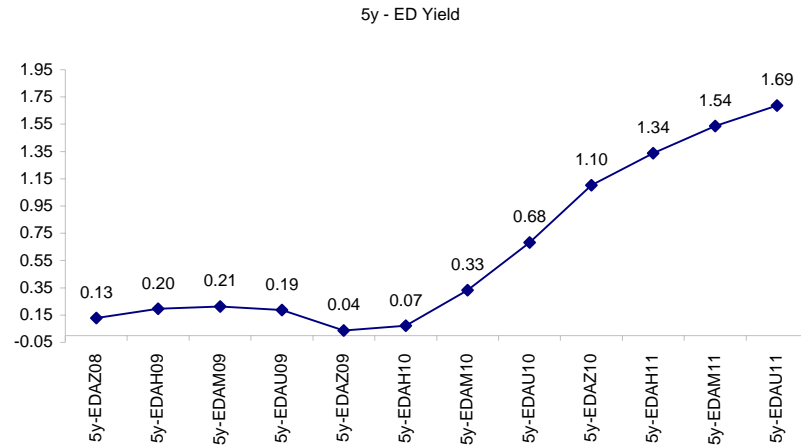


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	5.359	0.13	5y-EDAZ08	-16.559
EDAH09	5.034	0.20	5y-EDAH09	0.169
EDAM09	5.019	0.21	5y-EDAM09	-21.454
EDAU09	5.044	0.19	5y-EDAU09	-46.709
EDAZ09	5.194	0.04	5y-EDAZ09	-59.005
EDAH10	5.304	0.07	5y-EDAH10	-63.655
EDAM10	5.564	0.33	5y-EDAM10	-68.642
EDAU10	5.914	0.68	5y-EDAU10	-74.018
EDAZ10	6.334	1.10	5y-EDAZ10	-81.058
EDAH11	6.569	1.34	5y-EDAH11	-87.248
EDAM11	6.769	1.54	5y-EDAM11	-89.910
EDAU11	6.919	1.69	5y-EDAU11	-91.174

Price = Outright Decimal Price - Euro Contract Price

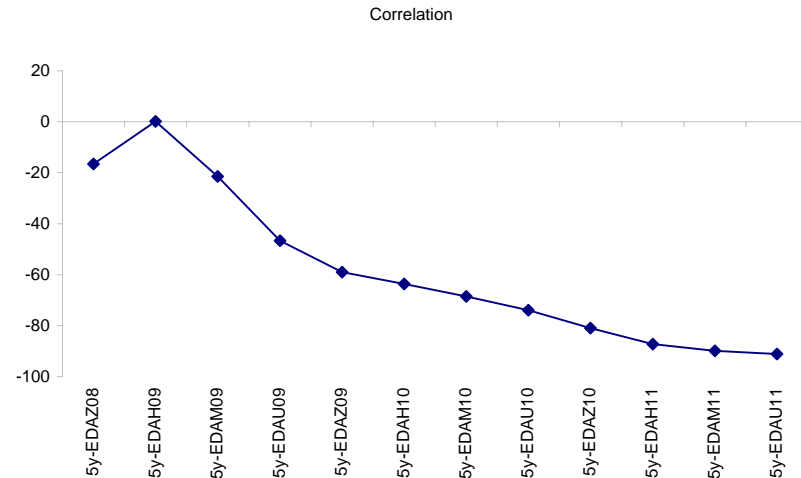
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.145	4.55	4.41	5y-EDAZ08
EDAH09	0.394	4.55	4.16	5y-EDAH09
EDAM09	0.643	4.55	3.91	5y-EDAM09
EDAU09	0.892	4.55	3.66	5y-EDAU09
EDAZ09	1.142	4.55	3.41	5y-EDAZ09
EDAH10	1.391	4.55	3.16	5y-EDAH10
EDAM10	1.640	4.55	2.91	5y-EDAM10
EDAU10	1.890	4.55	2.66	5y-EDAU10
EDAZ10	2.139	4.55	2.41	5y-EDAZ10
EDAH11	2.388	4.55	2.16	5y-EDAH11
EDAM11	2.638	4.55	1.91	5y-EDAM11
EDAU11	2.906	4.55	1.64	5y-EDAU11

The farther away from 0 the spread duration is the riskier the trade.



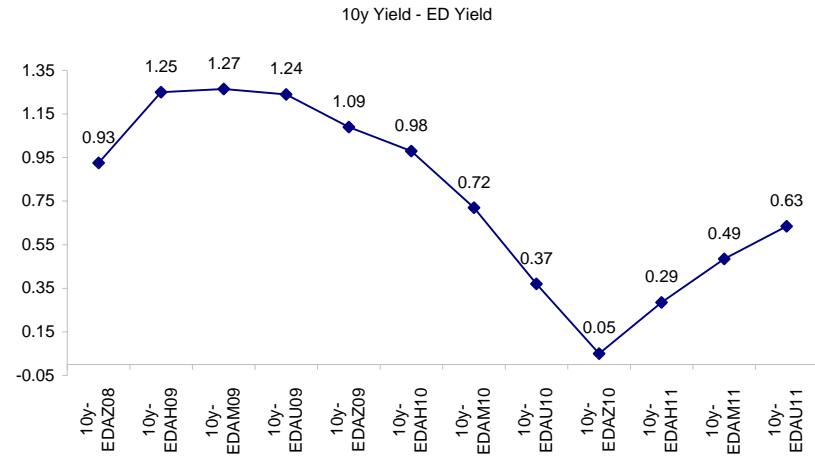


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	5.359	0.93	10y-EDAZ08	-25.290
EDAH09	5.034	1.25	10y-EDAH09	-5.007
EDAM09	5.019	1.27	10y-EDAM09	-24.504
EDAU09	5.044	1.24	10y-EDAU09	-50.663
EDAZ09	5.194	1.09	10y-EDAZ09	-64.115
EDAH10	5.304	0.98	10y-EDAH10	-69.115
EDAM10	5.564	0.72	10y-EDAM10	-74.391
EDAU10	5.914	0.37	10y-EDAU10	-79.612
EDAZ10	6.334	0.05	10y-EDAZ10	-86.284
EDAH11	6.569	0.29	10y-EDAH11	-92.058
EDAM11	6.769	0.49	10y-EDAM11	-94.373
EDAU11	6.919	0.63	10y-EDAU11	-95.200

Price = Outright Decimal Price - Euro Contract Price

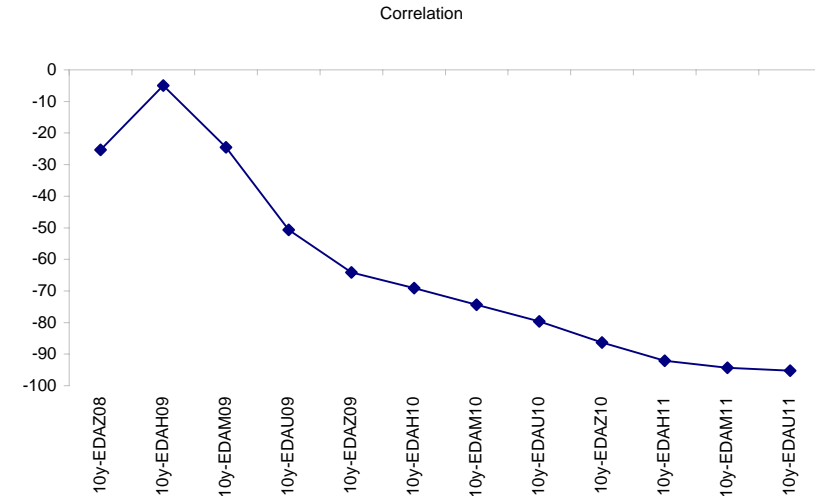
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.145	8.04	7.89	10y-EDAZ08
EDAH09	0.394	8.04	7.64	10y-EDAH09
EDAM09	0.643	8.04	7.39	10y-EDAM09
EDAU09	0.892	8.04	7.15	10y-EDAU09
EDAZ09	1.142	8.04	6.90	10y-EDAZ09
EDAH10	1.391	8.04	6.65	10y-EDAH10
EDAM10	1.640	8.04	6.40	10y-EDAM10
EDAU10	1.890	8.04	6.15	10y-EDAU10
EDAZ10	2.139	8.04	5.90	10y-EDAZ10
EDAH11	2.388	8.04	5.65	10y-EDAH11
EDAM11	2.638	8.04	5.40	10y-EDAM11
EDAU11	2.906	8.04	5.13	10y-EDAU11

The farther away from 0 the spread duration is the riskier the trade.



**Dirty TED Curve**

Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.

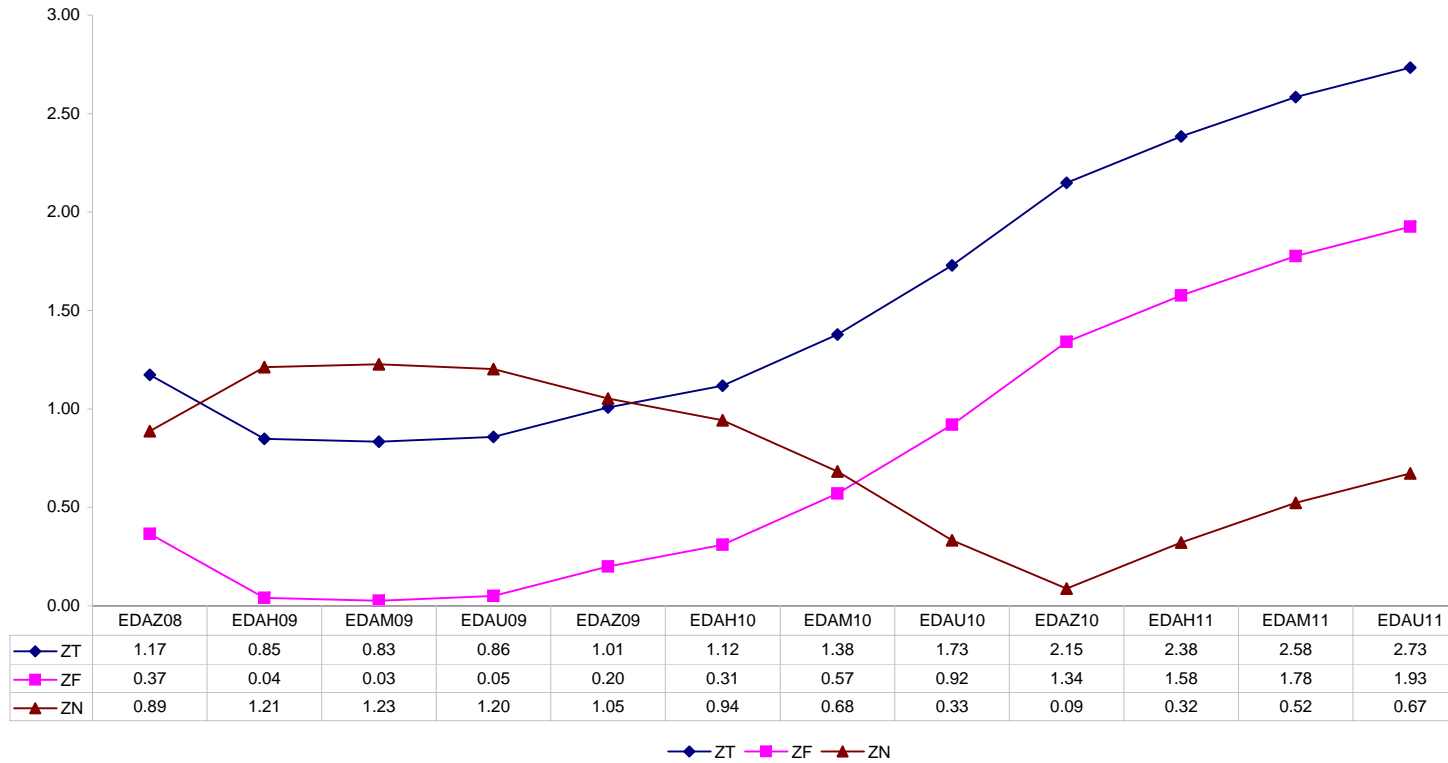
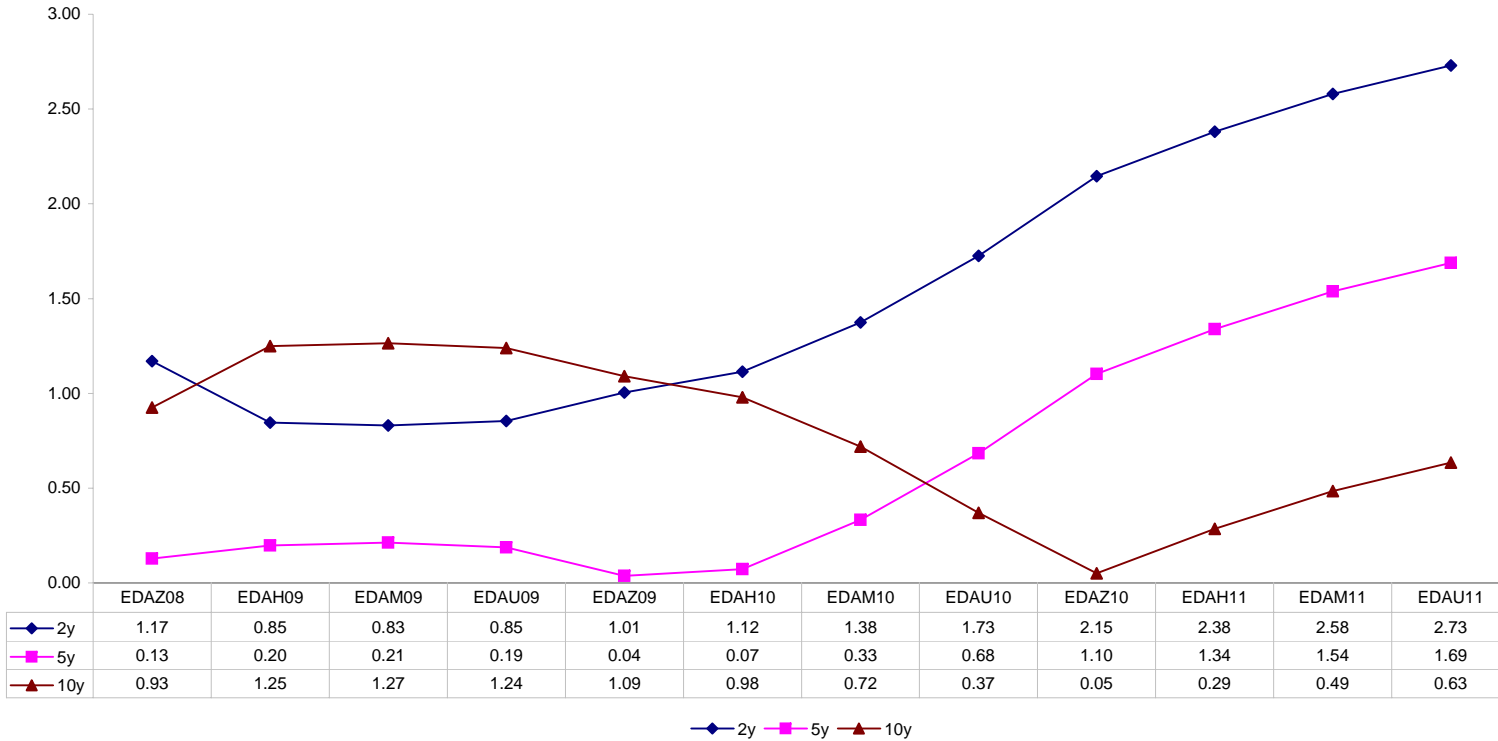
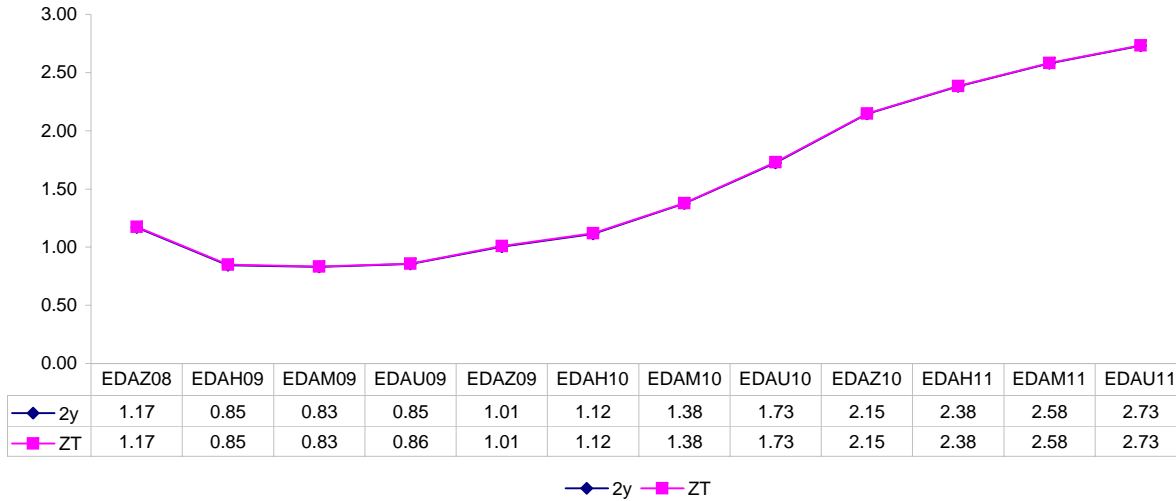


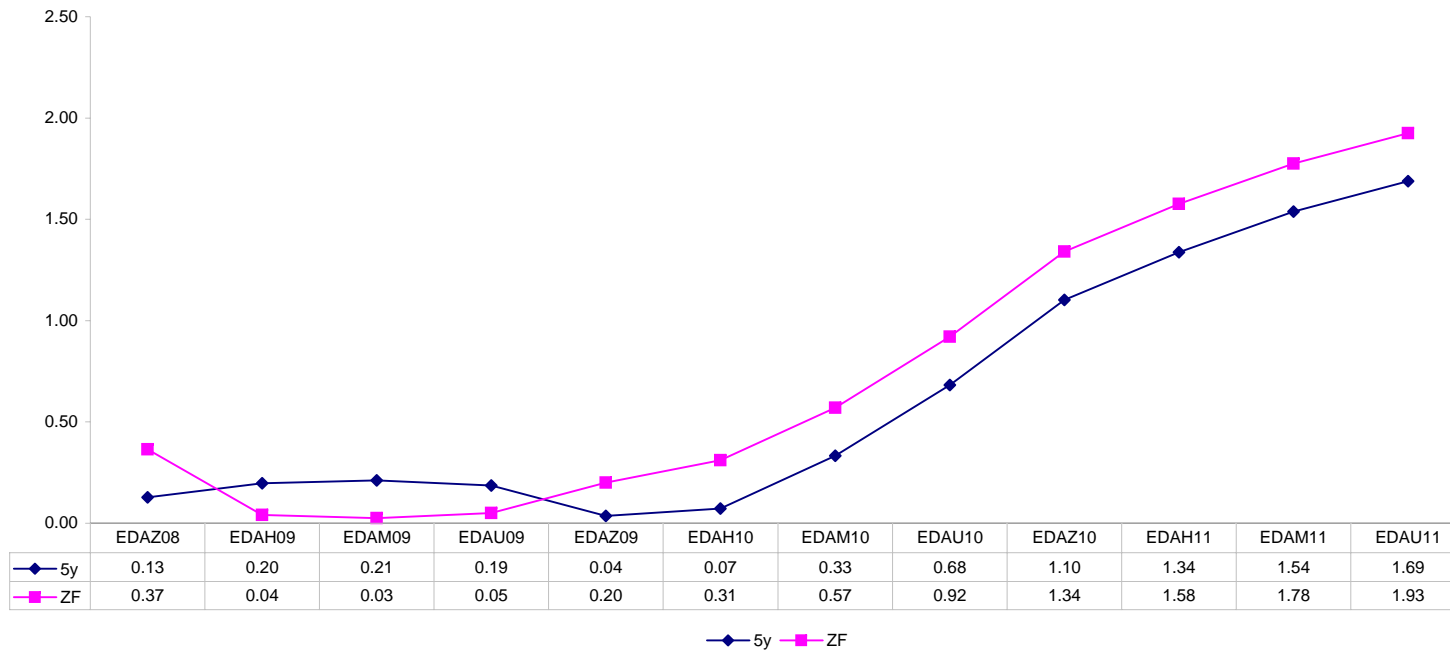
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



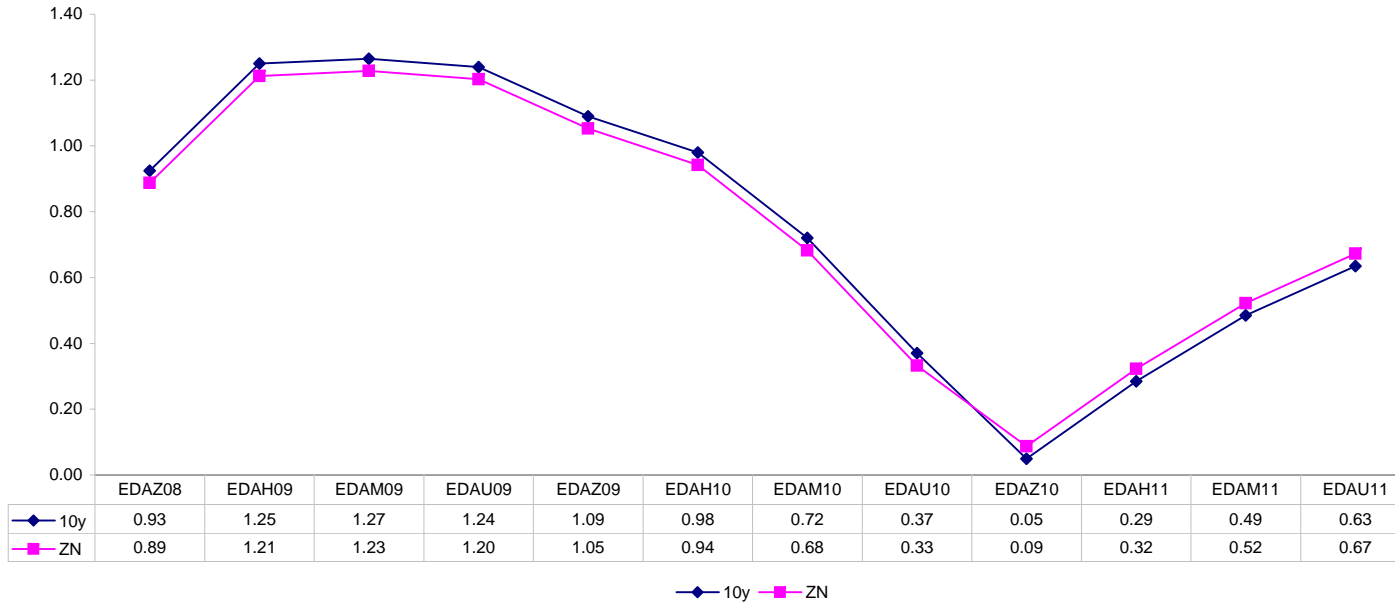
2y Basis TED Curve



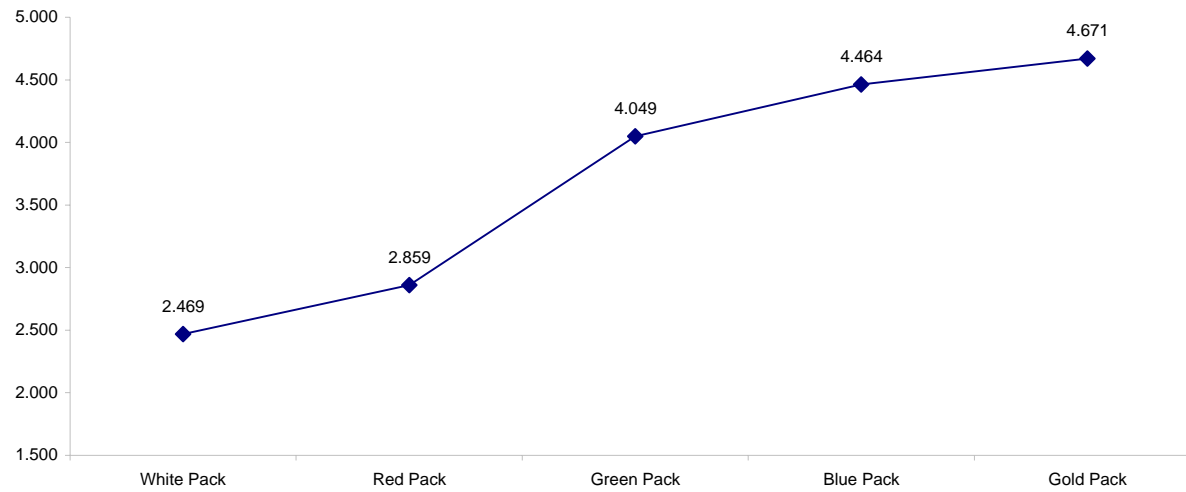
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.469	-10.625	9758.000
Red Pack	2.859	-5.000	9720.000
Green Pack	4.049	-2.750	9604.625
Blue Pack	4.464	-1.875	9564.500
Gold Pack	4.671	0.500	9544.500



2y, 5y, 10y Basis Curves vs ED

