

## **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	1.550	1.94
ZF	113.8344	113.267	2.468	4.11
ZN	116.1719	116.055	3.436	6.25
2y	100.866	100.2770	1.547	1.87
5y	102.344	102.1100	2.619	4.60
10y	103.469	103.1500	3.579	8.09

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	96.750	3.250	73	0.199	DEC	
EDAH09	97.455	2.545	164	0.449	MAR	White Pack
EDAM09	97.460	2.540	255	0.698	JUN	
EDAU09	97.385	2.615	346	0.947	SEP	
EDAZ09	97.075	2.925	437	1.197	DEC	
EDAH10	96.850	3.150	528	1.446	MAR	Red Pack
EDAM10	96.540	3.460	619	1.695	JUN	
EDAU10	96.275	3.725	710	1.945	SEP	
EDAZ10	96.025	3.975	801	2.194	DEC	
EDAH11	95.915	4.085	892	2.443	MAR	Green Pack
EDAM11	95.815	4.185	983	2.692	JUN	
EDAU11	95.745	4.255	1081	2.961	SEP	
EDAZ11	95.555	4.445	1172	3.210	DEC	
EDAH12	95.565	4.435	1263	3.460	MAR	Blue Pack
EDAM12	95.495	4.505	1354	3.709	JUN	
EDAU12	95.460	4.540	1445	3.958	SEP	
EDAZ12	95.360	4.640	1536	4.208	DEC	
EDAH13	95.380	4.620	1627	4.457	MAR	Gold Pack
EDAM13	95.320	4.680	1718	4.706	JUN	
EDZU13	95.060	4.940	1900	5.205	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.795	17.000	9726.250	
Red Pack	3.389	16.000	9668.500	Pack Prices
Green Pack	4.226	9.000	9587.500	
Blue Pack		0.000	9555.500	
Gold Pack		0.125	9534.250	

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.

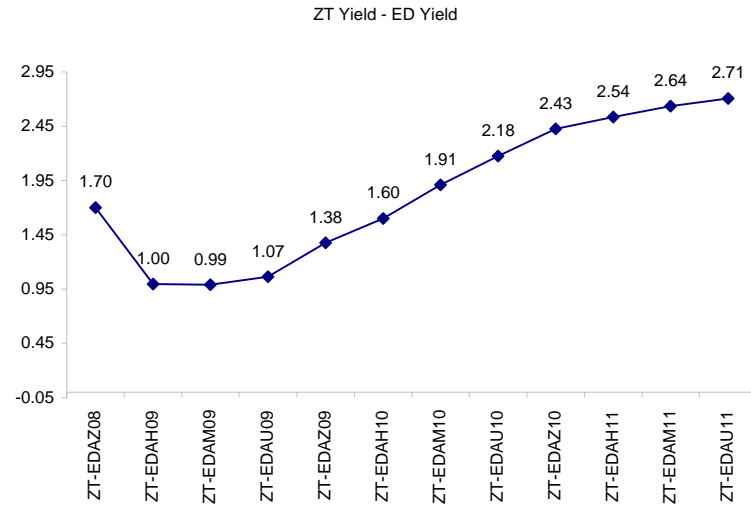
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

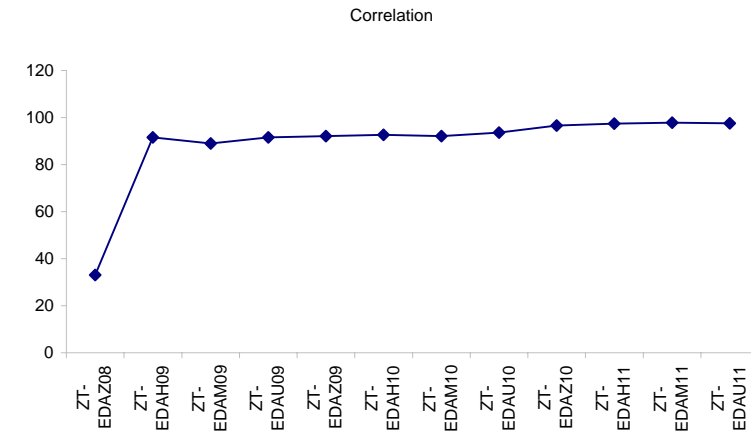
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.734	1.70	ZT-EDAZ08	33.013
EDAH09	10.029	1.00	ZT-EDAH09	91.515
EDAM09	10.024	0.99	ZT-EDAM09	88.958
EDAU09	10.099	1.07	ZT-EDAU09	91.515
EDAZ09	10.409	1.38	ZT-EDAZ09	92.127
EDAH10	10.634	1.60	ZT-EDAH10	92.714
EDAM10	10.944	1.91	ZT-EDAM10	92.051
EDAU10	11.209	2.18	ZT-EDAU10	93.599
EDAZ10	11.459	2.43	ZT-EDAZ10	96.550
EDAH11	11.569	2.54	ZT-EDAH11	97.389
EDAM11	11.669	2.64	ZT-EDAM11	97.826
EDAU11	11.739	2.71	ZT-EDAU11	97.610

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	0.199	1.94	1.74	ZT-EDAZ08		
EDAH09	0.449	1.94	1.49	ZT-EDAH09		
EDAM09	0.698	1.94	1.24	ZT-EDAM09		
EDAU09	0.947	1.94	0.99	ZT-EDAU09		
EDAZ09	1.197	1.94	0.74	ZT-EDAZ09		
EDAH10	1.446	1.94	0.49	ZT-EDAH10		
EDAM10	1.695	1.94	0.24	ZT-EDAM10		
EDAU10	1.945	1.94	(0.01)	ZT-EDAU10		
EDAZ10	2.194	1.94	(0.25)	ZT-EDAZ10		
EDAH11	2.443	1.94	(0.50)	ZT-EDAH11		
EDAM11	2.692	1.94	(0.75)	ZT-EDAM11		
EDAU11	2.961	1.94	(1.02)	ZT-EDAU11		

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

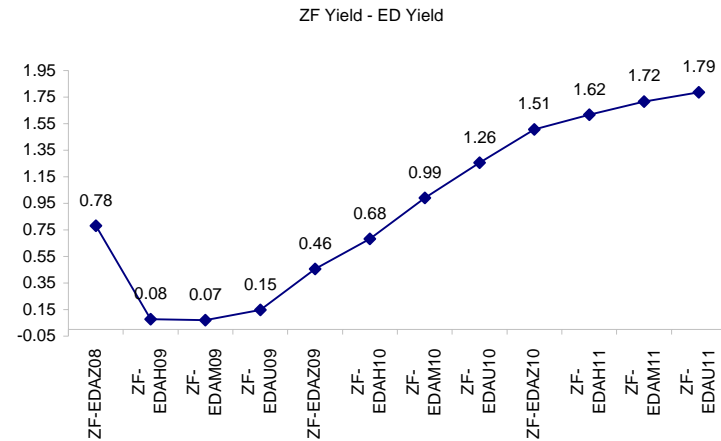


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	17.084	0.78	ZF-EDAZ08	38.887
EDAH09	16.379	0.08	ZF-EDAH09	85.969
EDAM09	16.374	0.07	ZF-EDAM09	91.651
EDAU09	16.449	0.15	ZF-EDAU09	94.090
EDAZ09	16.759	0.46	ZF-EDAZ09	94.678
EDAH10	16.984	0.68	ZF-EDAH10	95.005
EDAM10	17.294	0.99	ZF-EDAM10	94.375
EDAU10	17.559	1.26	ZF-EDAU10	95.661
EDAZ10	17.809	1.51	ZF-EDAZ10	98.056
EDAH11	17.919	1.62	ZF-EDAH11	98.612
EDAM11	18.019	1.72	ZF-EDAM11	98.837
EDAU11	18.089	1.79	ZF-EDAU11	98.602

Price = Outright Decimal Price - Euro Contract Price

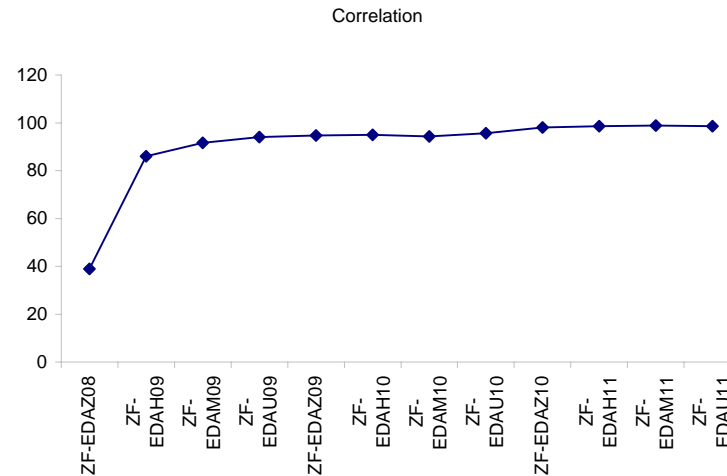
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAZ08	0.199	4.11	3.92	ZF-EDAZ08		
EDAH09	0.449	4.11	3.67	ZF-EDAH09		
EDAM09	0.698	4.11	3.42	ZF-EDAM09		
EDAU09	0.947	4.11	3.17	ZF-EDAU09		
EDAZ09	1.197	4.11	2.92	ZF-EDAZ09		
EDAH10	1.446	4.11	2.67	ZF-EDAH10		
EDAM10	1.695	4.11	2.42	ZF-EDAM10		
EDAU10	1.945	4.11	2.17	ZF-EDAU10		
EDAZ10	2.194	4.11	1.92	ZF-EDAZ10		
EDAH11	2.443	4.11	1.67	ZF-EDAH11		
EDAM11	2.692	4.11	1.42	ZF-EDAM11		
EDAU11	2.961	4.11	1.15	ZF-EDAU11		

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

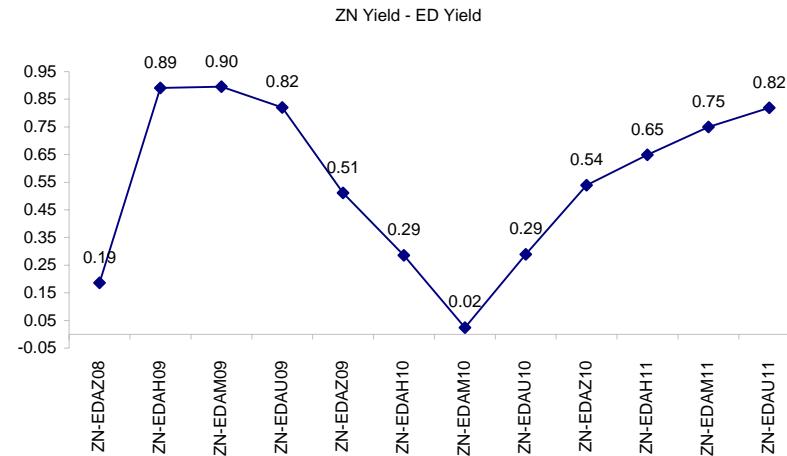


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.422	0.19	ZN-EDAZ08	44.526
EDAH09	18.717	0.89	ZN-EDAH09	74.757
EDAM09	18.712	0.90	ZN-EDAM09	81.733
EDAU09	18.787	0.82	ZN-EDAU09	85.532
EDAZ09	19.097	0.51	ZN-EDAZ09	86.673
EDAH10	19.322	0.29	ZN-EDAH10	87.011
EDAM10	19.632	0.02	ZN-EDAM10	94.375
EDAU10	19.897	0.29	ZN-EDAU10	95.661
EDAZ10	20.147	0.54	ZN-EDAZ10	98.056
EDAH11	20.257	0.65	ZN-EDAH11	98.612
EDAM11	20.357	0.75	ZN-EDAM11	98.837
EDAU11	20.427	0.82	ZN-EDAU11	98.602

Price = Outright Decimal Price - Euro Contract Price

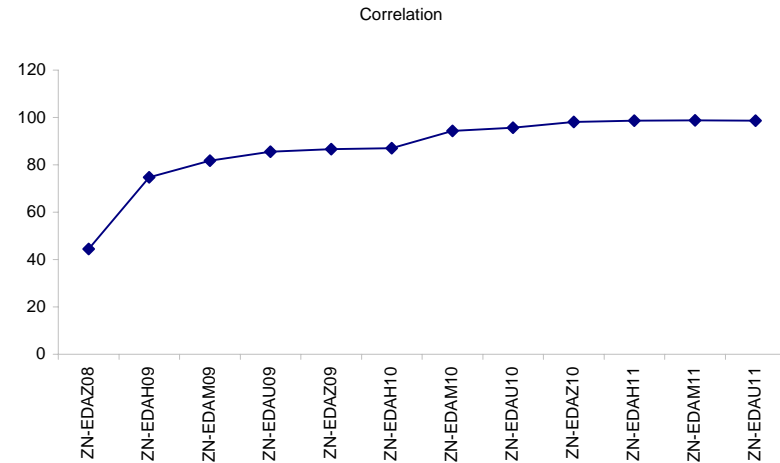
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.199	6.25	6.05	ZN-EDAZ08		
EDAH09	0.449	6.25	5.80	ZN-EDAH09		
EDAM09	0.698	6.25	5.55	ZN-EDAM09		
EDAU09	0.947	6.25	5.30	ZN-EDAU09		
EDAZ09	1.197	6.25	5.05	ZN-EDAZ09		
EDAH10	1.446	6.25	4.80	ZN-EDAH10		
EDAM10	1.695	6.25	4.55	ZN-EDAM10		
EDAU10	1.945	6.25	4.30	ZN-EDAU10		
EDAZ10	2.194	6.25	4.06	ZN-EDAZ10		
EDAH11	2.443	6.25	3.81	ZN-EDAH11		
EDAM11	2.692	6.25	3.56	ZN-EDAM11		
EDAU11	2.961	6.25	3.29	ZN-EDAU11		

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

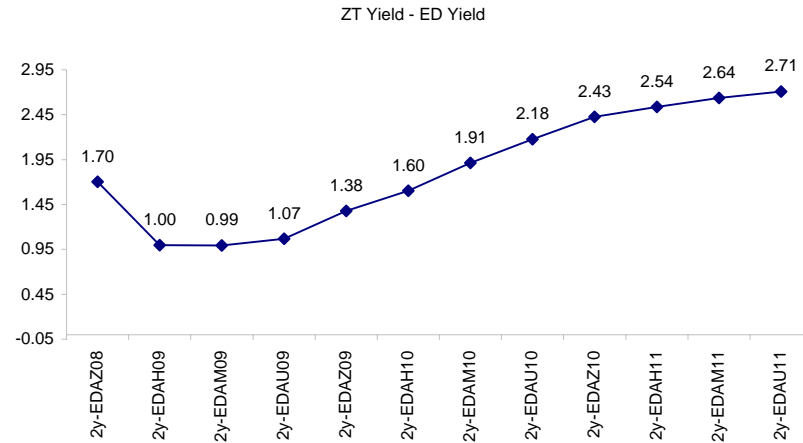


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	4.116	1.70	2y-EDAZ08	-29.722
EDAH09	3.411	1.00	2y-EDAH09	-81.999
EDAM09	3.406	0.99	2y-EDAM09	-88.114
EDAU09	3.481	1.07	2y-EDAU09	-90.983
EDAZ09	3.791	1.38	2y-EDAZ09	-91.569
EDAH10	4.016	1.60	2y-EDAH10	-92.440
EDAM10	4.326	1.91	2y-EDAM10	-91.622
EDAU10	4.591	2.18	2y-EDAU10	-92.826
EDAZ10	4.841	2.43	2y-EDAZ10	-95.556
EDAH11	4.951	2.54	2y-EDAH11	-96.372
EDAM11	5.051	2.64	2y-EDAM11	-96.784
EDAU11	5.121	2.71	2y-EDAU11	-96.192

Price = Outright Decimal Price - Euro Contract Price

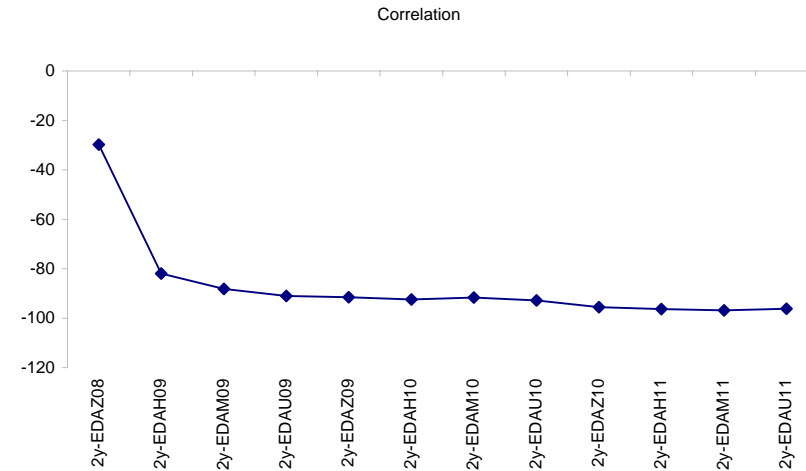
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.199	1.87	1.68	2y-EDAZ08	
EDAH09	0.449	1.87	1.43	2y-EDAH09	
EDAM09	0.698	1.87	1.18	2y-EDAM09	
EDAU09	0.947	1.87	0.93	2y-EDAU09	
EDAZ09	1.197	1.87	0.68	2y-EDAZ09	
EDAH10	1.446	1.87	0.43	2y-EDAH10	
EDAM10	1.695	1.87	0.18	2y-EDAM10	
EDAU10	1.945	1.87	(0.07)	2y-EDAU10	
EDAZ10	2.194	1.87	(0.32)	2y-EDAZ10	
EDAH11	2.443	1.87	(0.57)	2y-EDAH11	
EDAM11	2.692	1.87	(0.82)	2y-EDAM11	
EDAU11	2.961	1.87	(1.09)	2y-EDAU11	

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

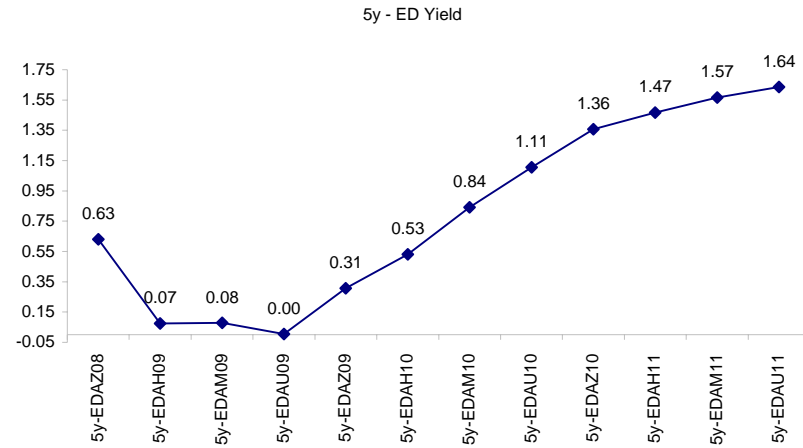


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	5.594	0.63	5y-EDAZ08	-28.255
EDAH09	4.889	0.07	5y-EDAH09	-78.860
EDAM09	4.884	0.08	5y-EDAM09	-86.025
EDAU09	4.959	0.00	5y-EDAU09	-89.830
EDAZ09	5.269	0.31	5y-EDAZ09	-91.213
EDAH10	5.494	0.53	5y-EDAH10	-92.233
EDAM10	5.804	0.84	5y-EDAM10	-91.972
EDAU10	6.069	1.11	5y-EDAU10	-93.516
EDAZ10	6.319	1.36	5y-EDAZ10	-96.208
EDAH11	6.429	1.47	5y-EDAH11	-97.225
EDAM11	6.529	1.57	5y-EDAM11	-97.572
EDAU11	6.599	1.64	5y-EDAU11	-97.731

Price = Outright Decimal Price - Euro Contract Price

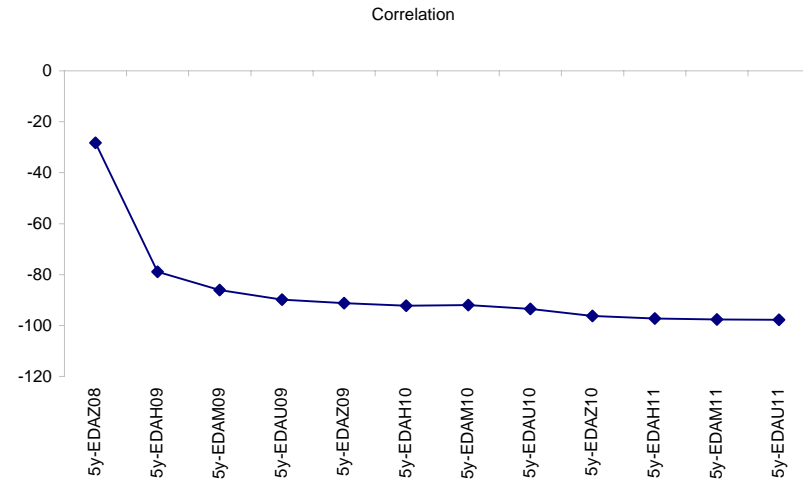
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.199	4.60	4.40	5y-EDAZ08
EDAH09	0.449	4.60	4.15	5y-EDAH09
EDAM09	0.698	4.60	3.90	5y-EDAM09
EDAU09	0.947	4.60	3.65	5y-EDAU09
EDAZ09	1.197	4.60	3.40	5y-EDAZ09
EDAH10	1.446	4.60	3.15	5y-EDAH10
EDAM10	1.695	4.60	2.90	5y-EDAM10
EDAU10	1.945	4.60	2.65	5y-EDAU10
EDAZ10	2.194	4.60	2.40	5y-EDAZ10
EDAH11	2.443	4.60	2.15	5y-EDAH11
EDAM11	2.692	4.60	1.90	5y-EDAM11
EDAU11	2.961	4.60	1.63	5y-EDAU11

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



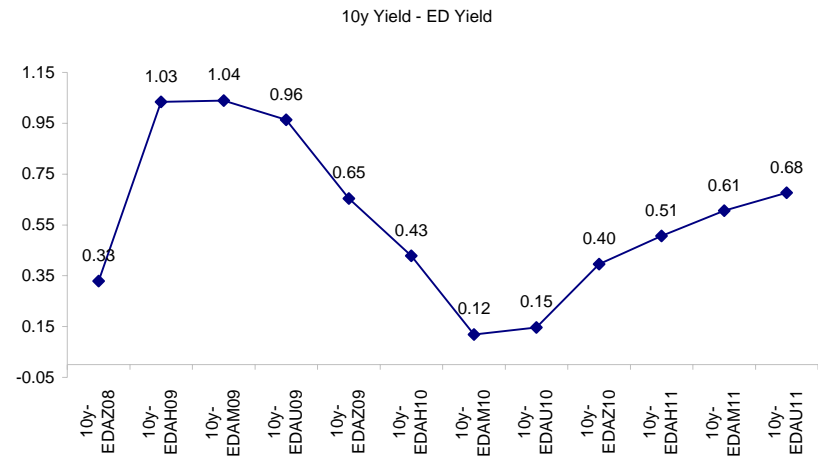


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	5.594	0.33	10y-EDAZ08	-43.908
EDAH09	4.889	1.03	10y-EDAH09	-85.514
EDAM09	4.884	1.04	10y-EDAM09	-91.238
EDAU09	4.959	0.96	10y-EDAU09	-94.011
EDAZ09	5.269	0.65	10y-EDAZ09	-95.064
EDAH10	5.494	0.43	10y-EDAH10	-95.917
EDAM10	5.804	0.12	10y-EDAM10	-96.074
EDAU10	6.069	0.15	10y-EDAU10	-96.838
EDAZ10	6.319	0.40	10y-EDAZ10	-97.565
EDAH11	6.429	0.51	10y-EDAH11	-97.367
EDAM11	6.529	0.61	10y-EDAM11	-96.903
EDAU11	6.599	0.68	10y-EDAU11	-97.096

Price = Outright Decimal Price - Euro Contract Price

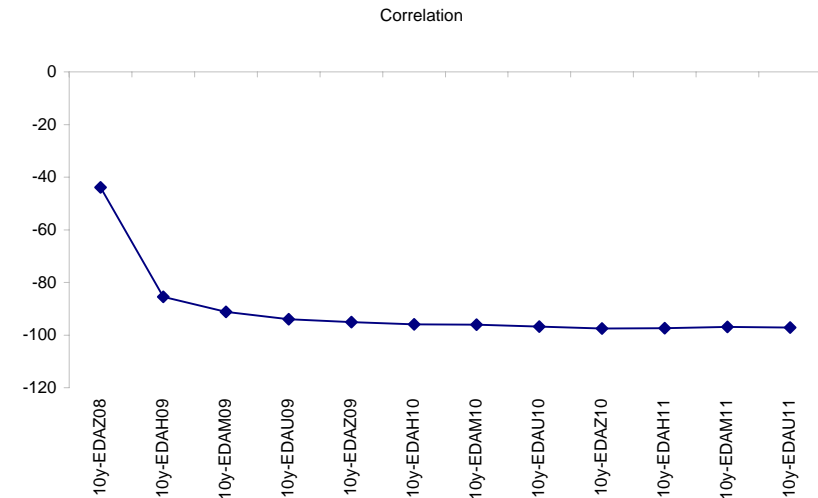
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.199	8.09	7.89	10y-EDAZ08
EDAH09	0.449	8.09	7.64	10y-EDAH09
EDAM09	0.698	8.09	7.39	10y-EDAM09
EDAU09	0.947	8.09	7.14	10y-EDAU09
EDAZ09	1.197	8.09	6.89	10y-EDAZ09
EDAH10	1.446	8.09	6.64	10y-EDAH10
EDAM10	1.695	8.09	6.39	10y-EDAM10
EDAU10	1.945	8.09	6.14	10y-EDAU10
EDAZ10	2.194	8.09	5.89	10y-EDAZ10
EDAH11	2.443	8.09	5.64	10y-EDAH11
EDAM11	2.692	8.09	5.40	10y-EDAM11
EDAU11	2.961	8.09	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.

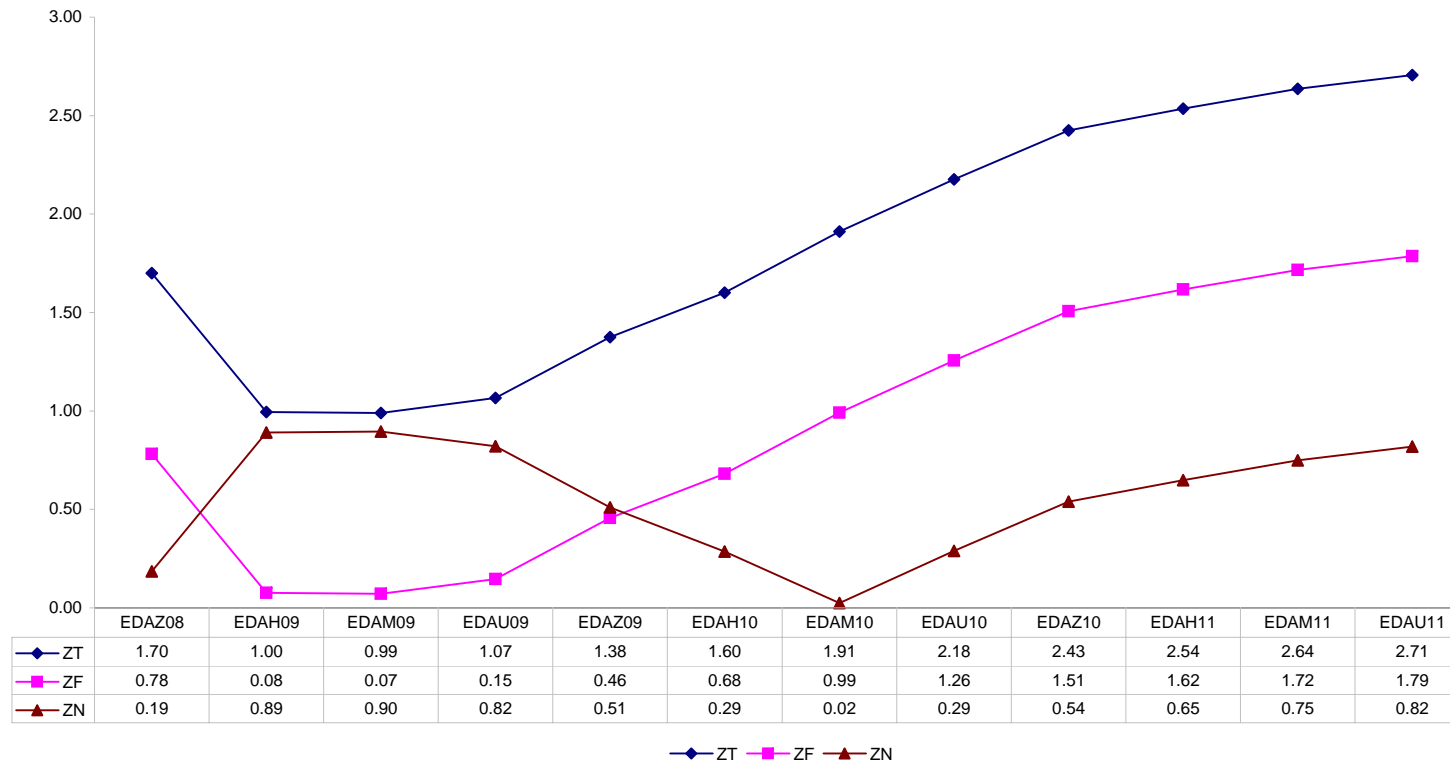
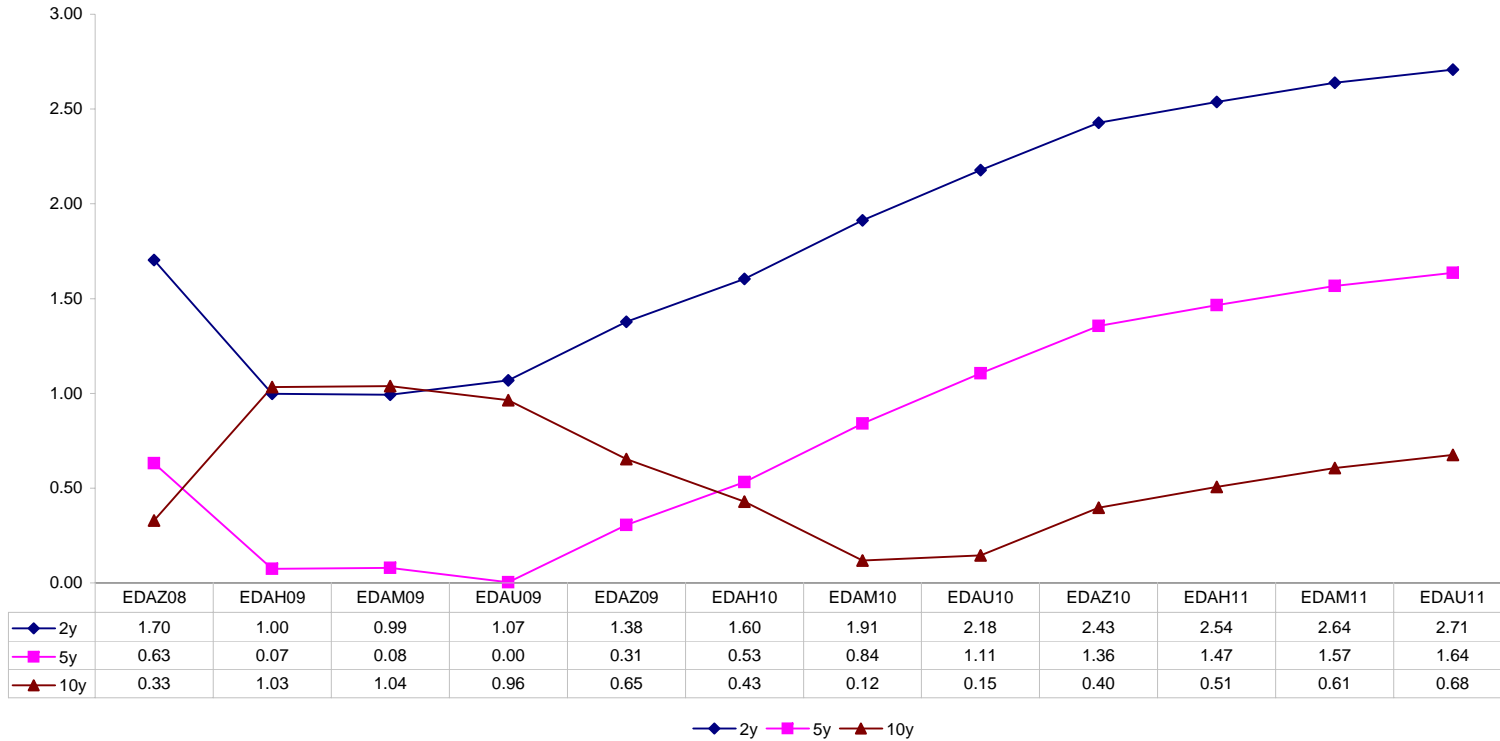
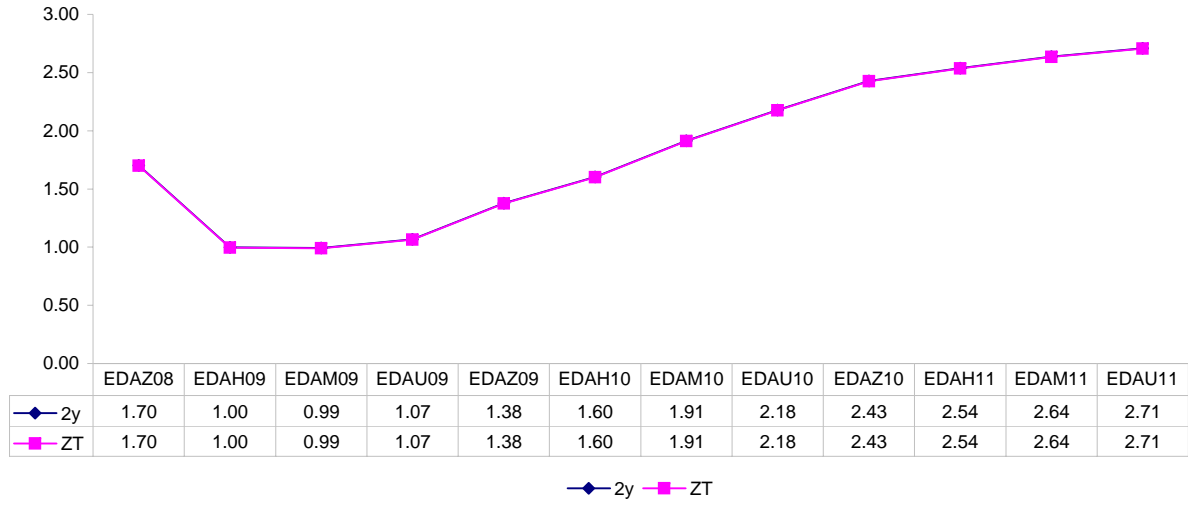


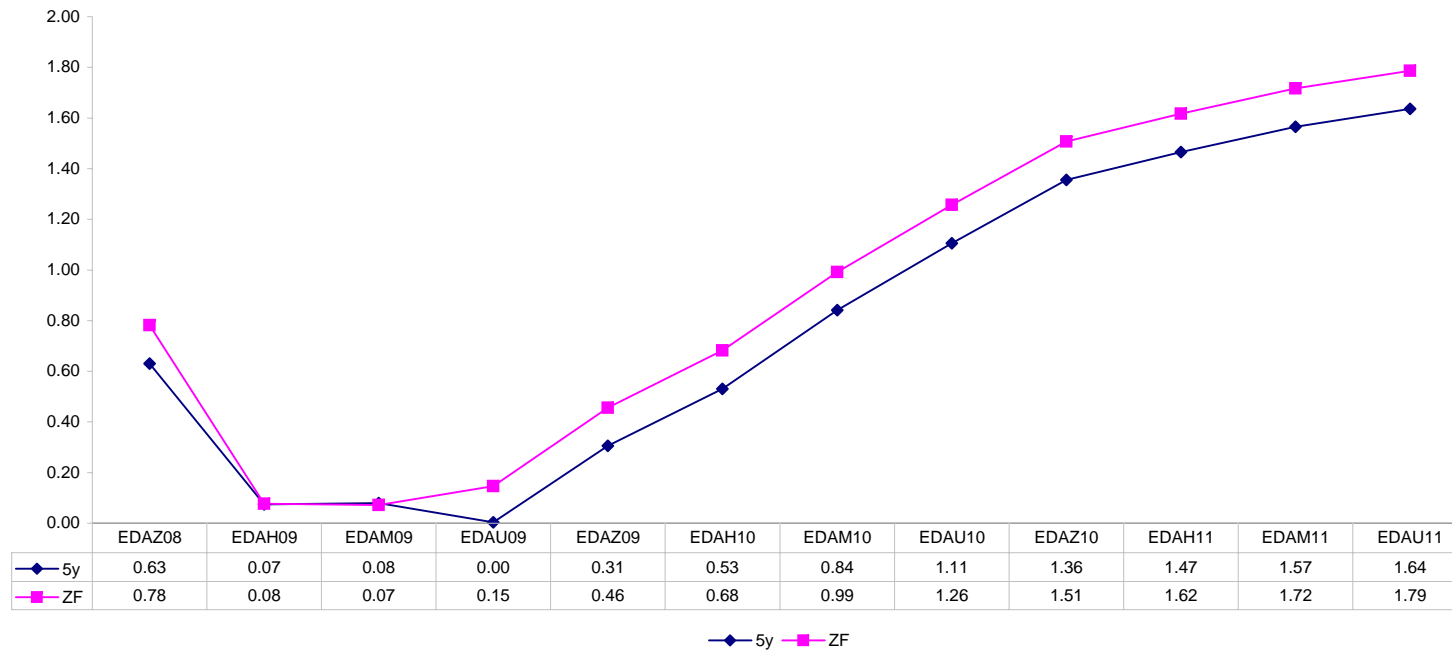
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



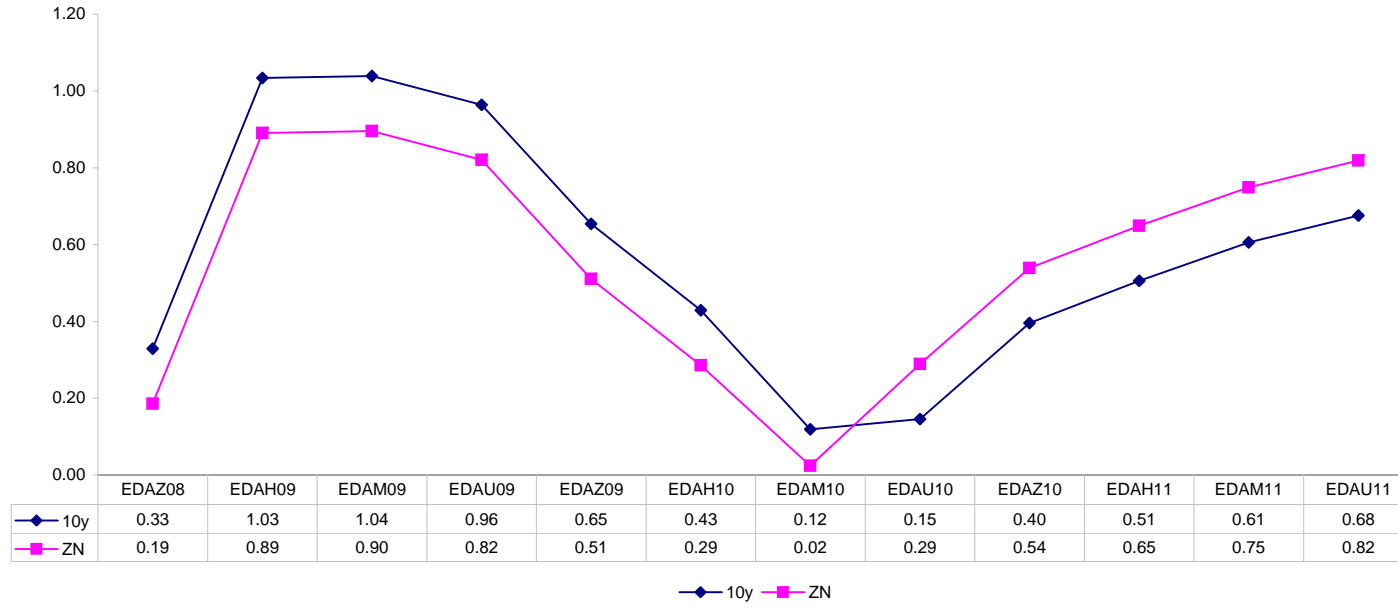
2y Basis TED Curve



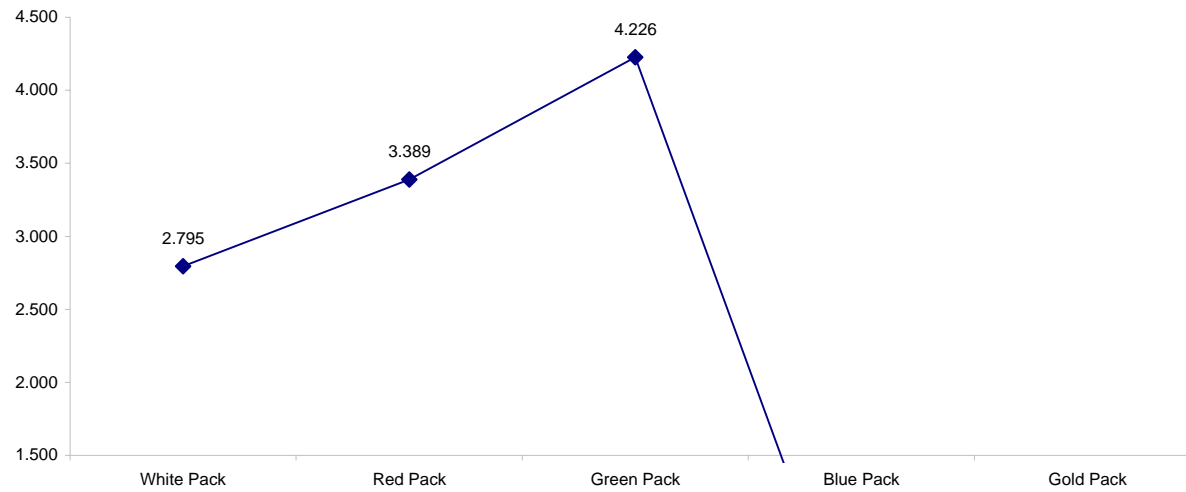
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.795	17.000	9726.250
Red Pack	3.389	16.000	9668.500
Green Pack	4.226	9.000	9587.500
Blue Pack		0.000	9555.500
Gold Pack		0.125	9534.250



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

