

## **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	108.3438	108.110	0.996	1.76
ZF	117.0688	117.022	2.068	4.23
ZN	117.7656	117.245	3.259	6.43
2y	100.616	100.1970	1.179	1.91
5y	102.288	102.0920	2.259	4.61
10y	100.953	100.3050	3.633	8.28

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.873	2.128	27	0.073	DEC	
EDAH09	98.060	1.940	118	0.323	MAR	White Pack
EDAM09	98.040	1.960	209	0.572	JUN	
EDAU09	97.950	2.050	300	0.821	SEP	
EDAZ09	97.775	2.225	391	1.071	DEC	
EDAH10	97.700	2.300	482	1.320	MAR	Red Pack
EDAM10	97.485	2.515	573	1.569	JUN	
EDAU10	97.210	2.790	664	1.819	SEP	
EDAZ10	96.835	3.165	755	2.068	DEC	
EDAH11	96.565	3.435	846	2.317	MAR	Green Pack
EDAM11	96.290	3.710	937	2.566	JUN	
EDAU11	96.060	3.940	1035	2.835	SEP	
EDAZ11	95.840	4.160	1126	3.084	DEC	
EDAH12	95.775	4.225	1217	3.334	MAR	Blue Pack
EDAM12	95.625	4.375	1308	3.583	JUN	
EDAU12	95.530	4.470	1399	3.832	SEP	
EDAZ12	95.390	4.610	1490	4.082	DEC	
EDAH13	95.350	4.650	1581	4.331	MAR	Gold Pack
EDAM13	95.260	4.740	1672	4.580	JUN	
EDZU13	95.000	5.000	1854	5.079	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.058	5.312	9798.063	Pack Prices
Red Pack	2.507	5.875	9754.250	
Green Pack	3.645	6.625	9643.750	
Blue Pack	4.415	5.250	9569.250	
Gold Pack	4.826	5.875	9529.625	

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.

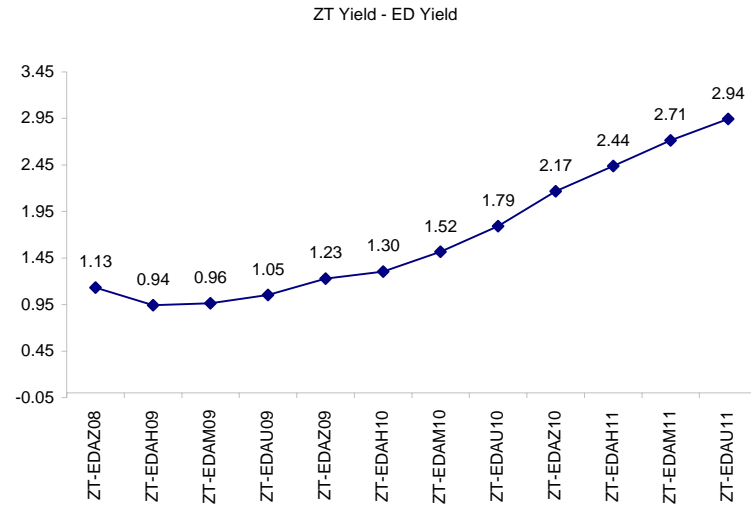
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

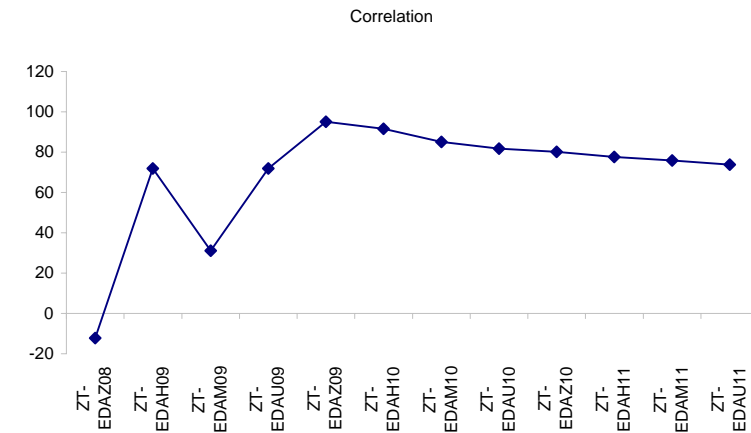
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.471	1.13	ZT-EDAZ08	-12.276
EDAH09	10.284	0.94	ZT-EDAH09	71.955
EDAM09	10.304	0.96	ZT-EDAM09	31.137
EDAU09	10.394	1.05	ZT-EDAU09	71.955
EDAZ09	10.569	1.23	ZT-EDAZ09	95.007
EDAH10	10.644	1.30	ZT-EDAH10	91.567
EDAM10	10.859	1.52	ZT-EDAM10	85.101
EDAU10	11.134	1.79	ZT-EDAU10	81.785
EDAZ10	11.509	2.17	ZT-EDAZ10	80.190
EDAH11	11.779	2.44	ZT-EDAH11	77.679
EDAM11	12.054	2.71	ZT-EDAM11	75.927
EDAU11	12.284	2.94	ZT-EDAU11	73.772

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	0.073	1.76	1.68	ZT-EDAZ08
EDAH09	0.323	1.76	1.43	ZT-EDAH09
EDAM09	0.572	1.76	1.19	ZT-EDAM09
EDAU09	0.821	1.76	0.94	ZT-EDAU09
EDAZ09	1.071	1.76	0.69	ZT-EDAZ09
EDAH10	1.320	1.76	0.44	ZT-EDAH10
EDAM10	1.569	1.76	0.19	ZT-EDAM10
EDAU10	1.819	1.76	(0.06)	ZT-EDAU10
EDAZ10	2.068	1.76	(0.31)	ZT-EDAZ10
EDAH11	2.317	1.76	(0.56)	ZT-EDAH11
EDAM11	2.566	1.76	(0.81)	ZT-EDAM11
EDAU11	2.835	1.76	(1.08)	ZT-EDAU11

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

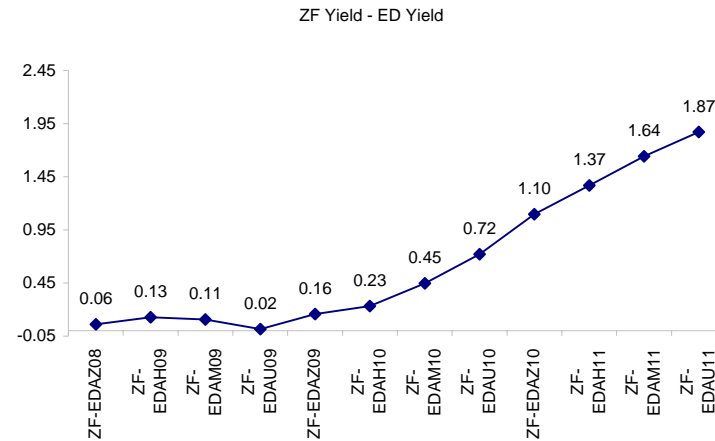


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.196	0.06	ZF-EDAZ08	-54.770
EDAH09	19.009	0.13	ZF-EDAH09	-37.736
EDAM09	19.029	0.11	ZF-EDAM09	-7.435
EDAU09	19.119	0.02	ZF-EDAU09	39.466
EDAZ09	19.294	0.16	ZF-EDAZ09	81.148
EDAH10	19.369	0.23	ZF-EDAH10	96.332
EDAM10	19.584	0.45	ZF-EDAM10	98.414
EDAU10	19.859	0.72	ZF-EDAU10	98.903
EDAZ10	20.234	1.10	ZF-EDAZ10	98.977
EDAH11	20.504	1.37	ZF-EDAH11	98.668
EDAM11	20.779	1.64	ZF-EDAM11	98.306
EDAU11	21.009	1.87	ZF-EDAU11	97.502

Price = Outright Decimal Price - Euro Contract Price

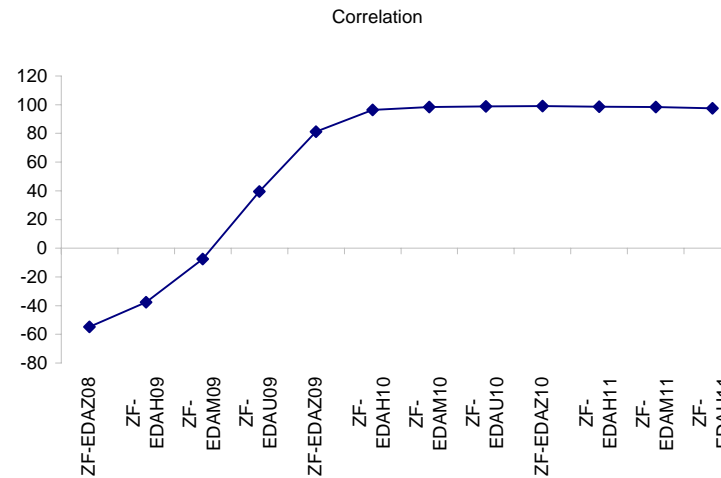
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAZ08	0.073	4.23	4.15	ZF-EDAZ08	
EDAH09	0.323	4.23	3.90	ZF-EDAH09	
EDAM09	0.572	4.23	3.65	ZF-EDAM09	
EDAU09	0.821	4.23	3.40	ZF-EDAU09	
EDAZ09	1.071	4.23	3.16	ZF-EDAZ09	
EDAH10	1.320	4.23	2.91	ZF-EDAH10	
EDAM10	1.569	4.23	2.66	ZF-EDAM10	
EDAU10	1.819	4.23	2.41	ZF-EDAU10	
EDAZ10	2.068	4.23	2.16	ZF-EDAZ10	
EDAH11	2.317	4.23	1.91	ZF-EDAH11	
EDAM11	2.566	4.23	1.66	ZF-EDAM11	
EDAU11	2.835	4.23	1.39	ZF-EDAU11	

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

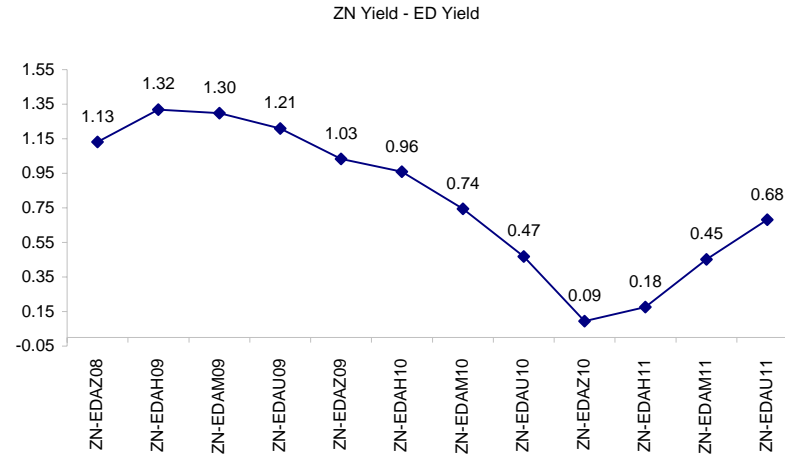


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.893	1.13	ZN-EDAZ08	-54.484
EDAH09	19.706	1.32	ZN-EDAH09	-36.803
EDAM09	19.726	1.30	ZN-EDAM09	-8.410
EDAU09	19.816	1.21	ZN-EDAU09	36.441
EDAZ09	19.991	1.03	ZN-EDAZ09	77.895
EDAH10	20.066	0.96	ZN-EDAH10	94.023
EDAM10	20.281	0.74	ZN-EDAM10	98.414
EDAU10	20.556	0.47	ZN-EDAU10	98.903
EDAZ10	20.931	0.09	ZN-EDAZ10	98.977
EDAH11	21.201	0.18	ZN-EDAH11	98.668
EDAM11	21.476	0.45	ZN-EDAM11	98.306
EDAU11	21.706	0.68	ZN-EDAU11	97.502

Price = Outright Decimal Price - Euro Contract Price

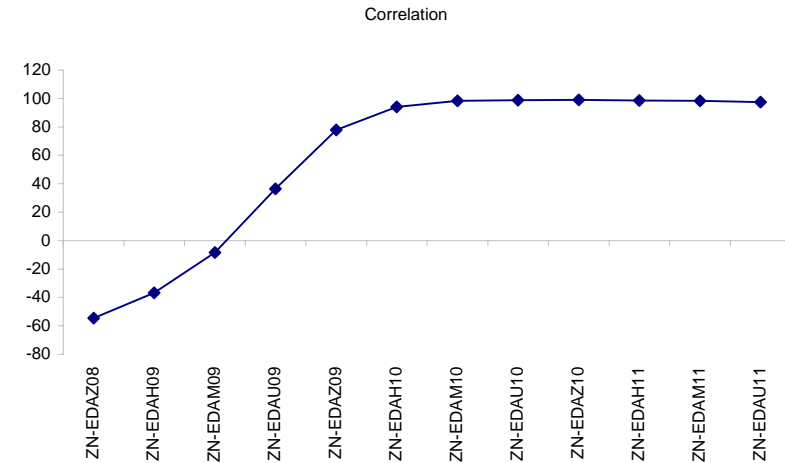
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.073	6.43	6.36	ZN-EDAZ08		
EDAH09	0.323	6.43	6.11	ZN-EDAH09		
EDAM09	0.572	6.43	5.86	ZN-EDAM09		
EDAU09	0.821	6.43	5.61	ZN-EDAU09		
EDAZ09	1.071	6.43	5.36	ZN-EDAZ09		
EDAH10	1.320	6.43	5.11	ZN-EDAH10		
EDAM10	1.569	6.43	4.86	ZN-EDAM10		
EDAU10	1.819	6.43	4.61	ZN-EDAU10		
EDAZ10	2.068	6.43	4.37	ZN-EDAZ10		
EDAH11	2.317	6.43	4.12	ZN-EDAH11		
EDAM11	2.566	6.43	3.87	ZN-EDAM11		
EDAU11	2.835	6.43	3.60	ZN-EDAU11		

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

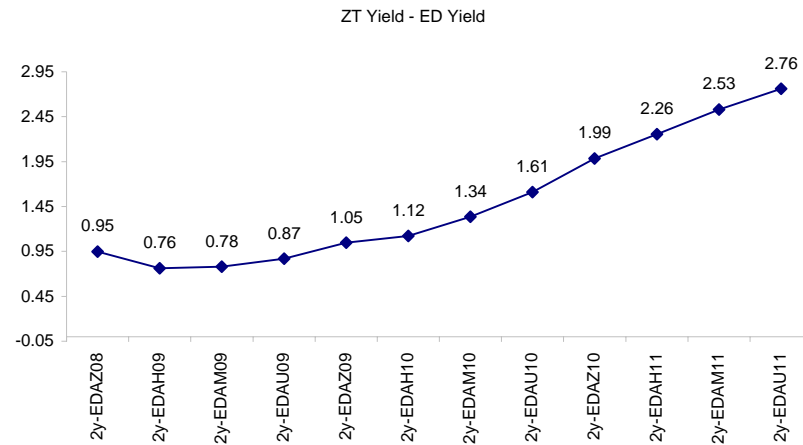


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.743	0.95	2y-EDAZ08	33.068
EDAH09	2.556	0.76	2y-EDAH09	3.968
EDAM09	2.576	0.78	2y-EDAM09	-37.941
EDAU09	2.666	0.87	2y-EDAU09	-75.202
EDAZ09	2.841	1.05	2y-EDAZ09	-93.981
EDAH10	2.916	1.12	2y-EDAH10	-96.319
EDAM10	3.131	1.34	2y-EDAM10	-94.970
EDAU10	3.406	1.61	2y-EDAU10	-93.438
EDAZ10	3.781	1.99	2y-EDAZ10	-92.304
EDAH11	4.051	2.26	2y-EDAH11	-90.392
EDAM11	4.326	2.53	2y-EDAM11	-88.647
EDAU11	4.556	2.76	2y-EDAU11	-87.000

Price = Outright Decimal Price - Euro Contract Price

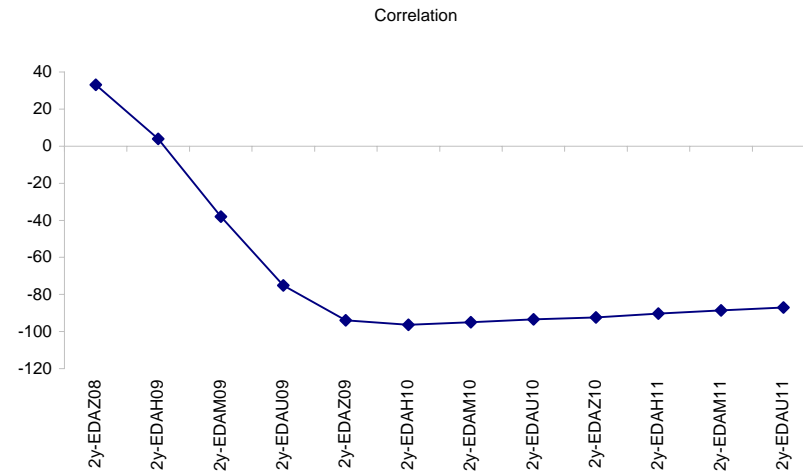
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.073	1.91	1.84	2y-EDAZ08	
EDAH09	0.323	1.91	1.59	2y-EDAH09	
EDAM09	0.572	1.91	1.34	2y-EDAM09	
EDAU09	0.821	1.91	1.09	2y-EDAU09	
EDAZ09	1.071	1.91	0.84	2y-EDAZ09	
EDAH10	1.320	1.91	0.59	2y-EDAH10	
EDAM10	1.569	1.91	0.34	2y-EDAM10	
EDAU10	1.819	1.91	0.09	2y-EDAU10	
EDAZ10	2.068	1.91	(0.16)	2y-EDAZ10	
EDAH11	2.317	1.91	(0.41)	2y-EDAH11	
EDAM11	2.566	1.91	(0.65)	2y-EDAM11	
EDAU11	2.835	1.91	(0.92)	2y-EDAU11	

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

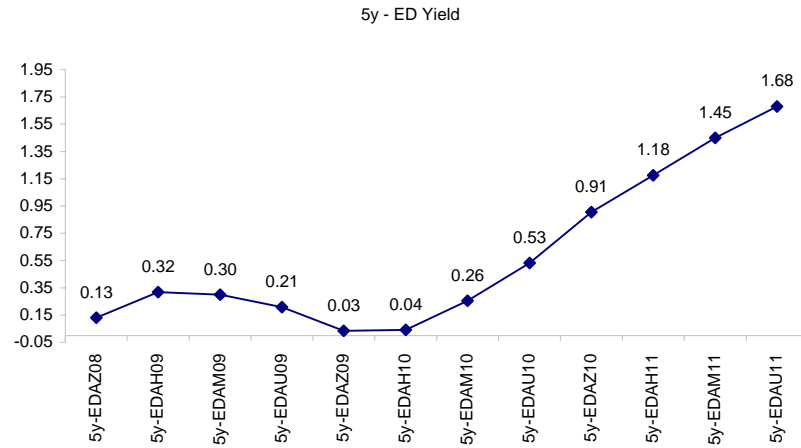


	5y			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAZ08	4.415	0.13	5y-EDAZ08	56.309
EDAH09	4.227	0.32	5y-EDAH09	27.532
EDAM09	4.247	0.30	5y-EDAM09	-11.437
EDAU09	4.337	0.21	5y-EDAU09	-51.981
EDAZ09	4.512	0.03	5y-EDAZ09	-80.725
EDAH10	4.587	0.04	5y-EDAH10	-91.306
EDAM10	4.802	0.26	5y-EDAM10	-93.949
EDAU10	5.077	0.53	5y-EDAU10	-95.313
EDAZ10	5.452	0.91	5y-EDAZ10	-95.981
EDAH11	5.723	1.18	5y-EDAH11	-96.557
EDAM11	5.997	1.45	5y-EDAM11	-97.124
EDAU11	6.227	1.68	5y-EDAU11	-97.416

Price = Outright Decimal Price - Euro Contract Price

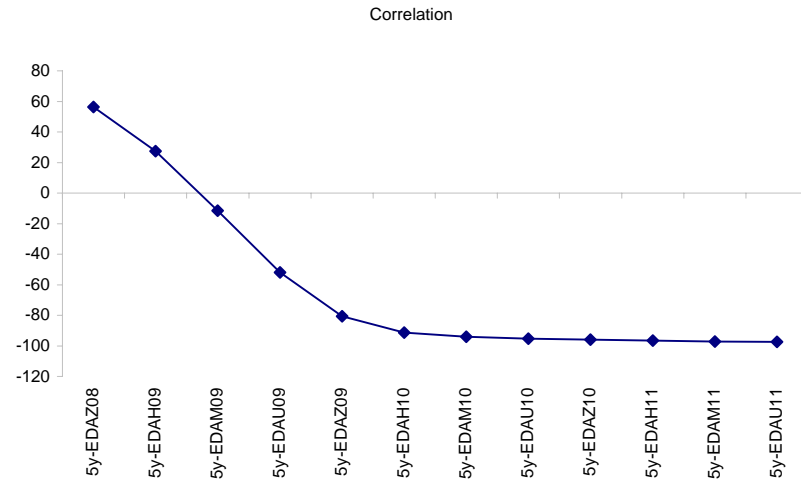
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as		Spread Duration	
	Fraction of year	5Y Duration		
EDAZ08	0.073	4.61	4.53	5y-EDAZ08
EDAH09	0.323	4.61	4.28	5y-EDAH09
EDAM09	0.572	4.61	4.03	5y-EDAM09
EDAU09	0.821	4.61	3.78	5y-EDAU09
EDAZ09	1.071	4.61	3.53	5y-EDAZ09
EDAH10	1.320	4.61	3.29	5y-EDAH10
EDAM10	1.569	4.61	3.04	5y-EDAM10
EDAU10	1.819	4.61	2.79	5y-EDAU10
EDAZ10	2.068	4.61	2.54	5y-EDAZ10
EDAH11	2.317	4.61	2.29	5y-EDAH11
EDAM11	2.566	4.61	2.04	5y-EDAM11
EDAU11	2.835	4.61	1.77	5y-EDAU11

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

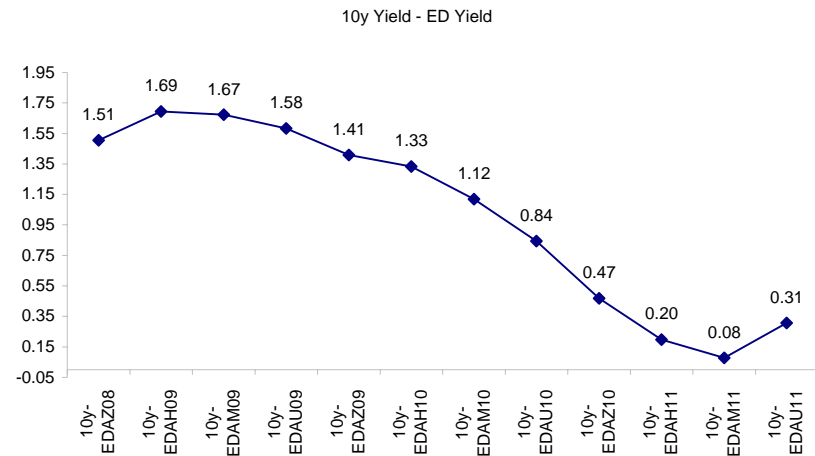


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	4.415	1.51	10y-EDAZ08	-11.900
EDAH09	4.227	1.69	10y-EDAH09	-28.384
EDAM09	4.247	1.67	10y-EDAM09	-37.327
EDAU09	4.337	1.58	10y-EDAU09	-41.720
EDAZ09	4.512	1.41	10y-EDAZ09	-41.256
EDAH10	4.587	1.33	10y-EDAH10	-37.712
EDAM10	4.802	1.12	10y-EDAM10	-35.098
EDAU10	5.077	0.84	10y-EDAU10	-35.538
EDAZ10	5.452	0.47	10y-EDAZ10	-37.205
EDAH11	5.723	0.20	10y-EDAH11	-40.002
EDAM11	5.997	0.08	10y-EDAM11	-44.236
EDAU11	6.227	0.31	10y-EDAU11	-48.200

Price = Outright Decimal Price - Euro Contract Price

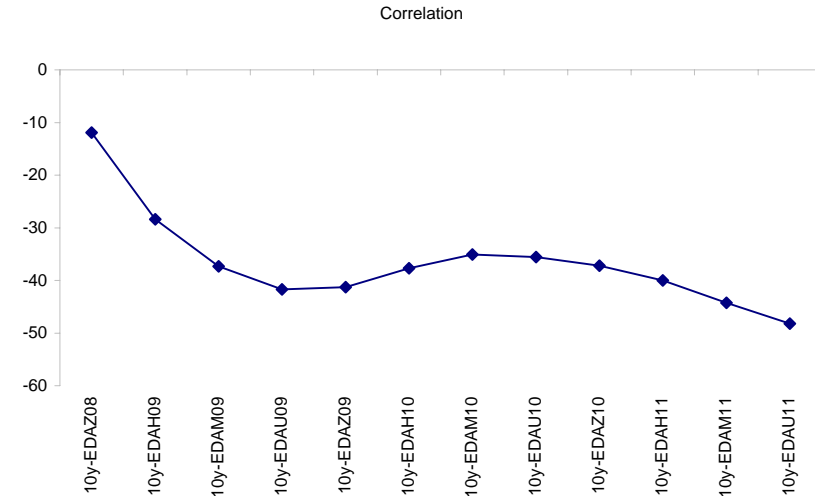
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.073	8.28	8.20	10y-EDAZ08
EDAH09	0.323	8.28	7.96	10y-EDAH09
EDAM09	0.572	8.28	7.71	10y-EDAM09
EDAU09	0.821	8.28	7.46	10y-EDAU09
EDAZ09	1.071	8.28	7.21	10y-EDAZ09
EDAH10	1.320	8.28	6.96	10y-EDAH10
EDAM10	1.569	8.28	6.71	10y-EDAM10
EDAU10	1.819	8.28	6.46	10y-EDAU10
EDAZ10	2.068	8.28	6.21	10y-EDAZ10
EDAH11	2.317	8.28	5.96	10y-EDAH11
EDAM11	2.566	8.28	5.71	10y-EDAM11
EDAU11	2.835	8.28	5.44	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.

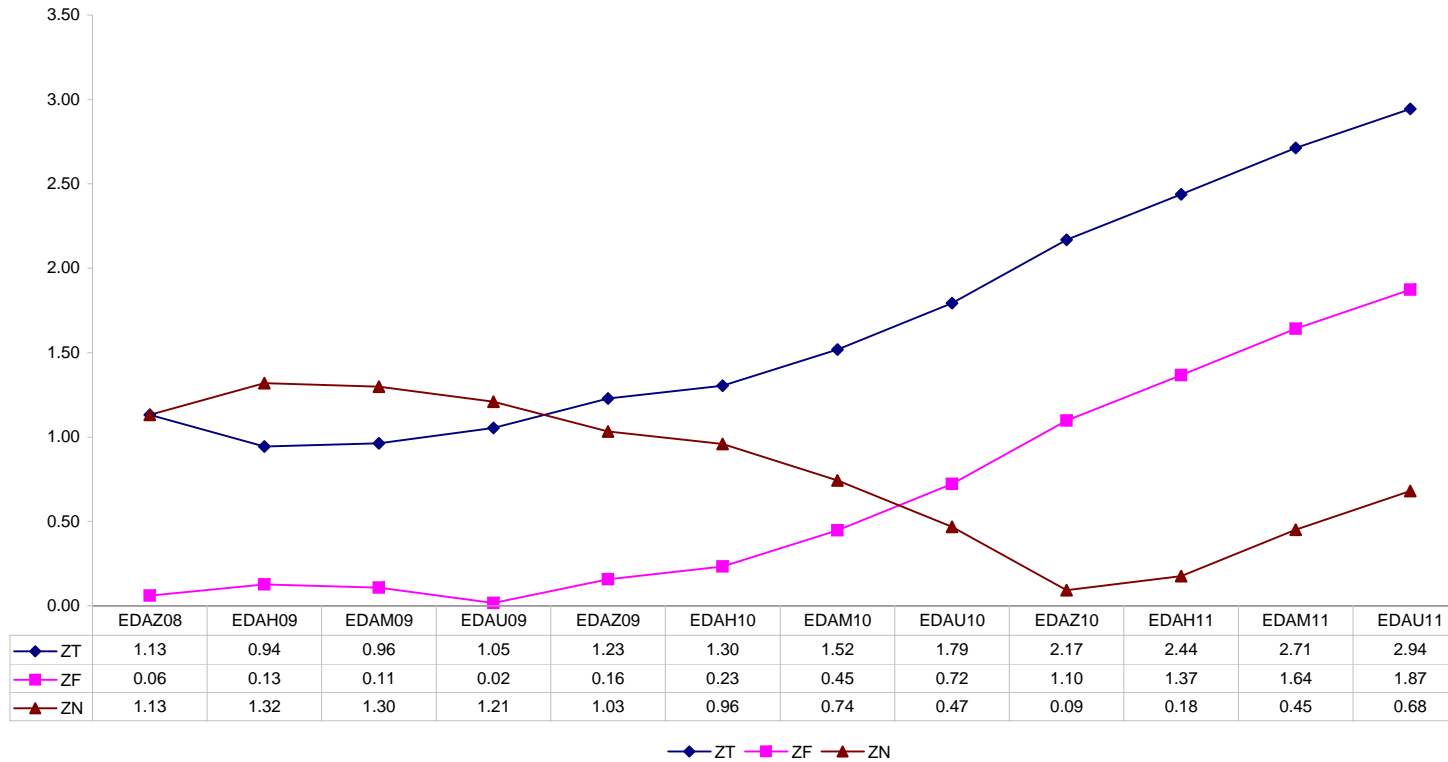
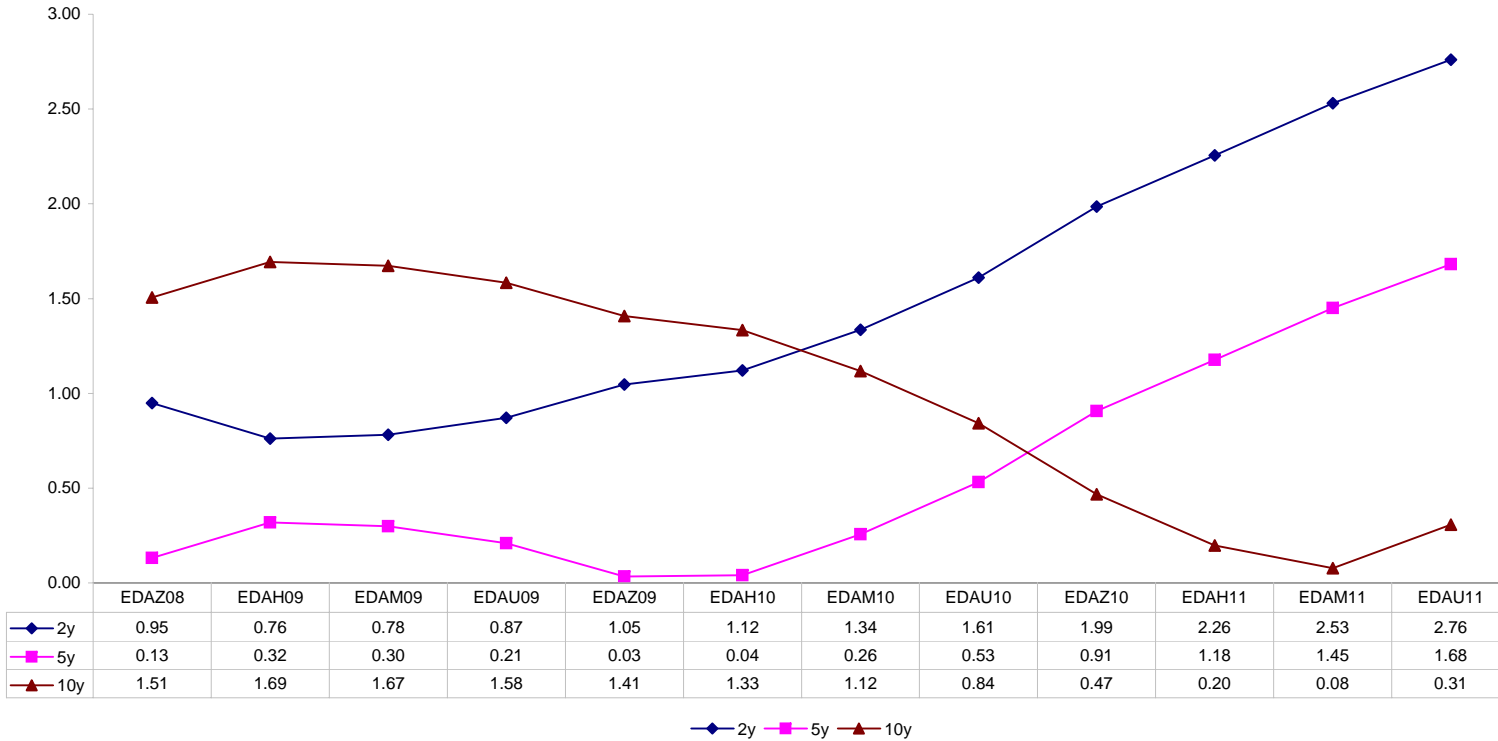
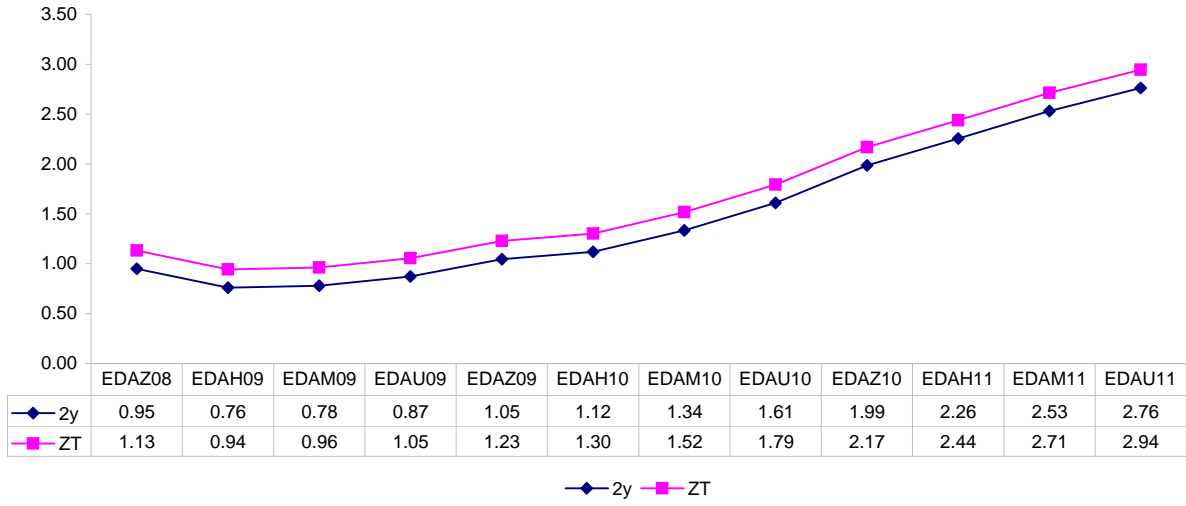


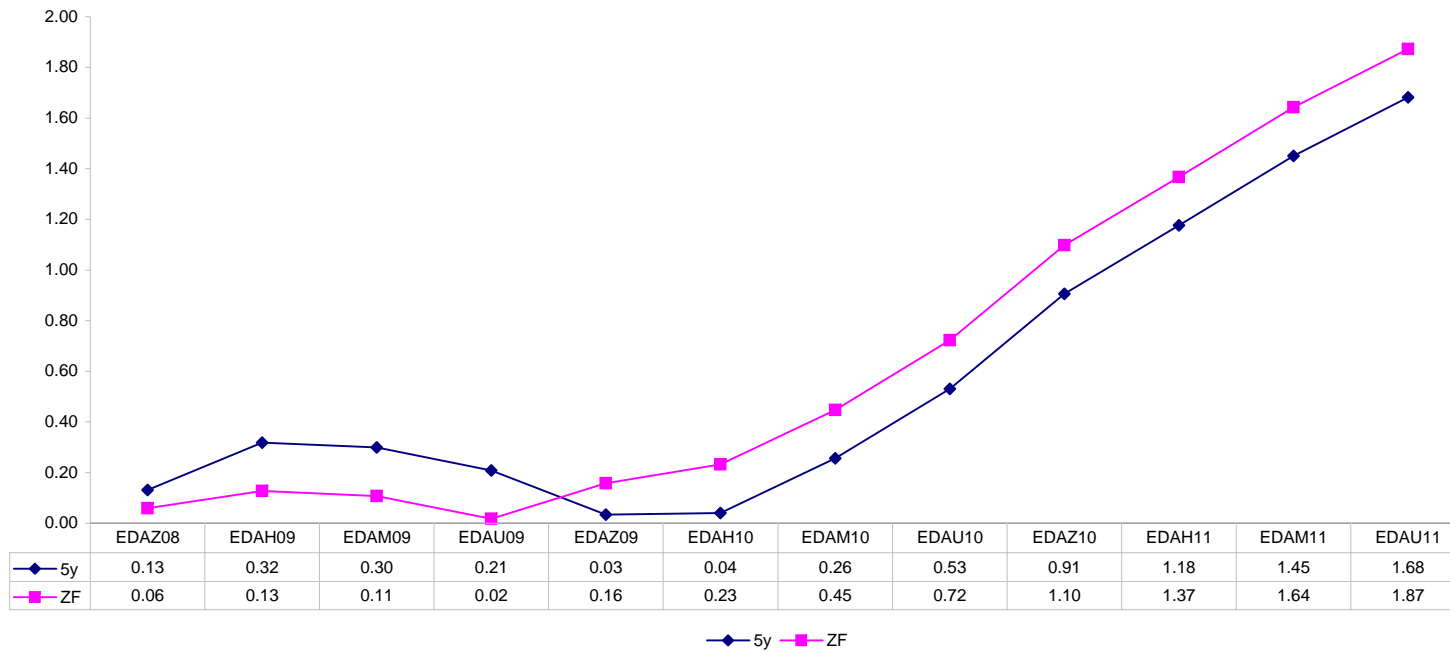
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



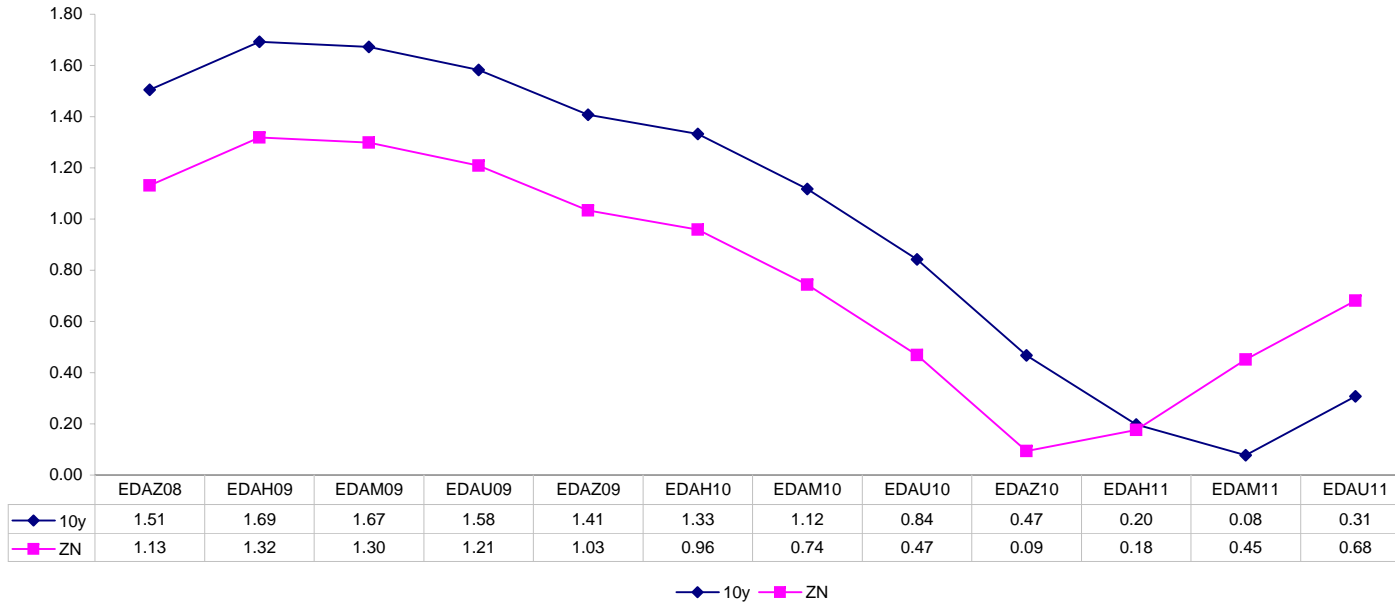
2y Basis TED Curve



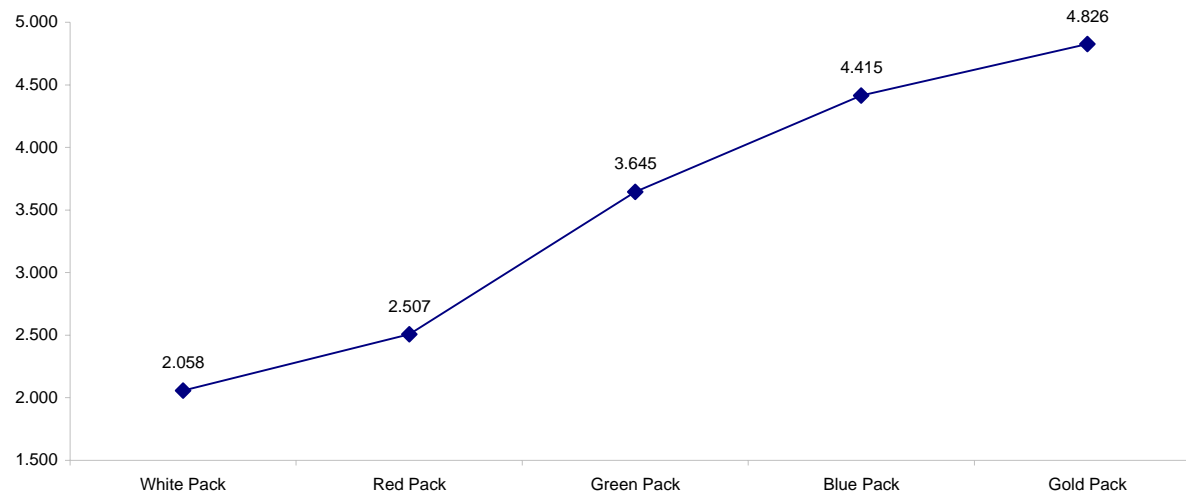
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.058	5.312	9798.063
Red Pack	2.507	5.875	9754.250
Green Pack	3.645	6.625	9643.750
Blue Pack	4.415	5.250	9569.250
Gold Pack	4.826	5.875	9529.625



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

