

## **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	106.0625	106.020	2.411	1.91
ZF	111.6875	111.220	3.025	4.04
ZN	115.5000	115.160	3.645	6.61
2y	100.881	100.2820	2.414	1.91
5y	101.209	101.0670	3.107	4.54
10y	100.344	100.1100	3.830	8.08

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU08	97.100	2.900	67	0.183	SEP	
EDAZ08	96.970	3.030	158	0.432	DEC	White Pack
EDAH09	96.940	3.060	249	0.682	MAR	
EDAM09	96.800	3.200	340	0.931	JUN	
EDAU09	96.565	3.435	431	1.180	SEP	
EDAZ09	96.265	3.735	522	1.429	DEC	Red Pack
EDAH10	96.030	3.970	613	1.679	MAR	
EDAM10	95.845	4.155	704	1.928	JUN	
EDAU10	95.705	4.295	795	2.177	SEP	
EDAZ10	95.570	4.430	886	2.427	DEC	Green Pack
EDAH11	95.510	4.490	977	2.676	MAR	
EDAM11	95.485	4.515	1068	2.925	JUN	
EDAU11	95.450	4.550	1166	3.194	SEP	
EDAZ11	95.390	4.610	1257	3.443	DEC	Blue Pack
EDAH12	95.355	4.645	1348	3.692	MAR	
EDAM12	95.290	4.710	1439	3.942	JUN	
EDAU12	95.300	4.700	1530	4.191	SEP	
EDAZ12	95.195	4.805	1621	4.440	DEC	Gold Pack
EDAH13	95.170	4.830	1712	4.690	MAR	
EDAM13	95.090	4.910	1803	4.939	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	3.114	-2.000	9695.250	
Red Pack	3.914	-2.375	9617.625	Pack Prices
Green Pack	4.544	-2.375	9556.750	
Blue Pack		0.250	9537.250	
Gold Pack		0.000	9517.500	

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.

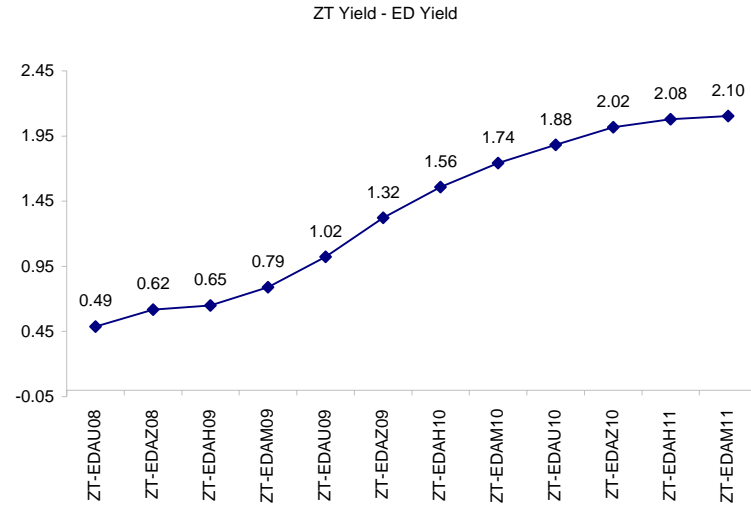
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### 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.**

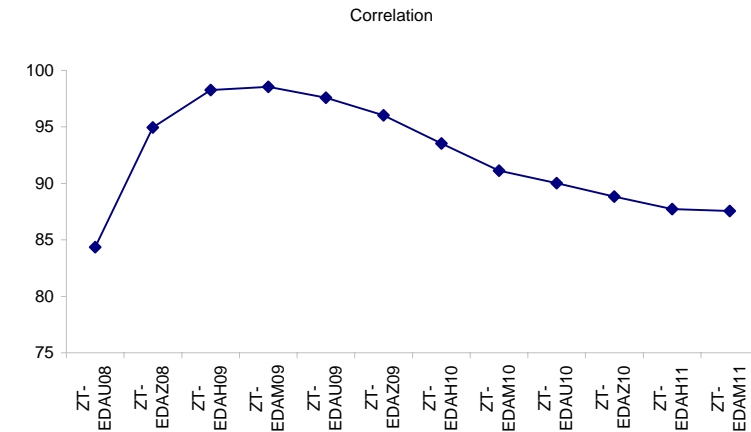
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	8.962	0.49	ZT-EDAU08	84.356
EDAZ08	9.092	0.62	ZT-EDAZ08	94.959
EDAH09	9.122	0.65	ZT-EDAH09	98.283
EDAM09	9.262	0.79	ZT-EDAM09	98.545
EDAU09	9.497	1.02	ZT-EDAU09	97.593
EDAZ09	9.797	1.32	ZT-EDAZ09	96.034
EDAH10	10.033	1.56	ZT-EDAH10	93.550
EDAM10	10.218	1.74	ZT-EDAM10	91.134
EDAU10	10.358	1.88	ZT-EDAU10	90.030
EDAZ10	10.493	2.02	ZT-EDAZ10	88.835
EDAH11	10.553	2.08	ZT-EDAH11	87.736
EDAM11	10.578	2.10	ZT-EDAM11	87.550

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	
EDAU08	0.183	1.91	1.72	ZT-EDAU08		
EDAZ08	0.432	1.91	1.47	ZT-EDAZ08		
EDAH09	0.682	1.91	1.22	ZT-EDAH09		
EDAM09	0.931	1.91	0.97	ZT-EDAM09		
EDAU09	1.180	1.91	0.73	ZT-EDAU09		
EDAZ09	1.429	1.91	0.48	ZT-EDAZ09		
EDAH10	1.679	1.91	0.23	ZT-EDAH10		
EDAM10	1.928	1.91	(0.02)	ZT-EDAM10		
EDAU10	2.177	1.91	(0.27)	ZT-EDAU10		
EDAZ10	2.427	1.91	(0.52)	ZT-EDAZ10		
EDAH11	2.676	1.91	(0.77)	ZT-EDAH11		
EDAM11	2.925	1.91	(1.02)	ZT-EDAM11		

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

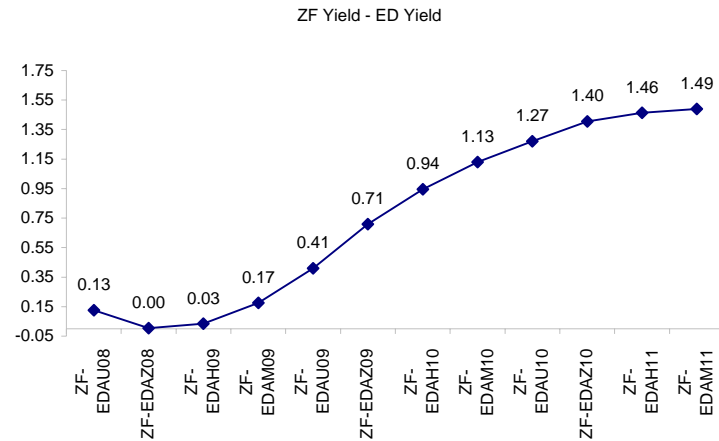


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	14.588	0.13	ZF-EDAU08	85.958
EDAZ08	14.718	0.00	ZF-EDAZ08	94.784
EDAH09	14.748	0.03	ZF-EDAH09	97.934
EDAM09	14.888	0.17	ZF-EDAM09	99.243
EDAU09	15.123	0.41	ZF-EDAU09	99.232
EDAZ09	15.423	0.71	ZF-EDAZ09	98.692
EDAH10	15.658	0.94	ZF-EDAH10	97.267
EDAM10	15.843	1.13	ZF-EDAM10	95.656
EDAU10	15.983	1.27	ZF-EDAU10	94.843
EDAZ10	16.118	1.40	ZF-EDAZ10	93.963
EDAH11	16.178	1.46	ZF-EDAH11	93.252
EDAM11	16.203	1.49	ZF-EDAM11	92.964

Price = Outright Decimal Price - Euro Contract Price

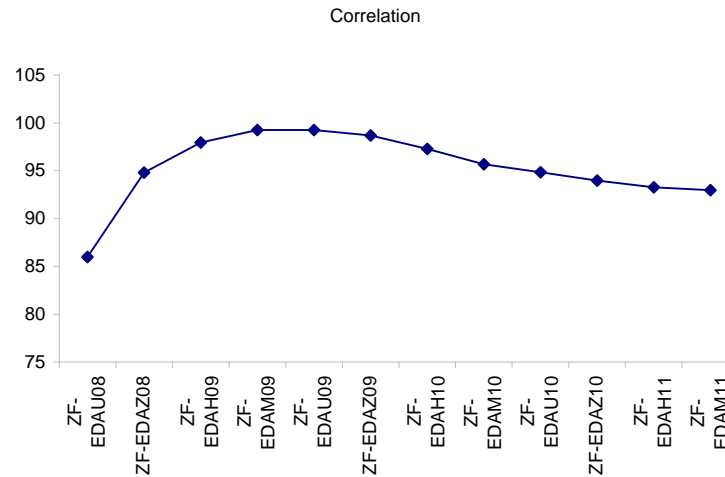
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year	ZF Duration	Spread Duration	
EDAU08	0.183	4.04	3.86	ZF-EDAU08
EDAZ08	0.432	4.04	3.61	ZF-EDAZ08
EDAH09	0.682	4.04	3.36	ZF-EDAH09
EDAM09	0.931	4.04	3.11	ZF-EDAM09
EDAU09	1.180	4.04	2.86	ZF-EDAU09
EDAZ09	1.429	4.04	2.61	ZF-EDAZ09
EDAH10	1.679	4.04	2.36	ZF-EDAH10
EDAM10	1.928	4.04	2.11	ZF-EDAM10
EDAU10	2.177	4.04	1.86	ZF-EDAU10
EDAZ10	2.427	4.04	1.62	ZF-EDAZ10
EDAH11	2.676	4.04	1.37	ZF-EDAH11
EDAM11	2.925	4.04	1.12	ZF-EDAM11

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

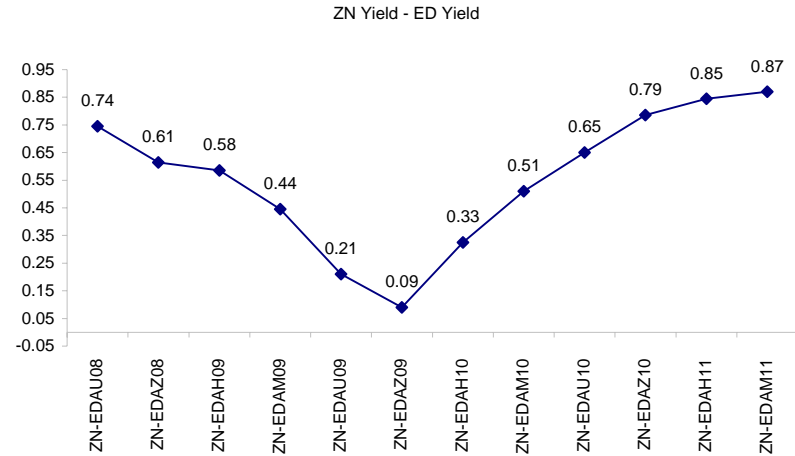


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	18.400	0.74	ZN-EDAU08	87.806
EDAZ08	18.530	0.61	ZN-EDAZ08	96.639
EDAH09	18.560	0.58	ZN-EDAH09	98.724
EDAM09	18.700	0.44	ZN-EDAM09	99.127
EDAU09	18.935	0.21	ZN-EDAU09	98.523
EDAZ09	19.235	0.09	ZN-EDAZ09	97.672
EDAH10	19.470	0.33	ZN-EDAH10	97.267
EDAM10	19.655	0.51	ZN-EDAM10	95.656
EDAU10	19.795	0.65	ZN-EDAU10	94.843
EDAZ10	19.930	0.79	ZN-EDAZ10	93.963
EDAH11	19.990	0.85	ZN-EDAH11	93.252
EDAM11	20.015	0.87	ZN-EDAM11	92.964

Price = Outright Decimal Price - Euro Contract Price

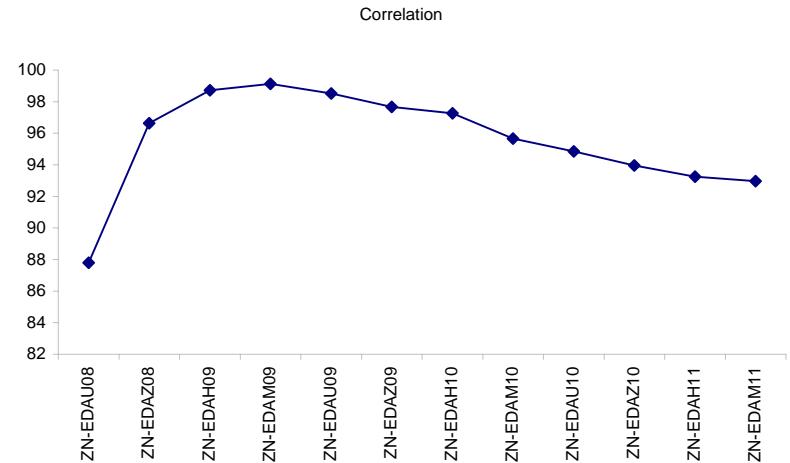
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAU08	0.183	6.61	6.42	ZN-EDAU08		
EDAZ08	0.432	6.61	6.17	ZN-EDAZ08		
EDAH09	0.682	6.61	5.93	ZN-EDAH09		
EDAM09	0.931	6.61	5.68	ZN-EDAM09		
EDAU09	1.180	6.61	5.43	ZN-EDAU09		
EDAZ09	1.429	6.61	5.18	ZN-EDAZ09		
EDAH10	1.679	6.61	4.93	ZN-EDAH10		
EDAM10	1.928	6.61	4.68	ZN-EDAM10		
EDAU10	2.177	6.61	4.43	ZN-EDAU10		
EDAZ10	2.427	6.61	4.18	ZN-EDAZ10		
EDAH11	2.676	6.61	3.93	ZN-EDAH11		
EDAM11	2.925	6.61	3.68	ZN-EDAM11		

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

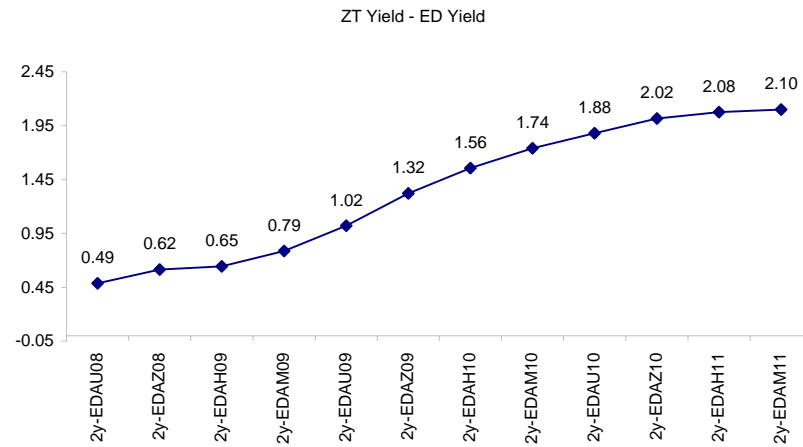


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.781	0.49	2y-EDAU08	-81.036
EDAZ08	3.911	0.62	2y-EDAZ08	-96.681
EDAH09	3.941	0.65	2y-EDAH09	-98.050
EDAM09	4.081	0.79	2y-EDAM09	-97.621
EDAU09	4.316	1.02	2y-EDAU09	-96.248
EDAZ09	4.616	1.32	2y-EDAZ09	-94.419
EDAH10	4.851	1.56	2y-EDAH10	-91.827
EDAM10	5.036	1.74	2y-EDAM10	-89.094
EDAU10	5.176	1.88	2y-EDAU10	-87.855
EDAZ10	5.311	2.02	2y-EDAZ10	-86.792
EDAH11	5.371	2.08	2y-EDAH11	-85.498
EDAM11	5.396	2.10	2y-EDAM11	-85.413

Price = Outright Decimal Price - Euro Contract Price

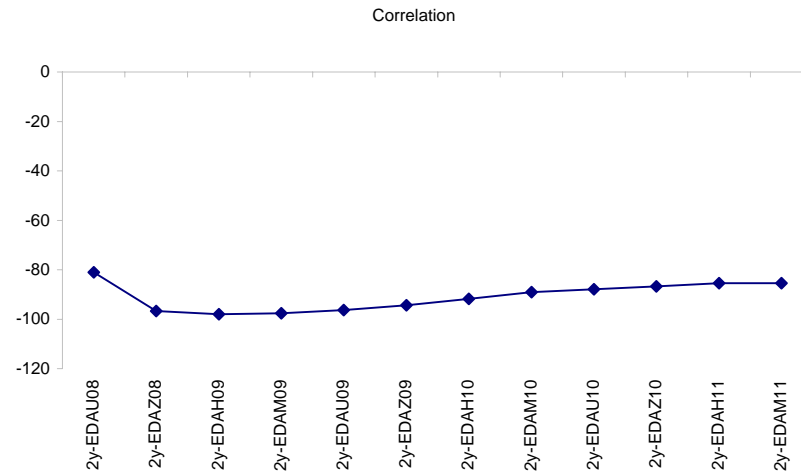
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	2Y Duration	Spread Duration		
EDAU08	0.183	1.91	1.72	2y-EDAU08
EDAZ08	0.432	1.91	1.47	2y-EDAZ08
EDAH09	0.682	1.91	1.22	2y-EDAH09
EDAM09	0.931	1.91	0.97	2y-EDAM09
EDAU09	1.180	1.91	0.73	2y-EDAU09
EDAZ09	1.429	1.91	0.48	2y-EDAZ09
EDAH10	1.679	1.91	0.23	2y-EDAH10
EDAM10	1.928	1.91	(0.02)	2y-EDAM10
EDAU10	2.177	1.91	(0.27)	2y-EDAU10
EDAZ10	2.427	1.91	(0.52)	2y-EDAZ10
EDAH11	2.676	1.91	(0.77)	2y-EDAH11
EDAM11	2.925	1.91	(1.02)	2y-EDAM11

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

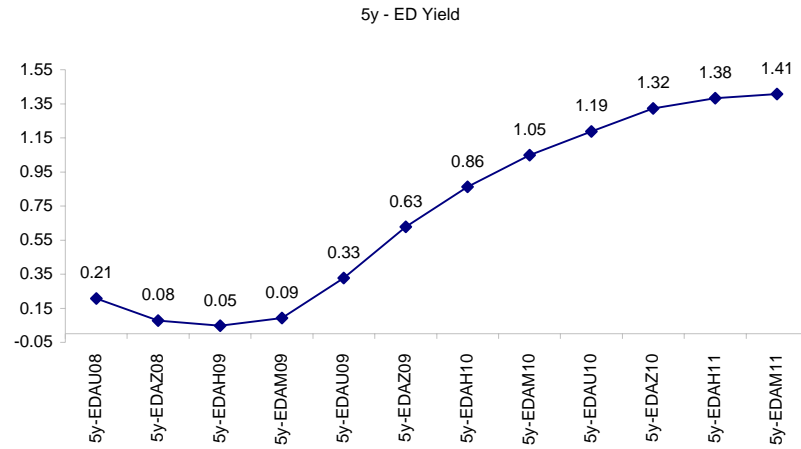


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	4.109	0.21	5y-EDAU08	-82.612
EDAZ08	4.239	0.08	5y-EDAZ08	-96.588
EDAH09	4.269	0.05	5y-EDAH09	-98.322
EDAM09	4.409	0.09	5y-EDAM09	-99.083
EDAU09	4.644	0.33	5y-EDAU09	-98.736
EDAZ09	4.944	0.63	5y-EDAZ09	-97.928
EDAH10	5.179	0.86	5y-EDAH10	-96.479
EDAM10	5.364	1.05	5y-EDAM10	-94.661
EDAU10	5.504	1.19	5y-EDAU10	-93.828
EDAZ10	5.639	1.32	5y-EDAZ10	-93.211
EDAH11	5.699	1.38	5y-EDAH11	-92.314
EDAM11	5.724	1.41	5y-EDAM11	-92.197

Price = Outright Decimal Price - Euro Contract Price

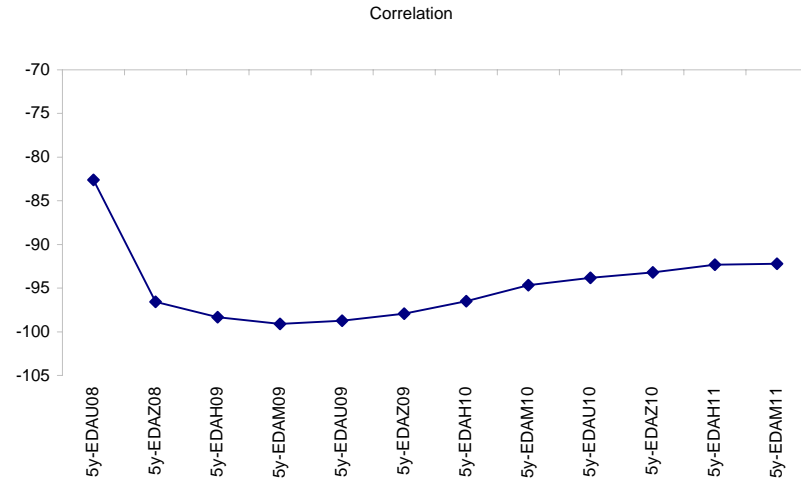
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAU08	0.183	4.54	4.36	5y-EDAU08
EDAZ08	0.432	4.54	4.11	5y-EDAZ08
EDAH09	0.682	4.54	3.86	5y-EDAH09
EDAM09	0.931	4.54	3.61	5y-EDAM09
EDAU09	1.180	4.54	3.36	5y-EDAU09
EDAZ09	1.429	4.54	3.12	5y-EDAZ09
EDAH10	1.679	4.54	2.87	5y-EDAH10
EDAM10	1.928	4.54	2.62	5y-EDAM10
EDAU10	2.177	4.54	2.37	5y-EDAU10
EDAZ10	2.427	4.54	2.12	5y-EDAZ10
EDAH11	2.676	4.54	1.87	5y-EDAH11
EDAM11	2.925	4.54	1.62	5y-EDAM11

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

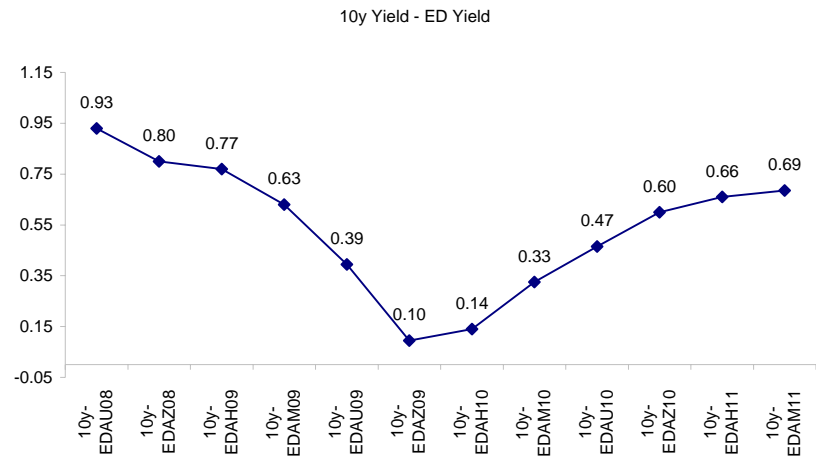


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	4.109	0.93	10y-EDAU08	-83.649
EDAZ08	4.239	0.80	10y-EDAZ08	-94.282
EDAH09	4.269	0.77	10y-EDAH09	-94.842
EDAM09	4.409	0.63	10y-EDAM09	-95.925
EDAU09	4.644	0.39	10y-EDAU09	-96.205
EDAZ09	4.944	0.10	10y-EDAZ09	-96.237
EDAH10	5.179	0.14	10y-EDAH10	-95.763
EDAM10	5.364	0.33	10y-EDAM10	-94.630
EDAU10	5.504	0.47	10y-EDAU10	-94.028
EDAZ10	5.639	0.60	10y-EDAZ10	-93.659
EDAH11	5.699	0.66	10y-EDAH11	-92.829
EDAM11	5.724	0.69	10y-EDAM11	-92.727

Price = Outright Decimal Price - Euro Contract Price

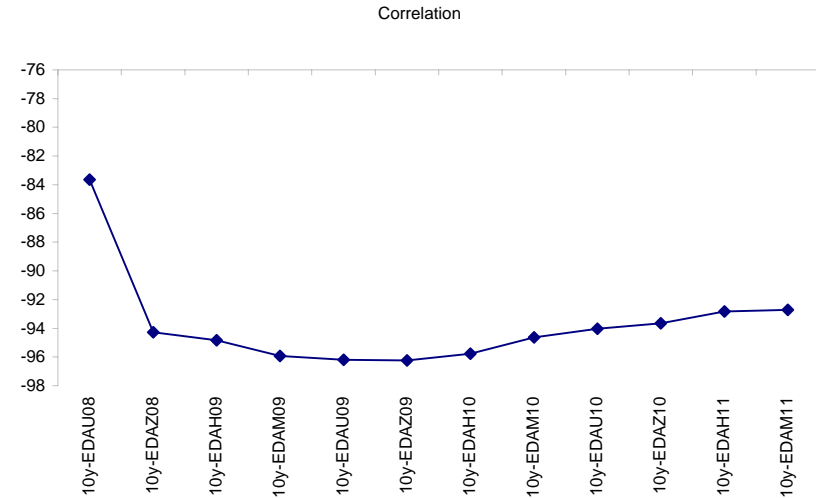
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAU08	0.183	8.08	7.90	10y-EDAU08
EDAZ08	0.432	8.08	7.65	10y-EDAZ08
EDAH09	0.682	8.08	7.40	10y-EDAH09
EDAM09	0.931	8.08	7.15	10y-EDAM09
EDAU09	1.180	8.08	6.90	10y-EDAU09
EDAZ09	1.429	8.08	6.65	10y-EDAZ09
EDAH10	1.679	8.08	6.40	10y-EDAH10
EDAM10	1.928	8.08	6.15	10y-EDAM10
EDAU10	2.177	8.08	5.90	10y-EDAU10
EDAZ10	2.427	8.08	5.65	10y-EDAZ10
EDAH11	2.676	8.08	5.40	10y-EDAH11
EDAM11	2.925	8.08	5.15	10y-EDAM11

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.

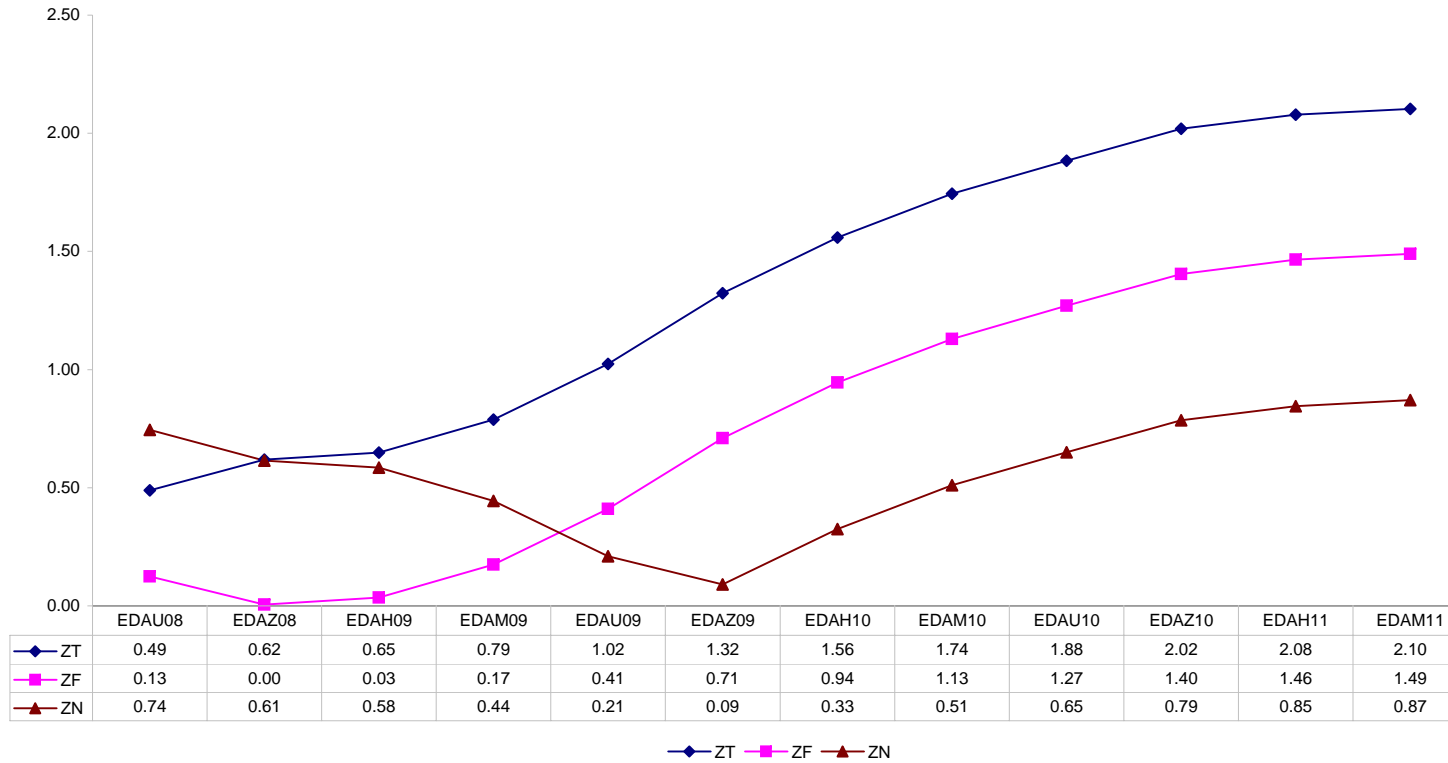
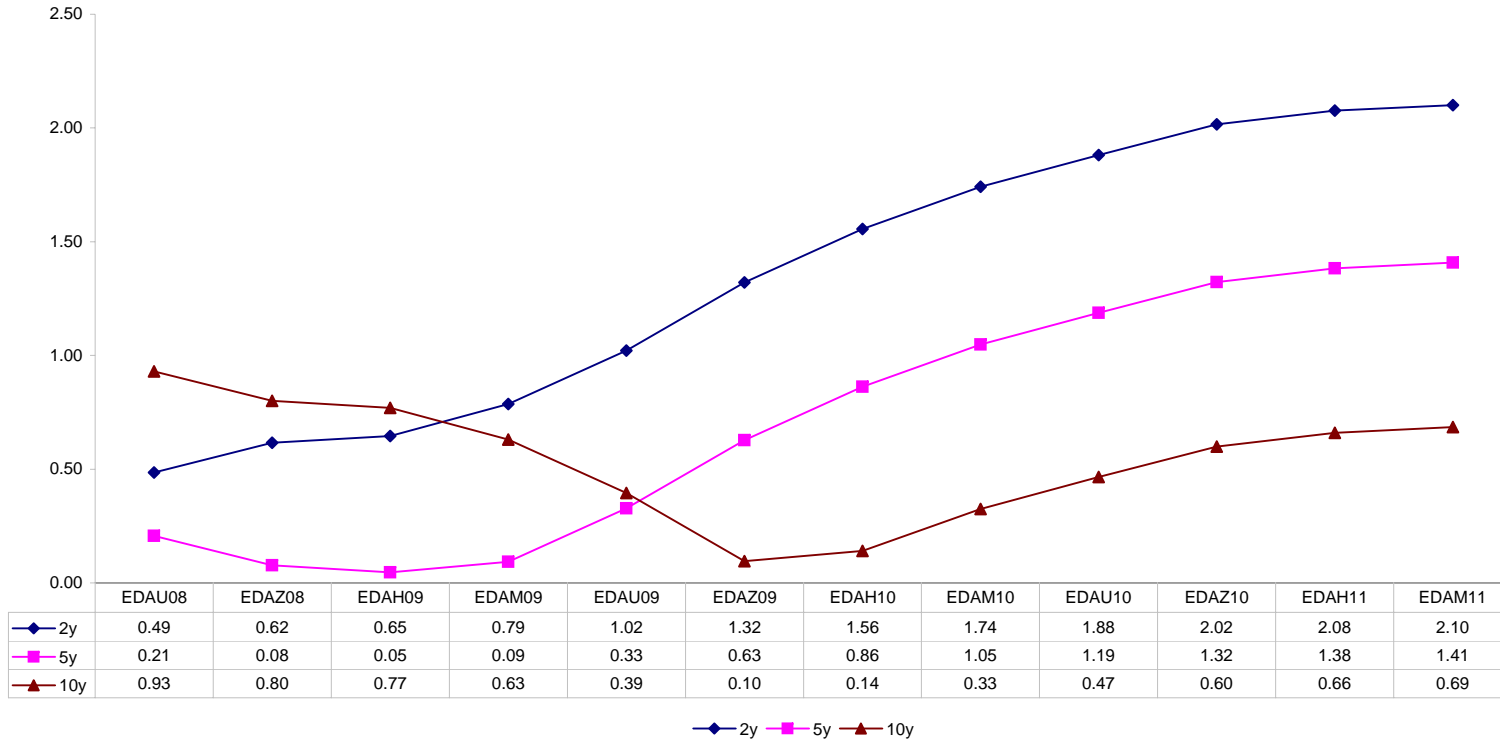
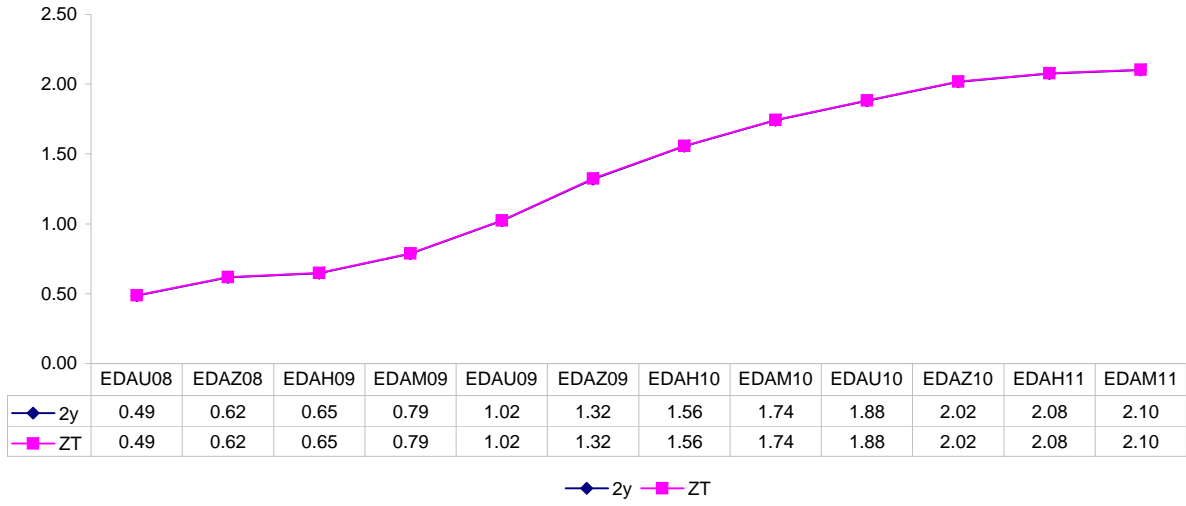


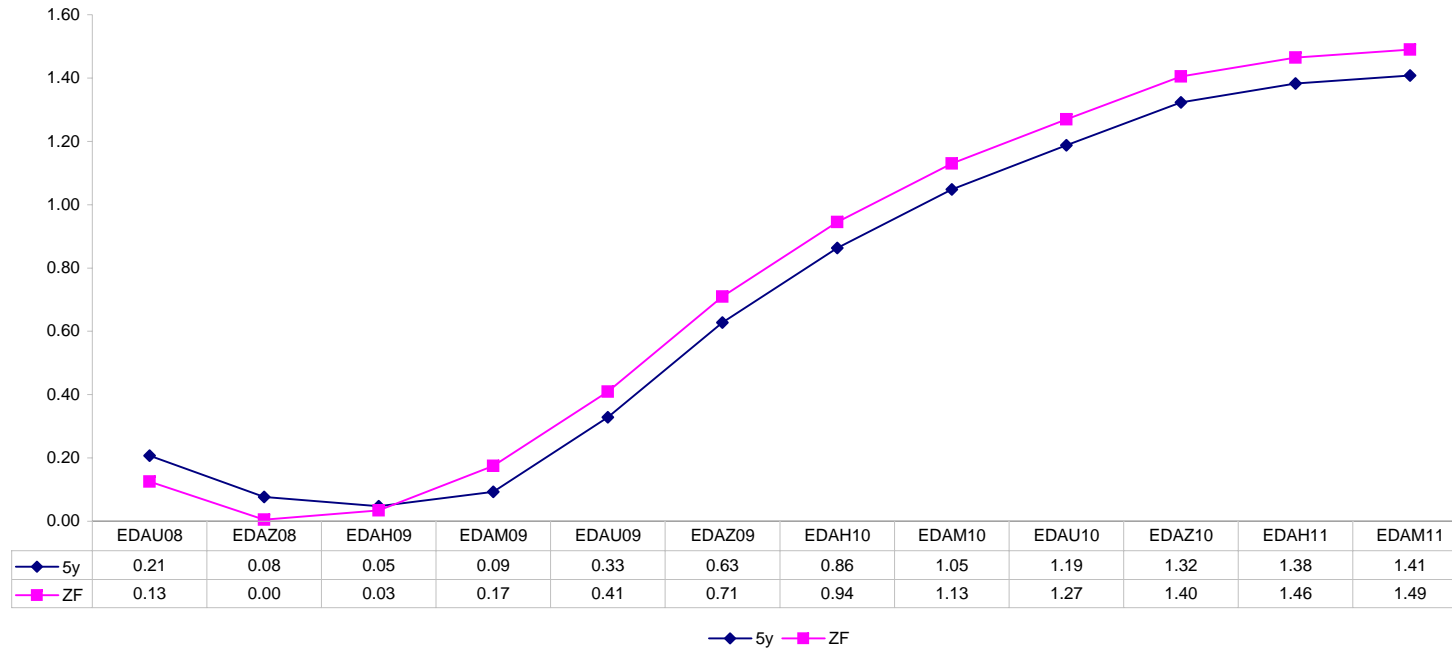
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



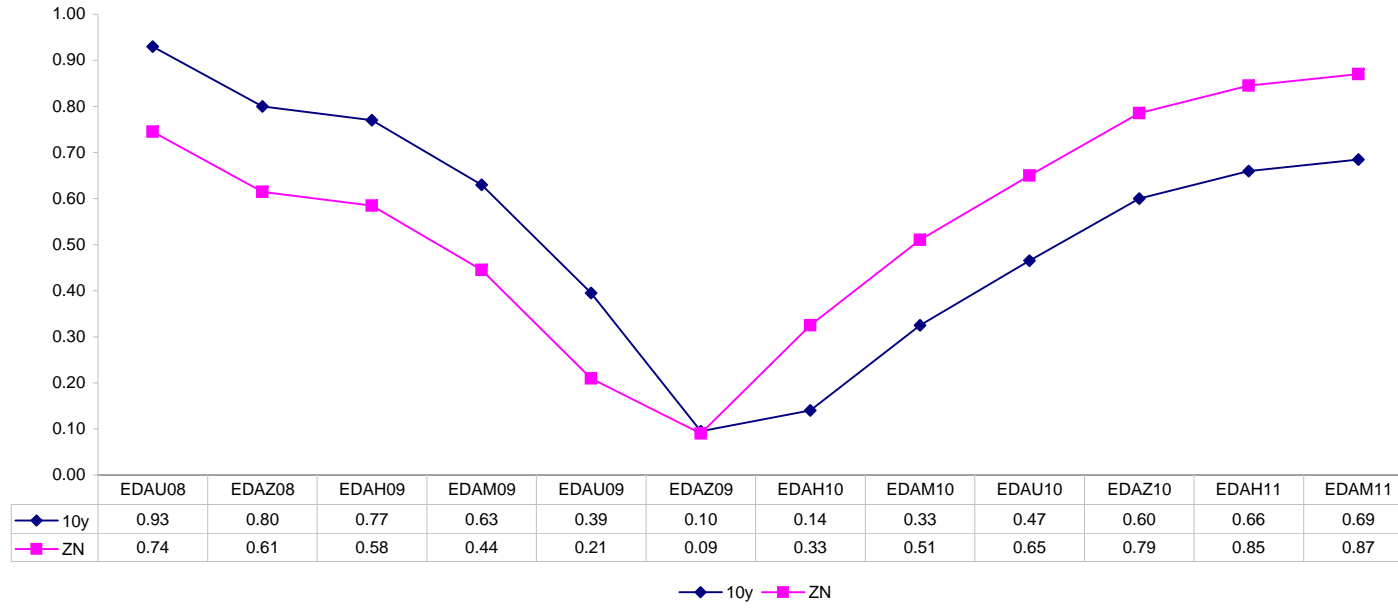
2y Basis TED Curve



5y Basis TED Curve

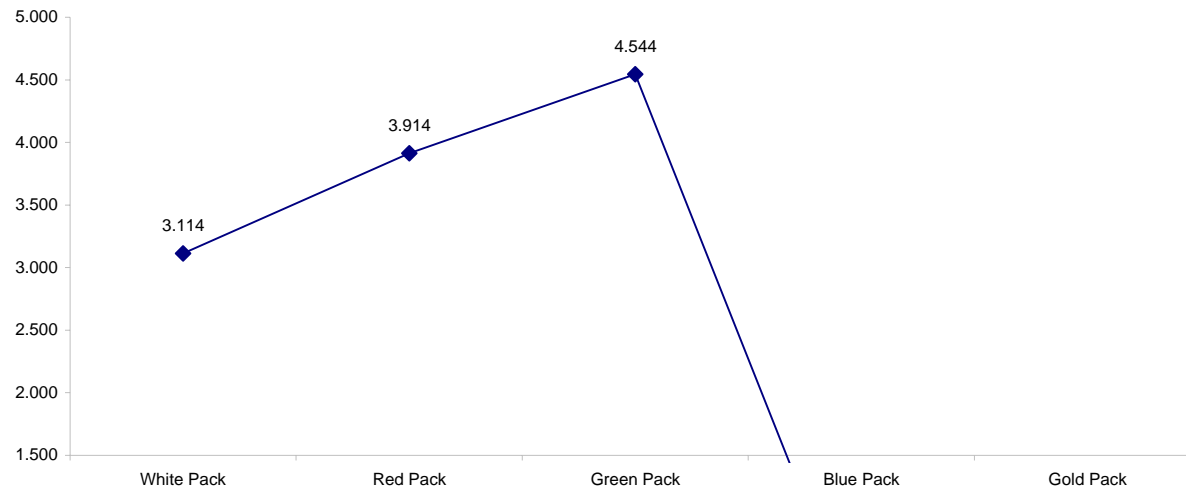


10y Basis TED Curve



### Packs

	Last Yield	Net Last Yield	Last Price
White Pack	3.114	-2.000	9695.250
Red Pack	3.914	-2.375	9617.625
Green Pack	4.544	-2.375	9556.750
Blue Pack		0.250	9537.250
Gold Pack		0.000	9517.500



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

