

## **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	107.2406	107.077	1.675	1.90
ZF	112.4375	112.140	2.750	4.07
ZN	111.9531	111.305	3.937	6.17
2y	100.625	100.2000	1.668	1.83
5y	101.203	101.0650	2.861	4.55
10y	100.328	100.1050	3.959	8.00

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.590	2.410	56	0.153	DEC	
EDAH09	97.825	2.175	147	0.402	MAR	White Pack
EDAM09	97.825	2.175	238	0.651	JUN	
EDAU09	97.720	2.280	329	0.901	SEP	
EDAZ09	97.435	2.565	420	1.150	DEC	
EDAH10	97.220	2.780	511	1.399	MAR	Red Pack
EDAM10	96.855	3.145	602	1.649	JUN	
EDAU10	96.440	3.560	693	1.898	SEP	
EDAZ10	95.970	4.030	784	2.147	DEC	
EDAH11	95.675	4.325	875	2.397	MAR	Green Pack
EDAM11	95.440	4.560	966	2.646	JUN	
EDAU11	95.285	4.715	1064	2.914	SEP	
EDAZ11	95.190	4.810	1155	3.164	DEC	
EDAH12	95.135	4.865	1246	3.413	MAR	Blue Pack
EDAM12	95.070	4.930	1337	3.662	JUN	
EDAU12	94.995	5.005	1428	3.912	SEP	
EDAZ12	94.880	5.120	1519	4.161	DEC	
EDAH13	#VALUE!	#VALUE!	1610	4.410	MAR	Gold Pack
EDAM13	94.790	5.210	1701	4.660	JUN	
EDZU13	94.640	5.360	1883	5.158	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.304	6.875	9774.000	
Red Pack	3.078	4.250	9698.750	Pack Prices
Green Pack	4.519	4.250	9559.250	
Blue Pack	5.032	0.500	9509.750	
Gold Pack		0.000	9480.375	

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.

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

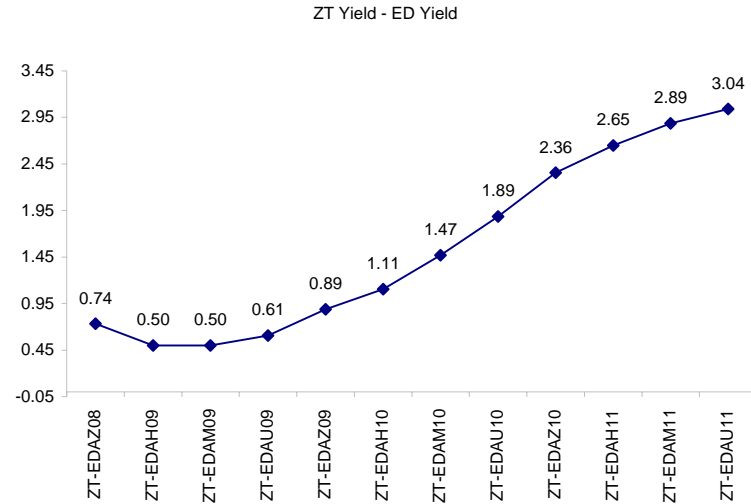
Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based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

	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	9.651	0.74	ZT-EDAZ08	9.269
EDAH09	9.416	0.50	ZT-EDAH09	87.639
EDAM09	9.416	0.50	ZT-EDAM09	77.706
EDAU09	9.521	0.61	ZT-EDAU09	87.639
EDAZ09	9.806	0.89	ZT-EDAZ09	89.463
EDAH10	10.021	1.11	ZT-EDAH10	92.101
EDAM10	10.386	1.47	ZT-EDAM10	93.011
EDAU10	10.801	1.89	ZT-EDAU10	93.847
EDAZ10	11.271	2.36	ZT-EDAZ10	90.225
EDAH11	11.566	2.65	ZT-EDAH11	81.304
EDAM11	11.801	2.89	ZT-EDAM11	72.132
EDAU11	11.956	3.04	ZT-EDAU11	67.967

Price = Outright Decimal Price - Euro Contract Price

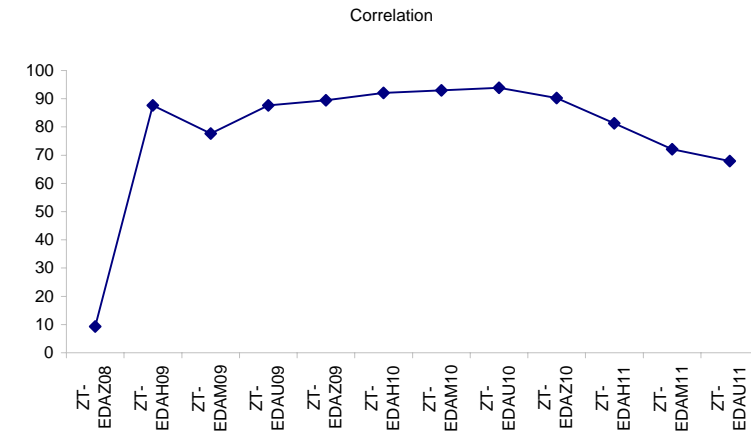
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		ZT Duration	Spread Duration	
EDAZ08	0.153	1.90	1.74	ZT-EDAZ08	
EDAH09	0.402	1.90	1.49	ZT-EDAH09	
EDAM09	0.651	1.90	1.25	ZT-EDAM09	
EDAU09	0.901	1.90	1.00	ZT-EDAU09	
EDAZ09	1.150	1.90	0.75	ZT-EDAZ09	
EDAH10	1.399	1.90	0.50	ZT-EDAH10	
EDAM10	1.649	1.90	0.25	ZT-EDAM10	
EDAU10	1.898	1.90	(0.00)	ZT-EDAU10	
EDAZ10	2.147	1.90	(0.25)	ZT-EDAZ10	
EDAH11	2.397	1.90	(0.50)	ZT-EDAH11	
EDAM11	2.646	1.90	(0.75)	ZT-EDAM11	
EDAU11	2.914	1.90	(1.02)	ZT-EDAU11	

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

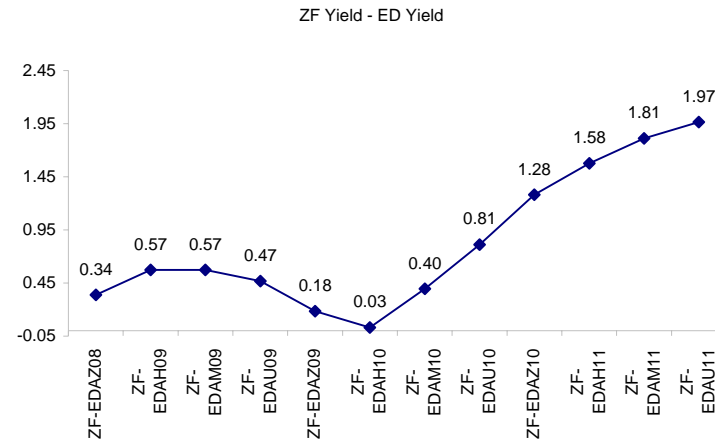


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	14.848	0.34	ZF-EDAZ08	-20.692
EDAH09	14.613	0.57	ZF-EDAH09	29.917
EDAM09	14.613	0.57	ZF-EDAM09	53.118
EDAU09	14.718	0.47	ZF-EDAU09	62.093
EDAZ09	15.003	0.18	ZF-EDAZ09	64.068
EDAH10	15.218	0.03	ZF-EDAH10	69.857
EDAM10	15.583	0.40	ZF-EDAM10	76.012
EDAU10	15.998	0.81	ZF-EDAU10	84.759
EDAZ10	16.468	1.28	ZF-EDAZ10	93.796
EDAH11	16.763	1.58	ZF-EDAH11	98.468
EDAM11	16.998	1.81	ZF-EDAM11	97.553
EDAU11	17.153	1.97	ZF-EDAU11	96.567

Price = Outright Decimal Price - Euro Contract Price

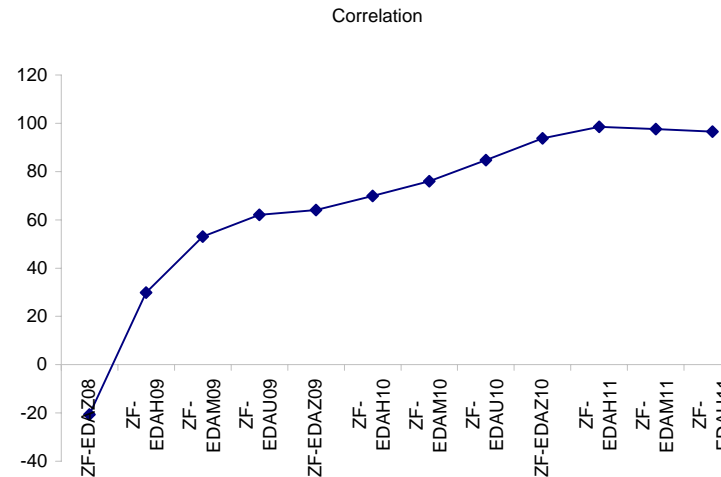
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				
	ZF Duration	Spread Duration	ZF Duration	Spread Duration
EDAZ08	0.153	4.07	3.91	ZF-EDAZ08
EDAH09	0.402	4.07	3.66	ZF-EDAH09
EDAM09	0.651	4.07	3.42	ZF-EDAM09
EDAU09	0.901	4.07	3.17	ZF-EDAU09
EDAZ09	1.150	4.07	2.92	ZF-EDAZ09
EDAH10	1.399	4.07	2.67	ZF-EDAH10
EDAM10	1.649	4.07	2.42	ZF-EDAM10
EDAU10	1.898	4.07	2.17	ZF-EDAU10
EDAZ10	2.147	4.07	1.92	ZF-EDAZ10
EDAH11	2.397	4.07	1.67	ZF-EDAH11
EDAM11	2.646	4.07	1.42	ZF-EDAM11
EDAU11	2.914	4.07	1.15	ZF-EDAU11

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

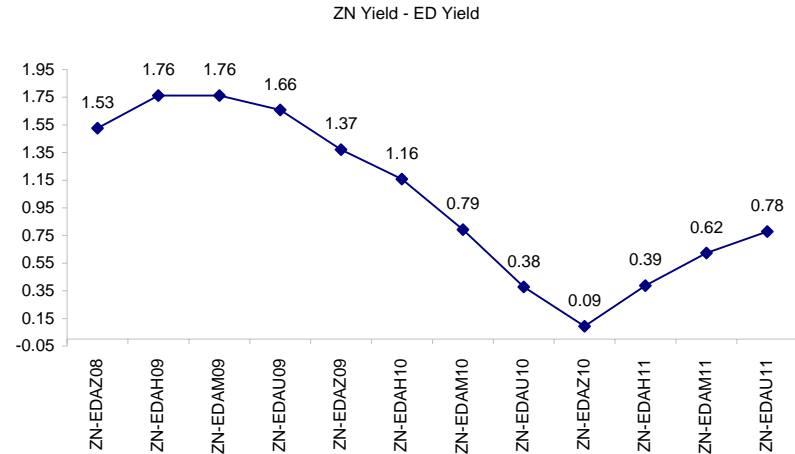


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	14.363	1.53	ZN-EDAZ08	-45.193
EDAH09	14.128	1.76	ZN-EDAH09	13.601
EDAM09	14.128	1.76	ZN-EDAM09	17.780
EDAU09	14.233	1.66	ZN-EDAU09	23.435
EDAZ09	14.518	1.37	ZN-EDAZ09	25.254
EDAH10	14.733	1.16	ZN-EDAH10	32.924
EDAM10	15.098	0.79	ZN-EDAM10	76.012
EDAU10	15.513	0.38	ZN-EDAU10	84.759
EDAZ10	15.983	0.09	ZN-EDAZ10	93.796
EDAH11	16.278	0.39	ZN-EDAH11	98.468
EDAM11	16.513	0.62	ZN-EDAM11	97.553
EDAU11	16.668	0.78	ZN-EDAU11	96.567

Price = Outright Decimal Price - Euro Contract Price

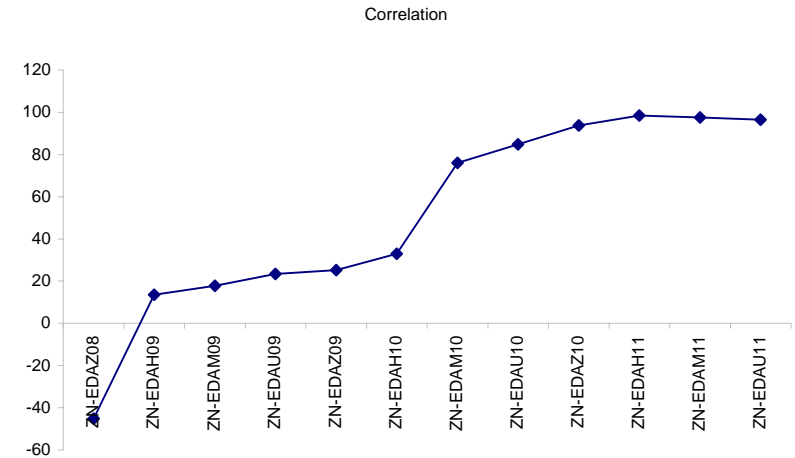
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.153	6.17	6.02	ZN-EDAZ08		
EDAH09	0.402	6.17	5.77	ZN-EDAH09		
EDAM09	0.651	6.17	5.52	ZN-EDAM09		
EDAU09	0.901	6.17	5.27	ZN-EDAU09		
EDAZ09	1.150	6.17	5.02	ZN-EDAZ09		
EDAH10	1.399	6.17	4.77	ZN-EDAH10		
EDAM10	1.649	6.17	4.52	ZN-EDAM10		
EDAU10	1.898	6.17	4.27	ZN-EDAU10		
EDAZ10	2.147	6.17	4.02	ZN-EDAZ10		
EDAH11	2.397	6.17	3.77	ZN-EDAH11		
EDAM11	2.646	6.17	3.52	ZN-EDAM11		
EDAU11	2.914	6.17	3.26	ZN-EDAU11		

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

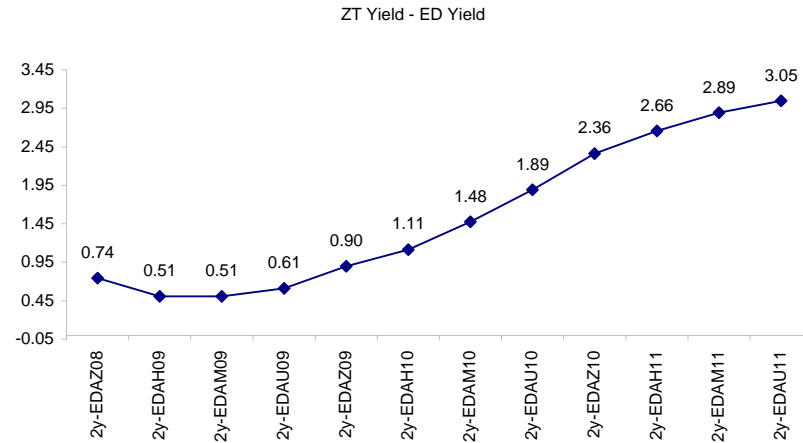


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.035	0.74	2y-EDAZ08	52.647
EDAH09	2.800	0.51	2y-EDAH09	-6.285
EDAM09	2.800	0.51	2y-EDAM09	-23.856
EDAU09	2.905	0.61	2y-EDAU09	-36.005
EDAZ09	3.190	0.90	2y-EDAZ09	-35.347
EDAH10	3.405	1.11	2y-EDAH10	-39.356
EDAM10	3.770	1.48	2y-EDAM10	-46.616
EDAU10	4.185	1.89	2y-EDAU10	-57.738
EDAZ10	4.655	2.36	2y-EDAZ10	-67.725
EDAH11	4.950	2.66	2y-EDAH11	-72.986
EDAM11	5.185	2.89	2y-EDAM11	-73.767
EDAU11	5.340	3.05	2y-EDAU11	-74.427

Price = Outright Decimal Price - Euro Contract Price

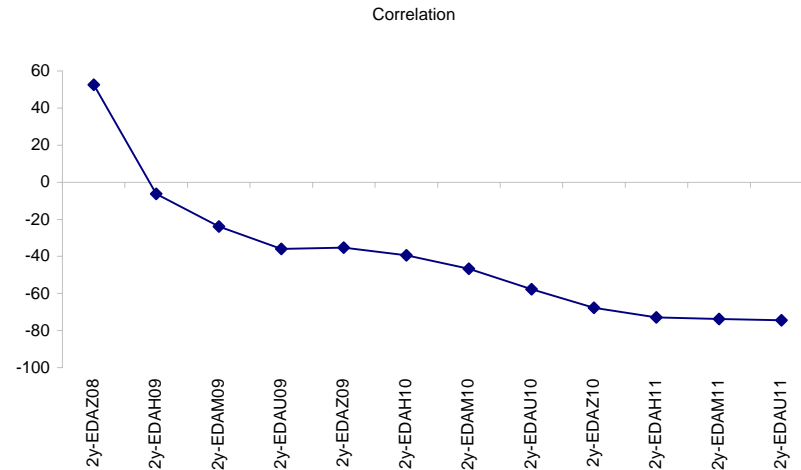
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.153	1.83	1.68	2y-EDAZ08	
EDAH09	0.402	1.83	1.43	2y-EDAH09	
EDAM09	0.651	1.83	1.18	2y-EDAM09	
EDAU09	0.901	1.83	0.93	2y-EDAU09	
EDAZ09	1.150	1.83	0.68	2y-EDAZ09	
EDAH10	1.399	1.83	0.43	2y-EDAH10	
EDAM10	1.649	1.83	0.18	2y-EDAM10	
EDAU10	1.898	1.83	(0.07)	2y-EDAU10	
EDAZ10	2.147	1.83	(0.31)	2y-EDAZ10	
EDAH11	2.397	1.83	(0.56)	2y-EDAH11	
EDAM11	2.646	1.83	(0.81)	2y-EDAM11	
EDAU11	2.914	1.83	(1.08)	2y-EDAU11	

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

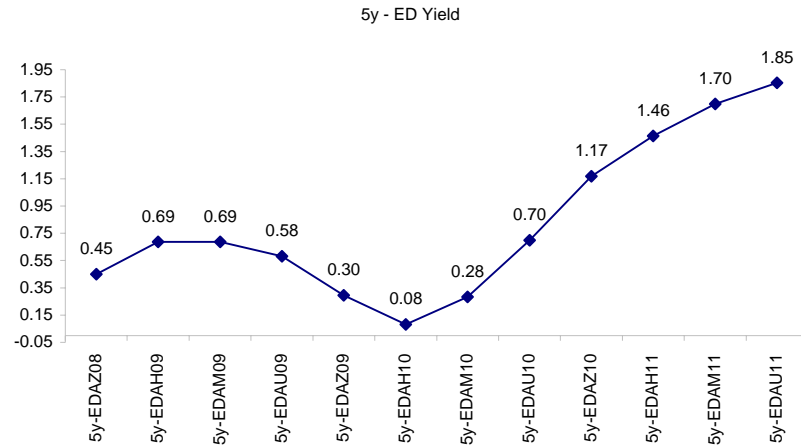


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.613	0.45	5y-EDAZ08	48.820
EDAH09	3.378	0.69	5y-EDAH09	-27.543
EDAM09	3.378	0.69	5y-EDAM09	-35.211
EDAU09	3.483	0.58	5y-EDAU09	-42.513
EDAZ09	3.768	0.30	5y-EDAZ09	-40.533
EDAH10	3.983	0.08	5y-EDAH10	-46.777
EDAM10	4.348	0.28	5y-EDAM10	-56.663
EDAU10	4.763	0.70	5y-EDAU10	-70.794
EDAZ10	5.233	1.17	5y-EDAZ10	-83.953
EDAH11	5.528	1.46	5y-EDAH11	-91.922
EDAM11	5.763	1.70	5y-EDAM11	-94.009
EDAU11	5.918	1.85	5y-EDAU11	-94.955

Price = Outright Decimal Price - Euro Contract Price

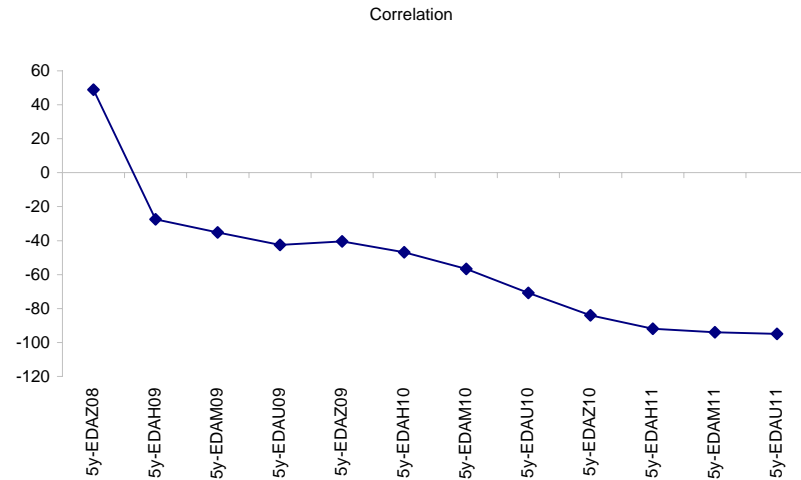
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.153	4.55	4.39	5y-EDAZ08
EDAH09	0.402	4.55	4.15	5y-EDAH09
EDAM09	0.651	4.55	3.90	5y-EDAM09
EDAU09	0.901	4.55	3.65	5y-EDAU09
EDAZ09	1.150	4.55	3.40	5y-EDAZ09
EDAH10	1.399	4.55	3.15	5y-EDAH10
EDAM10	1.649	4.55	2.90	5y-EDAM10
EDAU10	1.898	4.55	2.65	5y-EDAU10
EDAZ10	2.147	4.55	2.40	5y-EDAZ10
EDAH11	2.397	4.55	2.15	5y-EDAH11
EDAM11	2.646	4.55	1.90	5y-EDAM11
EDAU11	2.914	4.55	1.63	5y-EDAU11

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

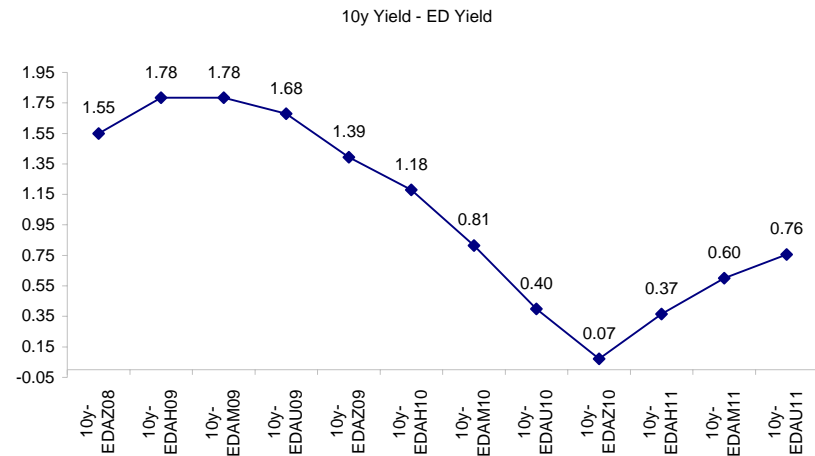


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.613	1.55	10y-EDAZ08	45.199
EDAH09	3.378	1.78	10y-EDAH09	-36.444
EDAM09	3.378	1.78	10y-EDAM09	-41.354
EDAU09	3.483	1.68	10y-EDAU09	-46.399
EDAZ09	3.768	1.39	10y-EDAZ09	-43.108
EDAH10	3.983	1.18	10y-EDAH10	-48.886
EDAM10	4.348	0.81	10y-EDAM10	-58.876
EDAU10	4.763	0.40	10y-EDAU10	-73.107
EDAZ10	5.233	0.07	10y-EDAZ10	-86.473
EDAH11	5.528	0.37	10y-EDAH11	-94.647
EDAM11	5.763	0.60	10y-EDAM11	-96.906
EDAU11	5.918	0.76	10y-EDAU11	-97.825

Price = Outright Decimal Price - Euro Contract Price

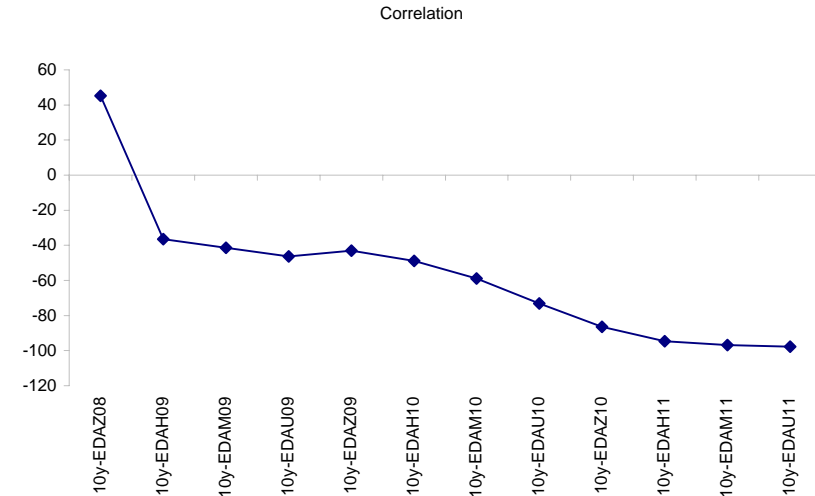
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.153	8.00	7.85	10y-EDAZ08
EDAH09	0.402	8.00	7.60	10y-EDAH09
EDAM09	0.651	8.00	7.35	10y-EDAM09
EDAU09	0.901	8.00	7.10	10y-EDAU09
EDAZ09	1.150	8.00	6.85	10y-EDAZ09
EDAH10	1.399	8.00	6.60	10y-EDAH10
EDAM10	1.649	8.00	6.35	10y-EDAM10
EDAU10	1.898	8.00	6.10	10y-EDAU10
EDAZ10	2.147	8.00	5.85	10y-EDAZ10
EDAH11	2.397	8.00	5.61	10y-EDAH11
EDAM11	2.646	8.00	5.36	10y-EDAM11
EDAU11	2.914	8.00	5.09	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.

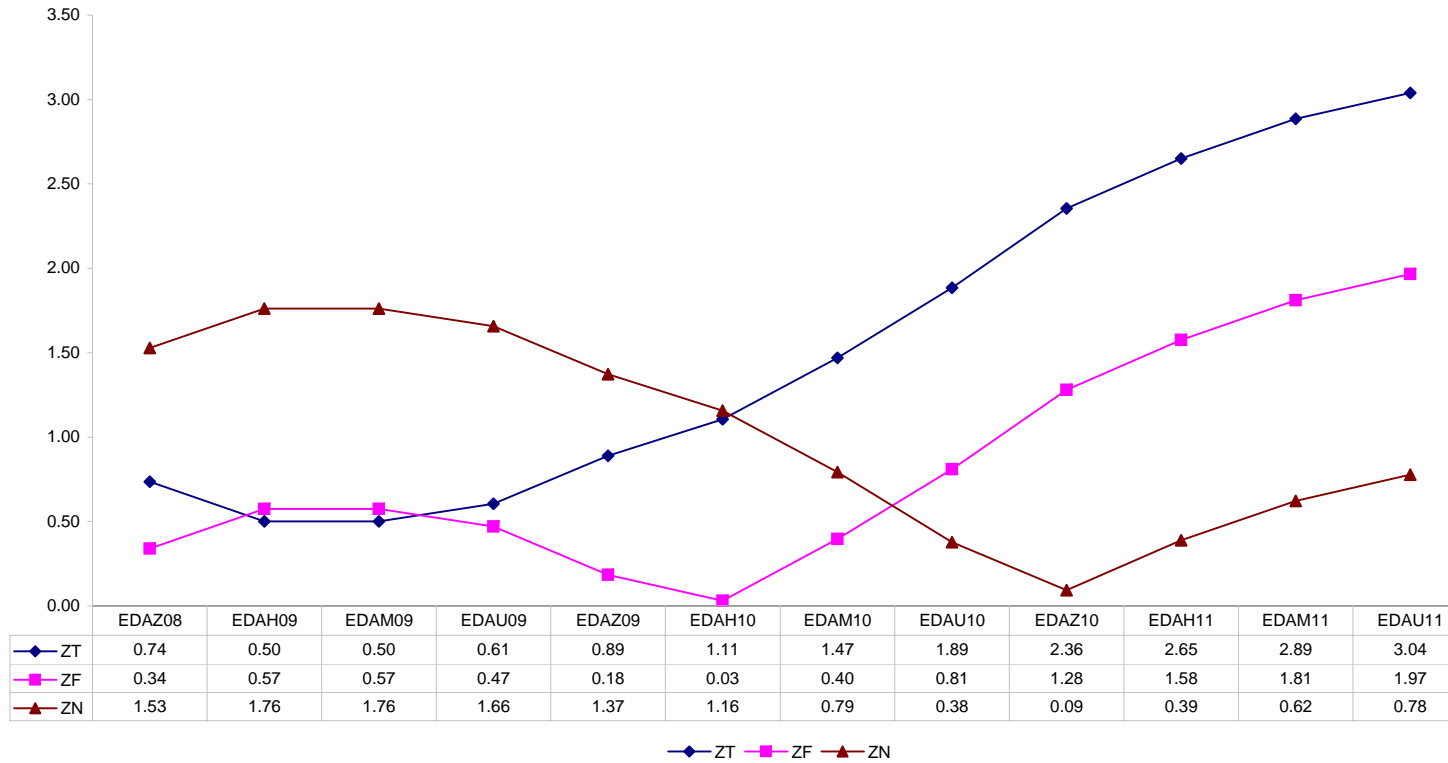
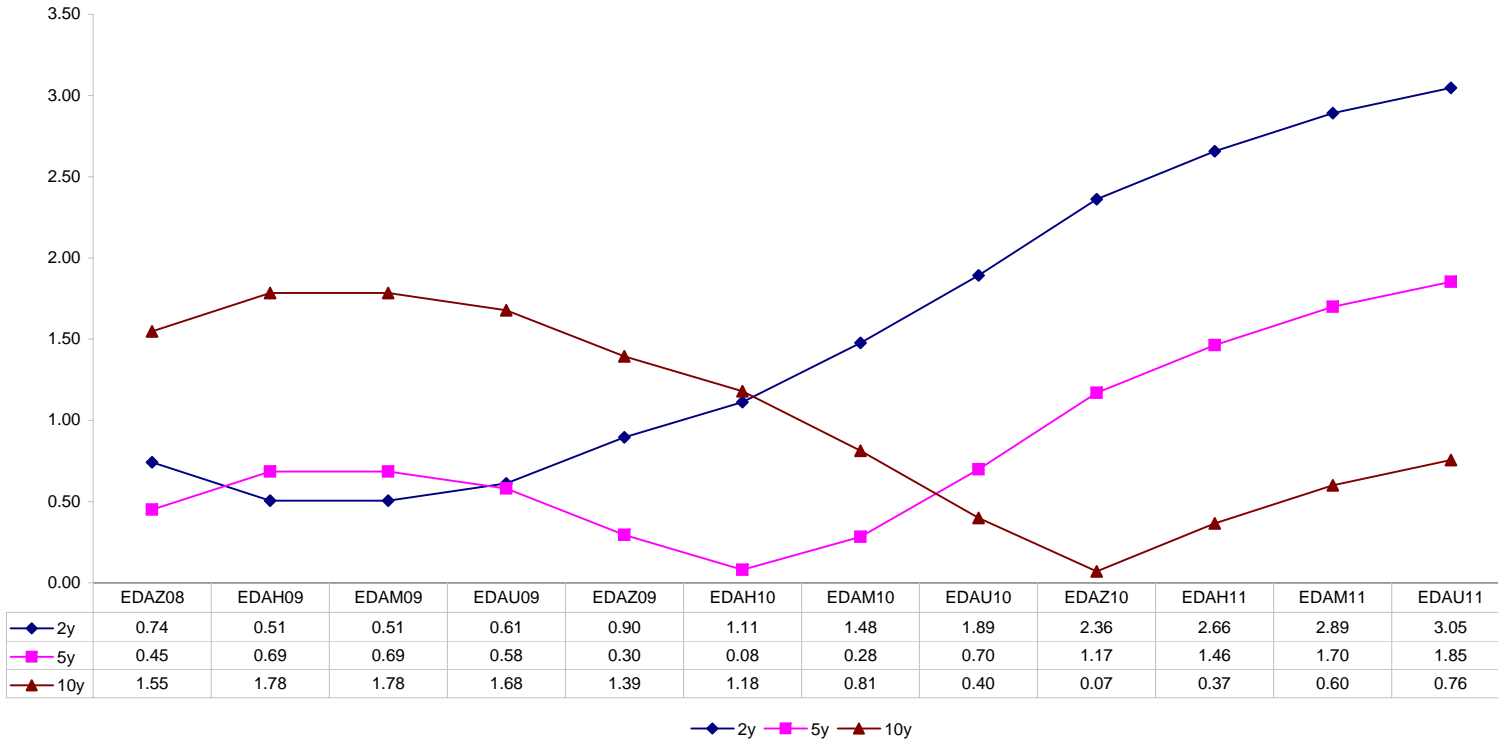
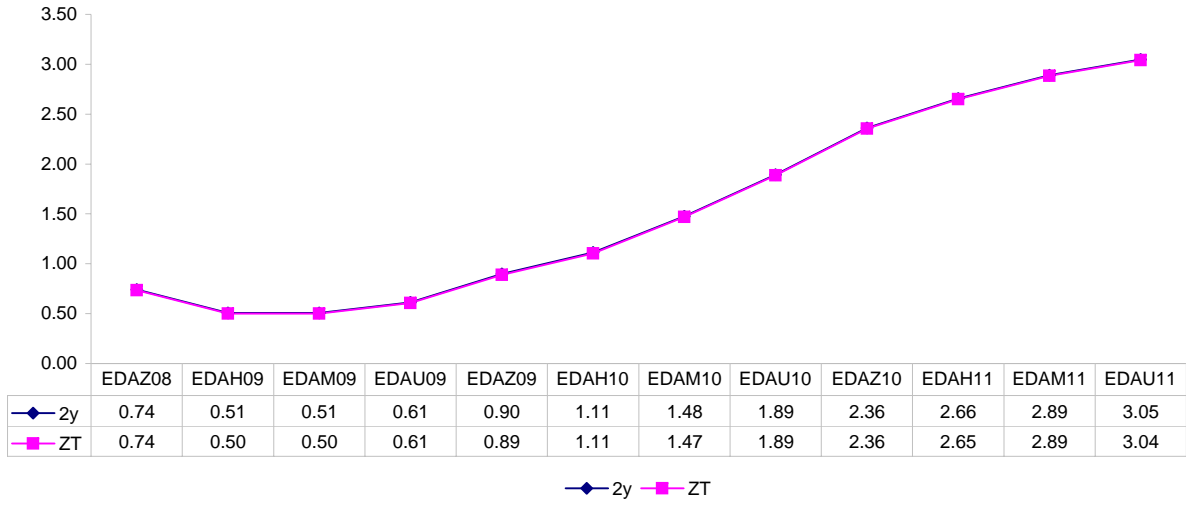


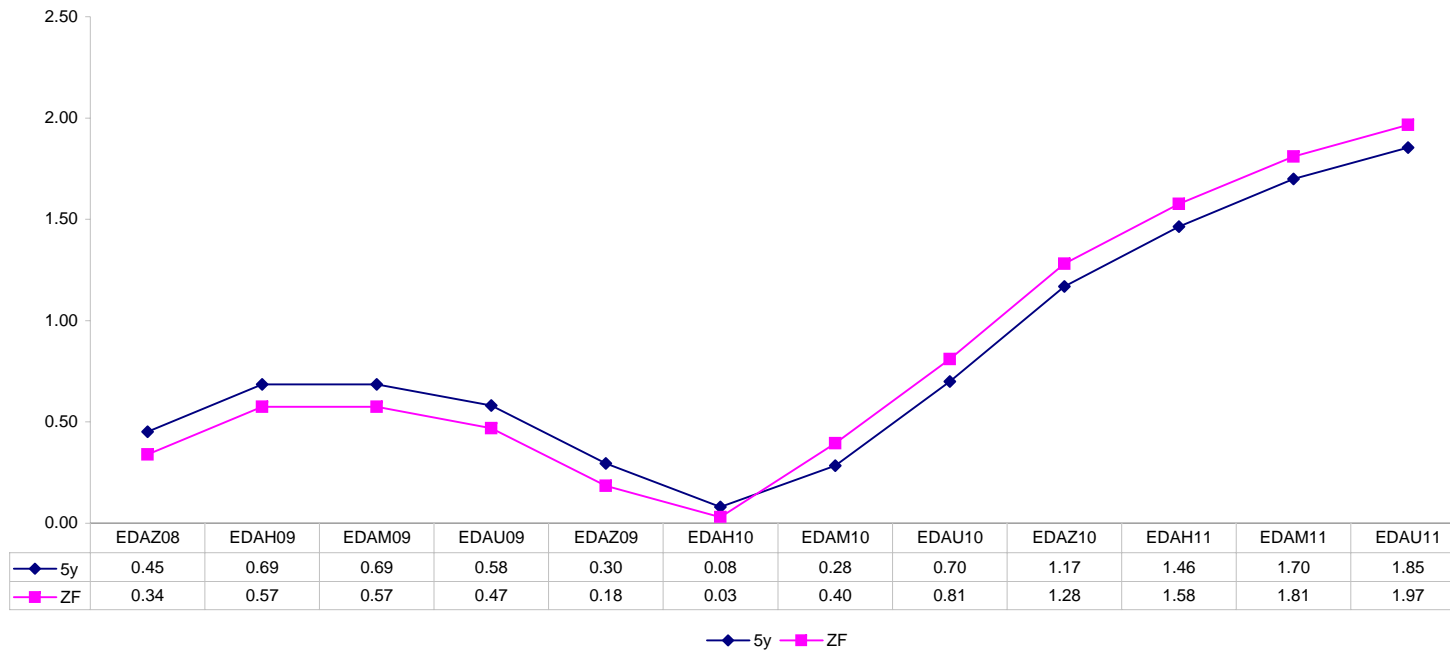
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



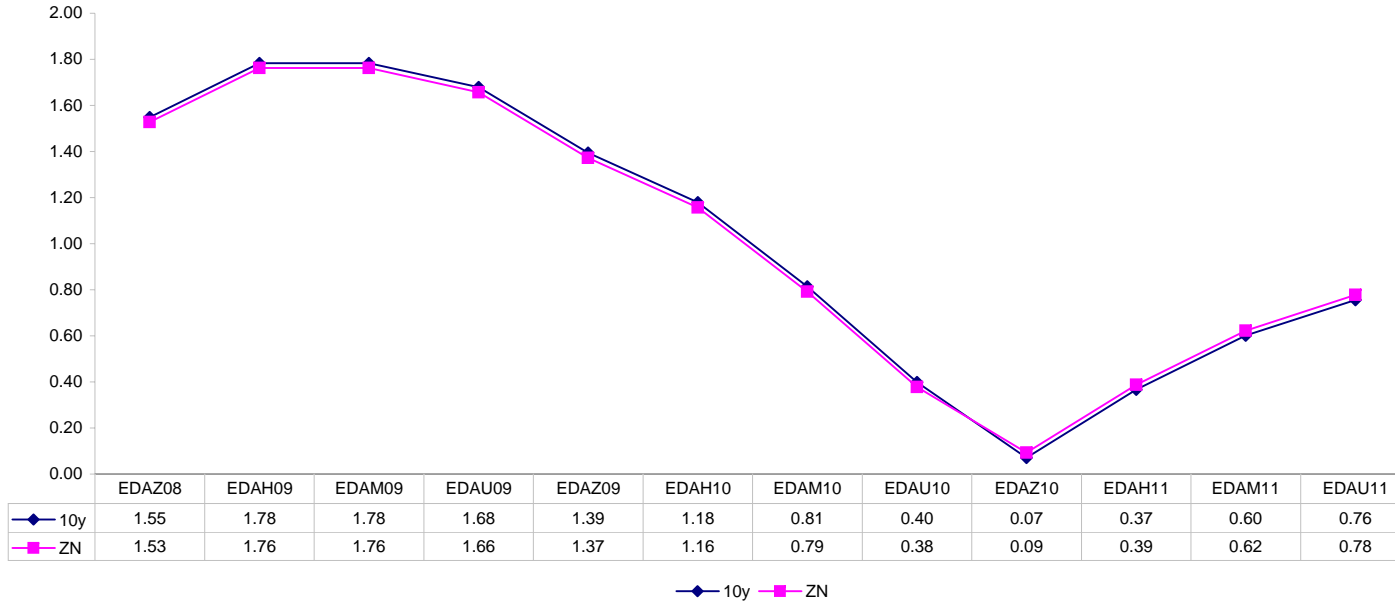
2y Basis TED Curve



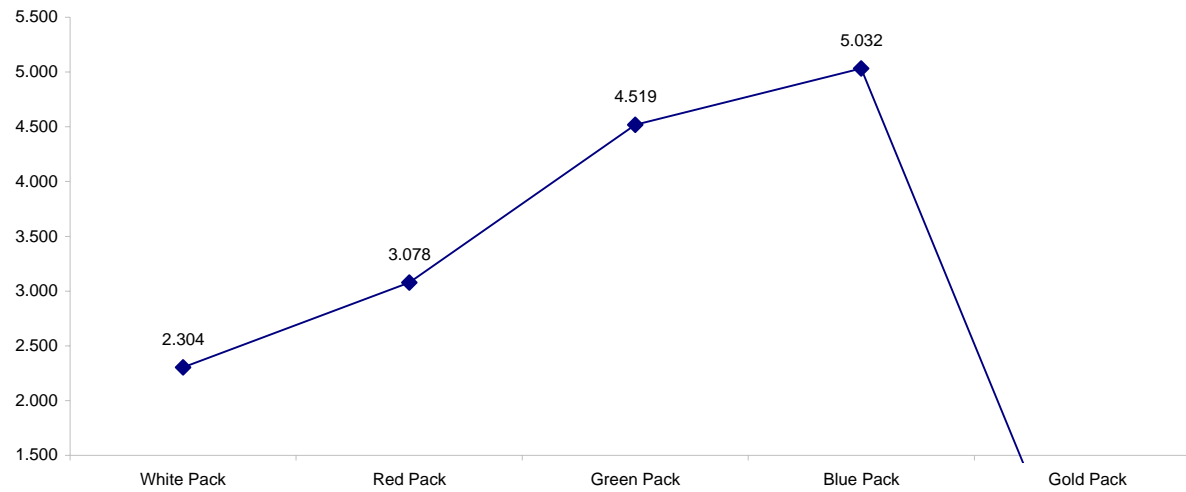
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.304	6.875	9774.000
Red Pack	3.078	4.250	9698.750
Green Pack	4.519	4.250	9559.250
Blue Pack	5.032	0.500	9509.750
Gold Pack		0.000	9480.375



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

