

## **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	106.6938	106.222	1.889	1.91
ZF	111.6406	111.205	2.880	4.08
ZN	112.4219	112.135	4.146	6.17
2y	100.225	100.0720	1.878	1.85
5y	100.469	100.1500	3.019	4.56
10y	100.000	100.0000	3.996	8.01

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.390	2.610	62	0.169	DEC	
EDAH09	97.750	2.250	153	0.419	MAR	White Pack
EDAM09	97.600	2.400	244	0.668	JUN	
EDAU09	97.325	2.675	335	0.917	SEP	
EDAZ09	96.895	3.105	426	1.166	DEC	
EDAH10	96.635	3.365	517	1.416	MAR	Red Pack
EDAM10	96.275	3.725	608	1.665	JUN	
EDAU10	95.935	4.065	699	1.914	SEP	
EDAZ10	95.585	4.415	790	2.164	DEC	
EDAH11	95.455	4.545	881	2.413	MAR	Green Pack
EDAM11	95.305	4.695	972	2.662	JUN	
EDAU11	95.205	4.795	1070	2.931	SEP	
EDAZ11	95.185	4.815	1161	3.180	DEC	
EDAH12	95.175	4.825	1252	3.429	MAR	Blue Pack
EDAM12	94.980	5.020	1343	3.679	JUN	
EDAU12	95.030	4.970	1434	3.928	SEP	
EDAZ12	94.760	5.240	1525	4.177	DEC	
EDAH13	94.850	5.150	1616	4.427	MAR	Gold Pack
EDAM13	94.645	5.355	1707	4.676	JUN	
EDZU13	#VALUE!	#VALUE!	1889	5.175	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.534	4.500	9751.625	
Red Pack	3.647	-22.750	9643.500	Pack Prices
Green Pack	4.731	-16.250	9538.750	
Blue Pack	5.178	-24.500	9495.750	
Gold Pack	5.442	-20.625	9470.375	

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.

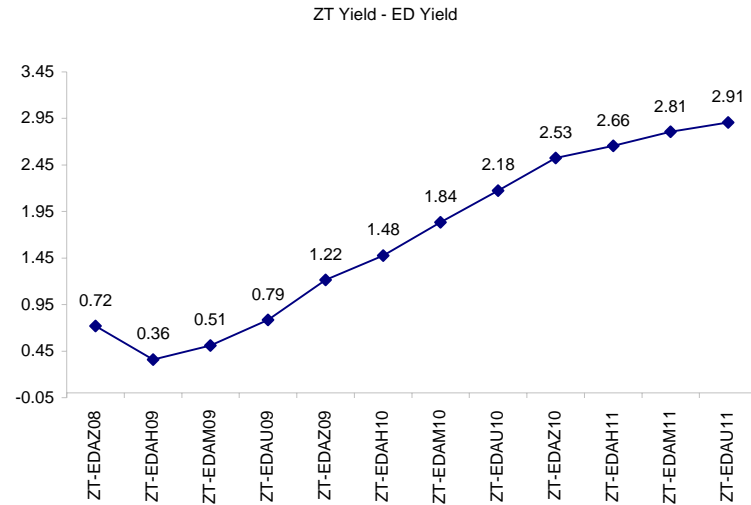
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

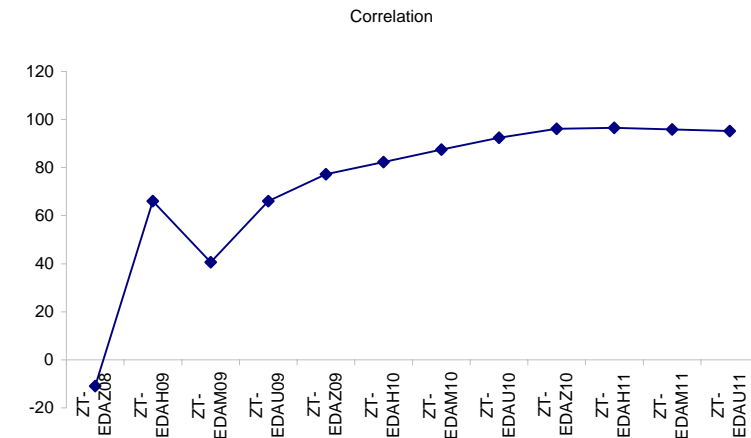
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	9.304	0.72	ZT-EDAZ08	-10.987
EDAH09	8.944	0.36	ZT-EDAH09	66.067
EDAM09	9.094	0.51	ZT-EDAM09	40.590
EDAU09	9.369	0.79	ZT-EDAU09	66.067
EDAZ09	9.799	1.22	ZT-EDAZ09	77.240
EDAH10	10.059	1.48	ZT-EDAH10	82.257
EDAM10	10.419	1.84	ZT-EDAM10	87.490
EDAU10	10.759	2.18	ZT-EDAU10	92.460
EDAZ10	11.109	2.53	ZT-EDAZ10	96.176
EDAH11	11.239	2.66	ZT-EDAH11	96.524
EDAM11	11.389	2.81	ZT-EDAM11	95.946
EDAU11	11.489	2.91	ZT-EDAU11	95.221

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	0.169	1.91	1.74	ZT-EDAZ08		
EDAH09	0.419	1.91	1.49	ZT-EDAH09		
EDAM09	0.668	1.91	1.24	ZT-EDAM09		
EDAU09	0.917	1.91	0.99	ZT-EDAU09		
EDAZ09	1.166	1.91	0.74	ZT-EDAZ09		
EDAH10	1.416	1.91	0.50	ZT-EDAH10		
EDAM10	1.665	1.91	0.25	ZT-EDAM10		
EDAU10	1.914	1.91	(0.00)	ZT-EDAU10		
EDAZ10	2.164	1.91	(0.25)	ZT-EDAZ10		
EDAH11	2.413	1.91	(0.50)	ZT-EDAH11		
EDAM11	2.662	1.91	(0.75)	ZT-EDAM11		
EDAU11	2.931	1.91	(1.02)	ZT-EDAU11		

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

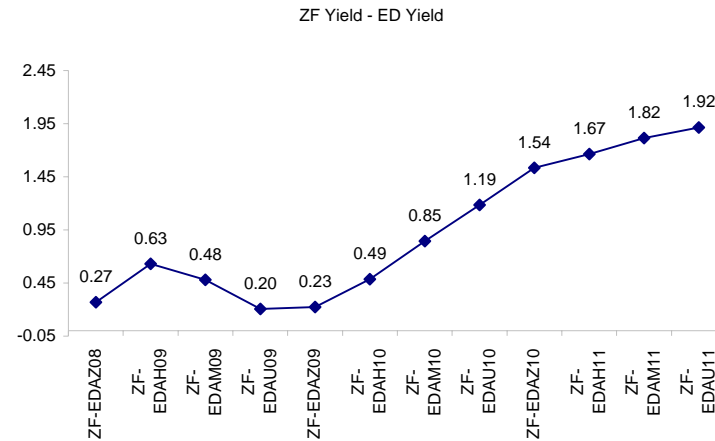


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	14.251	0.27	ZF-EDAZ08	-16.274
EDAH09	13.891	0.63	ZF-EDAH09	13.816
EDAM09	14.041	0.48	ZF-EDAM09	33.270
EDAU09	14.316	0.20	ZF-EDAU09	59.742
EDAZ09	14.746	0.23	ZF-EDAZ09	71.877
EDAH10	15.006	0.49	ZF-EDAH10	77.752
EDAM10	15.366	0.85	ZF-EDAM10	84.666
EDAU10	15.706	1.19	ZF-EDAU10	91.228
EDAZ10	16.056	1.54	ZF-EDAZ10	97.337
EDAH11	16.186	1.67	ZF-EDAH11	98.831
EDAM11	16.336	1.82	ZF-EDAM11	99.288
EDAU11	16.436	1.92	ZF-EDAU11	99.135

Price = Outright Decimal Price - Euro Contract Price

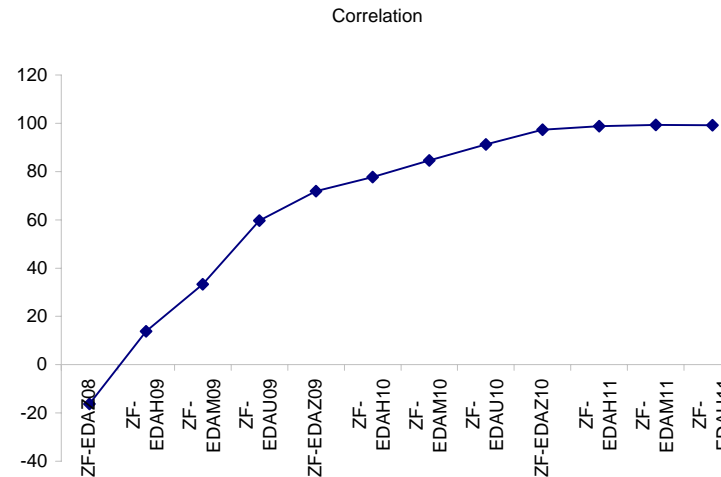
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				
	ZF Duration	Spread Duration		
EDAZ08	0.169	4.08	3.91	ZF-EDAZ08
EDAH09	0.419	4.08	3.66	ZF-EDAH09
EDAM09	0.668	4.08	3.41	ZF-EDAM09
EDAU09	0.917	4.08	3.16	ZF-EDAU09
EDAZ09	1.166	4.08	2.91	ZF-EDAZ09
EDAH10	1.416	4.08	2.66	ZF-EDAH10
EDAM10	1.665	4.08	2.41	ZF-EDAM10
EDAU10	1.914	4.08	2.17	ZF-EDAU10
EDAZ10	2.164	4.08	1.92	ZF-EDAZ10
EDAH11	2.413	4.08	1.67	ZF-EDAH11
EDAM11	2.662	4.08	1.42	ZF-EDAM11
EDAU11	2.931	4.08	1.15	ZF-EDAU11

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

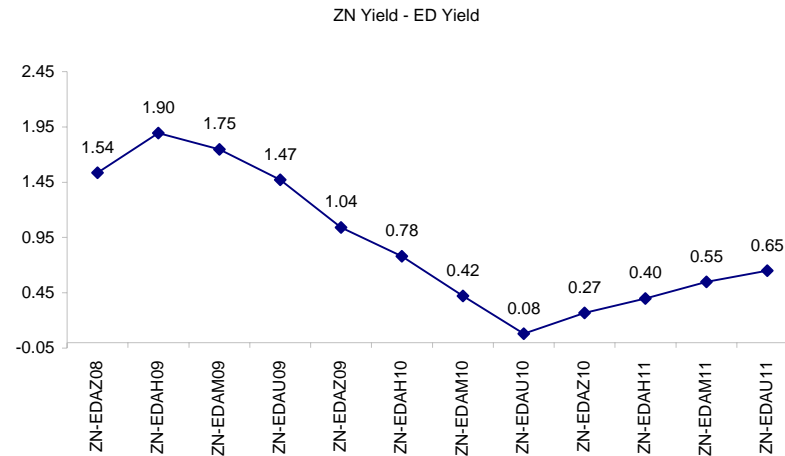


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	15.032	1.54	ZN-EDAZ08	-21.057
EDAH09	14.672	1.90	ZN-EDAH09	6.512
EDAM09	14.822	1.75	ZN-EDAM09	23.307
EDAU09	15.097	1.47	ZN-EDAU09	49.298
EDAZ09	15.527	1.04	ZN-EDAZ09	61.833
EDAH10	15.787	0.78	ZN-EDAH10	68.871
EDAM10	16.147	0.42	ZN-EDAM10	84.666
EDAU10	16.487	0.08	ZN-EDAU10	91.228
EDAZ10	16.837	0.27	ZN-EDAZ10	97.337
EDAH11	16.967	0.40	ZN-EDAH11	98.831
EDAM11	17.117	0.55	ZN-EDAM11	99.288
EDAU11	17.217	0.65	ZN-EDAU11	99.135

Price = Outright Decimal Price - Euro Contract Price

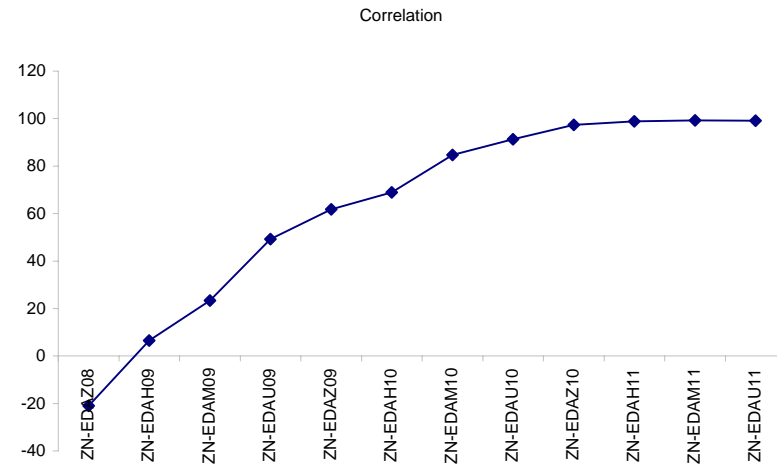
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.169	6.17	6.00	ZN-EDAZ08		
EDAH09	0.419	6.17	5.75	ZN-EDAH09		
EDAM09	0.668	6.17	5.50	ZN-EDAM09		
EDAU09	0.917	6.17	5.25	ZN-EDAU09		
EDAZ09	1.166	6.17	5.00	ZN-EDAZ09		
EDAH10	1.416	6.17	4.75	ZN-EDAH10		
EDAM10	1.665	6.17	4.50	ZN-EDAM10		
EDAU10	1.914	6.17	4.25	ZN-EDAU10		
EDAZ10	2.164	6.17	4.01	ZN-EDAZ10		
EDAH11	2.413	6.17	3.76	ZN-EDAH11		
EDAM11	2.662	6.17	3.51	ZN-EDAM11		
EDAU11	2.931	6.17	3.24	ZN-EDAU11		

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

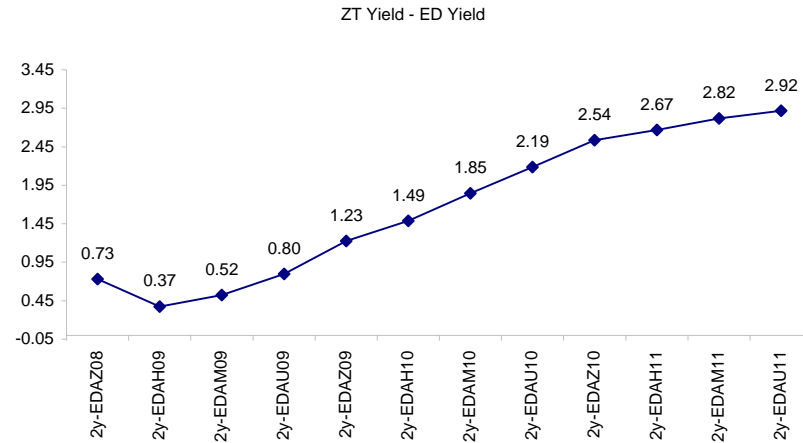


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.835	0.73	2y-EDAZ08	-45.322
EDAH09	2.475	0.37	2y-EDAH09	-64.722
EDAM09	2.625	0.52	2y-EDAM09	-74.203
EDAU09	2.900	0.80	2y-EDAU09	-82.800
EDAZ09	3.330	1.23	2y-EDAZ09	-86.839
EDAH10	3.590	1.49	2y-EDAH10	-86.069
EDAM10	3.950	1.85	2y-EDAM10	-84.295
EDAU10	4.290	2.19	2y-EDAU10	-82.732
EDAZ10	4.640	2.54	2y-EDAZ10	-77.813
EDAH11	4.770	2.67	2y-EDAH11	-74.213
EDAM11	4.920	2.82	2y-EDAM11	-69.205
EDAU11	5.020	2.92	2y-EDAU11	-65.326

Price = Outright Decimal Price - Euro Contract Price

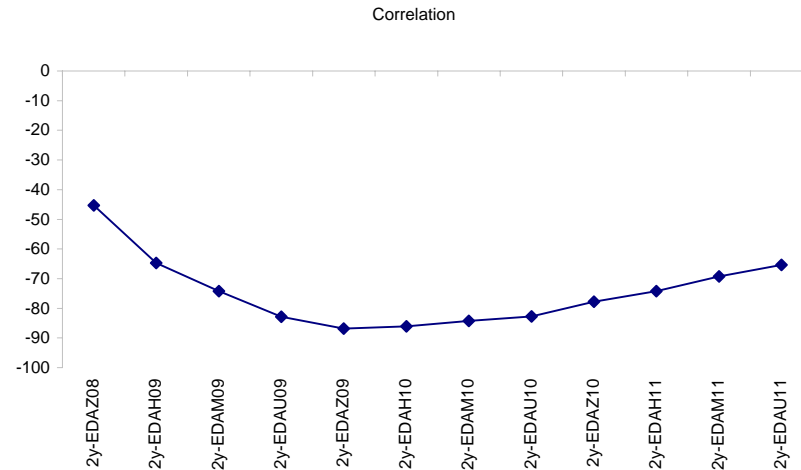
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.169	1.85	1.68	2y-EDAZ08	
EDAH09	0.419	1.85	1.43	2y-EDAH09	
EDAM09	0.668	1.85	1.18	2y-EDAM09	
EDAU09	0.917	1.85	0.93	2y-EDAU09	
EDAZ09	1.166	1.85	0.68	2y-EDAZ09	
EDAH10	1.416	1.85	0.43	2y-EDAH10	
EDAM10	1.665	1.85	0.18	2y-EDAM10	
EDAU10	1.914	1.85	(0.07)	2y-EDAU10	
EDAZ10	2.164	1.85	(0.32)	2y-EDAZ10	
EDAH11	2.413	1.85	(0.57)	2y-EDAH11	
EDAM11	2.662	1.85	(0.82)	2y-EDAM11	
EDAU11	2.931	1.85	(1.08)	2y-EDAU11	

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

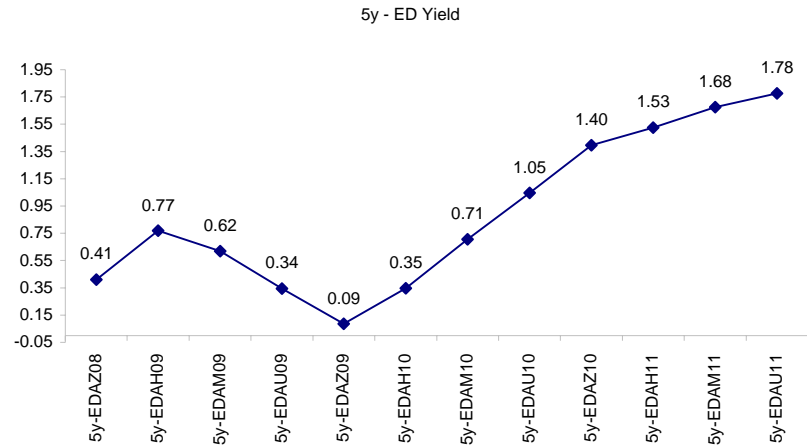


	5y			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAZ08	3.079	0.41	5y-EDAZ08	-29.495
EDAH09	2.719	0.77	5y-EDAH09	-51.855
EDAM09	2.869	0.62	5y-EDAM09	-61.870
EDAU09	3.144	0.34	5y-EDAU09	-75.044
EDAZ09	3.574	0.09	5y-EDAZ09	-82.441
EDAH10	3.834	0.35	5y-EDAH10	-85.323
EDAM10	4.194	0.71	5y-EDAM10	-88.443
EDAU10	4.534	1.05	5y-EDAU10	-91.299
EDAZ10	4.884	1.40	5y-EDAZ10	-92.390
EDAH11	5.014	1.53	5y-EDAH11	-91.406
EDAM11	5.164	1.68	5y-EDAM11	-89.039
EDAU11	5.264	1.78	5y-EDAU11	-86.830

Price = Outright Decimal Price - Euro Contract Price

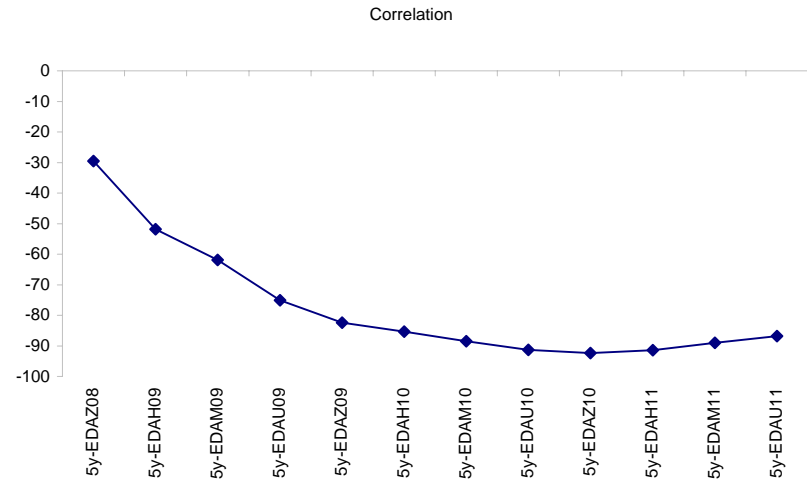
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.169	4.56	4.39	5y-EDAZ08
EDAH09	0.419	4.56	4.14	5y-EDAH09
EDAM09	0.668	4.56	3.89	5y-EDAM09
EDAU09	0.917	4.56	3.64	5y-EDAU09
EDAZ09	1.166	4.56	3.39	5y-EDAZ09
EDAH10	1.416	4.56	3.14	5y-EDAH10
EDAM10	1.665	4.56	2.89	5y-EDAM10
EDAU10	1.914	4.56	2.64	5y-EDAU10
EDAZ10	2.164	4.56	2.39	5y-EDAZ10
EDAH11	2.413	4.56	2.15	5y-EDAH11
EDAM11	2.662	4.56	1.90	5y-EDAM11
EDAU11	2.931	4.56	1.63	5y-EDAU11

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

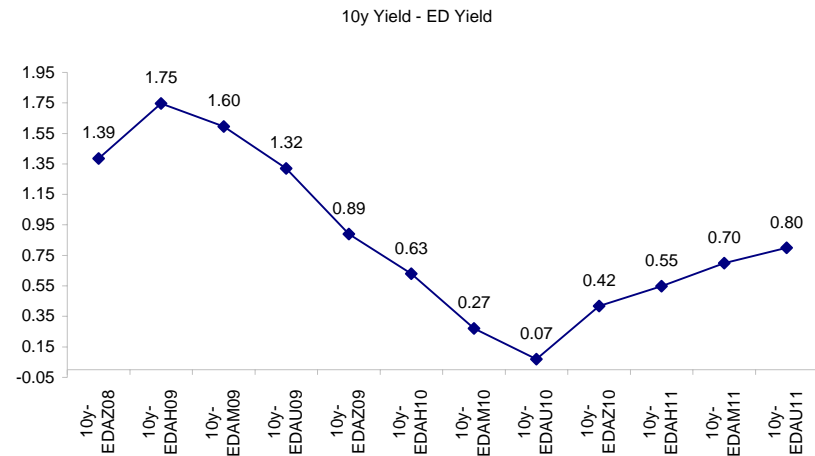


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.079	1.39	10y-EDAZ08	0.724
EDAH09	2.719	1.75	10y-EDAH09	-23.333
EDAM09	2.869	1.60	10y-EDAM09	-32.639
EDAU09	3.144	1.32	10y-EDAU09	-49.307
EDAZ09	3.574	0.89	10y-EDAZ09	-59.191
EDAH10	3.834	0.63	10y-EDAH10	-65.299
EDAM10	4.194	0.27	10y-EDAM10	-73.838
EDAU10	4.534	0.07	10y-EDAU10	-82.282
EDAZ10	4.884	0.42	10y-EDAZ10	-92.140
EDAH11	5.014	0.55	10y-EDAH11	-95.562
EDAM11	5.164	0.70	10y-EDAM11	-97.745
EDAU11	5.264	0.80	10y-EDAU11	-98.462

Price = Outright Decimal Price - Euro Contract Price

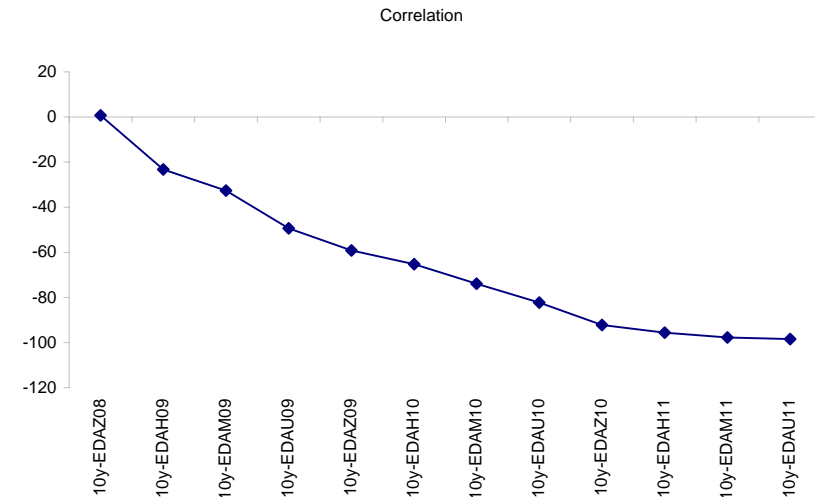
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.169	8.01	7.84	10y-EDAZ08
EDAH09	0.419	8.01	7.59	10y-EDAH09
EDAM09	0.668	8.01	7.34	10y-EDAM09
EDAU09	0.917	8.01	7.10	10y-EDAU09
EDAZ09	1.166	8.01	6.85	10y-EDAZ09
EDAH10	1.416	8.01	6.60	10y-EDAH10
EDAM10	1.665	8.01	6.35	10y-EDAM10
EDAU10	1.914	8.01	6.10	10y-EDAU10
EDAZ10	2.164	8.01	5.85	10y-EDAZ10
EDAH11	2.413	8.01	5.60	10y-EDAH11
EDAM11	2.662	8.01	5.35	10y-EDAM11
EDAU11	2.931	8.01	5.08	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.

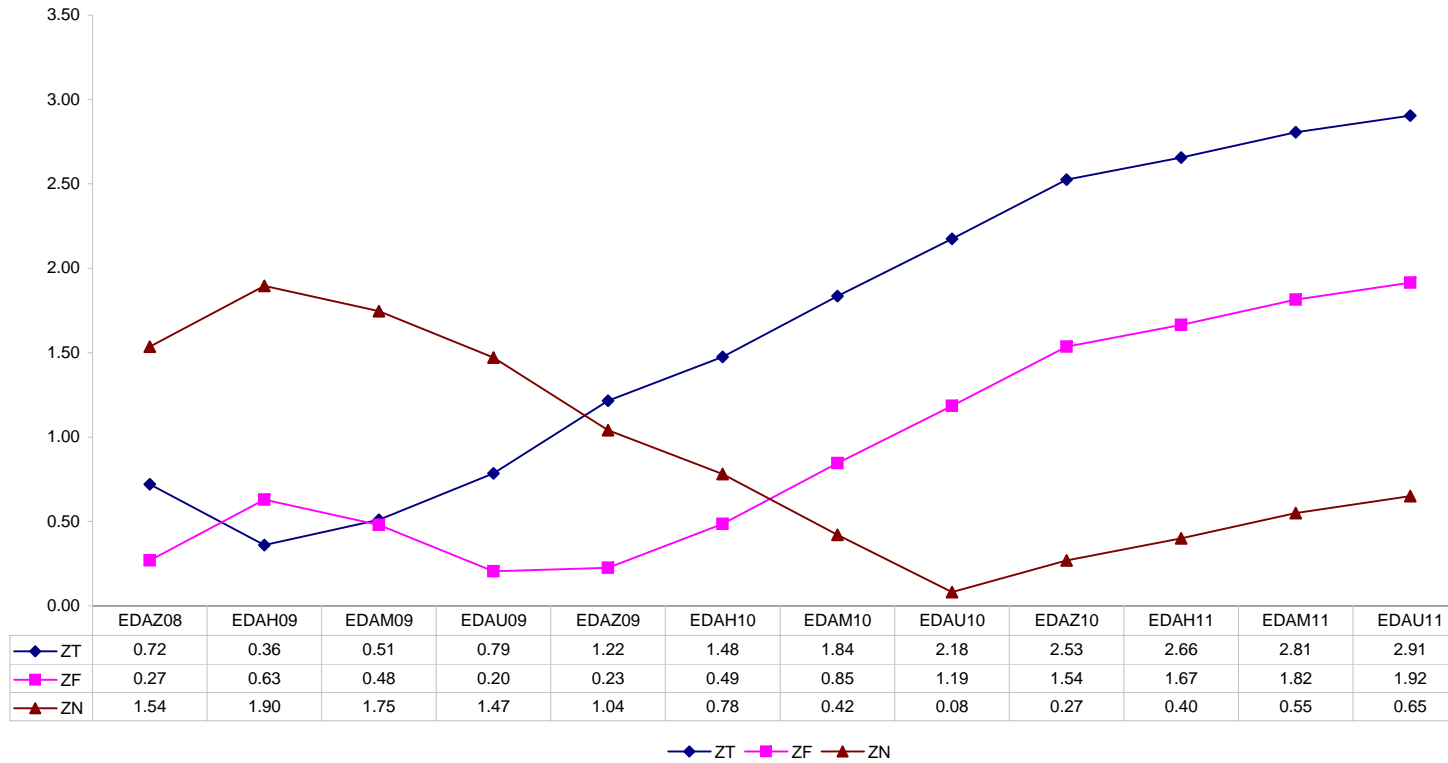
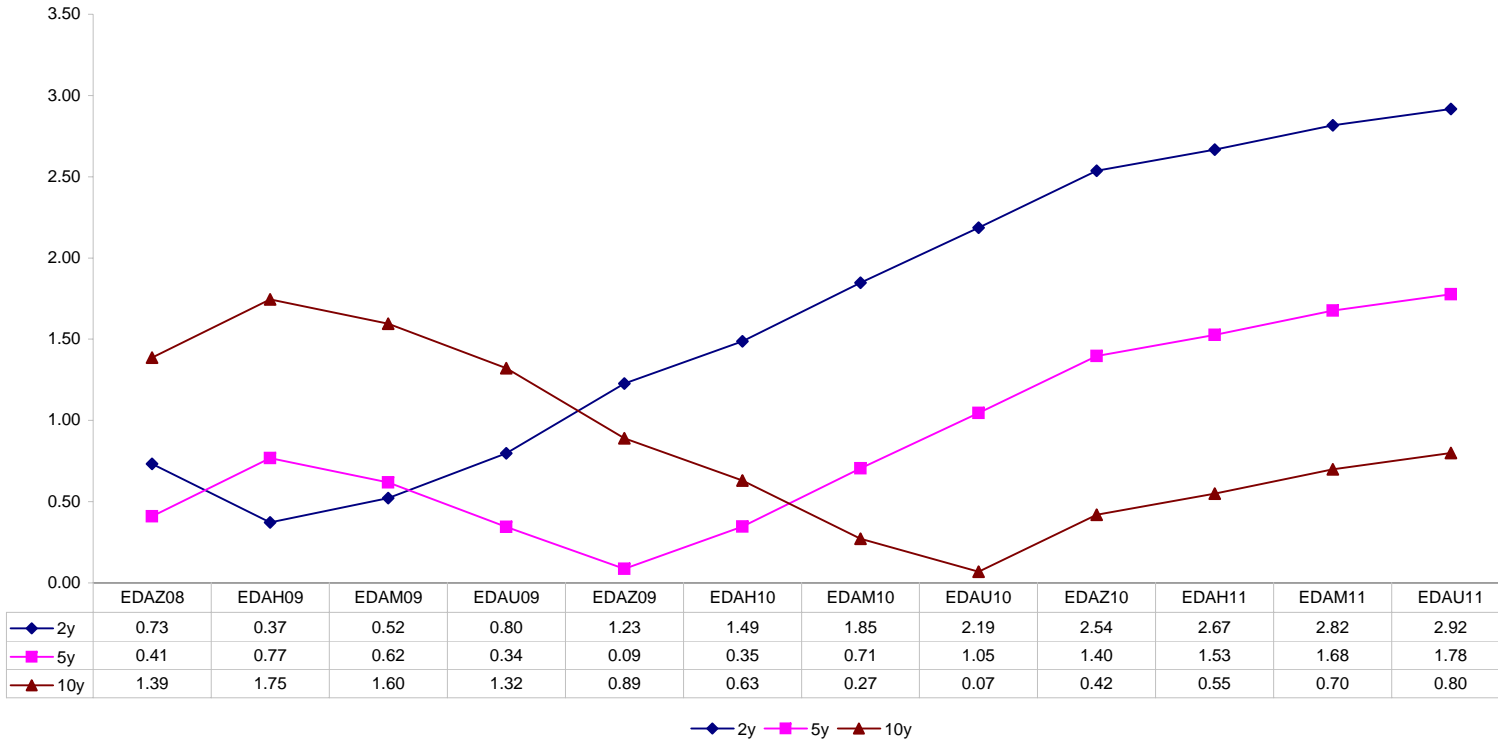
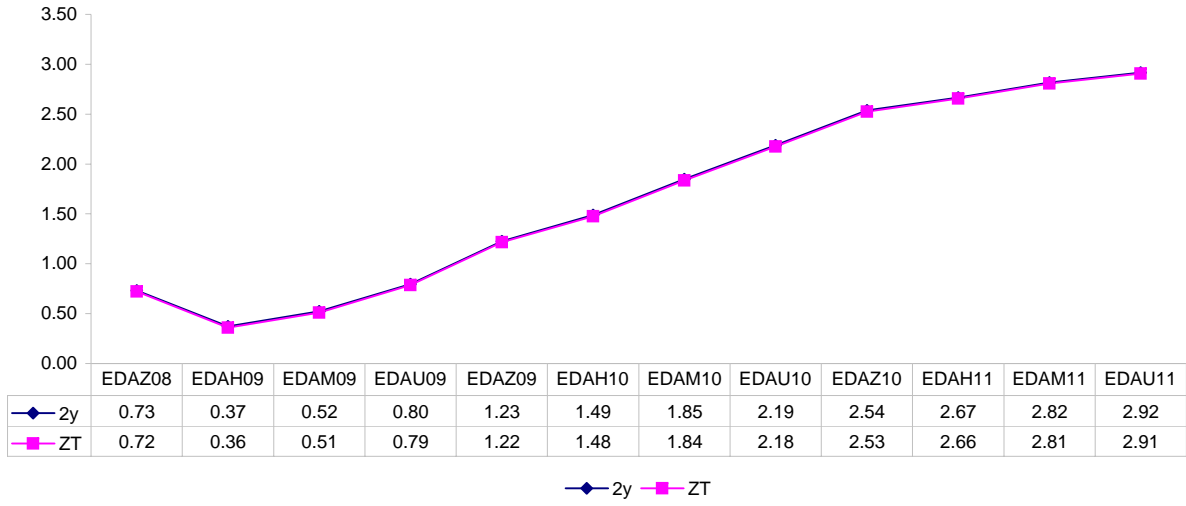


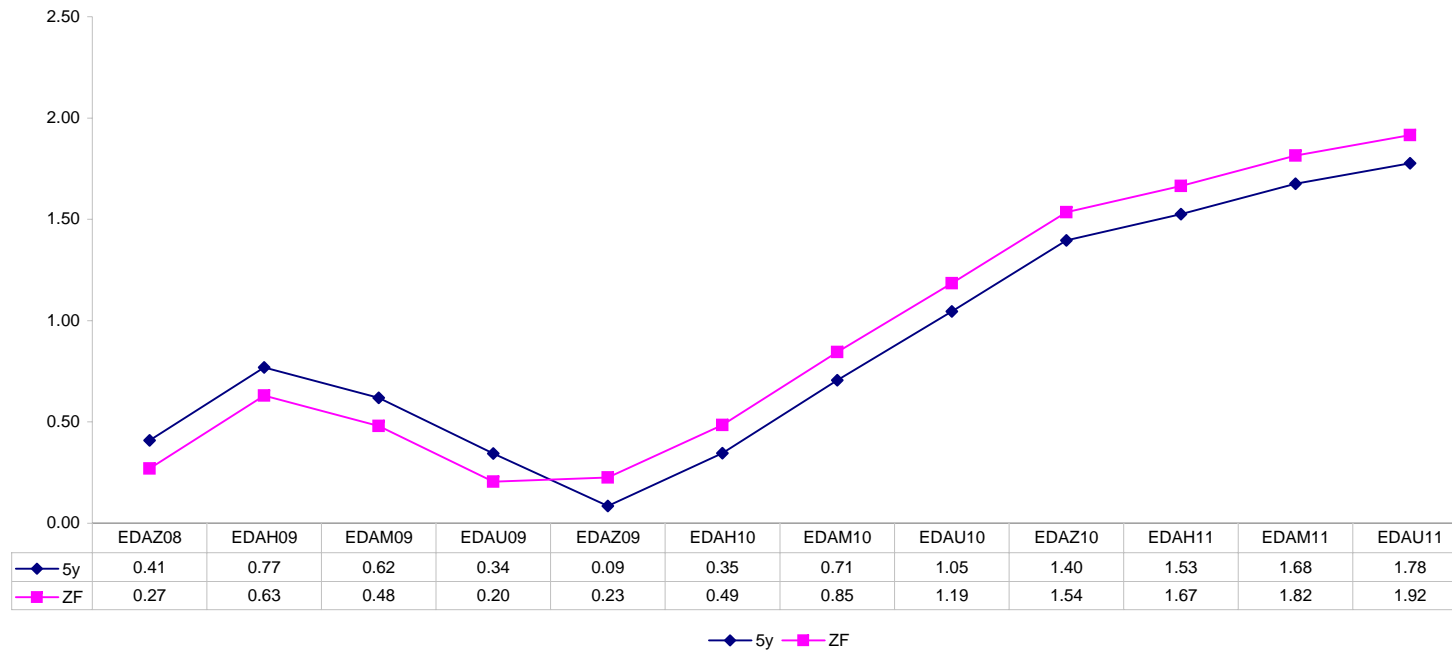
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



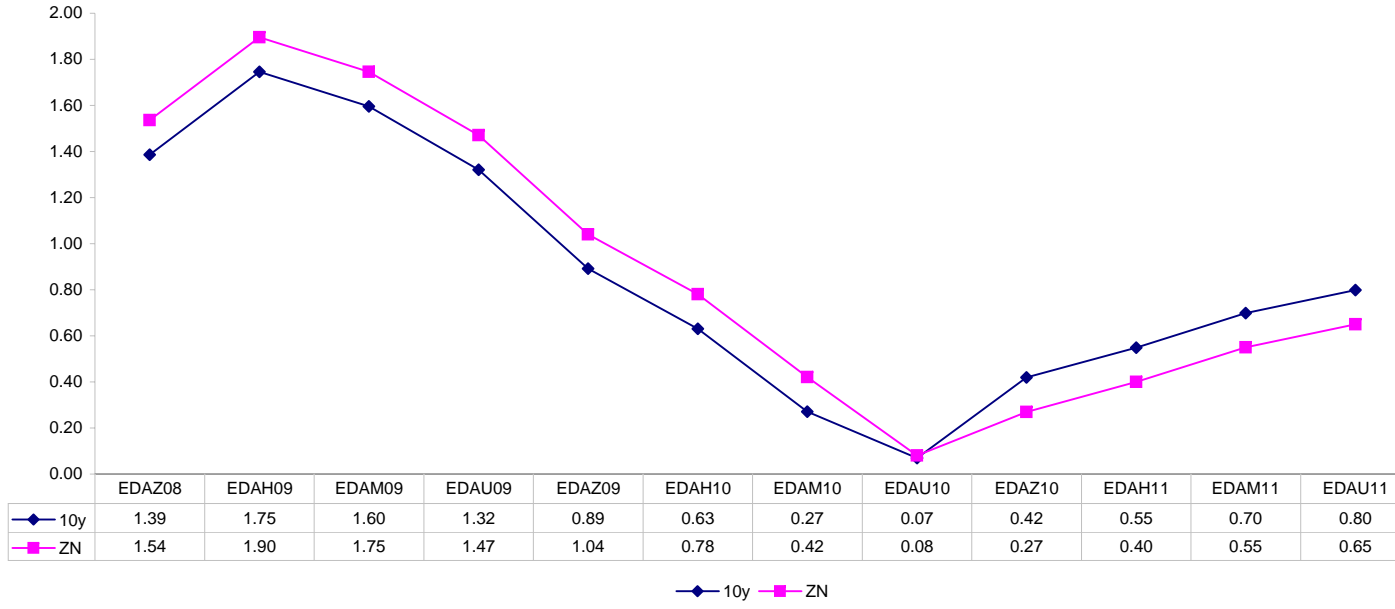
2y Basis TED Curve



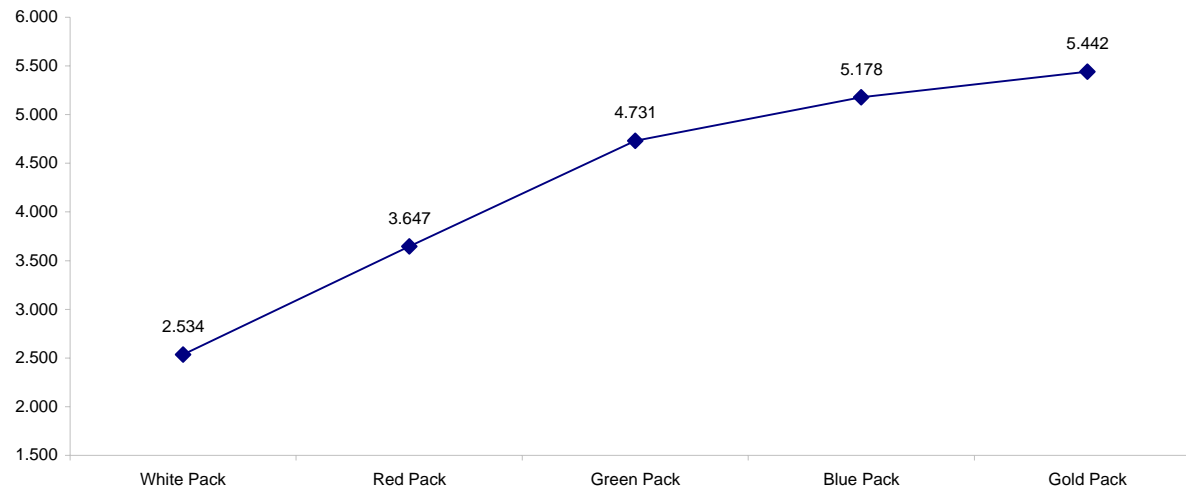
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.534	4.500	9751.625
Red Pack	3.647	-22.750	9643.500
Green Pack	4.731	-16.250	9538.750
Blue Pack	5.178	-24.500	9495.750
Gold Pack	5.442	-20.625	9470.375



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

