

## **The Morning Email: TERM TEDS & Dirty TEDS**

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Want something added? Let me know: [jgoulding@ghco.com](mailto:jgoulding@ghco.com)

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Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	107.8969	107.2870	1.167	1.885
ZF	113.9438	113.3020	2.475	4.201
ZN	115.1719	115.0550	3.300	5.823
2y	99.8813	99.2820	1.184	1.972
5y	99.5375	99.1720	2.724	4.606
10y	95.4063	95.1300	3.684	8.357

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU09	99.3050	0.695	81	0.2213	SEP	
EDAZ09	99.0750	0.925	172	0.4706	DEC	White Pack
EDAH10	98.7900	1.210	263	0.7199	MAR	Pack
EDAM10	98.3900	1.610	354	0.9692	JUN	
EDAU10	97.9850	2.015	445	1.2185	SEP	
EDAZ10	97.5550	2.445	536	1.4678	DEC	Red Pack
EDAH11	97.1800	2.820	627	1.7171	MAR	Pack
EDAM11	96.8100	3.190	718	1.9665	JUN	
EDAU11	96.5000	3.500	816	2.2350	SEP	
EDAZ11	96.2000	3.800	907	2.4843	DEC	Green Pack
EDAH12	95.9950	4.005	998	2.7336	MAR	Pack
EDAM12	95.8050	4.195	1,089	2.9829	JUN	
EDAU12	95.6550	4.345	1,180	3.2322	SEP	
EDAZ12	95.5250	4.475	1,271	3.4815	DEC	Blue Pack
EDAH13	95.4100	4.590	1,362	3.7308	MAR	Pack
EDAM13	95.3350	4.665	1,453	3.9802	JUN	
EDAU13	95.2600	4.740	1,544	4.2295	SEP	
EDAZ13	95.1100	4.890	1,635	4.4788	DEC	Gold Pack
EDAH14	95.0500	4.950	1,726	4.7281	MAR	Pack
EDAM14	95.0150	4.985	1,817	4.9774	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	1.129	1.875	9889.00	
Red Pack	2.672	0.250	9738.25	Pack Prices
Green Pack	3.967	-0.375	9612.50	
Blue Pack	4.634	-0.125	9548.13	
Gold Pack	5.021	-1.375	9510.88	

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.

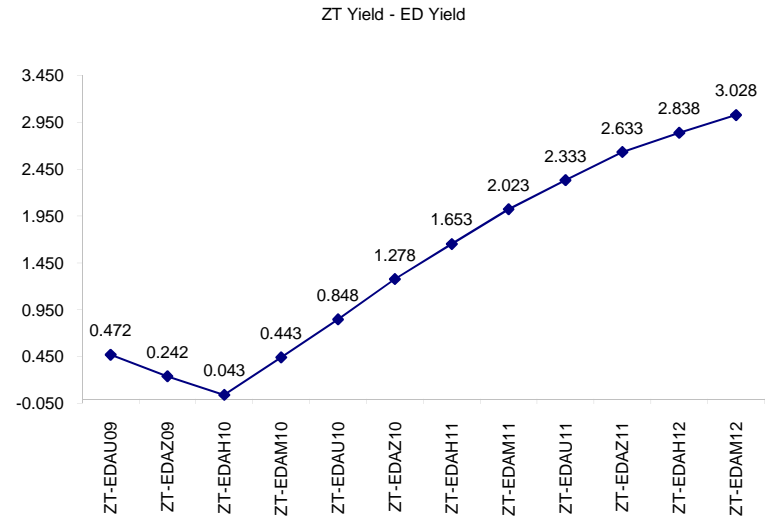
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

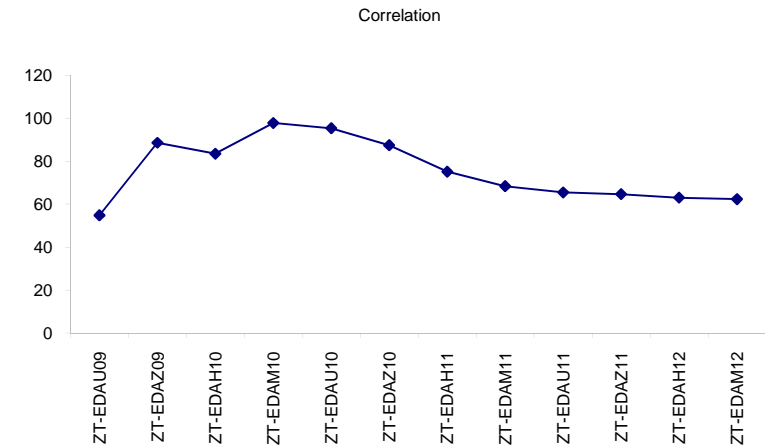
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU09	8.59	0.472	ZT-EDAU09	55
EDAZ09	8.82	0.242	ZT-EDAZ09	89
EDAH10	9.11	0.043	ZT-EDAH10	83
EDAM10	9.51	0.443	ZT-EDAM10	98
EDAU10	9.91	0.848	ZT-EDAU10	95
EDAZ10	10.34	1.278	ZT-EDAZ10	87
EDAH11	10.72	1.653	ZT-EDAH11	75
EDAM11	11.09	2.023	ZT-EDAM11	68
EDAU11	11.40	2.333	ZT-EDAU11	65
EDAZ11	11.70	2.633	ZT-EDAZ11	65
EDAH12	11.90	2.838	ZT-EDAH12	63
EDAM12	12.09	3.028	ZT-EDAM12	62

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	
EDAU09	0.2213	1.8846	1.6634	ZT-EDAU09		
EDAZ09	0.4706	1.8846	1.4141	ZT-EDAZ09		
EDAH10	0.7199	1.8846	1.1647	ZT-EDAH10		
EDAM10	0.9692	1.8846	0.9154	ZT-EDAM10		
EDAU10	1.2185	1.8846	0.6661	ZT-EDAU10		
EDAZ10	1.4678	1.8846	0.4168	ZT-EDAZ10		
EDAH11	1.7171	1.8846	0.1675	ZT-EDAH11		
EDAM11	1.9665	1.8846	-0.0818	ZT-EDAM11		
EDAU11	2.2350	1.8846	-0.3503	ZT-EDAU11		
EDAZ11	2.4843	1.8846	-0.5996	ZT-EDAZ11		
EDAH12	2.7336	1.8846	-0.8489	ZT-EDAH12		
EDAM12	2.9829	1.8846	-1.0983	ZT-EDAM12		

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

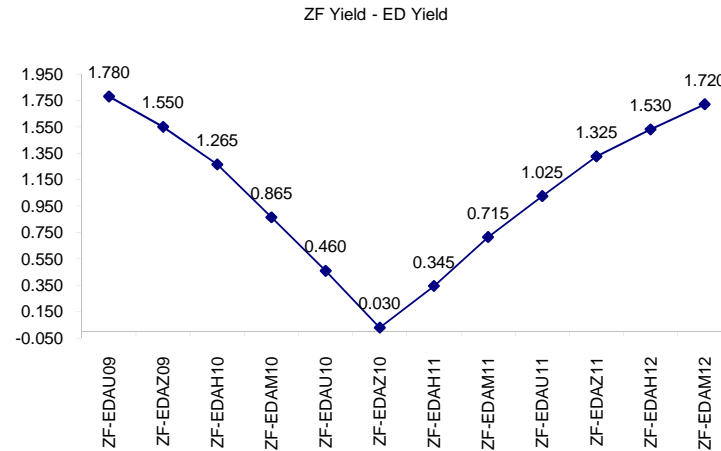


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU09	14.64	1.780	ZF-EDAU09	76
EDAZ09	14.87	1.550	ZF-EDAZ09	81
EDAH10	15.15	1.265	ZF-EDAH10	58
EDAM10	15.55	0.865	ZF-EDAM10	92
EDAU10	15.96	0.460	ZF-EDAU10	96
EDAZ10	16.39	0.030	ZF-EDAZ10	97
EDAH11	16.76	0.345	ZF-EDAH11	94
EDAM11	17.13	0.715	ZF-EDAM11	91
EDAU11	17.44	1.025	ZF-EDAU11	89
EDAZ11	17.74	1.325	ZF-EDAZ11	88
EDAH12	17.95	1.530	ZF-EDAH12	86
EDAM12	18.14	1.720	ZF-EDAM12	85

Price = Outright Decimal Price - Euro Contract Price

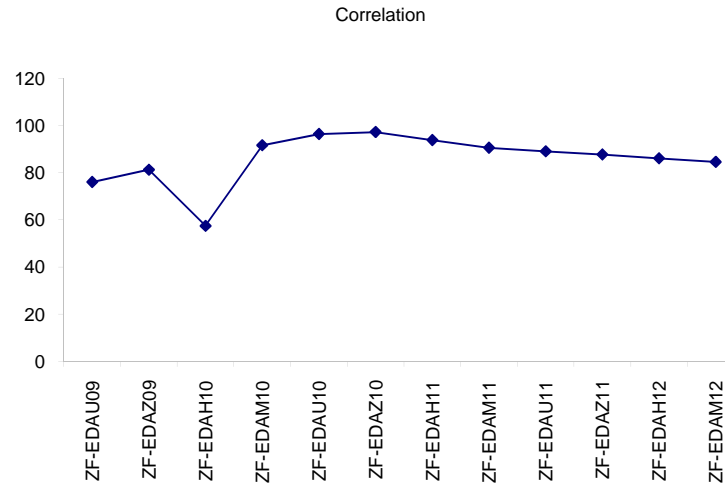
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



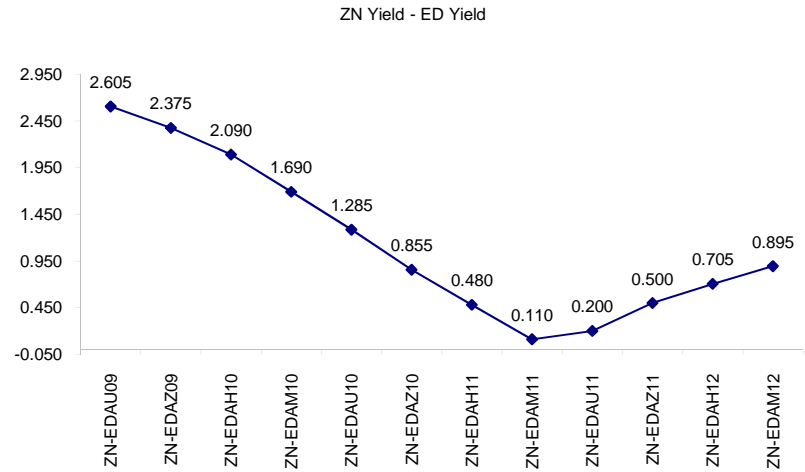
	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAU09	0.2213	4.2006	3.9794	ZF-EDAU09	
EDAZ09	0.4706	4.2006	3.7300	ZF-EDAZ09	
EDAH10	0.7199	4.2006	3.4807	ZF-EDAH10	
EDAM10	0.9692	4.2006	3.2314	ZF-EDAM10	
EDAU10	1.2185	4.2006	2.9821	ZF-EDAU10	
EDAZ10	1.4678	4.2006	2.7328	ZF-EDAZ10	
EDAH11	1.7171	4.2006	2.4835	ZF-EDAH11	
EDAM11	1.9665	4.2006	2.2342	ZF-EDAM11	
EDAU11	2.2350	4.2006	1.9657	ZF-EDAU11	
EDAZ11	2.4843	4.2006	1.7163	ZF-EDAZ11	
EDAH12	2.7336	4.2006	1.4670	ZF-EDAH12	
EDAM12	2.9829	4.2006	1.2177	ZF-EDAM12	

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



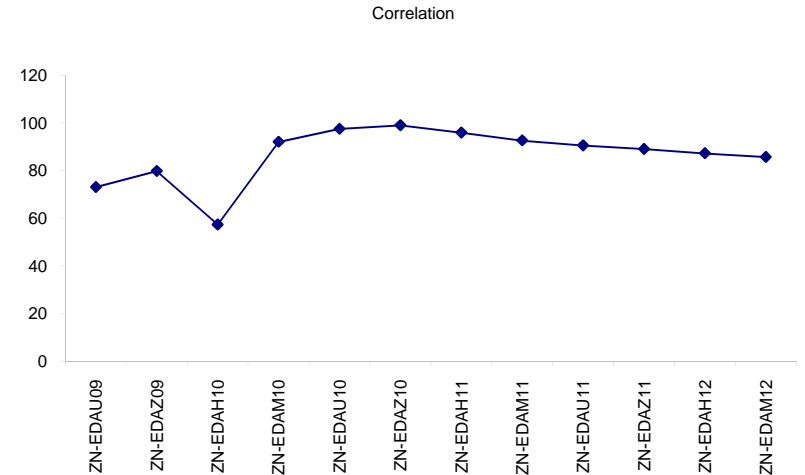
	ZN			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAU09	15.87	2.605	ZN-EDAU09	73
EDAZ09	16.10	2.375	ZN-EDAZ09	80
EDAH10	16.38	2.090	ZN-EDAH10	57
EDAM10	16.78	1.690	ZN-EDAM10	92
EDAU10	17.19	1.285	ZN-EDAU10	97
EDAZ10	17.62	0.855	ZN-EDAZ10	99
EDAH11	17.99	0.480	ZN-EDAH11	96
EDAM11	18.36	0.110	ZN-EDAM11	93
EDAU11	18.67	0.200	ZN-EDAU11	91
EDAZ11	18.97	0.500	ZN-EDAZ11	89
EDAH12	19.18	0.705	ZN-EDAH12	87
EDAM12	19.37	0.895	ZN-EDAM12	86

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			ZN Duration	Spread Duration
	Fraction of year	ZN Duration	Spread Duration		
EDAU09	0.2213	5.8234	5.6022	ZN-EDAU09	
EDAZ09	0.4706	5.8234	5.3529	ZN-EDAZ09	
EDAH10	0.7199	5.8234	5.1035	ZN-EDAH10	
EDAM10	0.9692	5.8234	4.8542	ZN-EDAM10	
EDAU10	1.2185	5.8234	4.6049	ZN-EDAU10	
EDAZ10	1.4678	5.8234	4.3556	ZN-EDAZ10	
EDAH11	1.7171	5.8234	4.1063	ZN-EDAH11	
EDAM11	1.9665	5.8234	3.8570	ZN-EDAM11	
EDAU11	2.2350	5.8234	3.5885	ZN-EDAU11	
EDAZ11	2.4843	5.8234	3.3392	ZN-EDAZ11	
EDAH12	2.7336	5.8234	3.0898	ZN-EDAH12	
EDAM12	2.9829	5.8234	2.8405	ZN-EDAM12	

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	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU09	0.58	0.489	2y-EDAU09	-33
EDAZ09	0.81	0.259	2y-EDAZ09	-66
EDAH10	1.09	0.026	2y-EDAH10	-61
EDAM10	1.49	0.426	2y-EDAM10	-83
EDAU10	1.90	0.831	2y-EDAU10	-84
EDAZ10	2.33	1.261	2y-EDAZ10	-81
EDAH11	2.70	1.636	2y-EDAH11	-73
EDAM11	3.07	2.006	2y-EDAM11	-68
EDAU11	3.38	2.316	2y-EDAU11	-65
EDAZ11	3.68	2.616	2y-EDAZ11	-64
EDAH12	3.89	2.821	2y-EDAH12	-62
EDAM12	4.08	3.011	2y-EDAM12	-61

Price = Outright Decimal Price - Euro Contract Price

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

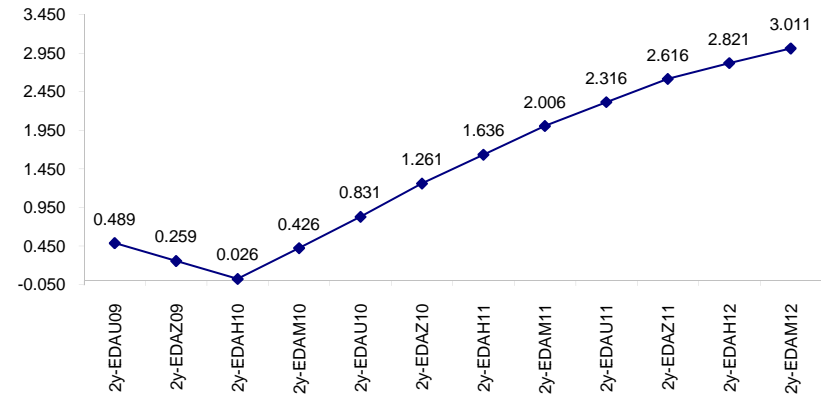
\*Correlation = ED Correlation to Treasury Future over 10 days.

ED Duration as

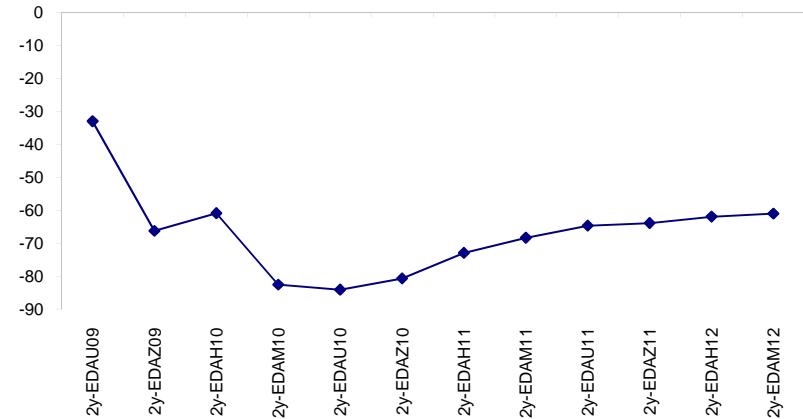
	Fraction of year	2Y Duration	Spread Duration	
EDAU09	0.2213	1.9715	1.7503	2y-EDAU09
EDAZ09	0.4706	1.9715	1.5010	2y-EDAZ09
EDAH10	0.7199	1.9715	1.2517	2y-EDAH10
EDAM10	0.9692	1.9715	1.0023	2y-EDAM10
EDAU10	1.2185	1.9715	0.7530	2y-EDAU10
EDAZ10	1.4678	1.9715	0.5037	2y-EDAZ10
EDAH11	1.7171	1.9715	0.2544	2y-EDAH11
EDAM11	1.9665	1.9715	0.0051	2y-EDAM11
EDAU11	2.2350	1.9715	-0.2634	2y-EDAU11
EDAZ11	2.4843	1.9715	-0.5127	2y-EDAZ11
EDAH12	2.7336	1.9715	-0.7620	2y-EDAH12
EDAM12	2.9829	1.9715	-1.0114	2y-EDAM12

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ZT Yield - ED Yield



Correlation

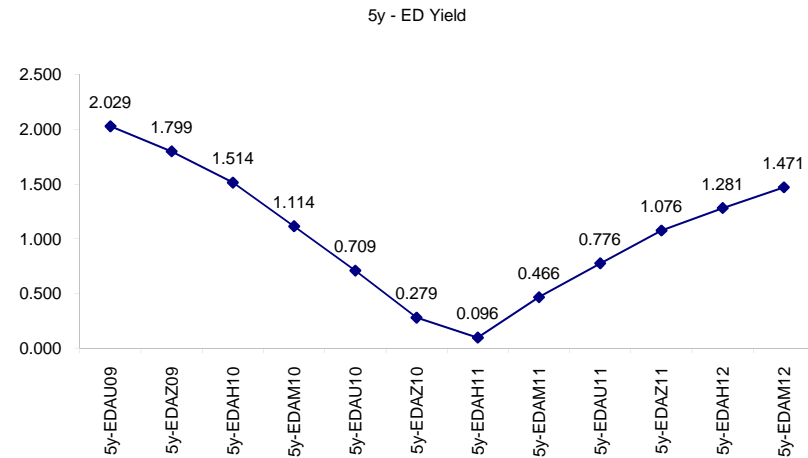


5y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU09	0.23	2.029	5y-EDAU09	-65
EDAZ09	0.46	1.799	5y-EDAZ09	-60
EDAH10	0.75	1.514	5y-EDAH10	-35
EDAM10	1.15	1.114	5y-EDAM10	-77
EDAU10	1.55	0.709	5y-EDAU10	-87
EDAZ10	1.98	0.279	5y-EDAZ10	-95
EDAH11	2.36	0.096	5y-EDAH11	-98
EDAM11	2.73	0.466	5y-EDAM11	-97
EDAU11	3.04	0.776	5y-EDAU11	-96
EDAZ11	3.34	1.076	5y-EDAZ11	-95
EDAH12	3.54	1.281	5y-EDAH12	-93
EDAM12	3.73	1.471	5y-EDAM12	-92

Price = Outright Decimal Price - Euro Contract Price

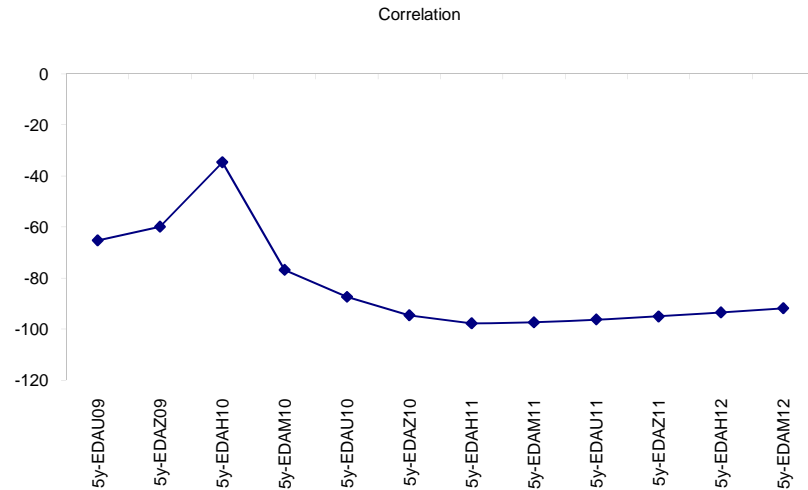
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				5Y Duration	Spread Duration	
EDAU09	0.2213	4.6062	4.3849	5y-EDAU09		
EDAZ09	0.4706	4.6062	4.1356	5y-EDAZ09		
EDAH10	0.7199	4.6062	3.8863	5y-EDAH10		
EDAM10	0.9692	4.6062	3.6370	5y-EDAM10		
EDAU10	1.2185	4.6062	3.3877	5y-EDAU10		
EDAZ10	1.4678	4.6062	3.1384	5y-EDAZ10		
EDAH11	1.7171	4.6062	2.8890	5y-EDAH11		
EDAM11	1.9665	4.6062	2.6397	5y-EDAM11		
EDAU11	2.2350	4.6062	2.3712	5y-EDAU11		
EDAZ11	2.4843	4.6062	2.1219	5y-EDAZ11		
EDAH12	2.7336	4.6062	1.8726	5y-EDAH12		
EDAM12	2.9829	4.6062	1.6233	5y-EDAM12		

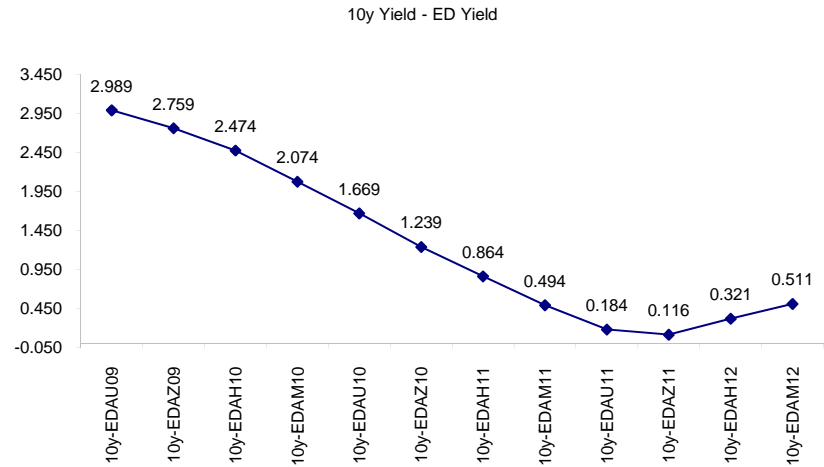
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	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU09	0.23	2.989	10y-EDAU09	-71
EDAZ09	0.46	2.759	10y-EDAZ09	-74
EDAH10	0.75	2.474	10y-EDAH10	-52
EDAM10	1.15	2.074	10y-EDAM10	-85
EDAU10	1.55	1.669	10y-EDAU10	-90
EDAZ10	1.98	1.239	10y-EDAZ10	-92
EDAH11	2.36	0.864	10y-EDAH11	-90
EDAM11	2.73	0.494	10y-EDAM11	-87
EDAU11	3.04	0.184	10y-EDAU11	-85
EDAZ11	3.34	0.116	10y-EDAZ11	-84
EDAH12	3.54	0.321	10y-EDAH12	-82
EDAM12	3.73	0.511	10y-EDAM12	-80

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		
EDAU09	0.2213	8.3574	8.1362	10y-EDAU09
EDAZ09	0.4706	8.3574	7.8868	10y-EDAZ09
EDAH10	0.7199	8.3574	7.6375	10y-EDAH10
EDAM10	0.9692	8.3574	7.3882	10y-EDAM10
EDAU10	1.2185	8.3574	7.1389	10y-EDAU10
EDAZ10	1.4678	8.3574	6.8896	10y-EDAZ10
EDAH11	1.7171	8.3574	6.6403	10y-EDAH11
EDAM11	1.9665	8.3574	6.3909	10y-EDAM11
EDAU11	2.2350	8.3574	6.1225	10y-EDAU11
EDAZ11	2.4843	8.3574	5.8731	10y-EDAZ11
EDAH12	2.7336	8.3574	5.6238	10y-EDAH12
EDAM12	2.9829	8.3574	5.3745	10y-EDAM12

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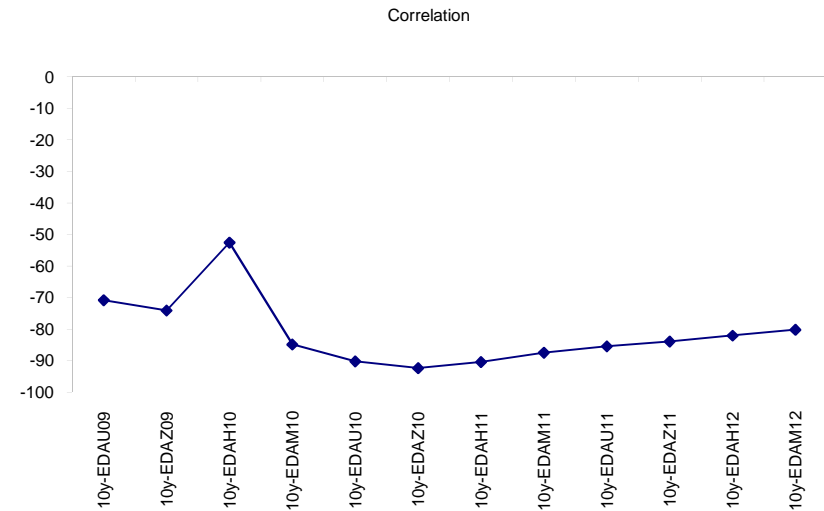


Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.

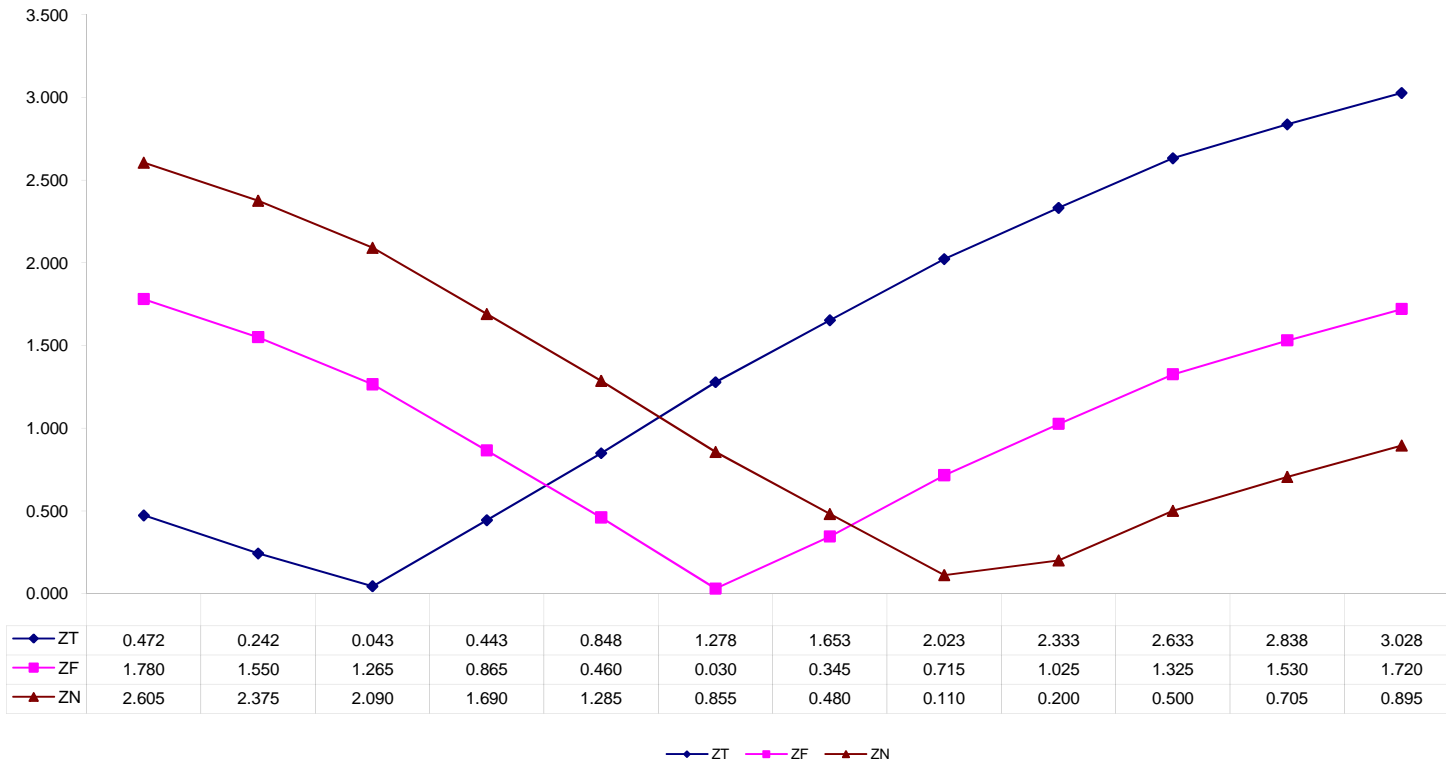
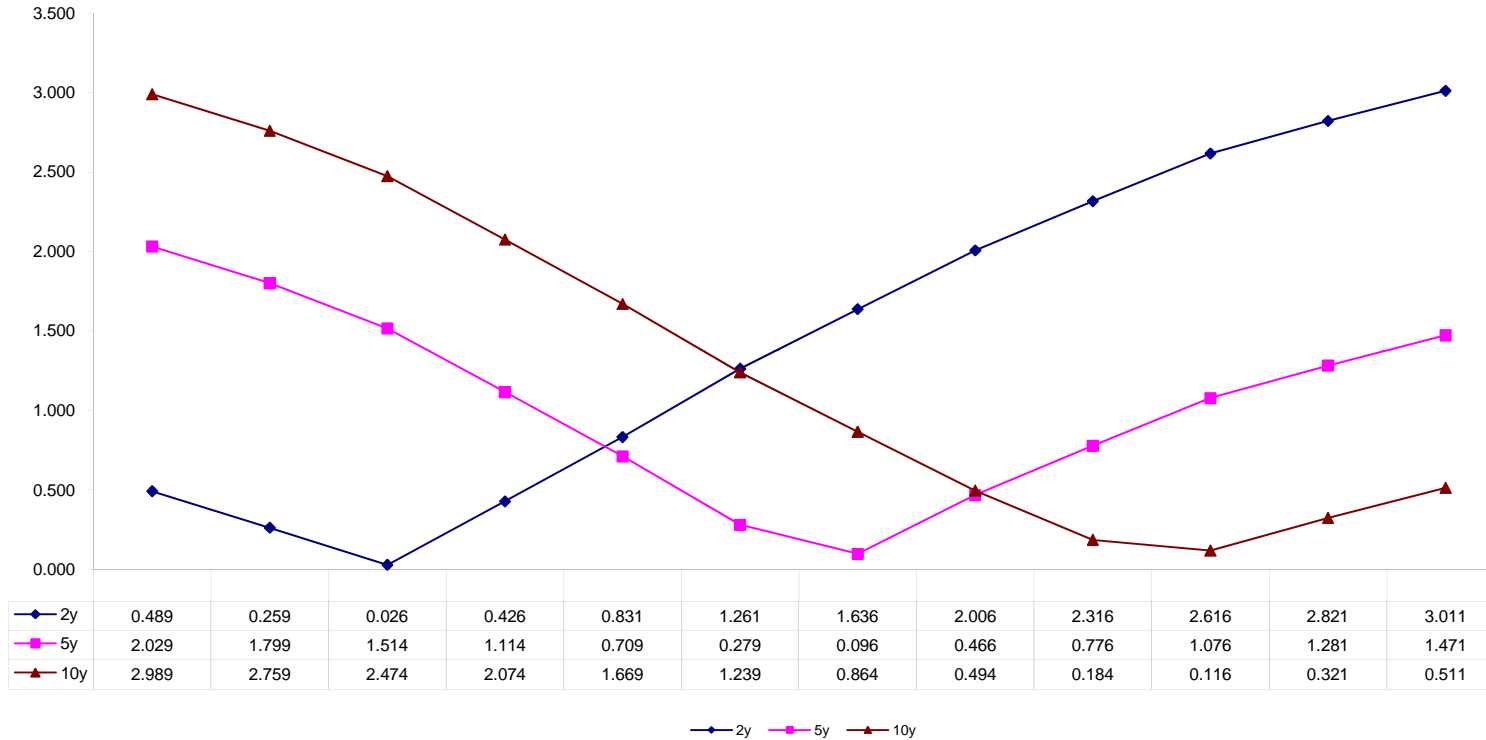
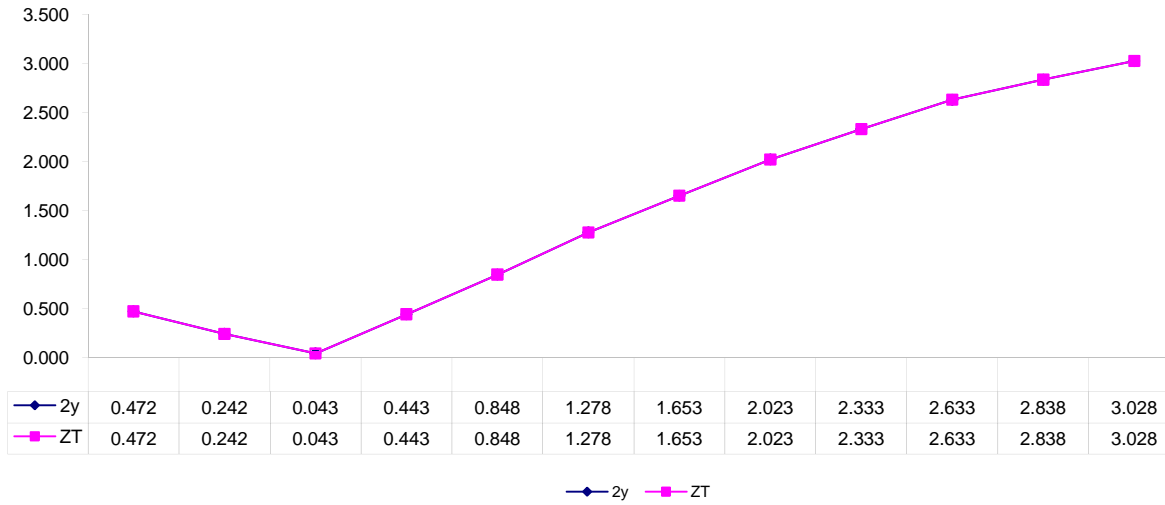
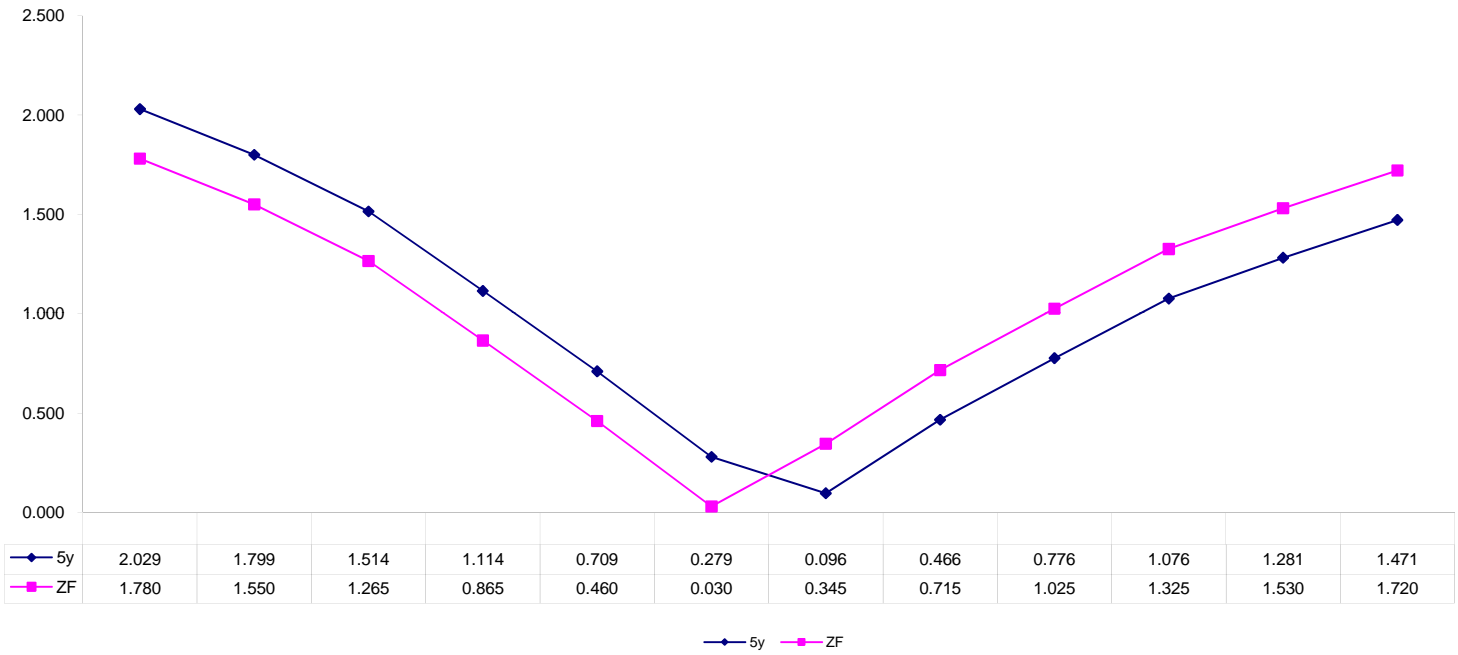


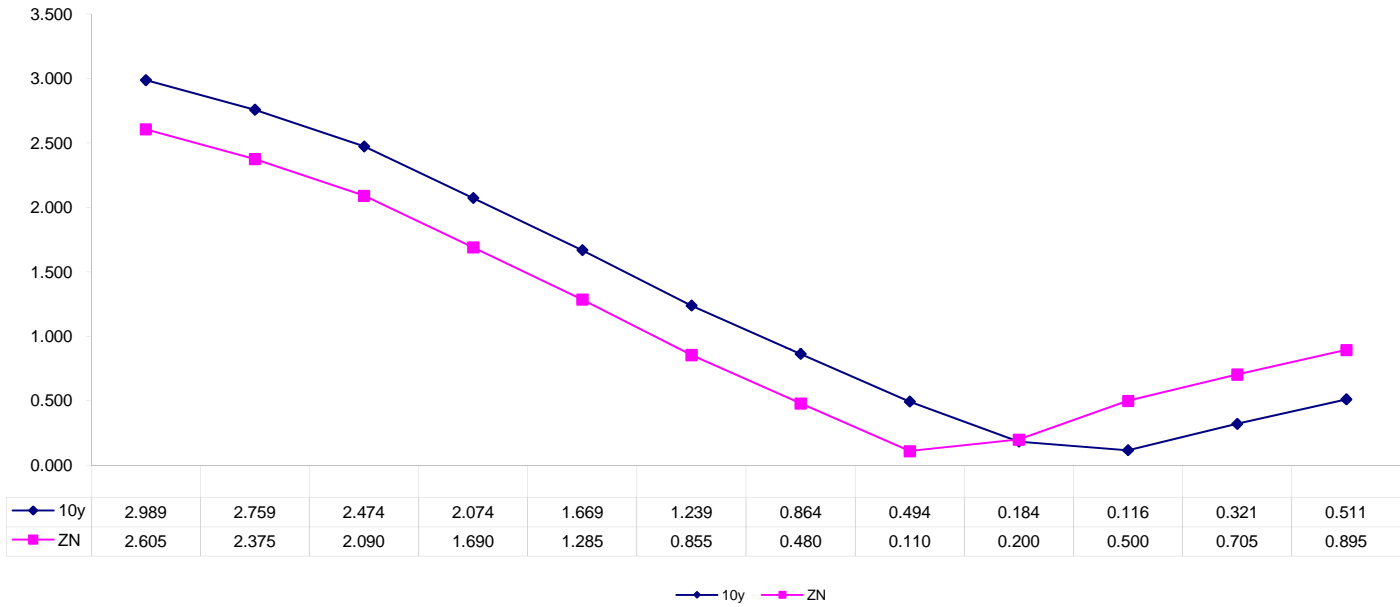
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



2y Basis TED Curve







	Last Yield	Net Last Yield	Last Price
White Pack	1.129	1.875	9889.0000
Red Pack	2.672	0.250	9738.2500
Green Pack	3.967	-0.375	9612.5000
Blue Pack	4.634	-0.125	9548.1250
Gold Pack	5.021	-1.375	9510.8750

