

## **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	108.7406	108.2370	0.849	1.847
ZF	117.7094	117.2270	1.673	4.046
ZN	122.2031	122.0650	2.515	5.904
2y	99.9219	99.2950	0.912	1.972
5y	99.4594	99.1470	1.863	4.686
10y	98.4531	98.1450	2.933	8.473

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAM09	98.9950	1.005	48	0.1304	JUN	
EDAU09	98.9450	1.055	139	0.3797	SEP	White Pack
EDAZ09	98.7500	1.250	230	0.6290	DEC	
EDAH10	98.6350	1.365	321	0.8784	MAR	
EDAM10	98.4150	1.585	412	1.1277	JUN	
EDAU10	98.1900	1.810	503	1.3770	SEP	Red Pack
EDAZ10	97.9250	2.075	594	1.6263	DEC	
EDAH11	97.7150	2.285	685	1.8756	MAR	
EDAM11	97.4800	2.520	776	2.1249	JUN	
EDAU11	97.2700	2.730	874	2.3934	SEP	Green Pack
EDAZ11	97.0650	2.935	965	2.6427	DEC	
EDAH12	96.9400	3.060	1,056	2.8920	MAR	
EDAM12	96.8200	3.180	1,147	3.1414	JUN	
EDAU12	96.7250	3.275	1,238	3.3907	SEP	Blue Pack
EDAZ12	96.6050	3.395	1,329	3.6400	DEC	
EDAH13	96.5600	3.440	1,420	3.8893	MAR	
EDAM13	96.4900	3.510	1,511	4.1386	JUN	
EDAU13	96.4250	3.575	1,602	4.3879	SEP	Gold Pack
EDAZ13	96.3300	3.670	1,693	4.6373	DEC	
EDAH14	96.2850	3.715	1,784	4.8866	MAR	

	Last Yield	Net Yield	Last Price	
White Pack	1.189	-1.875	9883.13	
Red Pack	1.975	-0.250	9806.13	Pack Prices
Green Pack	2.871	-2.625	9718.88	
Blue Pack	3.397	-3.750	9667.75	
Gold Pack	3.701	-3.250	9638.25	

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)**

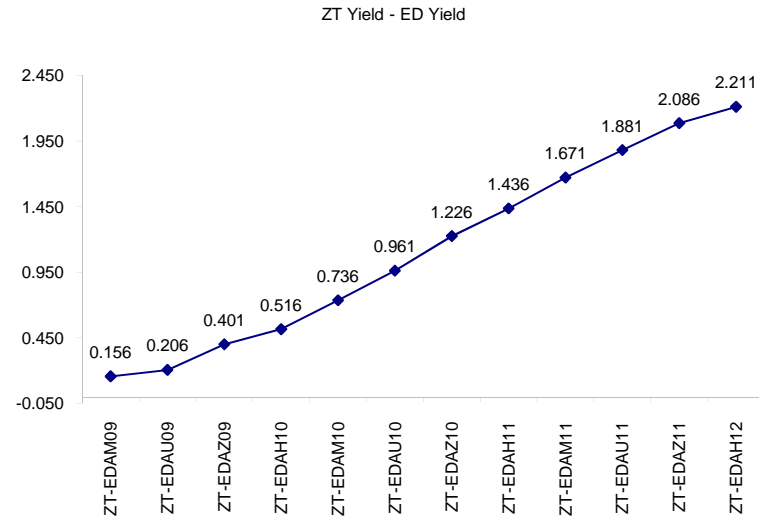
Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based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

	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	9.75	0.156	ZT-EDAM09	65
EDAU09	9.80	0.206	ZT-EDAU09	81
EDAZ09	9.99	0.401	ZT-EDAZ09	90
EDAH10	10.11	0.516	ZT-EDAH10	93
EDAM10	10.33	0.736	ZT-EDAM10	90
EDAU10	10.55	0.961	ZT-EDAU10	82
EDAZ10	10.82	1.226	ZT-EDAZ10	71
EDAH11	11.03	1.436	ZT-EDAH11	61
EDAM11	11.26	1.671	ZT-EDAM11	55
EDAU11	11.47	1.881	ZT-EDAU11	51
EDAZ11	11.68	2.086	ZT-EDAZ11	50
EDAH12	11.80	2.211	ZT-EDAH12	49

Price = Outright Decimal Price - Euro Contract Price

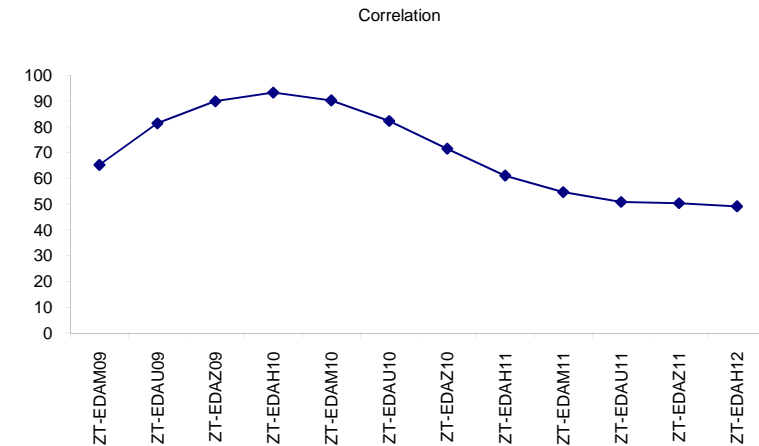
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			ZT Duration	Spread Duration	
EDAM09	0.1304	1.8472	1.7168	ZT-EDAM09		
EDAU09	0.3797	1.8472	1.4675	ZT-EDAU09		
EDAZ09	0.6290	1.8472	1.2182	ZT-EDAZ09		
EDAH10	0.8784	1.8472	0.9689	ZT-EDAH10		
EDAM10	1.1277	1.8472	0.7196	ZT-EDAM10		
EDAU10	1.3770	1.8472	0.4703	ZT-EDAU10		
EDAZ10	1.6263	1.8472	0.2210	ZT-EDAZ10		
EDAH11	1.8756	1.8472	-0.0284	ZT-EDAH11		
EDAM11	2.1249	1.8472	-0.2777	ZT-EDAM11		
EDAU11	2.3934	1.8472	-0.5462	ZT-EDAU11		
EDAZ11	2.6427	1.8472	-0.7955	ZT-EDAZ11		
EDAH12	2.8920	1.8472	-1.0448	ZT-EDAH12		

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



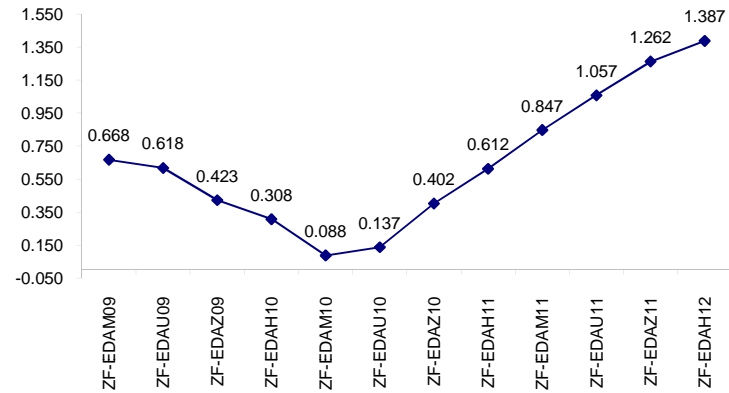
	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	18.71	0.668	ZF-EDAM09	21
EDAU09	18.76	0.618	ZF-EDAU09	49
EDAZ09	18.96	0.423	ZF-EDAZ09	63
EDAH10	19.07	0.308	ZF-EDAH10	77
EDAM10	19.29	0.088	ZF-EDAM10	88
EDAU10	19.52	0.137	ZF-EDAU10	94
EDAZ10	19.78	0.402	ZF-EDAZ10	96
EDAH11	19.99	0.612	ZF-EDAH11	95
EDAM11	20.23	0.847	ZF-EDAM11	94
EDAU11	20.44	1.057	ZF-EDAU11	93
EDAZ11	20.64	1.262	ZF-EDAZ11	93
EDAH12	20.77	1.387	ZF-EDAH12	93

Price = Outright Decimal Price - Euro Contract Price

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

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ZF Yield - ED Yield

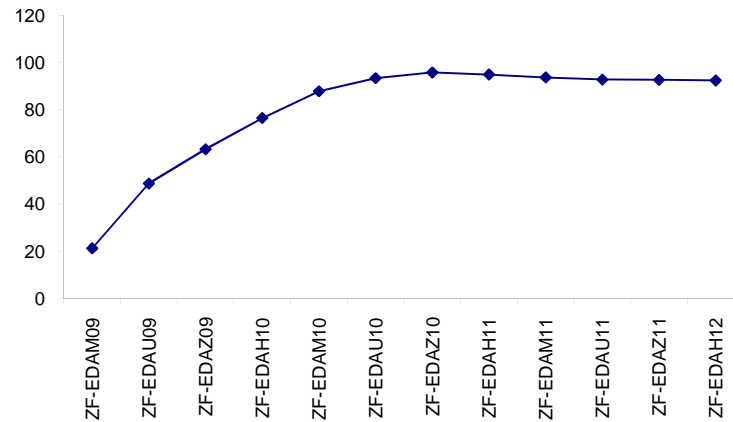


ED Duration as

	Fraction of year	ZF Duration	Spread Duration	
EDAM09	0.1304	4.0457	3.9153	ZF-EDAM09
EDAU09	0.3797	4.0457	3.6660	ZF-EDAU09
EDAZ09	0.6290	4.0457	3.4166	ZF-EDAZ09
EDAH10	0.8784	4.0457	3.1673	ZF-EDAH10
EDAM10	1.1277	4.0457	2.9180	ZF-EDAM10
EDAU10	1.3770	4.0457	2.6687	ZF-EDAU10
EDAZ10	1.6263	4.0457	2.4194	ZF-EDAZ10
EDAH11	1.8756	4.0457	2.1701	ZF-EDAH11
EDAM11	2.1249	4.0457	1.9208	ZF-EDAM11
EDAU11	2.3934	4.0457	1.6523	ZF-EDAU11
EDAZ11	2.6427	4.0457	1.4029	ZF-EDAZ11
EDAH12	2.8920	4.0457	1.1536	ZF-EDAH12

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

Correlation

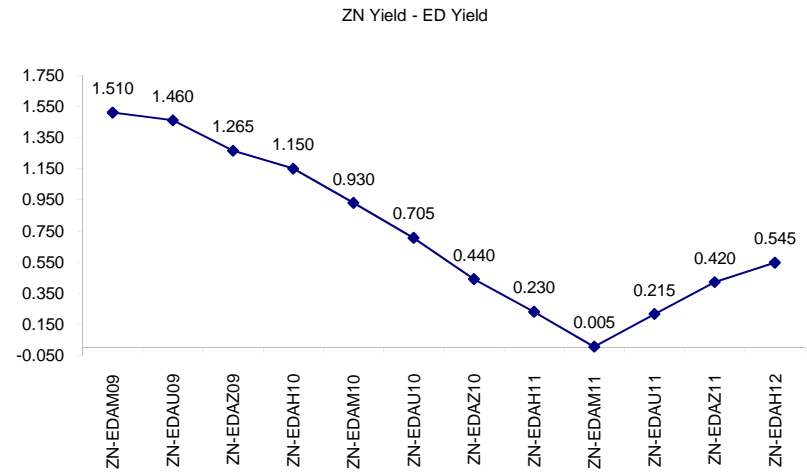


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	23.21	1.510	ZN-EDAM09	1
EDAU09	23.26	1.460	ZN-EDAU09	29
EDAZ09	23.45	1.265	ZN-EDAZ09	43
EDAH10	23.57	1.150	ZN-EDAH10	58
EDAM10	23.79	0.930	ZN-EDAM10	75
EDAU10	24.01	0.705	ZN-EDAU10	86
EDAZ10	24.28	0.440	ZN-EDAZ10	93
EDAH11	24.49	0.230	ZN-EDAH11	96
EDAM11	24.72	0.005	ZN-EDAM11	97
EDAU11	24.93	0.215	ZN-EDAU11	97
EDAZ11	25.14	0.420	ZN-EDAZ11	97
EDAH12	25.26	0.545	ZN-EDAH12	97

Price = Outright Decimal Price - Euro Contract Price

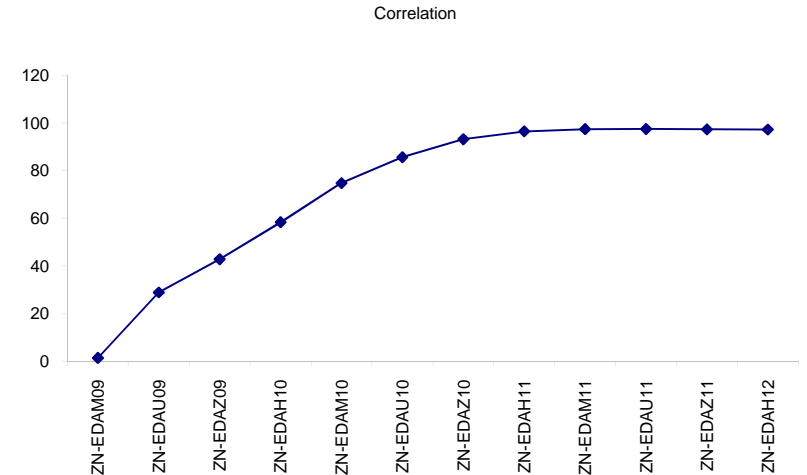
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



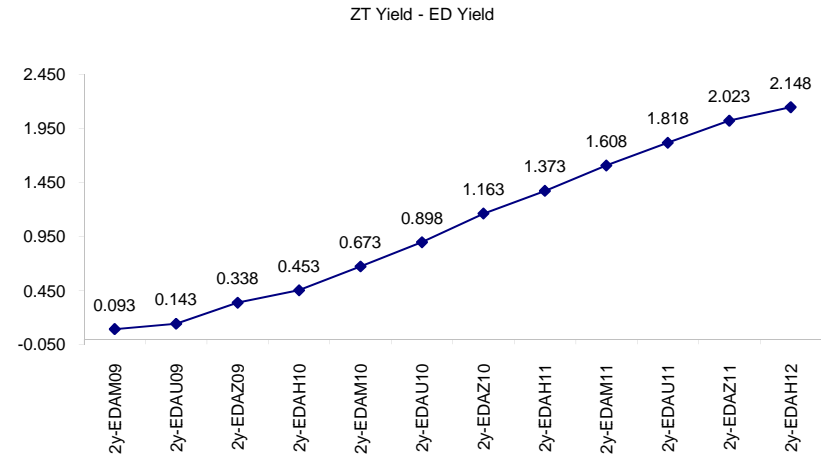
ED Duration as Fraction of year			
	Fraction of year	ZN Duration	Spread Duration
EDAM09	0.1304	5.9037	5.7733
EDAU09	0.3797	5.9037	5.5239
EDAZ09	0.6290	5.9037	5.2746
EDAH10	0.8784	5.9037	5.0253
EDAM10	1.1277	5.9037	4.7760
EDAU10	1.3770	5.9037	4.5267
EDAZ10	1.6263	5.9037	4.2774
EDAH11	1.8756	5.9037	4.0281
EDAM11	2.1249	5.9037	3.7787
EDAU11	2.3934	5.9037	3.5102
EDAZ11	2.6427	5.9037	3.2609
EDAH12	2.8920	5.9037	3.0116

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



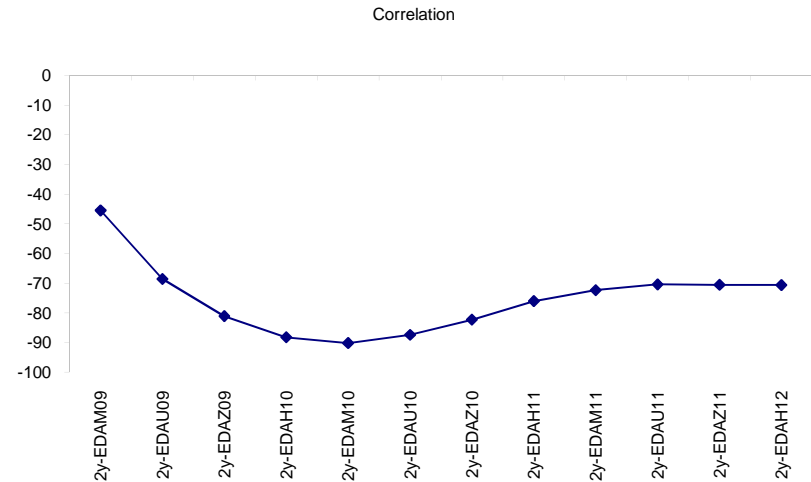
	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	0.93	0.093	2y-EDAM09	-46
EDAU09	0.98	0.143	2y-EDAU09	-69
EDAZ09	1.17	0.338	2y-EDAZ09	-81
EDAH10	1.29	0.453	2y-EDAH10	-88
EDAM10	1.51	0.673	2y-EDAM10	-90
EDAU10	1.73	0.898	2y-EDAU10	-87
EDAZ10	2.00	1.163	2y-EDAZ10	-82
EDAH11	2.21	1.373	2y-EDAH11	-76
EDAM11	2.44	1.608	2y-EDAM11	-72
EDAU11	2.65	1.818	2y-EDAU11	-70
EDAZ11	2.86	2.023	2y-EDAZ11	-71
EDAH12	2.98	2.148	2y-EDAH12	-71

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	2Y Duration		
EDAM09	0.1304	1.9721	1.8417	2y-EDAM09
EDAU09	0.3797	1.9721	1.5924	2y-EDAU09
EDAZ09	0.6290	1.9721	1.3430	2y-EDAZ09
EDAH10	0.8784	1.9721	1.0937	2y-EDAH10
EDAM10	1.1277	1.9721	0.8444	2y-EDAM10
EDAU10	1.3770	1.9721	0.5951	2y-EDAU10
EDAZ10	1.6263	1.9721	0.3458	2y-EDAZ10
EDAH11	1.8756	1.9721	0.0965	2y-EDAH11
EDAM11	2.1249	1.9721	-0.1529	2y-EDAM11
EDAU11	2.3934	1.9721	-0.4213	2y-EDAU11
EDAZ11	2.6427	1.9721	-0.6707	2y-EDAZ11
EDAH12	2.8920	1.9721	-0.9200	2y-EDAH12

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



	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	0.46	0.858	5y-EDAM09	-9
EDAU09	0.51	0.808	5y-EDAU09	-37
EDAZ09	0.71	0.613	5y-EDAZ09	-52
EDAH10	0.82	0.498	5y-EDAH10	-67
EDAM10	1.04	0.278	5y-EDAM10	-81
EDAU10	1.27	0.053	5y-EDAU10	-90
EDAZ10	1.53	0.212	5y-EDAZ10	-95
EDAH11	1.74	0.422	5y-EDAH11	-96
EDAM11	1.98	0.657	5y-EDAM11	-97
EDAU11	2.19	0.867	5y-EDAU11	-96
EDAZ11	2.39	1.072	5y-EDAZ11	-96
EDAH12	2.52	1.197	5y-EDAH12	-96

Price = Outright Decimal Price - Euro Contract Price

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

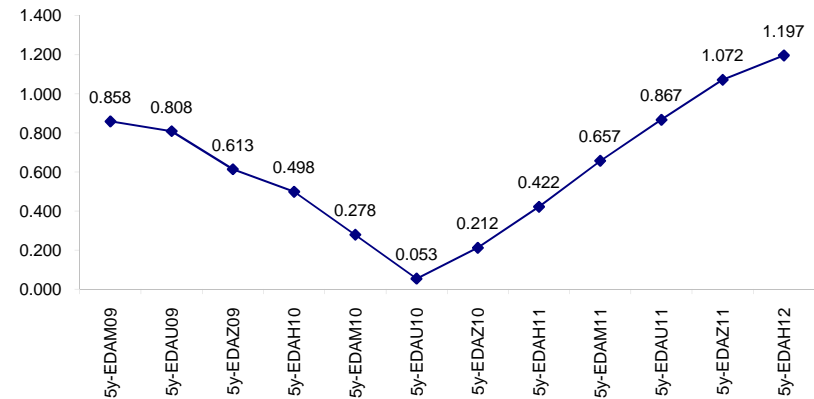
\*Correlation = ED Correlation to Treasury Future over 10 days

ED Duration as

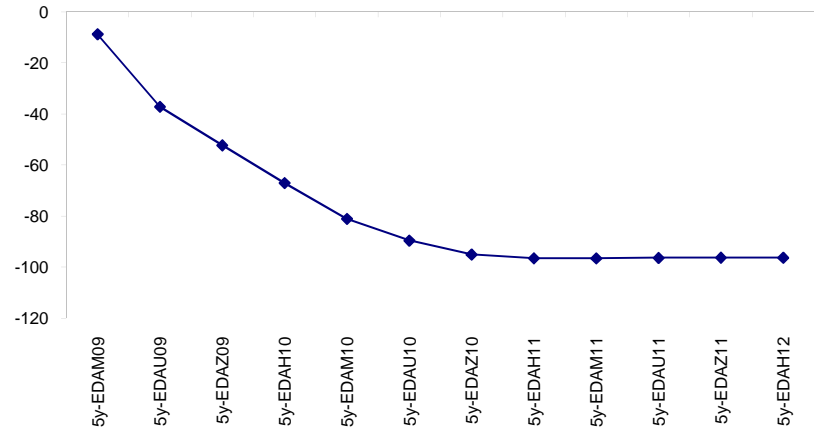
	Fraction of year	5Y Duration	Spread Duration	
EDAM09	0.1304	4.6857	4.5553	5y-EDAM09
EDAU09	0.3797	4.6857	4.3060	5y-EDAU09
EDAZ09	0.6290	4.6857	4.0567	5y-EDAZ09
EDAH10	0.8784	4.6857	3.8074	5y-EDAH10
EDAM10	1.1277	4.6857	3.5581	5y-EDAM10
EDAU10	1.3770	4.6857	3.3088	5y-EDAU10
EDAZ10	1.6263	4.6857	3.0594	5y-EDAZ10
EDAH11	1.8756	4.6857	2.8101	5y-EDAH11
EDAM11	2.1249	4.6857	2.5608	5y-EDAM11
EDAU11	2.3934	4.6857	2.2923	5y-EDAU11
EDAZ11	2.6427	4.6857	2.0430	5y-EDAZ11
EDAH12	2.8920	4.6857	1.7937	5y-EDAH12

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

5y - ED Yield

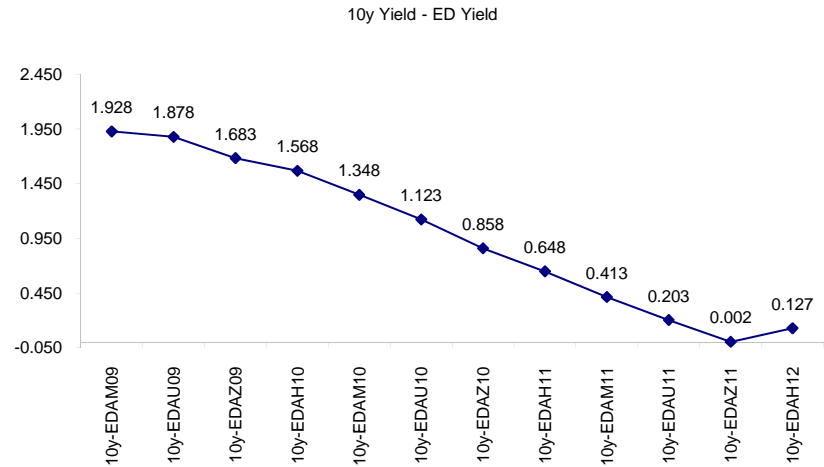


Correlation



10y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	0.46	1.928	10y-EDAM09	0
EDAU09	0.51	1.878	10y-EDAU09	-29
EDAZ09	0.71	1.683	10y-EDAZ09	-44
EDAH10	0.82	1.568	10y-EDAH10	-59
EDAM10	1.04	1.348	10y-EDAM10	-74
EDAU10	1.27	1.123	10y-EDAU10	-84
EDAZ10	1.53	0.858	10y-EDAZ10	-91
EDAH11	1.74	0.648	10y-EDAH11	-93
EDAM11	1.98	0.413	10y-EDAM11	-94
EDAU11	2.19	0.203	10y-EDAU11	-94
EDAZ11	2.39	0.002	10y-EDAZ11	-94
EDAH12	2.52	0.127	10y-EDAH12	-95

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	
EDAM09	0.1304	8.4729	8.3425	10y-EDAM09		
EDAU09	0.3797	8.4729	8.0932	10y-EDAU09		
EDAZ09	0.6290	8.4729	7.8439	10y-EDAZ09		
EDAH10	0.8784	8.4729	7.5946	10y-EDAH10		
EDAM10	1.1277	8.4729	7.3453	10y-EDAM10		
EDAU10	1.3770	8.4729	7.0959	10y-EDAU10		
EDAZ10	1.6263	8.4729	6.8466	10y-EDAZ10		
EDAH11	1.8756	8.4729	6.5973	10y-EDAH11		
EDAM11	2.1249	8.4729	6.3480	10y-EDAM11		
EDAU11	2.3934	8.4729	6.0795	10y-EDAU11		
EDAZ11	2.6427	8.4729	5.8302	10y-EDAZ11		
EDAH12	2.8920	8.4729	5.5809	10y-EDAH12		

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

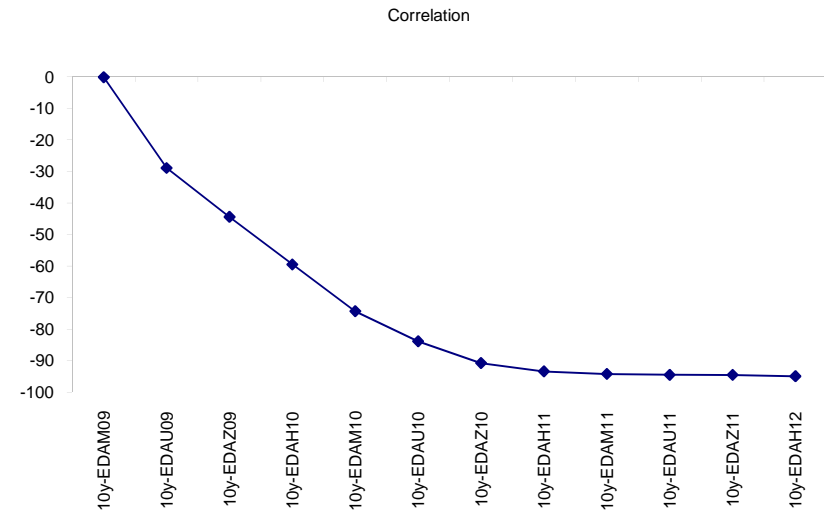


Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.

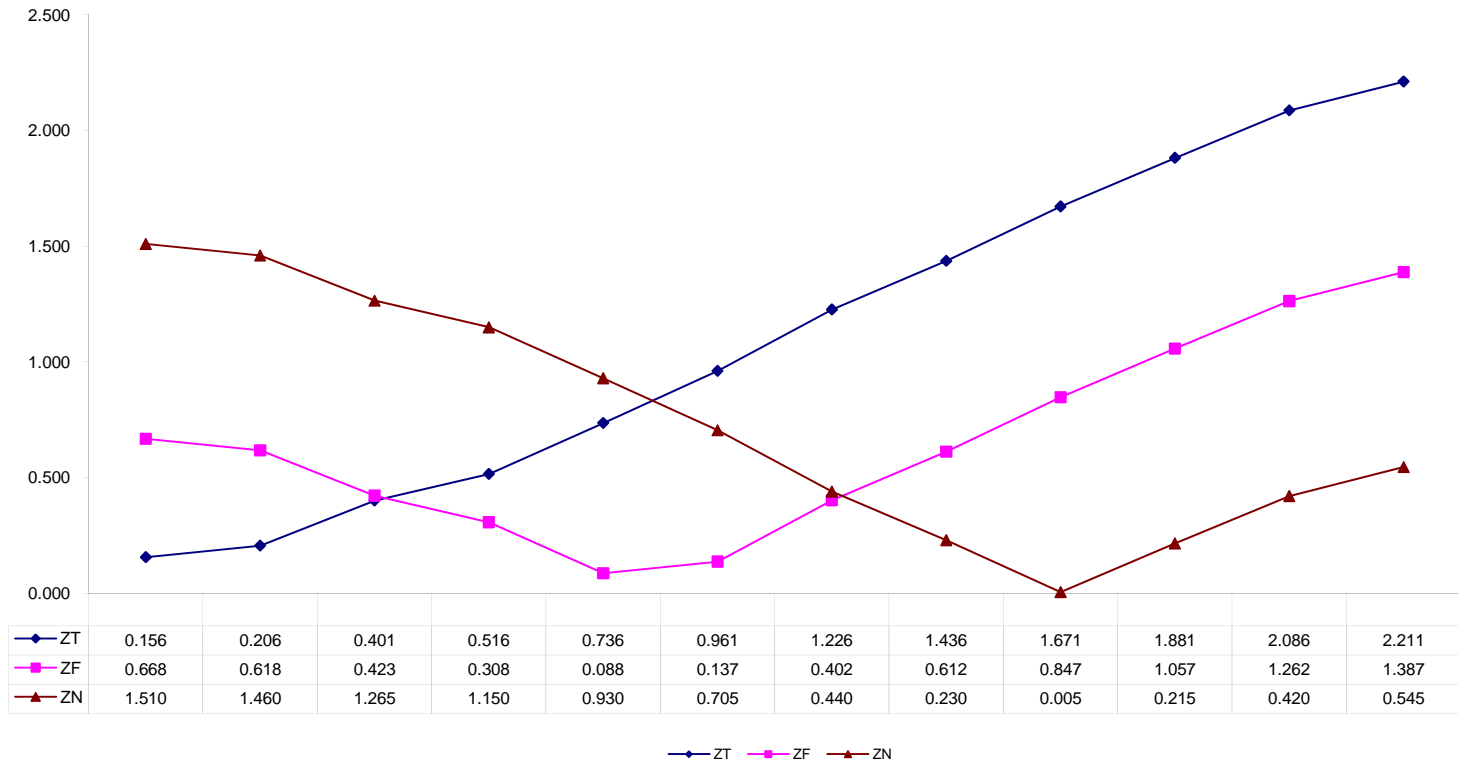
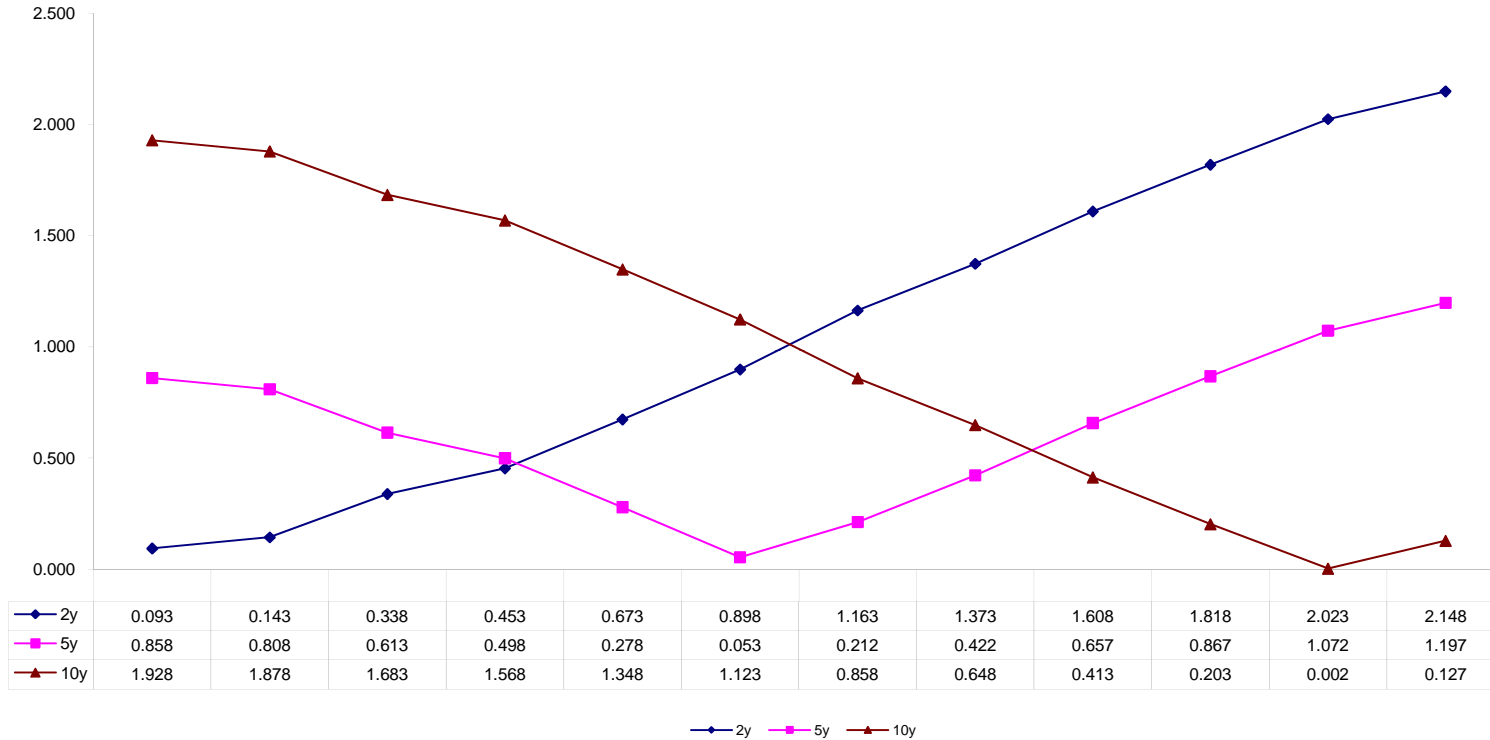
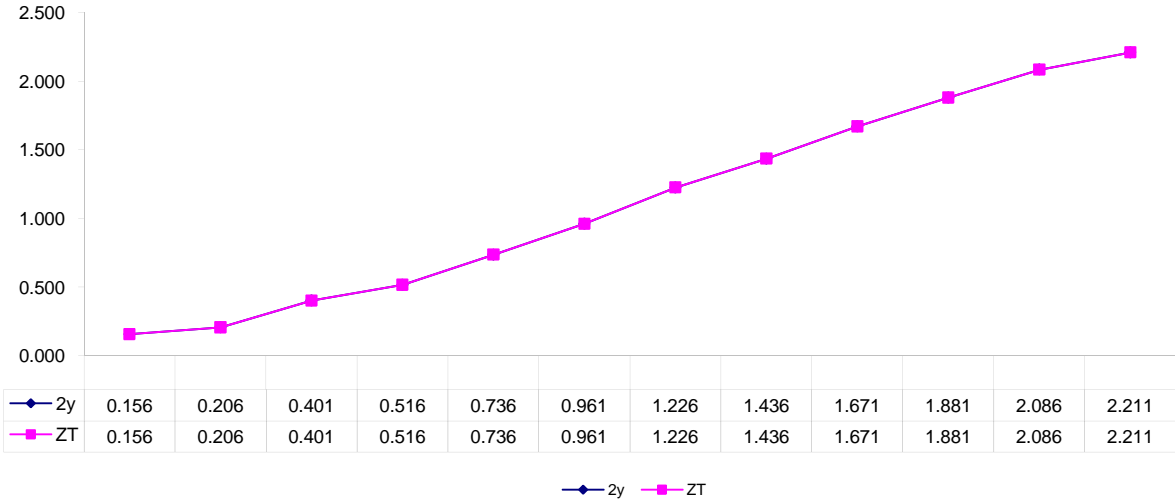
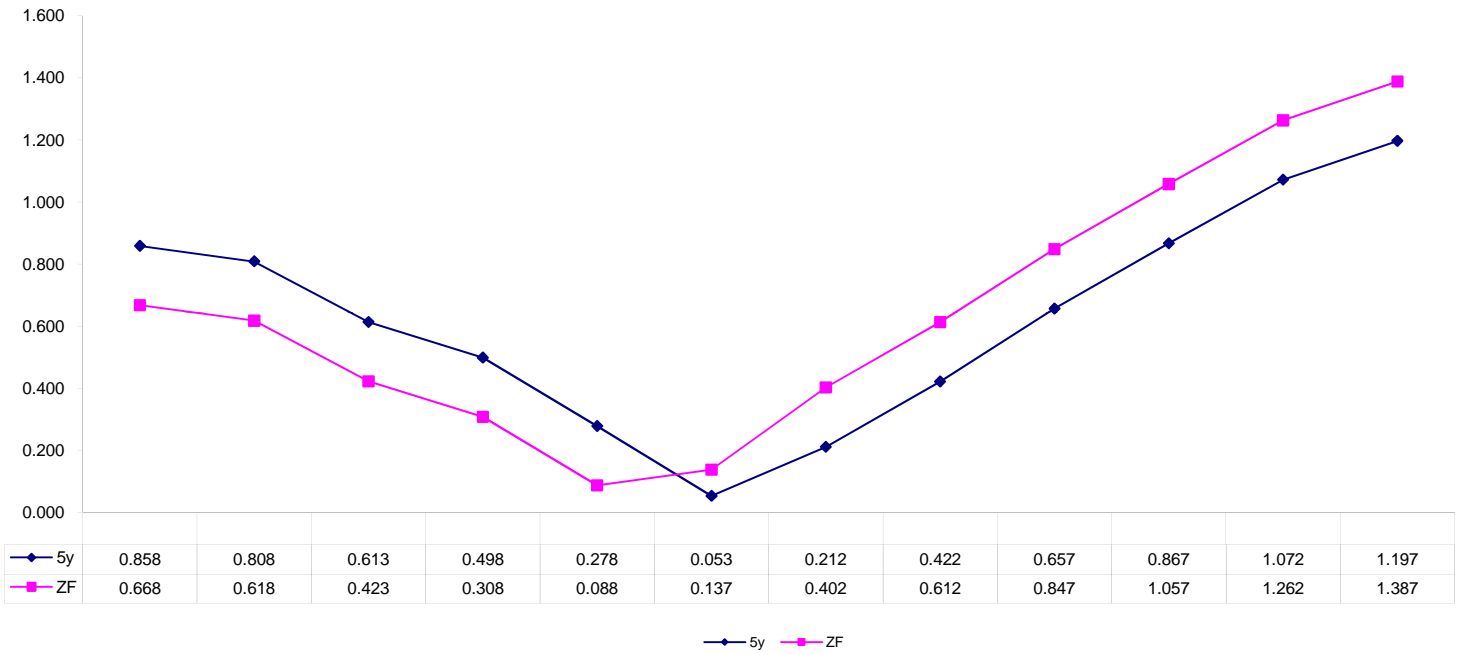


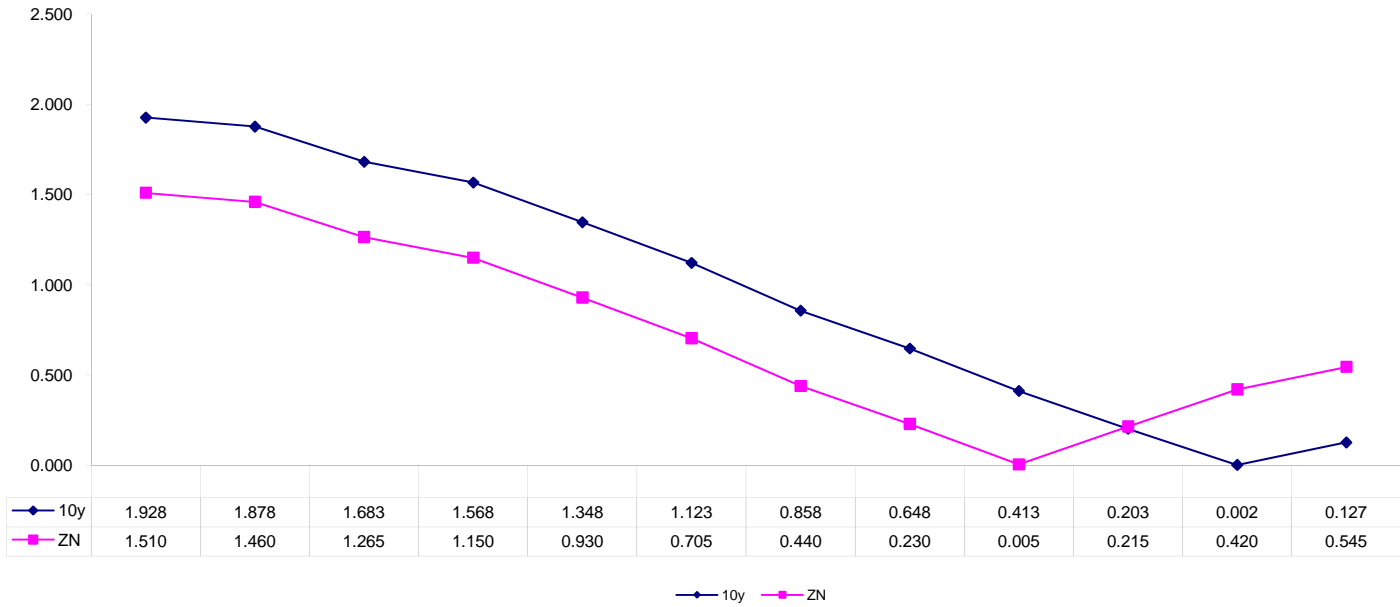
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



2y Basis TED Curve







	Last Yield	Net Last Yield	Last Price
White Pack	1.189	-1.875	9883.1250
Red Pack	1.975	-0.250	9806.1250
Green Pack	2.871	-2.625	9718.8750
Blue Pack	3.397	-3.750	9667.7500
Gold Pack	3.701	-3.250	9638.2500

