

## **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	106.0469	106.015	2.458	1.83
ZF	111.4438	111.142	3.101	3.97
ZN	114.8750	114.280	3.750	6.38
2y	100.469	100.1500	2.502	1.92
5y	100.569	100.1820	3.247	4.55
10y	99.031	99.0100	3.993	7.99

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU08	97.180	2.820	40	0.109	SEP	
EDAZ08	96.995	3.005	131	0.358	DEC	White Pack
EDAH09	96.910	3.090	222	0.608	MAR	
EDAM09	96.735	3.265	313	0.857	JUN	
EDAU09	96.485	3.515	404	1.106	SEP	
EDAZ09	96.175	3.825	495	1.356	DEC	Red Pack
EDAH10	95.930	4.070	586	1.605	MAR	
EDAM10	95.715	4.285	677	1.854	JUN	
EDAU10	95.560	4.440	768	2.103	SEP	
EDAZ10	95.420	4.580	859	2.353	DEC	Green Pack
EDAH11	95.365	4.635	950	2.602	MAR	
EDAM11	95.310	4.690	1041	2.851	JUN	
EDAU11	95.265	4.735	1139	3.120	SEP	
EDAZ11	95.205	4.795	1230	3.369	DEC	Blue Pack
EDAH12	95.160	4.840	1321	3.619	MAR	
EDAM12	95.130	4.870	1412	3.868	JUN	
EDAU12	95.045	4.955	1503	4.117	SEP	
EDAZ12	94.995	5.005	1594	4.366	DEC	Gold Pack
EDAH13	94.965	5.035	1685	4.616	MAR	
EDAM13	94.875	5.125	1776	4.865	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	3.111	4.125	9695.500	
Red Pack	4.018	3.750	9607.625	Pack Prices
Green Pack	4.704	1.250	9541.375	
Blue Pack		0.375	9518.500	
Gold Pack		-1.000	9496.875	

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.

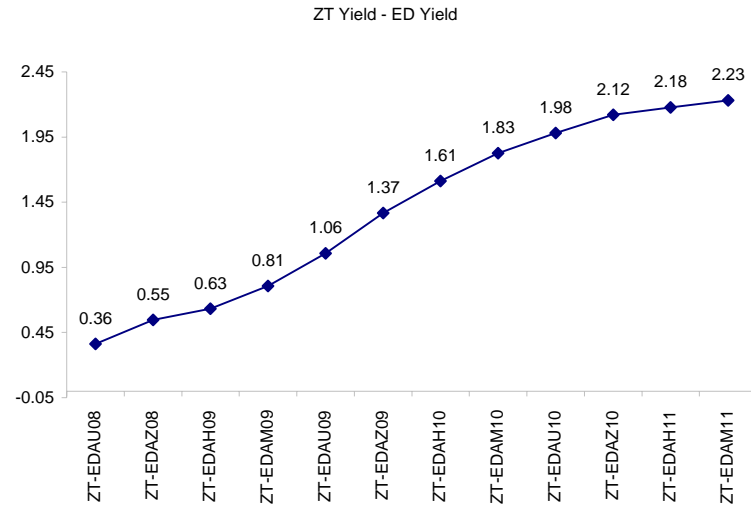
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### 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.**

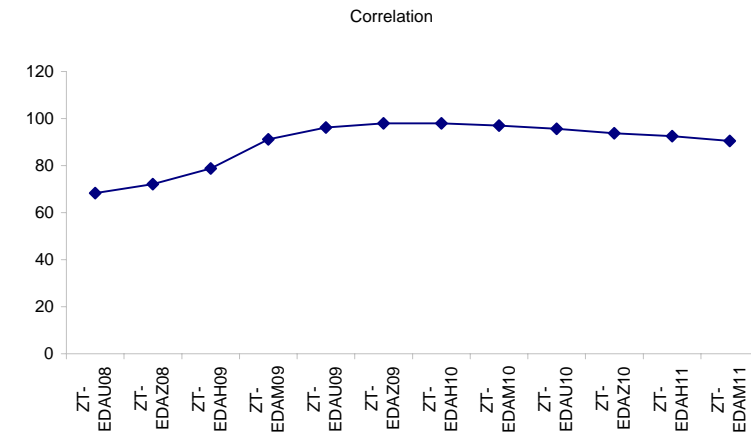
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	8.867	0.36	ZT-EDAU08	68.351
EDAZ08	9.052	0.55	ZT-EDAZ08	72.136
EDAH09	9.137	0.63	ZT-EDAH09	78.718
EDAM09	9.312	0.81	ZT-EDAM09	91.221
EDAU09	9.562	1.06	ZT-EDAU09	96.181
EDAZ09	9.872	1.37	ZT-EDAZ09	97.933
EDAH10	10.117	1.61	ZT-EDAH10	97.993
EDAM10	10.332	1.83	ZT-EDAM10	96.999
EDAU10	10.487	1.98	ZT-EDAU10	95.688
EDAZ10	10.627	2.12	ZT-EDAZ10	93.792
EDAH11	10.682	2.18	ZT-EDAH11	92.530
EDAM11	10.737	2.23	ZT-EDAM11	90.473

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	0.109	1.83	1.72	ZT-EDAU08		
EDAZ08	0.358	1.83	1.47	ZT-EDAZ08		
EDAH09	0.608	1.83	1.22	ZT-EDAH09		
EDAM09	0.857	1.83	0.98	ZT-EDAM09		
EDAU09	1.106	1.83	0.73	ZT-EDAU09		
EDAZ09	1.356	1.83	0.48	ZT-EDAZ09		
EDAH10	1.605	1.83	0.23	ZT-EDAH10		
EDAM10	1.854	1.83	(0.02)	ZT-EDAM10		
EDAU10	2.103	1.83	(0.27)	ZT-EDAU10		
EDAZ10	2.353	1.83	(0.52)	ZT-EDAZ10		
EDAH11	2.602	1.83	(0.77)	ZT-EDAH11		
EDAM11	2.851	1.83	(1.02)	ZT-EDAM11		

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

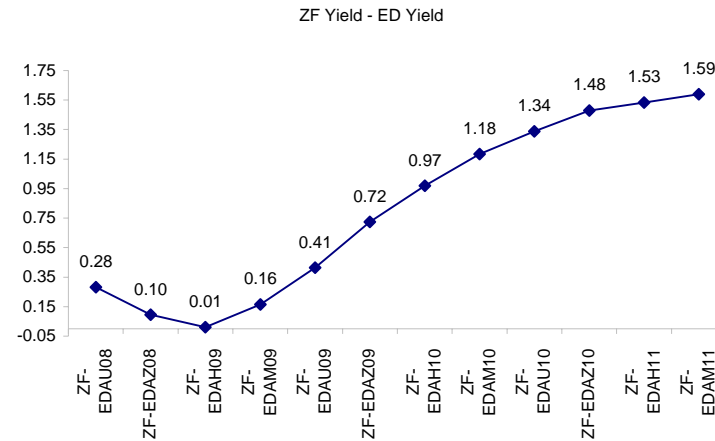


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	14.264	0.28	ZF-EDAU08	70.041
EDAZ08	14.449	0.10	ZF-EDAZ08	68.992
EDAH09	14.534	0.01	ZF-EDAH09	73.633
EDAM09	14.709	0.16	ZF-EDAM09	88.593
EDAU09	14.959	0.41	ZF-EDAU09	95.561
EDAZ09	15.269	0.72	ZF-EDAZ09	98.353
EDAH10	15.514	0.97	ZF-EDAH10	98.911
EDAM10	15.729	1.18	ZF-EDAM10	98.113
EDAU10	15.884	1.34	ZF-EDAU10	96.810
EDAZ10	16.024	1.48	ZF-EDAZ10	95.164
EDAH11	16.079	1.53	ZF-EDAH11	94.040
EDAM11	16.134	1.59	ZF-EDAM11	91.922

Price = Outright Decimal Price - Euro Contract Price

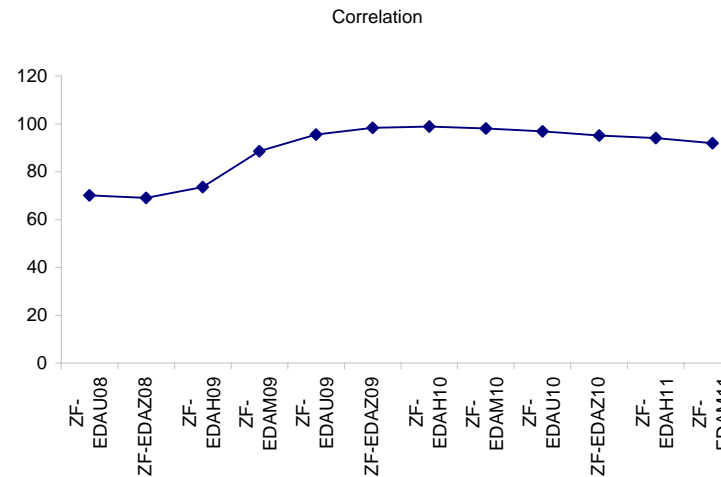
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAU08	0.109	3.97	3.86	ZF-EDAU08		
EDAZ08	0.358	3.97	3.61	ZF-EDAZ08		
EDAH09	0.608	3.97	3.36	ZF-EDAH09		
EDAM09	0.857	3.97	3.11	ZF-EDAM09		
EDAU09	1.106	3.97	2.86	ZF-EDAU09		
EDAZ09	1.356	3.97	2.61	ZF-EDAZ09		
EDAH10	1.605	3.97	2.36	ZF-EDAH10		
EDAM10	1.854	3.97	2.11	ZF-EDAM10		
EDAU10	2.103	3.97	1.86	ZF-EDAU10		
EDAZ10	2.353	3.97	1.61	ZF-EDAZ10		
EDAH11	2.602	3.97	1.37	ZF-EDAH11		
EDAM11	2.851	3.97	1.12	ZF-EDAM11		

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

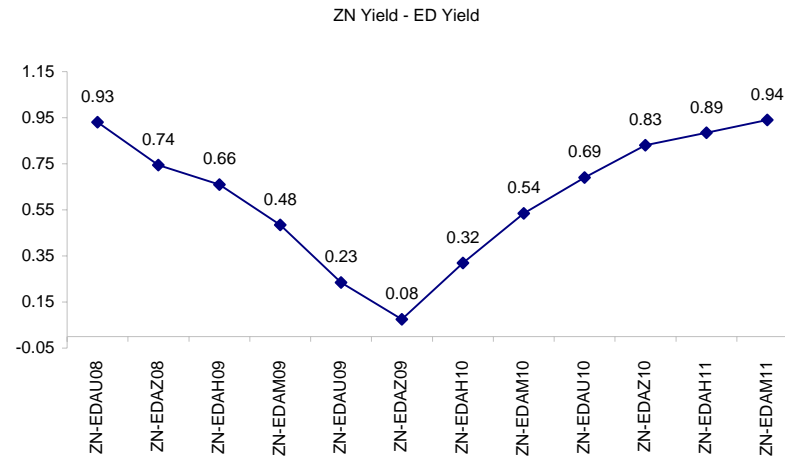


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	17.695	0.93	ZN-EDAU08	70.852
EDAZ08	17.880	0.74	ZN-EDAZ08	71.058
EDAH09	17.965	0.66	ZN-EDAH09	74.886
EDAM09	18.140	0.48	ZN-EDAM09	88.638
EDAU09	18.390	0.23	ZN-EDAU09	94.999
EDAZ09	18.700	0.08	ZN-EDAZ09	97.941
EDAH10	18.945	0.32	ZN-EDAH10	98.911
EDAM10	19.160	0.54	ZN-EDAM10	98.113
EDAU10	19.315	0.69	ZN-EDAU10	96.810
EDAZ10	19.455	0.83	ZN-EDAZ10	95.164
EDAH11	19.510	0.89	ZN-EDAH11	94.040
EDAM11	19.565	0.94	ZN-EDAM11	91.922

Price = Outright Decimal Price - Euro Contract Price

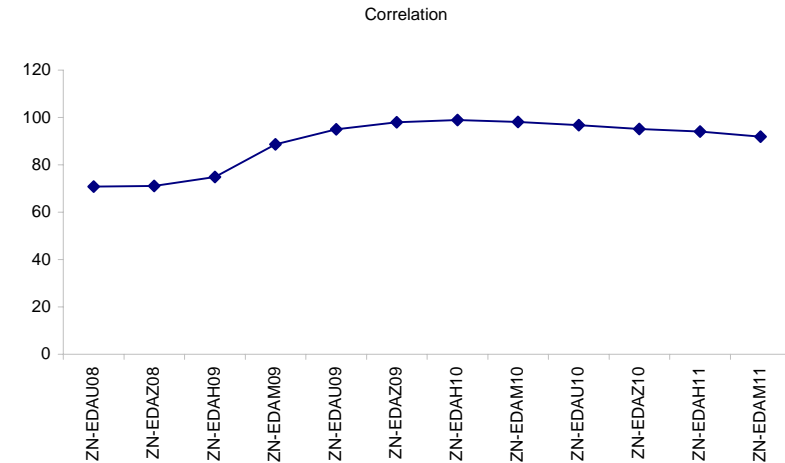
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAU08	0.109	6.38	6.28	ZN-EDAU08		
EDAZ08	0.358	6.38	6.03	ZN-EDAZ08		
EDAH09	0.608	6.38	5.78	ZN-EDAH09		
EDAM09	0.857	6.38	5.53	ZN-EDAM09		
EDAU09	1.106	6.38	5.28	ZN-EDAU09		
EDAZ09	1.356	6.38	5.03	ZN-EDAZ09		
EDAH10	1.605	6.38	4.78	ZN-EDAH10		
EDAM10	1.854	6.38	4.53	ZN-EDAM10		
EDAU10	2.103	6.38	4.28	ZN-EDAU10		
EDAZ10	2.353	6.38	4.03	ZN-EDAZ10		
EDAH11	2.602	6.38	3.78	ZN-EDAH11		
EDAM11	2.851	6.38	3.53	ZN-EDAM11		

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

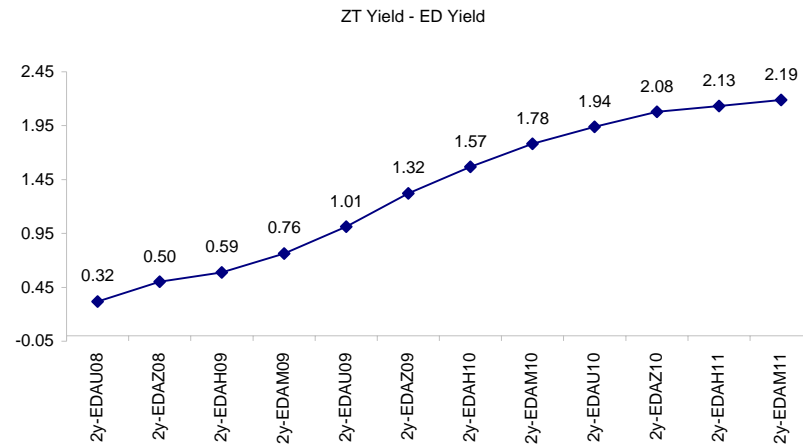


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.289	0.32	2y-EDAU08	-60.880
EDAZ08	3.474	0.50	2y-EDAZ08	-67.415
EDAH09	3.559	0.59	2y-EDAH09	-74.824
EDAM09	3.734	0.76	2y-EDAM09	-87.165
EDAU09	3.984	1.01	2y-EDAU09	-91.731
EDAZ09	4.294	1.32	2y-EDAZ09	-94.589
EDAH10	4.539	1.57	2y-EDAH10	-96.276
EDAM10	4.754	1.78	2y-EDAM10	-97.191
EDAU10	4.909	1.94	2y-EDAU10	-97.597
EDAZ10	5.049	2.08	2y-EDAZ10	-97.234
EDAH11	5.104	2.13	2y-EDAH11	-96.916
EDAM11	5.159	2.19	2y-EDAM11	-95.973

Price = Outright Decimal Price - Euro Contract Price

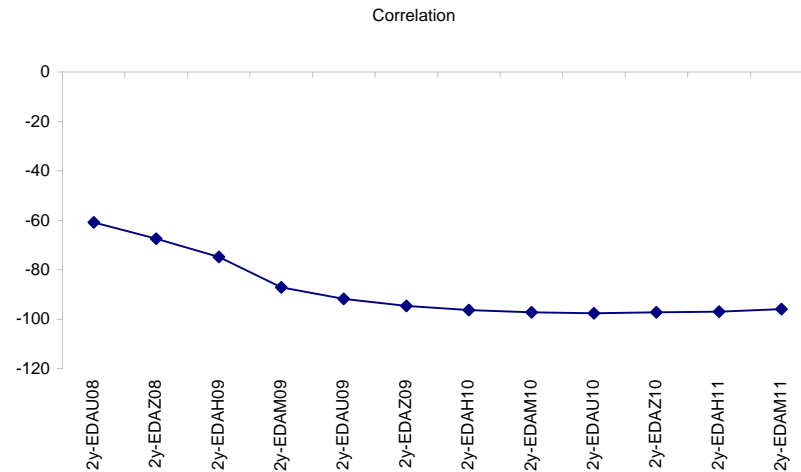
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAU08	0.109	1.92	1.81	2y-EDAU08	
EDAZ08	0.358	1.92	1.56	2y-EDAZ08	
EDAH09	0.608	1.92	1.31	2y-EDAH09	
EDAM09	0.857	1.92	1.06	2y-EDAM09	
EDAU09	1.106	1.92	0.81	2y-EDAU09	
EDAZ09	1.356	1.92	0.56	2y-EDAZ09	
EDAH10	1.605	1.92	0.31	2y-EDAH10	
EDAM10	1.854	1.92	0.06	2y-EDAM10	
EDAU10	2.103	1.92	(0.19)	2y-EDAU10	
EDAZ10	2.353	1.92	(0.44)	2y-EDAZ10	
EDAH11	2.602	1.92	(0.69)	2y-EDAH11	
EDAM11	2.851	1.92	(0.93)	2y-EDAM11	

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

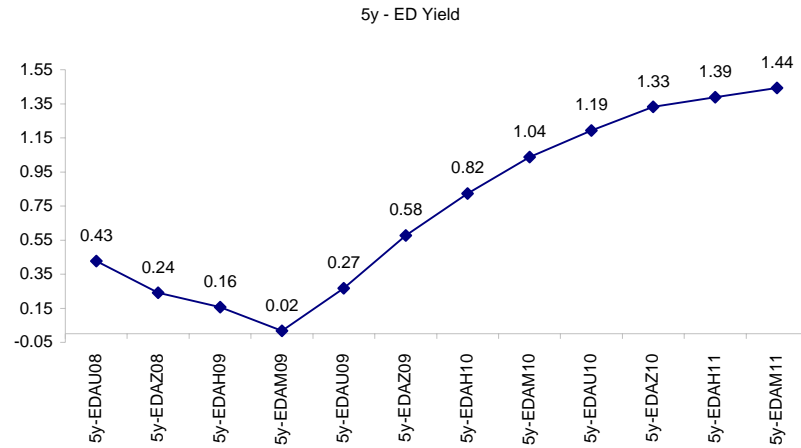


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.389	0.43	5y-EDAU08	-61.939
EDAZ08	3.574	0.24	5y-EDAZ08	-67.555
EDAH09	3.659	0.16	5y-EDAH09	-73.597
EDAM09	3.834	0.02	5y-EDAM09	-84.870
EDAU09	4.084	0.27	5y-EDAU09	-89.468
EDAZ09	4.394	0.58	5y-EDAZ09	-92.846
EDAH10	4.639	0.82	5y-EDAH10	-94.819
EDAM10	4.854	1.04	5y-EDAM10	-96.217
EDAU10	5.009	1.19	5y-EDAU10	-96.784
EDAZ10	5.149	1.33	5y-EDAZ10	-96.335
EDAH11	5.204	1.39	5y-EDAH11	-96.146
EDAM11	5.259	1.44	5y-EDAM11	-94.947

Price = Outright Decimal Price - Euro Contract Price

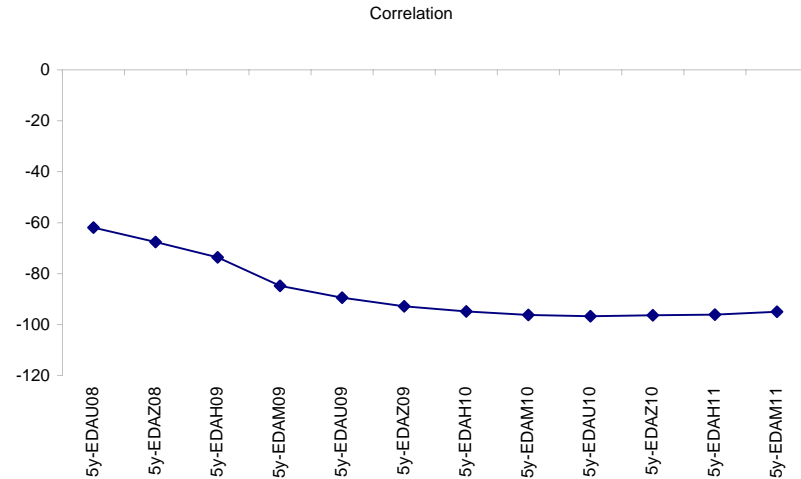
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAU08	0.109	4.55	4.44	5y-EDAU08
EDAZ08	0.358	4.55	4.19	5y-EDAZ08
EDAH09	0.608	4.55	3.94	5y-EDAH09
EDAM09	0.857	4.55	3.69	5y-EDAM09
EDAU09	1.106	4.55	3.44	5y-EDAU09
EDAZ09	1.356	4.55	3.20	5y-EDAZ09
EDAH10	1.605	4.55	2.95	5y-EDAH10
EDAM10	1.854	4.55	2.70	5y-EDAM10
EDAU10	2.103	4.55	2.45	5y-EDAU10
EDAZ10	2.353	4.55	2.20	5y-EDAZ10
EDAH11	2.602	4.55	1.95	5y-EDAH11
EDAM11	2.851	4.55	1.70	5y-EDAM11

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

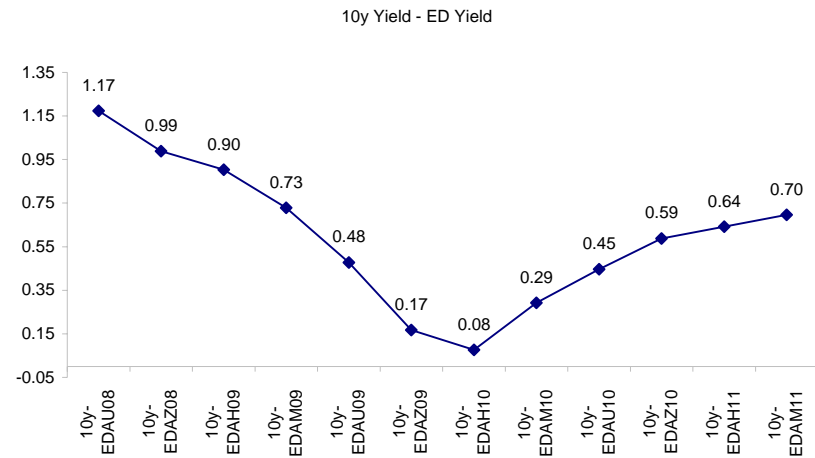


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.389	1.17	10y-EDAU08	-48.294
EDAZ08	3.574	0.99	10y-EDAZ08	-58.841
EDAH09	3.659	0.90	10y-EDAH09	-67.043
EDAM09	3.834	0.73	10y-EDAM09	-75.514
EDAU09	4.084	0.48	10y-EDAU09	-77.479
EDAZ09	4.394	0.17	10y-EDAZ09	-80.596
EDAH10	4.639	0.08	10y-EDAH10	-83.786
EDAM10	4.854	0.29	10y-EDAM10	-87.669
EDAU10	5.009	0.45	10y-EDAU10	-90.674
EDAZ10	5.149	0.59	10y-EDAZ10	-92.202
EDAH11	5.204	0.64	10y-EDAH11	-93.110
EDAM11	5.259	0.70	10y-EDAM11	-93.534

Price = Outright Decimal Price - Euro Contract Price

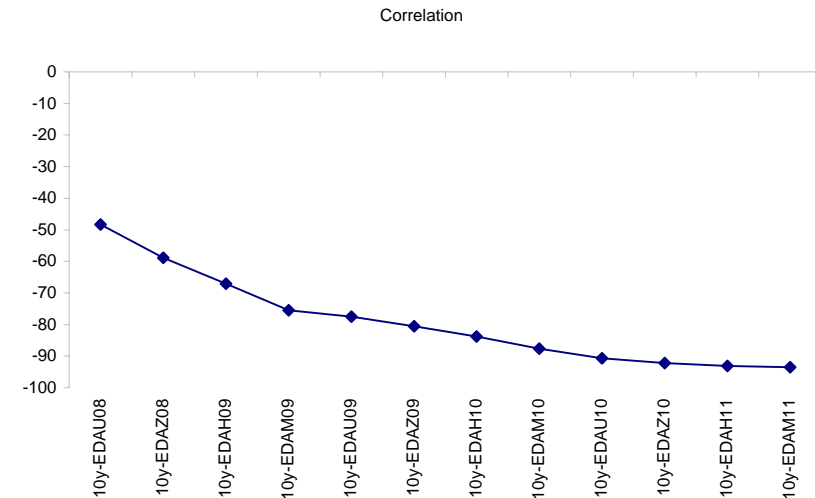
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAU08	0.109	7.99	7.88	10y-EDAU08
EDAZ08	0.358	7.99	7.63	10y-EDAZ08
EDAH09	0.608	7.99	7.38	10y-EDAH09
EDAM09	0.857	7.99	7.13	10y-EDAM09
EDAU09	1.106	7.99	6.88	10y-EDAU09
EDAZ09	1.356	7.99	6.63	10y-EDAZ09
EDAH10	1.605	7.99	6.38	10y-EDAH10
EDAM10	1.854	7.99	6.13	10y-EDAM10
EDAU10	2.103	7.99	5.88	10y-EDAU10
EDAZ10	2.353	7.99	5.63	10y-EDAZ10
EDAH11	2.602	7.99	5.39	10y-EDAH11
EDAM11	2.851	7.99	5.14	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.

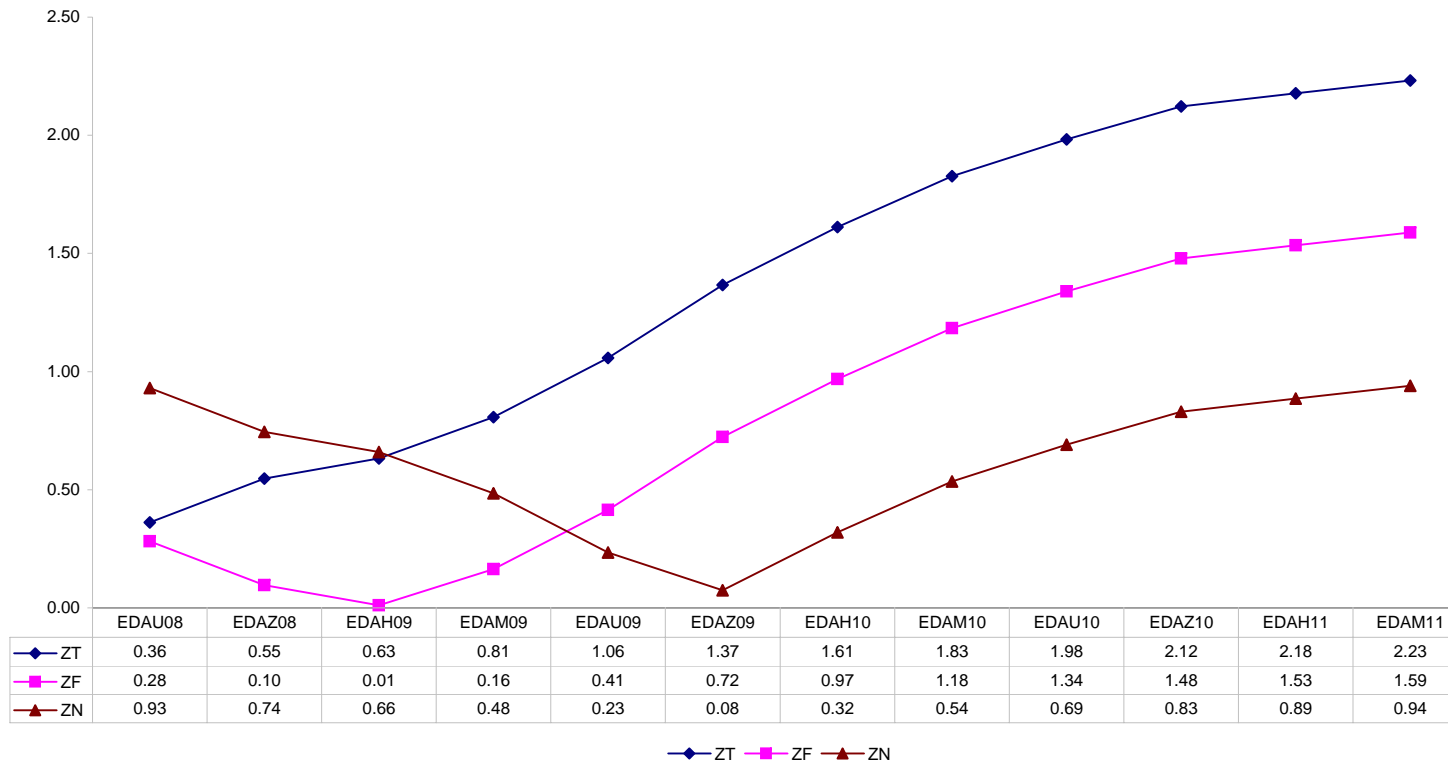
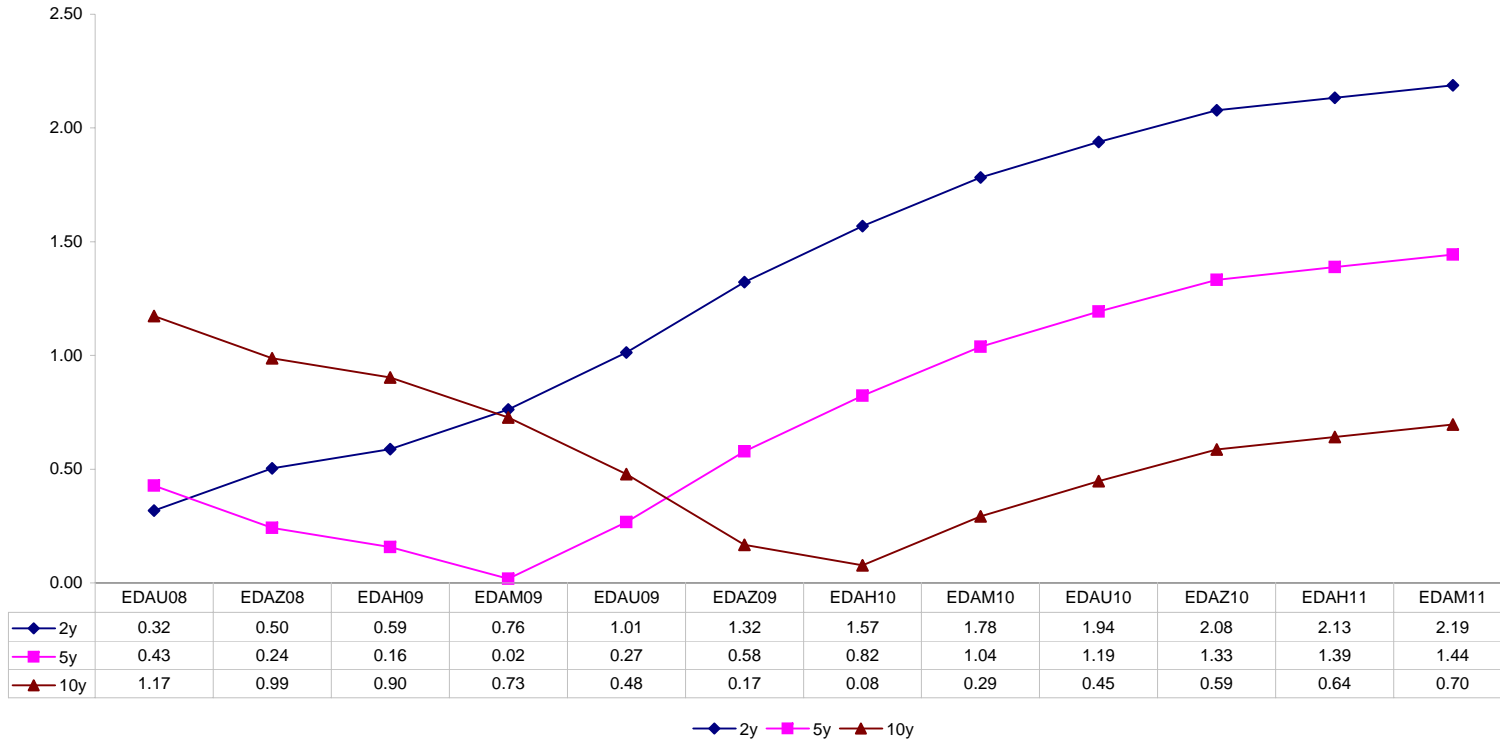
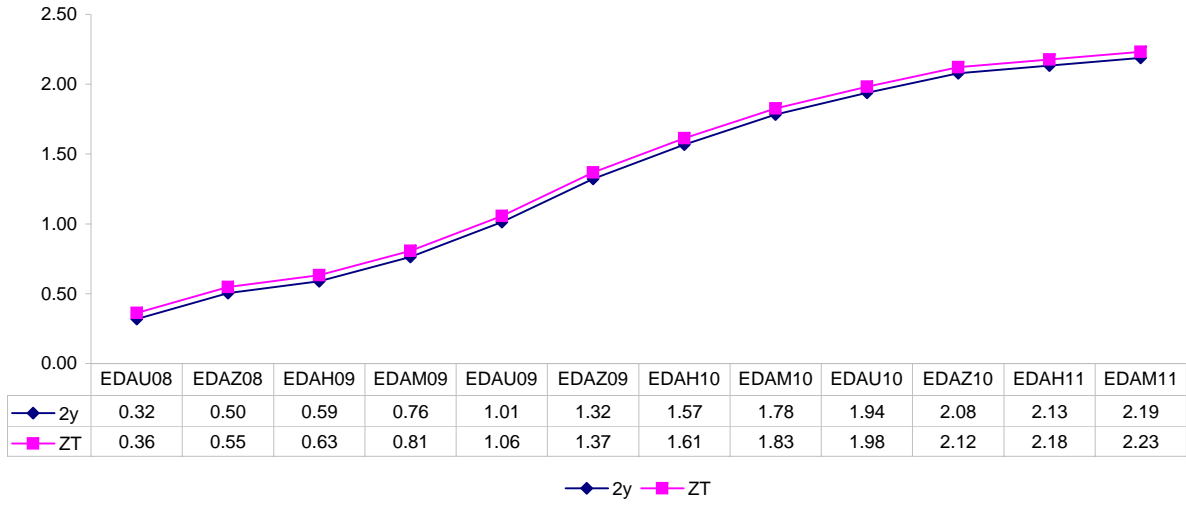


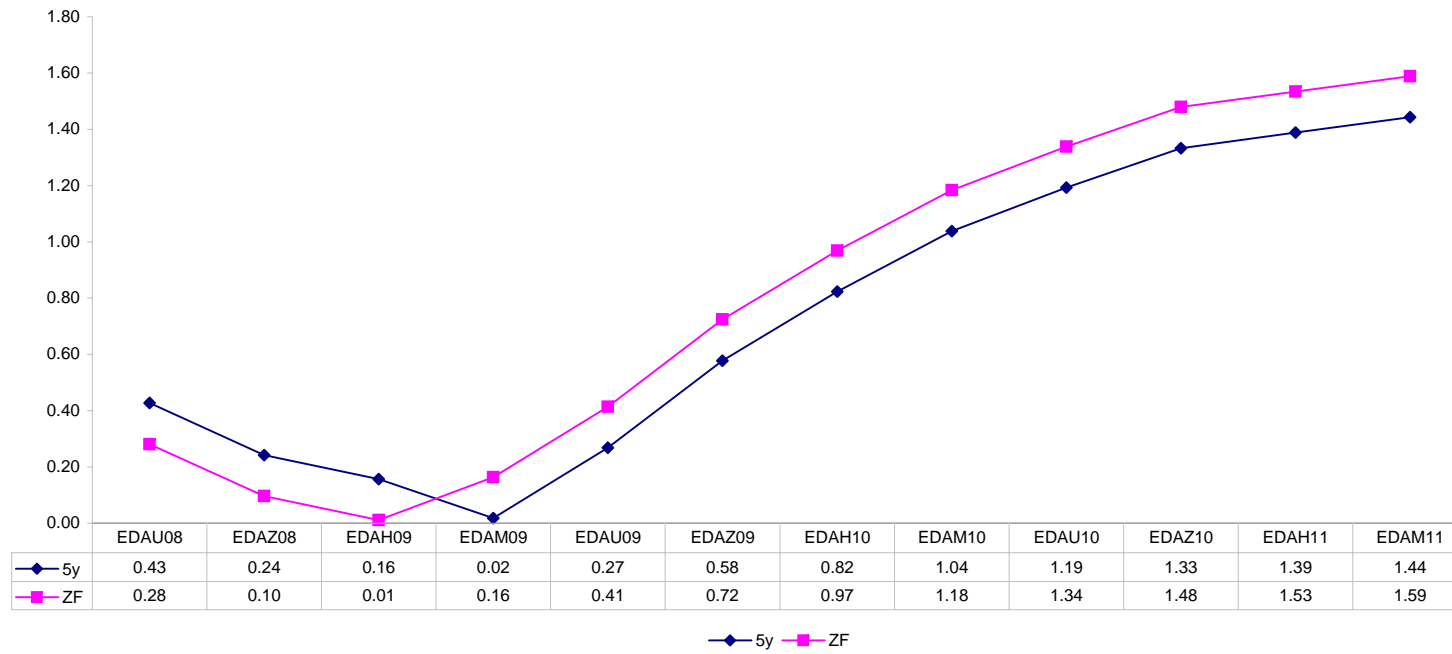
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



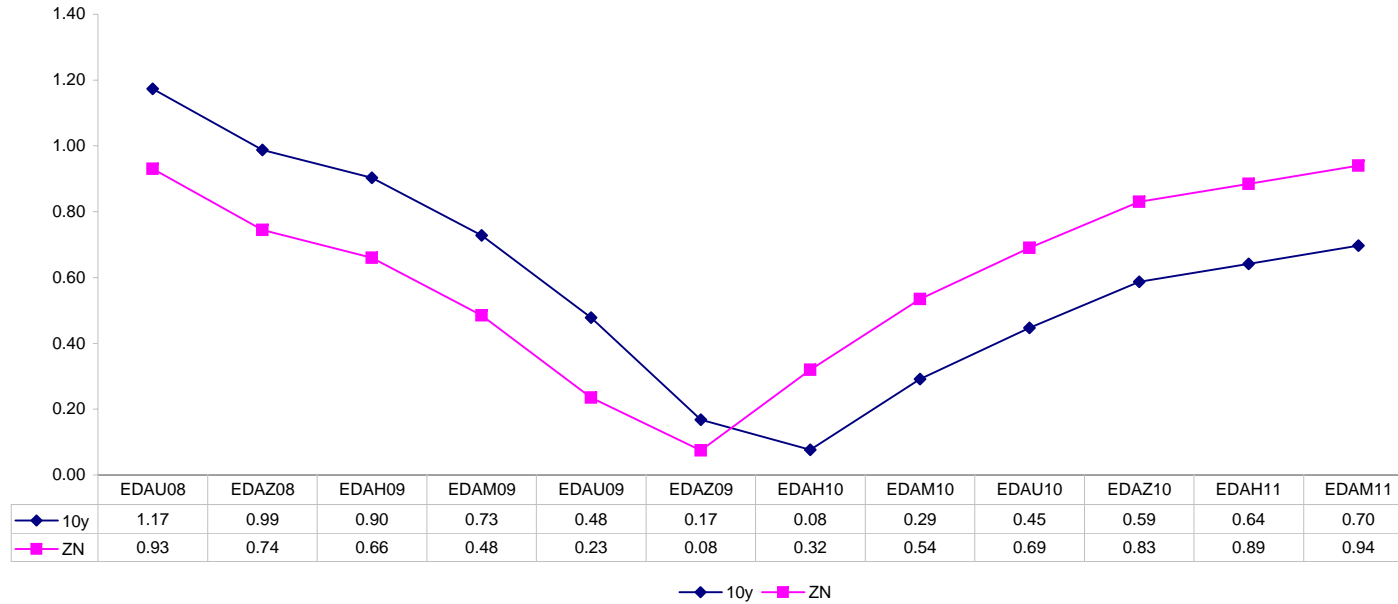
2y Basis TED Curve



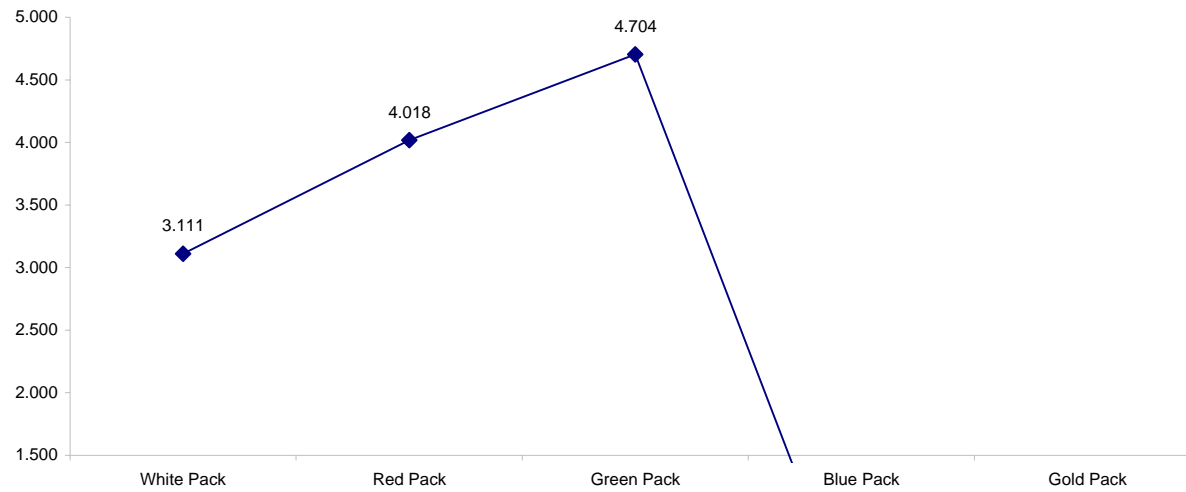
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	3.111	4.125	9695.500
Red Pack	4.018	3.750	9607.625
Green Pack	4.704	1.250	9541.375
Blue Pack		0.375	9518.500
Gold Pack		-1.000	9496.875



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

