

## **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	106.4844	106.155	2.123	1.97
ZF	112.8500	112.272	2.770	4.17
ZN	116.7500	116.240	3.322	6.32
2y	100.359	100.1150	2.188	1.90
5y	101.125	101.0400	2.880	4.57
10y	103.188	103.0600	3.615	8.15

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU08	97.185	2.815	4	0.010	SEP	
EDAZ08	97.110	2.890	95	0.260	DEC	White
EDAH09	97.215	2.785	186	0.509	MAR	Pack
EDAM09	97.125	2.875	277	0.758	JUN	
EDAU09	96.955	3.045	368	1.008	SEP	
EDAZ09	96.700	3.300	459	1.257	DEC	Red
EDAH10	96.545	3.455	550	1.506	MAR	Pack
EDAM10	96.335	3.665	641	1.755	JUN	
EDAU10	96.170	3.830	732	2.005	SEP	
EDAZ10	96.010	3.990	823	2.254	DEC	Green
EDAH11	95.935	4.065	914	2.503	MAR	Pack
EDAM11	95.850	4.150	1005	2.753	JUN	
EDAU11	95.785	4.215	1103	3.021	SEP	
EDAZ11	95.730	4.270	1194	3.271	DEC	Blue Pack
EDAH12	95.720	4.280	1285	3.520	MAR	
EDAM12	95.665	4.335	1376	3.769	JUN	
EDAU12	95.615	4.385	1467	4.018	SEP	
EDAZ12	95.515	4.485	1558	4.268	DEC	Gold Pack
EDAH13	95.490	4.510	1649	4.517	MAR	
EDAM13	95.425	4.575	1740	4.766	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	2.901	-1.063	9715.875	
Red Pack	3.442	2.000	9663.375	Pack
Green Pack	4.106	2.250	9599.125	Prices
Blue Pack	4.381	3.500	9572.500	
Gold Pack		1.000	9551.375	

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.

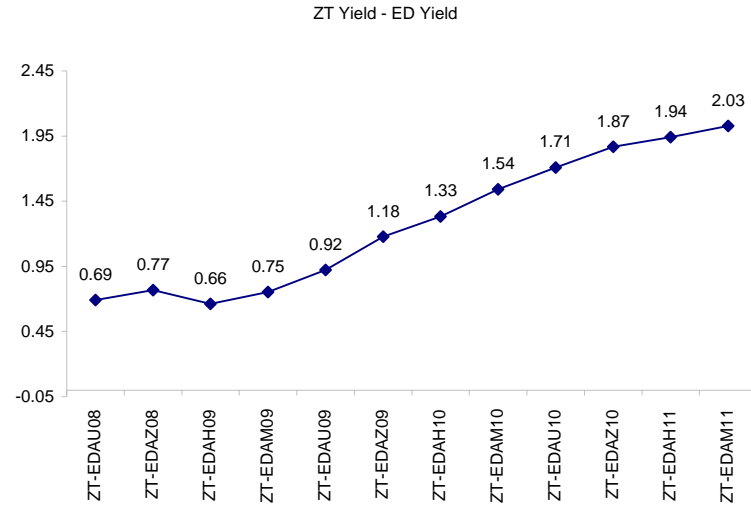
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

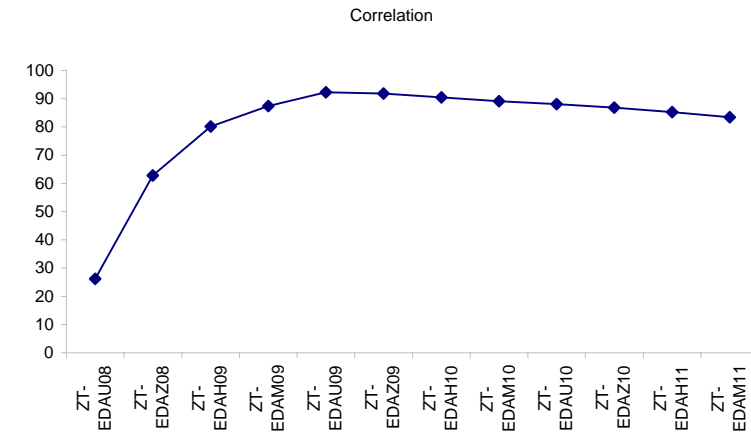
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	9.299	0.69	ZT-EDAU08	26.246
EDAZ08	9.374	0.77	ZT-EDAZ08	62.759
EDAH09	9.269	0.66	ZT-EDAH09	80.147
EDAM09	9.359	0.75	ZT-EDAM09	87.439
EDAU09	9.529	0.92	ZT-EDAU09	92.333
EDAZ09	9.784	1.18	ZT-EDAZ09	91.851
EDAH10	9.939	1.33	ZT-EDAH10	90.441
EDAM10	10.149	1.54	ZT-EDAM10	89.106
EDAU10	10.314	1.71	ZT-EDAU10	88.150
EDAZ10	10.474	1.87	ZT-EDAZ10	86.865
EDAH11	10.549	1.94	ZT-EDAH11	85.222
EDAM11	10.634	2.03	ZT-EDAM11	83.455

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	0.010	1.97	1.96	ZT-EDAU08	
EDAZ08	0.260	1.97	1.71	ZT-EDAZ08	
EDAH09	0.509	1.97	1.46	ZT-EDAH09	
EDAM09	0.758	1.97	1.21	ZT-EDAM09	
EDAU09	1.008	1.97	0.96	ZT-EDAU09	
EDAZ09	1.257	1.97	0.71	ZT-EDAZ09	
EDAH10	1.506	1.97	0.46	ZT-EDAH10	
EDAM10	1.755	1.97	0.21	ZT-EDAM10	
EDAU10	2.005	1.97	(0.03)	ZT-EDAU10	
EDAZ10	2.254	1.97	(0.28)	ZT-EDAZ10	
EDAH11	2.503	1.97	(0.53)	ZT-EDAH11	
EDAM11	2.753	1.97	(0.78)	ZT-EDAM11	

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

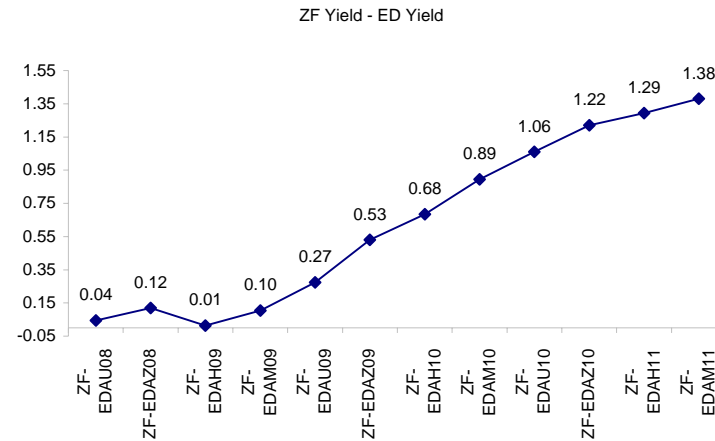


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	15.665	0.04	ZF-EDAU08	38.249
EDAZ08	15.740	0.12	ZF-EDAZ08	63.660
EDAH09	15.635	0.01	ZF-EDAH09	79.395
EDAM09	15.725	0.10	ZF-EDAM09	89.897
EDAU09	15.895	0.27	ZF-EDAU09	92.229
EDAZ09	16.150	0.53	ZF-EDAZ09	91.905
EDAH10	16.305	0.68	ZF-EDAH10	90.790
EDAM10	16.515	0.89	ZF-EDAM10	90.382
EDAU10	16.680	1.06	ZF-EDAU10	89.788
EDAZ10	16.840	1.22	ZF-EDAZ10	89.240
EDAH11	16.915	1.29	ZF-EDAH11	87.772
EDAM11	17.000	1.38	ZF-EDAM11	86.189

Price = Outright Decimal Price - Euro Contract Price

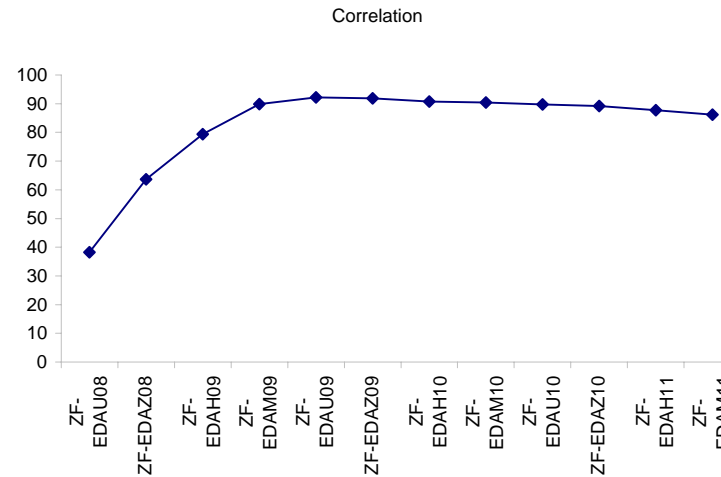
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAU08	0.010	4.17	4.16	ZF-EDAU08		
EDAZ08	0.260	4.17	3.91	ZF-EDAZ08		
EDAH09	0.509	4.17	3.66	ZF-EDAH09		
EDAM09	0.758	4.17	3.41	ZF-EDAM09		
EDAU09	1.008	4.17	3.16	ZF-EDAU09		
EDAZ09	1.257	4.17	2.92	ZF-EDAZ09		
EDAH10	1.506	4.17	2.67	ZF-EDAH10		
EDAM10	1.755	4.17	2.42	ZF-EDAM10		
EDAU10	2.005	4.17	2.17	ZF-EDAU10		
EDAZ10	2.254	4.17	1.92	ZF-EDAZ10		
EDAH11	2.503	4.17	1.67	ZF-EDAH11		
EDAM11	2.753	4.17	1.42	ZF-EDAM11		

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

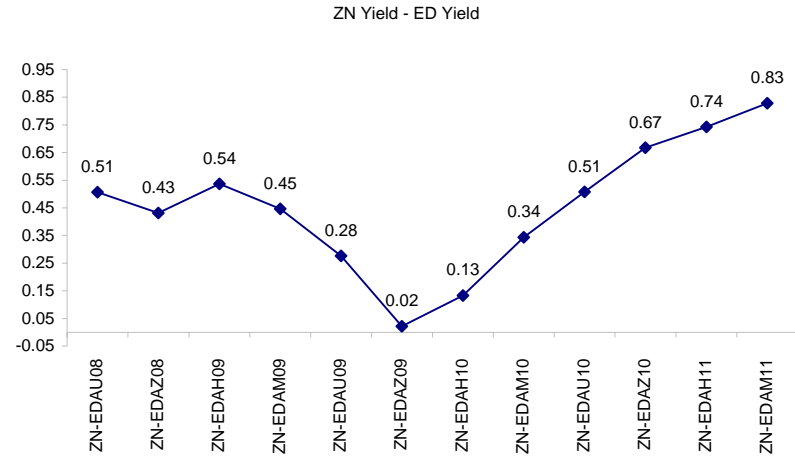


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	19.565	0.51	ZN-EDAU08	46.944
EDAZ08	19.640	0.43	ZN-EDAZ08	65.491
EDAH09	19.535	0.54	ZN-EDAH09	79.052
EDAM09	19.625	0.45	ZN-EDAM09	88.538
EDAU09	19.795	0.28	ZN-EDAU09	90.644
EDAZ09	20.050	0.02	ZN-EDAZ09	90.057
EDAH10	20.205	0.13	ZN-EDAH10	90.790
EDAM10	20.415	0.34	ZN-EDAM10	90.382
EDAU10	20.580	0.51	ZN-EDAU10	89.788
EDAZ10	20.740	0.67	ZN-EDAZ10	89.240
EDAH11	20.815	0.74	ZN-EDAH11	87.772
EDAM11	20.900	0.83	ZN-EDAM11	86.189

Price = Outright Decimal Price - Euro Contract Price

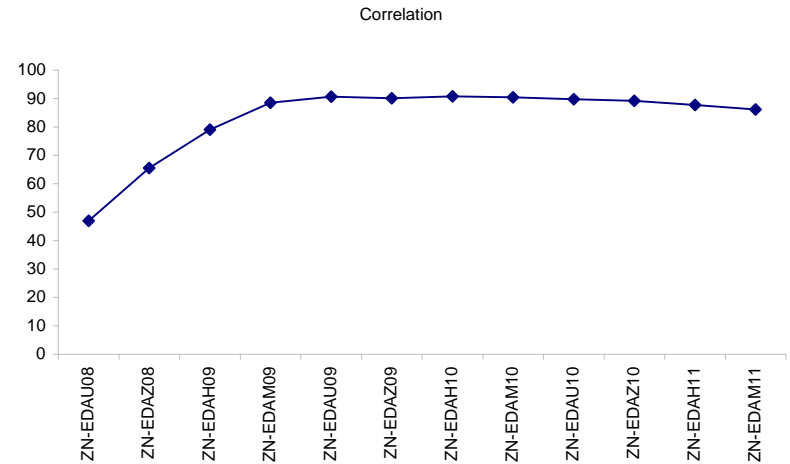
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAU08	0.010	6.32	6.31	ZN-EDAU08		
EDAZ08	0.260	6.32	6.06	ZN-EDAZ08		
EDAH09	0.509	6.32	5.81	ZN-EDAH09		
EDAM09	0.758	6.32	5.56	ZN-EDAM09		
EDAU09	1.008	6.32	5.32	ZN-EDAU09		
EDAZ09	1.257	6.32	5.07	ZN-EDAZ09		
EDAH10	1.506	6.32	4.82	ZN-EDAH10		
EDAM10	1.755	6.32	4.57	ZN-EDAM10		
EDAU10	2.005	6.32	4.32	ZN-EDAU10		
EDAZ10	2.254	6.32	4.07	ZN-EDAZ10		
EDAH11	2.503	6.32	3.82	ZN-EDAH11		
EDAM11	2.753	6.32	3.57	ZN-EDAM11		

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

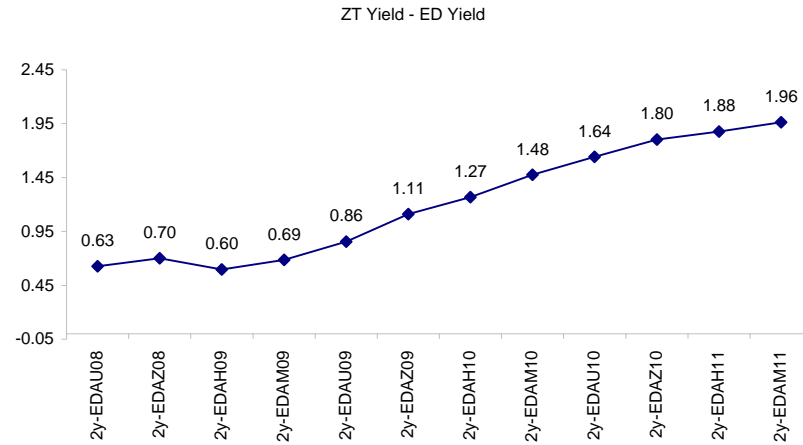


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.174	0.63	2y-EDAU08	-41.301
EDAZ08	3.249	0.70	2y-EDAZ08	-72.703
EDAH09	3.144	0.60	2y-EDAH09	-83.019
EDAM09	3.234	0.69	2y-EDAM09	-75.504
EDAU09	3.404	0.86	2y-EDAU09	-84.947
EDAZ09	3.659	1.11	2y-EDAZ09	-82.750
EDAH10	3.814	1.27	2y-EDAH10	-80.614
EDAM10	4.024	1.48	2y-EDAM10	-79.232
EDAU10	4.189	1.64	2y-EDAU10	-78.710
EDAZ10	4.349	1.80	2y-EDAZ10	-77.655
EDAH11	4.424	1.88	2y-EDAH11	-76.819
EDAM11	4.509	1.96	2y-EDAM11	-75.843

Price = Outright Decimal Price - Euro Contract Price

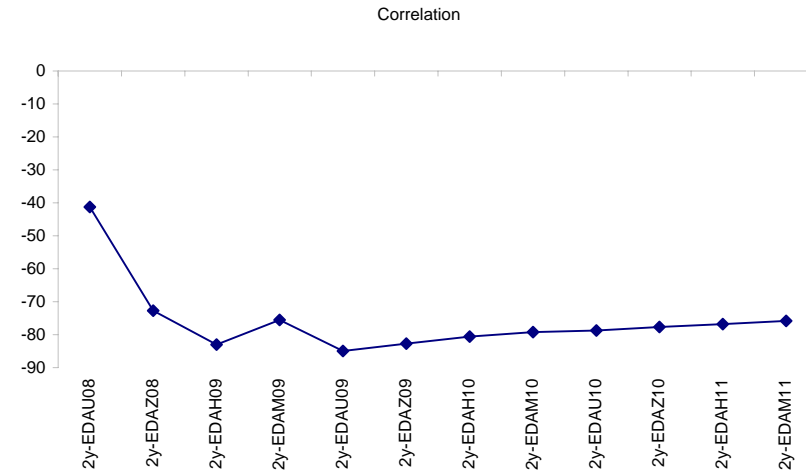
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAU08	0.010	1.90	1.89	2y-EDAU08	
EDAZ08	0.260	1.90	1.64	2y-EDAZ08	
EDAH09	0.509	1.90	1.39	2y-EDAH09	
EDAM09	0.758	1.90	1.14	2y-EDAM09	
EDAU09	1.008	1.90	0.89	2y-EDAU09	
EDAZ09	1.257	1.90	0.64	2y-EDAZ09	
EDAH10	1.506	1.90	0.39	2y-EDAH10	
EDAM10	1.755	1.90	0.14	2y-EDAM10	
EDAU10	2.005	1.90	(0.11)	2y-EDAU10	
EDAZ10	2.254	1.90	(0.36)	2y-EDAZ10	
EDAH11	2.503	1.90	(0.61)	2y-EDAH11	
EDAM11	2.753	1.90	(0.85)	2y-EDAM11	

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

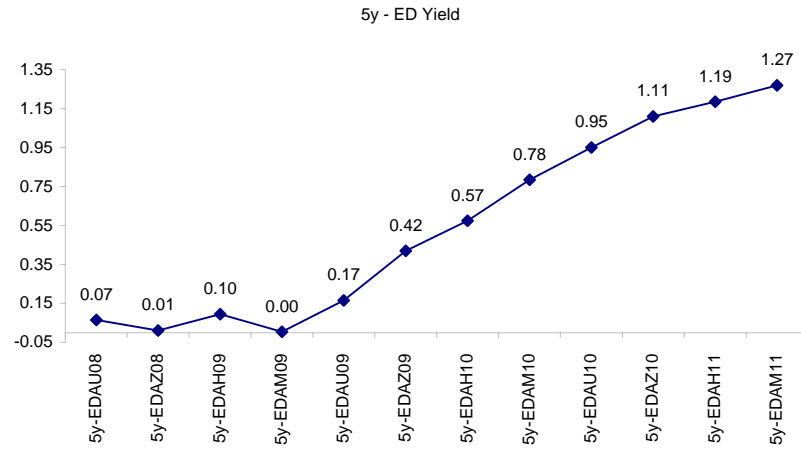


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.940	0.07	5y-EDAU08	-47.538
EDAZ08	4.015	0.01	5y-EDAZ08	-75.448
EDAH09	3.910	0.10	5y-EDAH09	-86.977
EDAM09	4.000	0.00	5y-EDAM09	-84.117
EDAU09	4.170	0.17	5y-EDAU09	-91.943
EDAZ09	4.425	0.42	5y-EDAZ09	-90.476
EDAH10	4.580	0.57	5y-EDAH10	-88.474
EDAM10	4.790	0.78	5y-EDAM10	-87.320
EDAU10	4.955	0.95	5y-EDAU10	-86.772
EDAZ10	5.115	1.11	5y-EDAZ10	-86.020
EDAH11	5.190	1.19	5y-EDAH11	-85.249
EDAM11	5.275	1.27	5y-EDAM11	-84.281

Price = Outright Decimal Price - Euro Contract Price

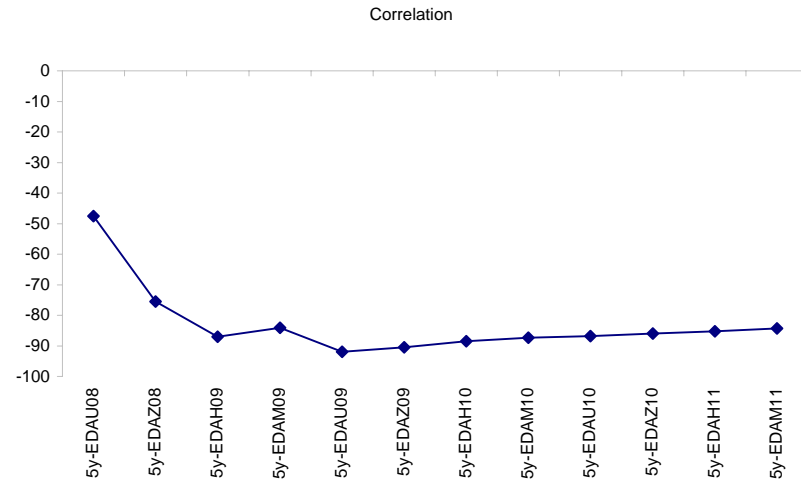
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAU08	0.010	4.57	4.56	5y-EDAU08
EDAZ08	0.260	4.57	4.31	5y-EDAZ08
EDAH09	0.509	4.57	4.06	5y-EDAH09
EDAM09	0.758	4.57	3.81	5y-EDAM09
EDAU09	1.008	4.57	3.56	5y-EDAU09
EDAZ09	1.257	4.57	3.31	5y-EDAZ09
EDAH10	1.506	4.57	3.06	5y-EDAH10
EDAM10	1.755	4.57	2.82	5y-EDAM10
EDAU10	2.005	4.57	2.57	5y-EDAU10
EDAZ10	2.254	4.57	2.32	5y-EDAZ10
EDAH11	2.503	4.57	2.07	5y-EDAH11
EDAM11	2.753	4.57	1.82	5y-EDAM11

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



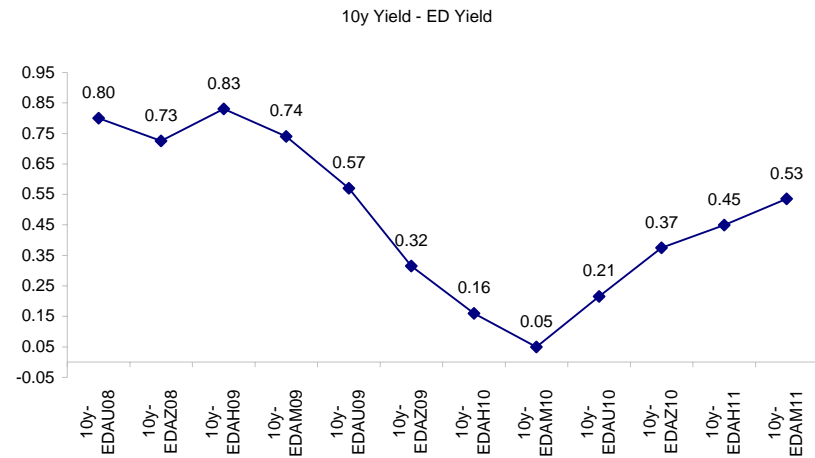


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.940	0.80	10y-EDAU08	-59.974
EDAZ08	4.015	0.73	10y-EDAZ08	-85.956
EDAH09	3.910	0.83	10y-EDAH09	-93.929
EDAM09	4.000	0.74	10y-EDAM09	-91.570
EDAU09	4.170	0.57	10y-EDAU09	-96.022
EDAZ09	4.425	0.32	10y-EDAZ09	-94.979
EDAH10	4.580	0.16	10y-EDAH10	-93.976
EDAM10	4.790	0.05	10y-EDAM10	-93.434
EDAU10	4.955	0.21	10y-EDAU10	-93.421
EDAZ10	5.115	0.37	10y-EDAZ10	-93.282
EDAH11	5.190	0.45	10y-EDAH11	-93.102
EDAM11	5.275	0.53	10y-EDAM11	-92.832

Price = Outright Decimal Price - Euro Contract Price

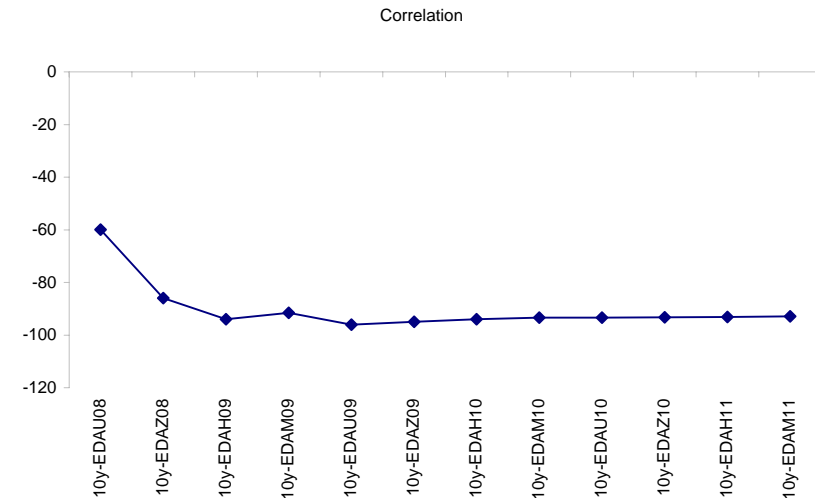
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAU08	0.010	8.15	8.14	10y-EDAU08
EDAZ08	0.260	8.15	7.89	10y-EDAZ08
EDAH09	0.509	8.15	7.64	10y-EDAH09
EDAM09	0.758	8.15	7.39	10y-EDAM09
EDAU09	1.008	8.15	7.14	10y-EDAU09
EDAZ09	1.257	8.15	6.89	10y-EDAZ09
EDAH10	1.506	8.15	6.64	10y-EDAH10
EDAM10	1.755	8.15	6.39	10y-EDAM10
EDAU10	2.005	8.15	6.14	10y-EDAU10
EDAZ10	2.254	8.15	5.89	10y-EDAZ10
EDAH11	2.503	8.15	5.64	10y-EDAH11
EDAM11	2.753	8.15	5.39	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.

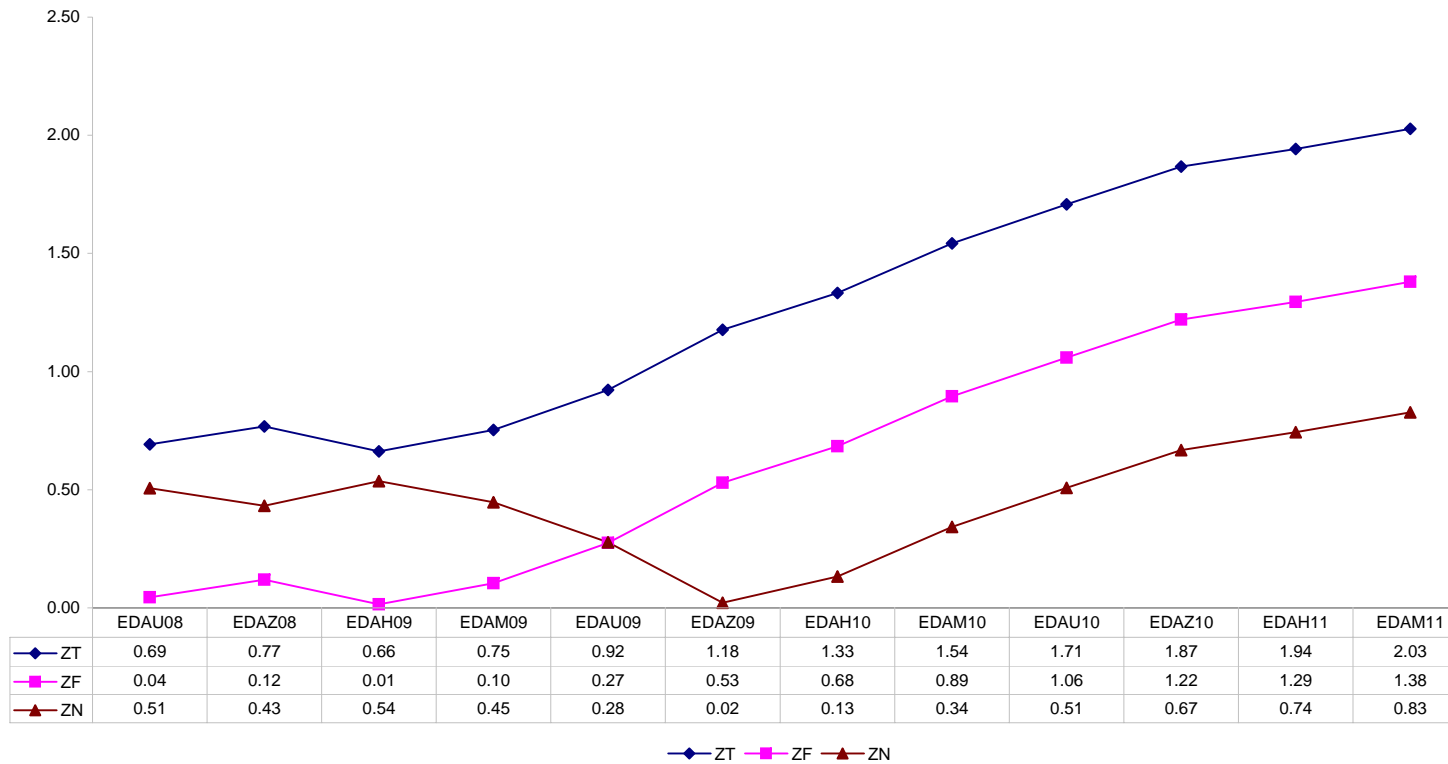
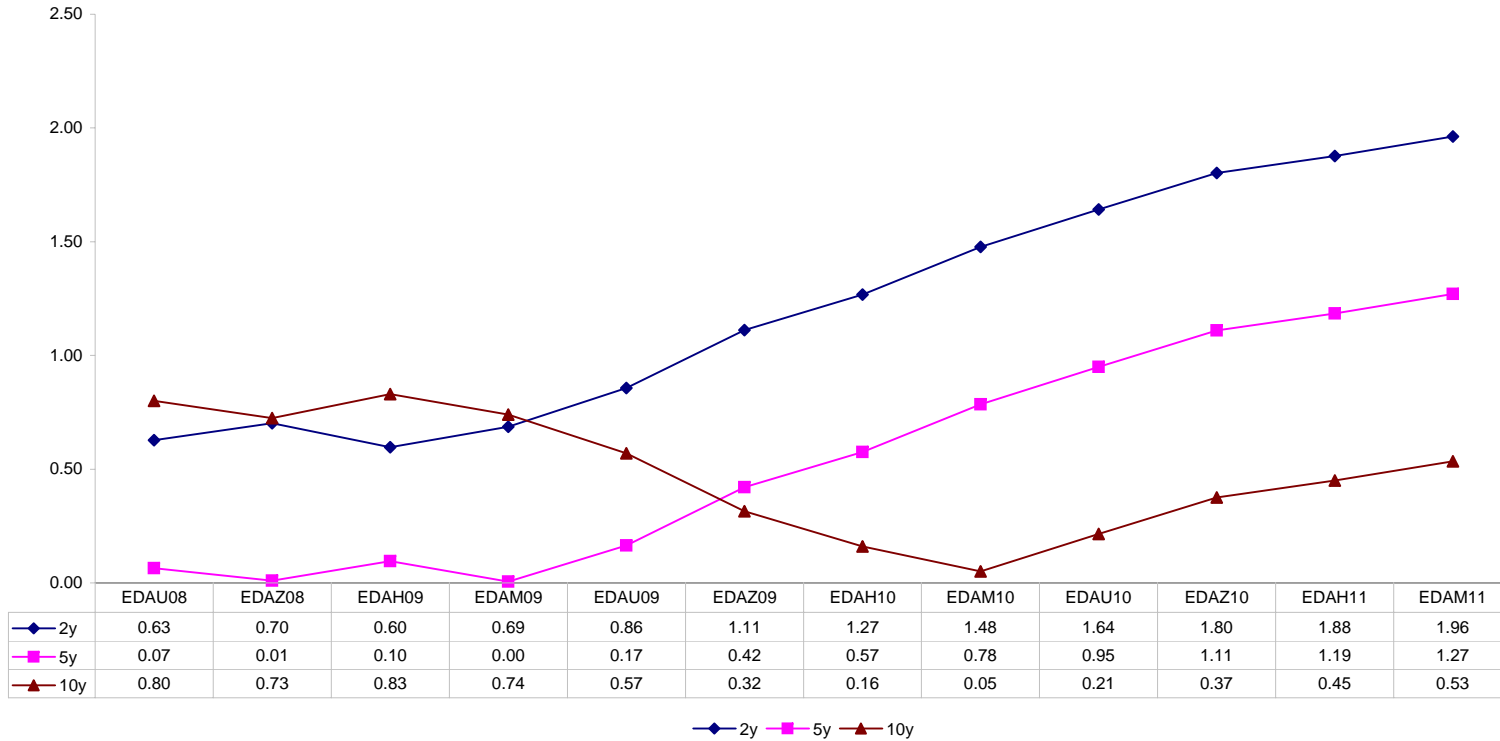
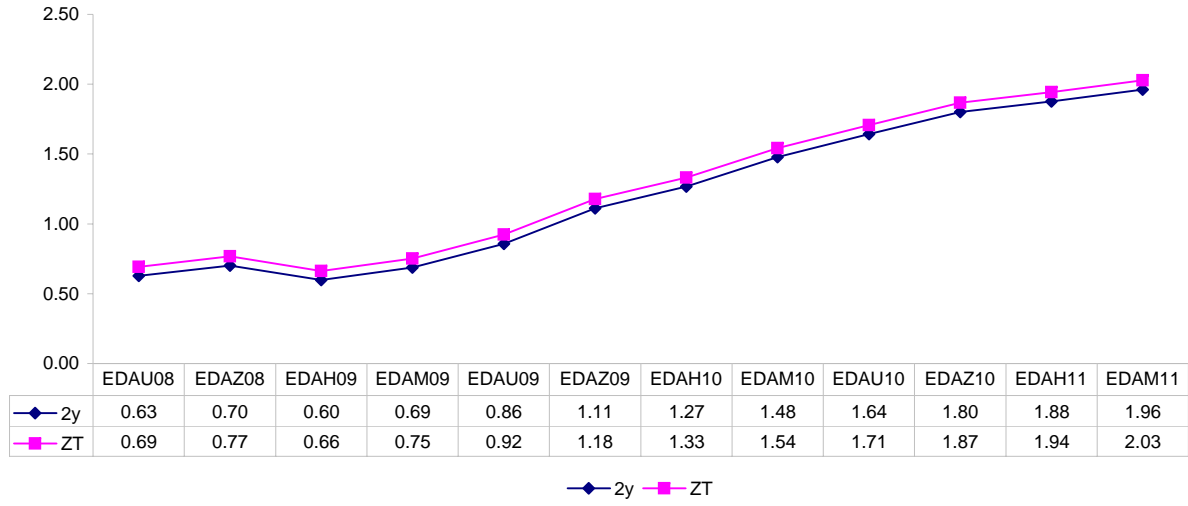


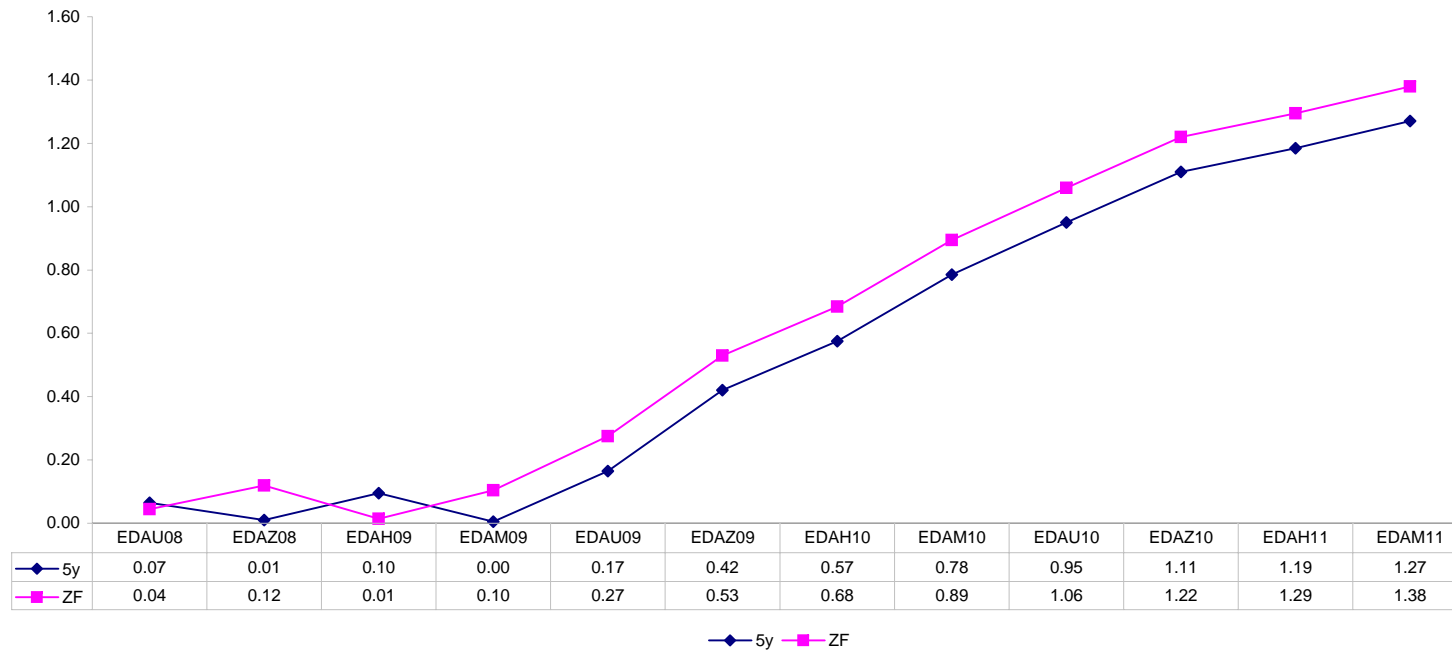
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



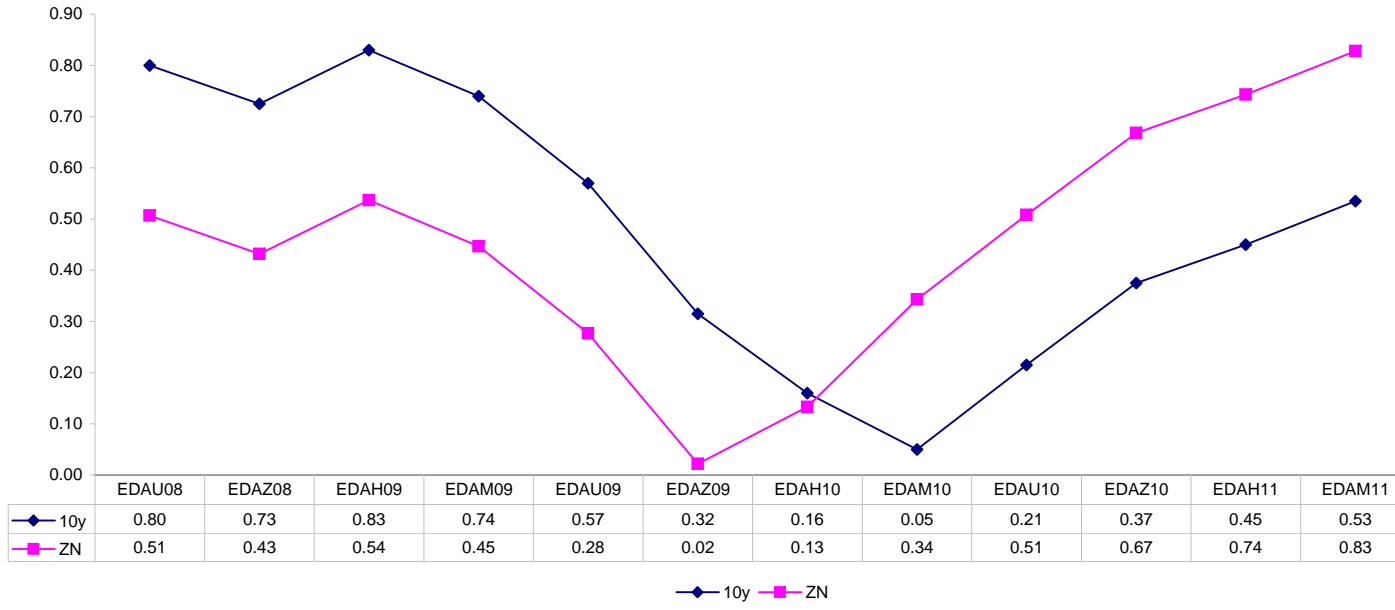
2y Basis TED Curve



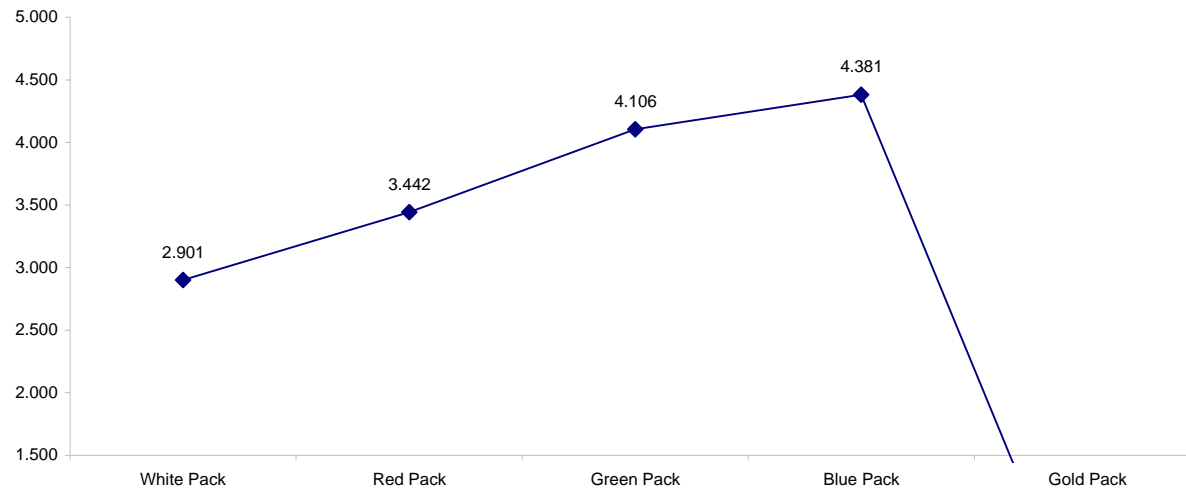
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.901	-1.063	9715.875
Red Pack	3.442	2.000	9663.375
Green Pack	4.106	2.250	9599.125
Blue Pack	4.381	3.500	9572.500
Gold Pack		1.000	9551.375



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

