

## **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	106.0625	106.020	2.360	1.74
ZF	111.8281	111.265	2.986	3.88
ZN	115.3594	115.115	3.669	5.83
2y	99.438	99.1400	2.419	1.89
5y	100.156	100.0500	3.089	4.48
10y	100.344	100.1100	3.829	8.08

Eurodollars (ED)					
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month
EDAM08	97.360	2.640	28	0.076	JUN
EDAU08	97.285	2.715	119	0.325	SEP White
EDAZ08	97.050	2.950	210	0.575	DEC Pack
EDAH09	96.905	3.095	301	0.824	MAR
EDAM09	96.720	3.280	392	1.073	JUN
EDAU09	96.525	3.475	483	1.323	SEP Red Pack
EDAZ09	96.325	3.675	574	1.572	DEC
EDAH10	96.205	3.795	665	1.821	MAR
EDAM10	96.075	3.925	756	2.071	JUN
EDAU10	95.955	4.045	847	2.320	SEP Green
EDAZ10	95.840	4.160	938	2.569	DEC Pack
EDAH11	95.770	4.230	1029	2.819	MAR
EDAM11	95.700	4.300	1120	3.068	JUN
EDAU11	95.630	4.370	1218	3.336	SEP Blue Pack
EDAZ11	95.545	4.455	1309	3.586	DEC
EDAH12	95.510	4.490	1400	3.835	MAR
EDAM12	95.465	4.535	1491	4.084	JUN
EDAU12	95.415	4.585	1582	4.334	SEP Gold Pack
EDAZ12	95.350	4.650	1673	4.583	DEC
EDAH13	95.315	4.685	1764	4.832	MAR

	Last Yield	Net Yield	Last Price	
White Pack	2.910	3.375	9715.000	
Red Pack	3.638	6.125	9644.375	Pack
Green Pack	4.190	4.750	9591.000	Prices
Blue Pack	4.515	4.750	9559.625	
Gold Pack	4.732	6.250	9538.625	

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.

**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)

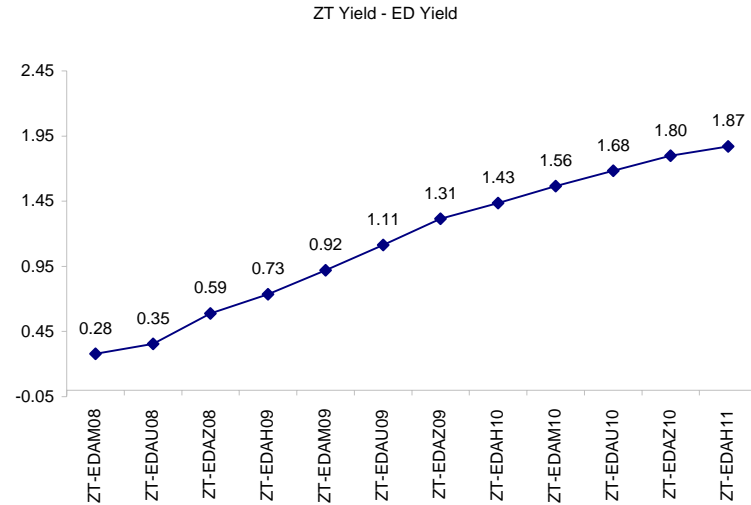
**Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations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

ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	8.702	0.28	ZT-EDAM08	88.112
EDAU08	8.777	0.35	ZT-EDAU08	94.839
EDAZ08	9.012	0.59	ZT-EDAZ08	98.598
EDAH09	9.157	0.73	ZT-EDAH09	99.340
EDAM09	9.342	0.92	ZT-EDAM09	99.254
EDAU09	9.537	1.11	ZT-EDAU09	99.229
EDAZ09	9.737	1.31	ZT-EDAZ09	99.070
EDAH10	9.857	1.43	ZT-EDAH10	98.752
EDAM10	9.987	1.56	ZT-EDAM10	97.413
EDAU10	10.108	1.68	ZT-EDAU10	94.653
EDAZ10	10.223	1.80	ZT-EDAZ10	89.651
EDAH11	10.293	1.87	ZT-EDAH11	86.310

Price = Outright Decimal Price - Euro Contract Price

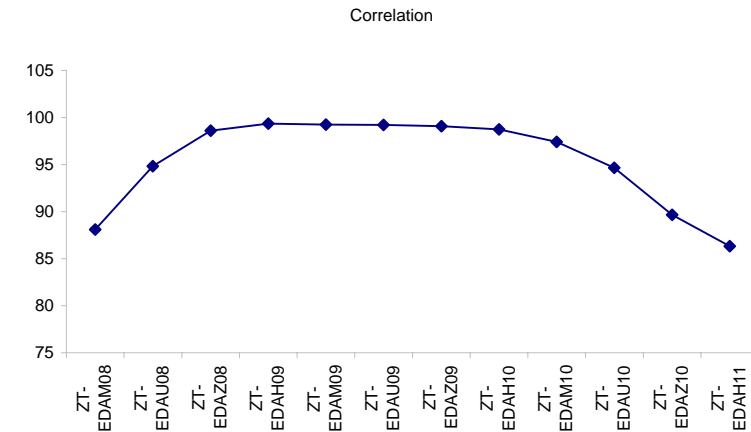
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZT Duration	Spread Duration	
EDAM08	0.076	1.74	1.67	ZT-EDAM08		
EDAU08	0.325	1.74	1.42	ZT-EDAU08		
EDAZ08	0.575	1.74	1.17	ZT-EDAZ08		
EDAH09	0.824	1.74	0.92	ZT-EDAH09		
EDAM09	1.073	1.74	0.67	ZT-EDAM09		
EDAU09	1.323	1.74	0.42	ZT-EDAU09		
EDAZ09	1.572	1.74	0.17	ZT-EDAZ09		
EDAH10	1.821	1.74	(0.08)	ZT-EDAH10		
EDAM10	2.071	1.74	(0.33)	ZT-EDAM10		
EDAU10	2.320	1.74	(0.58)	ZT-EDAU10		
EDAZ10	2.569	1.74	(0.83)	ZT-EDAZ10		
EDAH11	2.819	1.74	(1.08)	ZT-EDAH11		

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

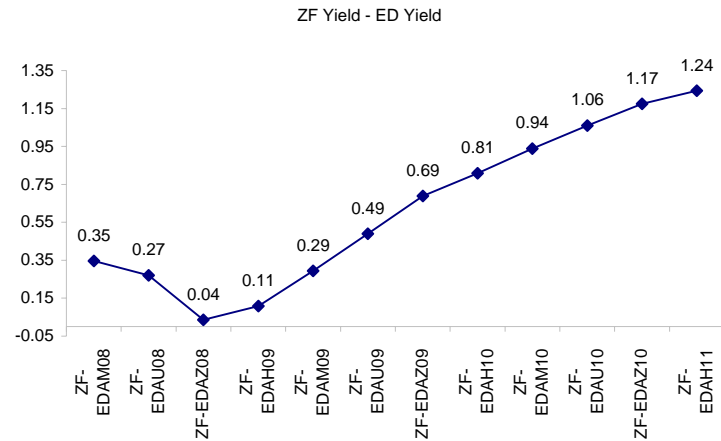


ZF				Correlation* (percent)
Spread Price	Spread Yield	Spread Name		
EDAM08	14.468	0.35	ZF-EDAM08	75.996
EDAU08	14.543	0.27	ZF-EDAU08	81.788
EDAZ08	14.778	0.04	ZF-EDAZ08	88.024
EDAH09	14.923	0.11	ZF-EDAH09	92.461
EDAM09	15.108	0.29	ZF-EDAM09	93.869
EDAU09	15.303	0.49	ZF-EDAU09	93.444
EDAZ09	15.503	0.69	ZF-EDAZ09	93.840
EDAH10	15.623	0.81	ZF-EDAH10	95.144
EDAM10	15.753	0.94	ZF-EDAM10	97.276
EDAU10	15.873	1.06	ZF-EDAU10	98.806
EDAZ10	15.988	1.17	ZF-EDAZ10	99.224
EDAH11	16.058	1.24	ZF-EDAH11	98.393

Price = Outright Decimal Price - Euro Contract Price

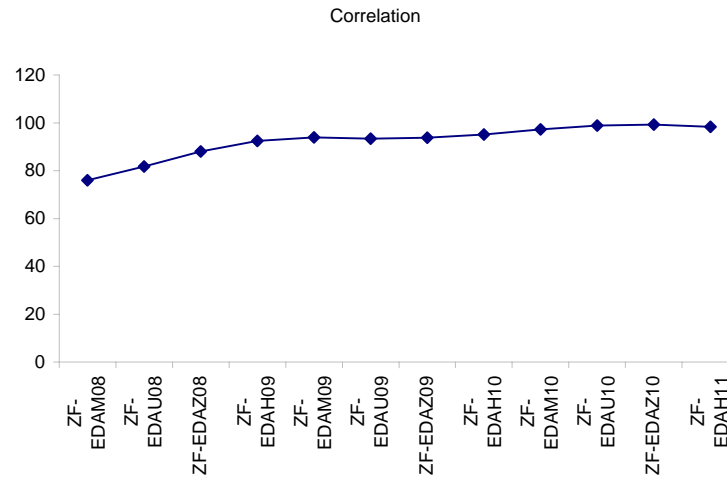
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAM08	0.076	3.88	3.81	ZF-EDAM08	
EDAU08	0.325	3.88	3.56	ZF-EDAU08	
EDAZ08	0.575	3.88	3.31	ZF-EDAZ08	
EDAH09	0.824	3.88	3.06	ZF-EDAH09	
EDAM09	1.073	3.88	2.81	ZF-EDAM09	
EDAU09	1.323	3.88	2.56	ZF-EDAU09	
EDAZ09	1.572	3.88	2.31	ZF-EDAZ09	
EDAH10	1.821	3.88	2.06	ZF-EDAH10	
EDAM10	2.071	3.88	1.81	ZF-EDAM10	
EDAU10	2.320	3.88	1.56	ZF-EDAU10	
EDAZ10	2.569	3.88	1.32	ZF-EDAZ10	
EDAH11	2.819	3.88	1.07	ZF-EDAH11	

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

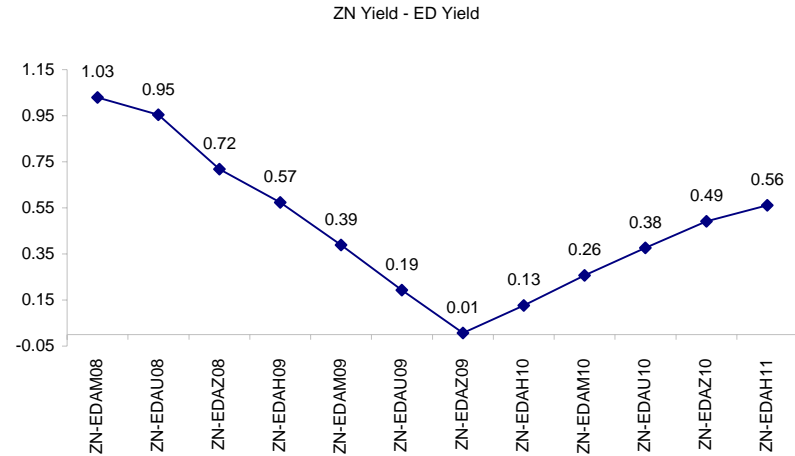


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	17.999	1.03	ZN-EDAM08	66.519
EDAU08	18.074	0.95	ZN-EDAU08	72.386
EDAZ08	18.309	0.72	ZN-EDAZ08	79.760
EDAH09	18.454	0.57	ZN-EDAH09	85.584
EDAM09	18.639	0.39	ZN-EDAM09	87.820
EDAU09	18.834	0.19	ZN-EDAU09	87.519
EDAZ09	19.034	0.01	ZN-EDAZ09	88.112
EDAH10	19.154	0.13	ZN-EDAH10	95.144
EDAM10	19.284	0.26	ZN-EDAM10	97.276
EDAU10	19.404	0.38	ZN-EDAU10	98.806
EDAZ10	19.519	0.49	ZN-EDAZ10	99.224
EDAH11	19.589	0.56	ZN-EDAH11	98.393

Price = Outright Decimal Price - Euro Contract Price

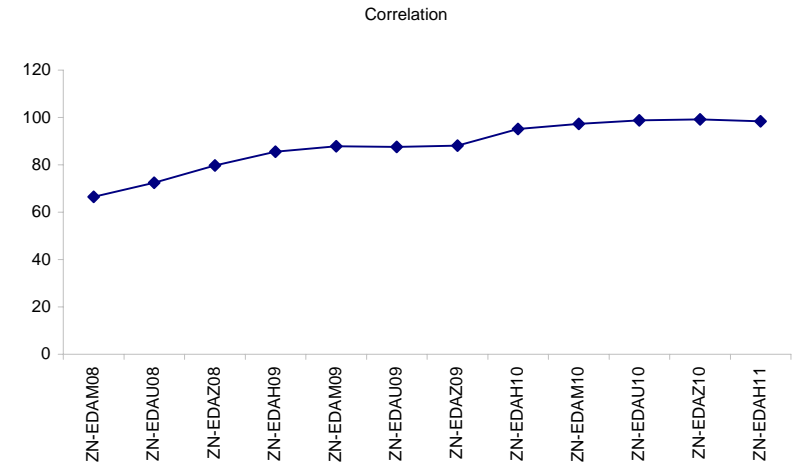
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year	ZN Duration	Spread Duration	
EDAM08	0.076	5.83	5.75	ZN-EDAM08
EDAU08	0.325	5.83	5.50	ZN-EDAU08
EDAZ08	0.575	5.83	5.26	ZN-EDAZ08
EDAH09	0.824	5.83	5.01	ZN-EDAH09
EDAM09	1.073	5.83	4.76	ZN-EDAM09
EDAU09	1.323	5.83	4.51	ZN-EDAU09
EDAZ09	1.572	5.83	4.26	ZN-EDAZ09
EDAH10	1.821	5.83	4.01	ZN-EDAH10
EDAM10	2.071	5.83	3.76	ZN-EDAM10
EDAU10	2.320	5.83	3.51	ZN-EDAU10
EDAZ10	2.569	5.83	3.26	ZN-EDAZ10
EDAH11	2.819	5.83	3.01	ZN-EDAH11

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

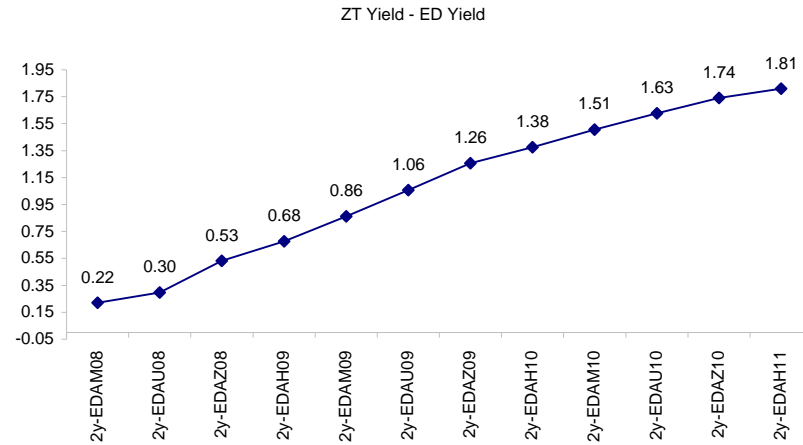


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	2.078	0.22	2y-EDAM08	-83.204
EDAU08	2.153	0.30	2y-EDAU08	-90.796
EDAZ08	2.388	0.53	2y-EDAZ08	-95.880
EDAH09	2.533	0.68	2y-EDAH09	-96.846
EDAM09	2.718	0.86	2y-EDAM09	-97.022
EDAU09	2.912	1.06	2y-EDAU09	-97.234
EDAZ09	3.113	1.26	2y-EDAZ09	-97.123
EDAH10	3.233	1.38	2y-EDAH10	-96.496
EDAM10	3.363	1.51	2y-EDAM10	-94.849
EDAU10	3.483	1.63	2y-EDAU10	-91.439
EDAZ10	3.598	1.74	2y-EDAZ10	-85.810
EDAH11	3.668	1.81	2y-EDAH11	-81.991

Price = Outright Decimal Price - Euro Contract Price

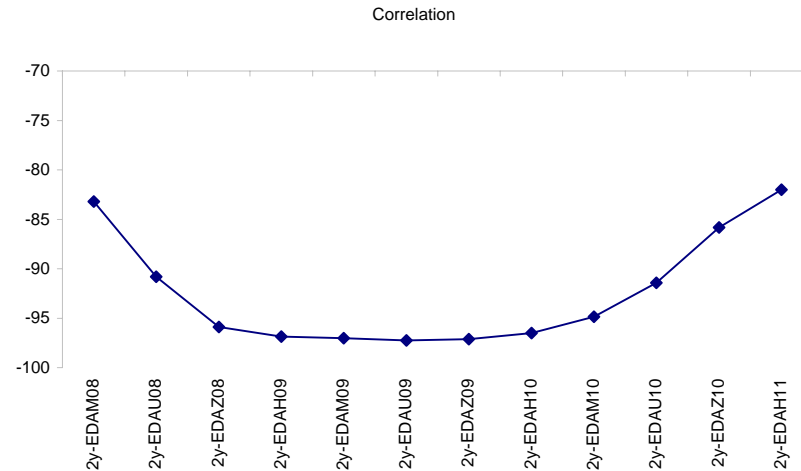
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	2Y Duration	Spread Duration		
EDAM08	0.076	1.89	1.82	2y-EDAM08
EDAU08	0.325	1.89	1.57	2y-EDAU08
EDAZ08	0.575	1.89	1.32	2y-EDAZ08
EDAH09	0.824	1.89	1.07	2y-EDAH09
EDAM09	1.073	1.89	0.82	2y-EDAM09
EDAU09	1.323	1.89	0.57	2y-EDAU09
EDAZ09	1.572	1.89	0.32	2y-EDAZ09
EDAH10	1.821	1.89	0.07	2y-EDAH10
EDAM10	2.071	1.89	(0.18)	2y-EDAM10
EDAU10	2.320	1.89	(0.43)	2y-EDAU10
EDAZ10	2.569	1.89	(0.68)	2y-EDAZ10
EDAH11	2.819	1.89	(0.93)	2y-EDAH11

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

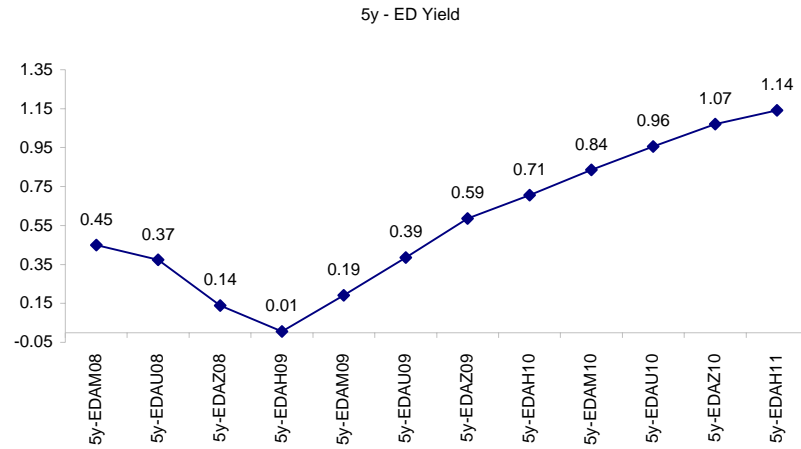


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	2.796	0.45	5y-EDAM08	-74.182
EDAU08	2.871	0.37	5y-EDAU08	-79.666
EDAZ08	3.106	0.14	5y-EDAZ08	-74.182
EDAH09	3.251	0.01	5y-EDAH09	-90.200
EDAM09	3.436	0.19	5y-EDAM09	-91.064
EDAU09	3.631	0.39	5y-EDAU09	-90.467
EDAZ09	3.831	0.59	5y-EDAZ09	-90.898
EDAH10	3.951	0.71	5y-EDAH10	-92.195
EDAM10	4.081	0.84	5y-EDAM10	-94.299
EDAU10	4.201	0.96	5y-EDAU10	-95.714
EDAZ10	4.316	1.07	5y-EDAZ10	-95.835
EDAH11	4.386	1.14	5y-EDAH11	-95.005

Price = Outright Decimal Price - Euro Contract Price

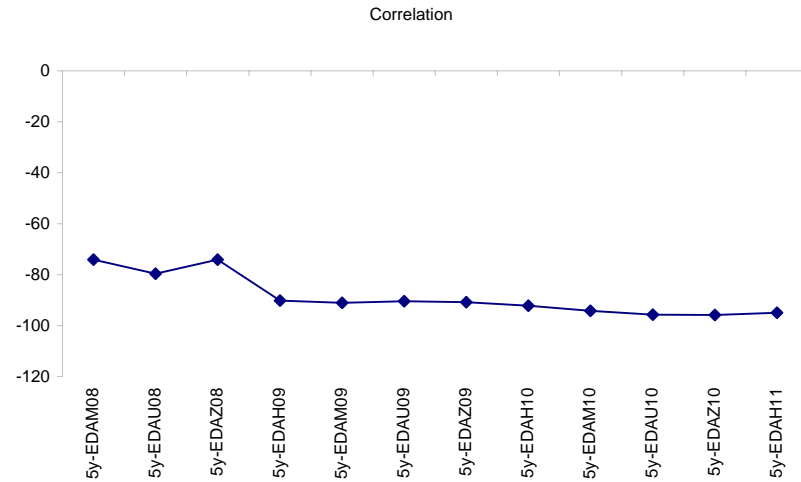
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAM08	0.076	4.48	4.40	5y-EDAM08
EDAU08	0.325	4.48	4.15	5y-EDAU08
EDAZ08	0.575	4.48	3.90	5y-EDAZ08
EDAH09	0.824	4.48	3.65	5y-EDAH09
EDAM09	1.073	4.48	3.41	5y-EDAM09
EDAU09	1.323	4.48	3.16	5y-EDAU09
EDAZ09	1.572	4.48	2.91	5y-EDAZ09
EDAH10	1.821	4.48	2.66	5y-EDAH10
EDAM10	2.071	4.48	2.41	5y-EDAM10
EDAU10	2.320	4.48	2.16	5y-EDAU10
EDAZ10	2.569	4.48	1.91	5y-EDAZ10
EDAH11	2.819	4.48	1.66	5y-EDAH11

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



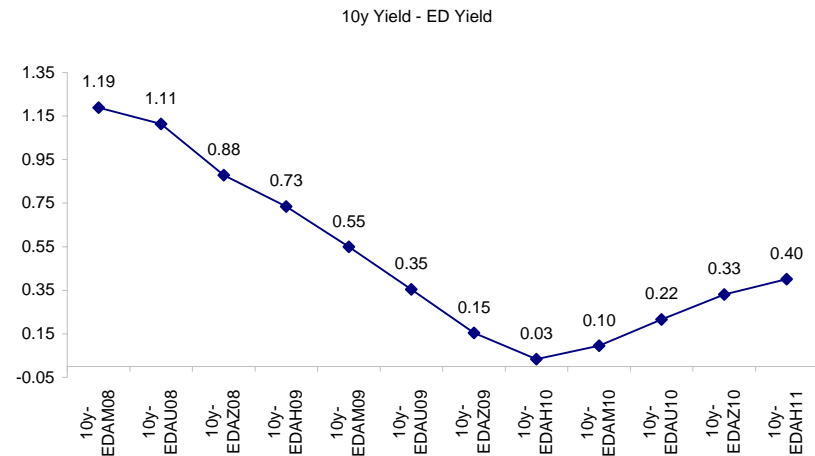


10y				Correlation*
	Spread Price	Spread Yield	Spread Name	(percent)
EDAM08	2.796	1.19	10y-EDAM08	-65.345
EDAU08	2.871	1.11	10y-EDAU08	-68.852
EDAZ08	3.106	0.88	10y-EDAZ08	-65.345
EDAH09	3.251	0.73	10y-EDAH09	-78.982
EDAM09	3.436	0.55	10y-EDAM09	-79.370
EDAU09	3.631	0.35	10y-EDAU09	-78.122
EDAZ09	3.831	0.15	10y-EDAZ09	-78.793
EDAH10	3.951	0.03	10y-EDAH10	-81.161
EDAM10	4.081	0.10	10y-EDAM10	-85.152
EDAU10	4.201	0.22	10y-EDAU10	-89.133
EDAZ10	4.316	0.33	10y-EDAZ10	-92.160
EDAH11	4.386	0.40	10y-EDAH11	-93.359

Price = Outright Decimal Price - Euro Contract Price

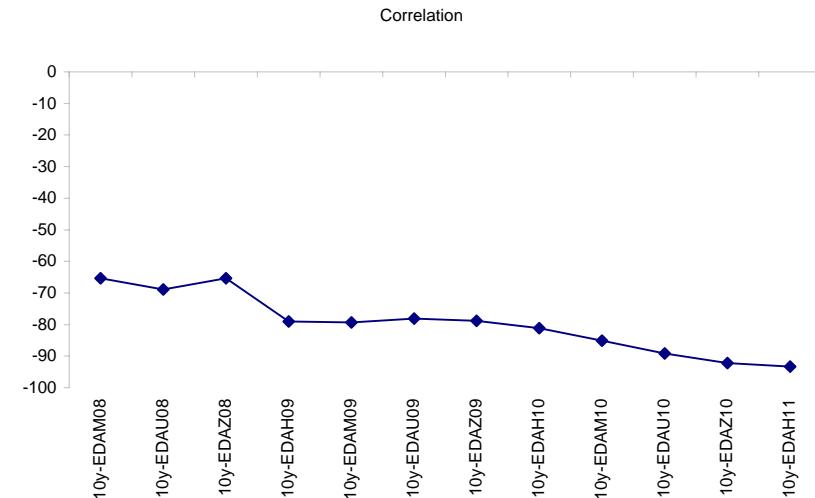
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as				
	Fraction of year	10Y Duration	Spread Duration	
EDAM08	0.076	8.08	8.01	10y-EDAM08
EDAU08	0.325	8.08	7.76	10y-EDAU08
EDAZ08	0.575	8.08	7.51	10y-EDAZ08
EDAH09	0.824	8.08	7.26	10y-EDAH09
EDAM09	1.073	8.08	7.01	10y-EDAM09
EDAU09	1.323	8.08	6.76	10y-EDAU09
EDAZ09	1.572	8.08	6.51	10y-EDAZ09
EDAH10	1.821	8.08	6.26	10y-EDAH10
EDAM10	2.071	8.08	6.01	10y-EDAM10
EDAU10	2.320	8.08	5.76	10y-EDAU10
EDAZ10	2.569	8.08	5.51	10y-EDAZ10
EDAH11	2.819	8.08	5.26	10y-EDAH11

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.

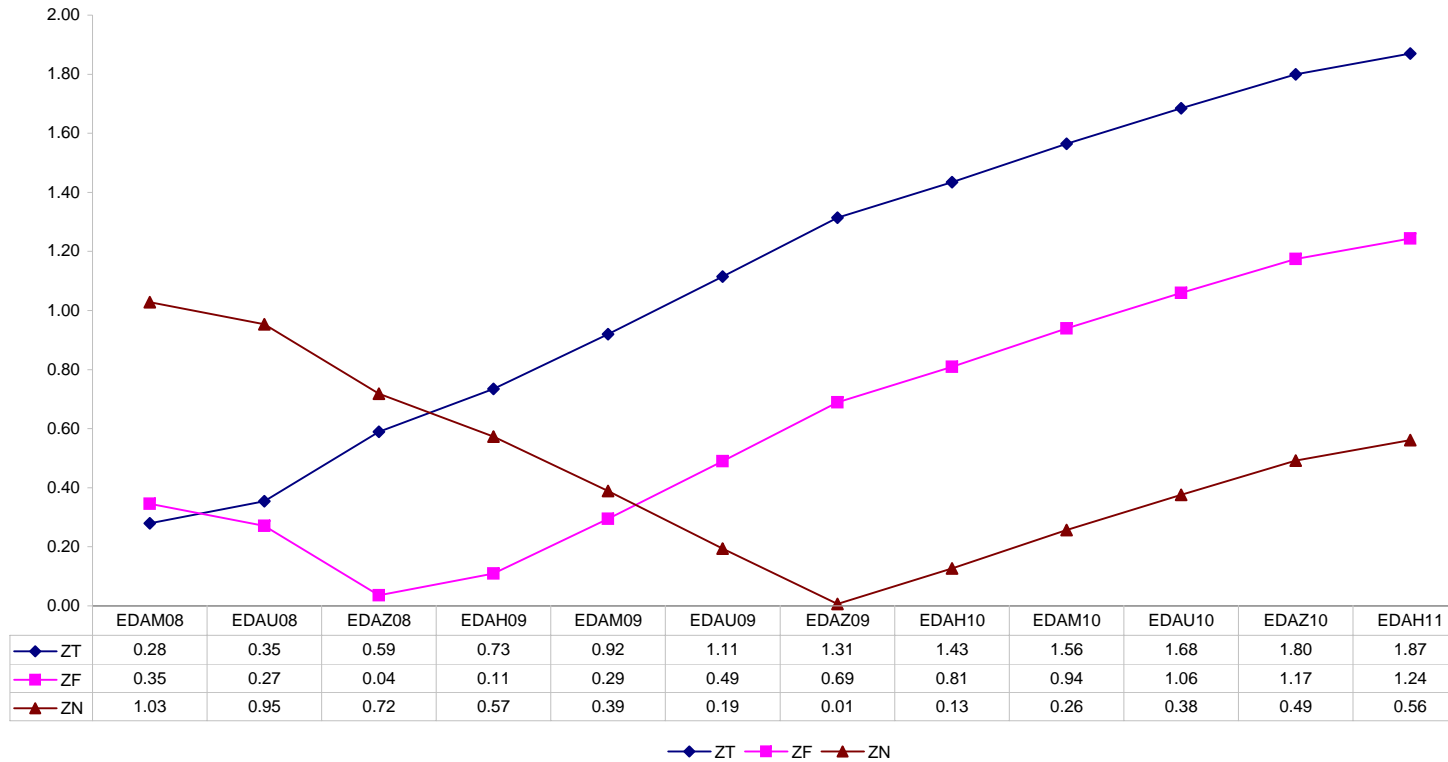
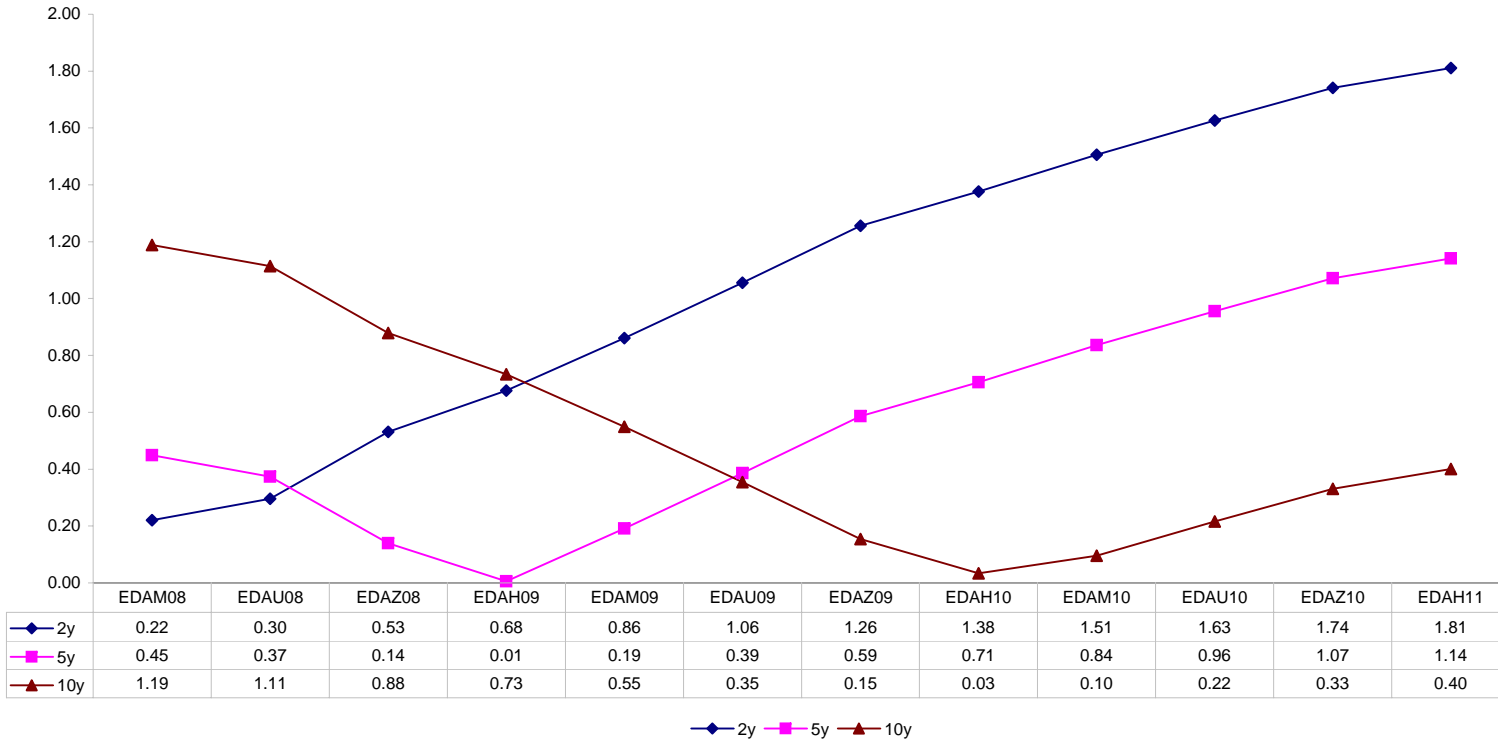
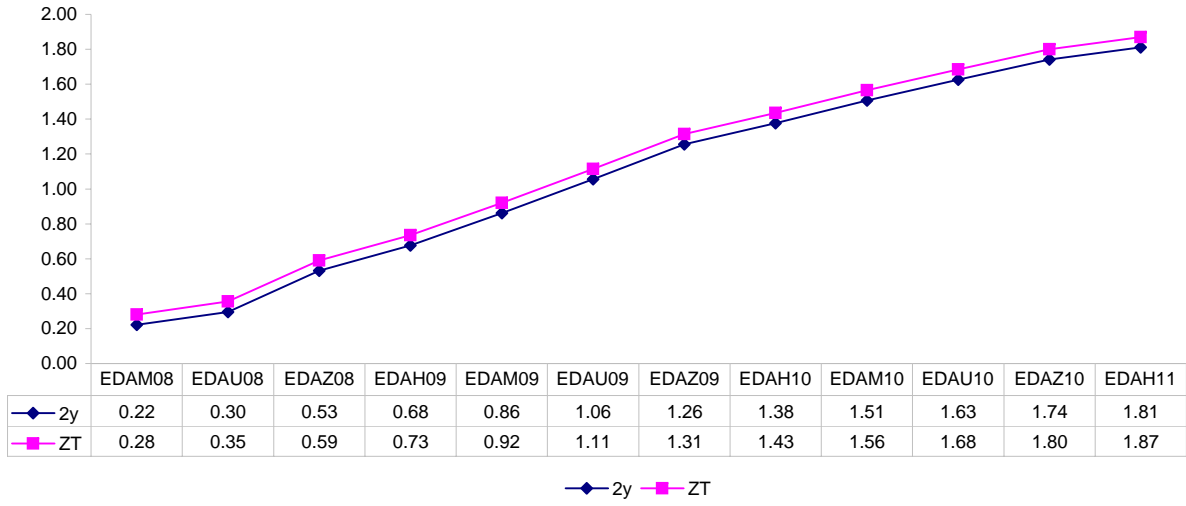


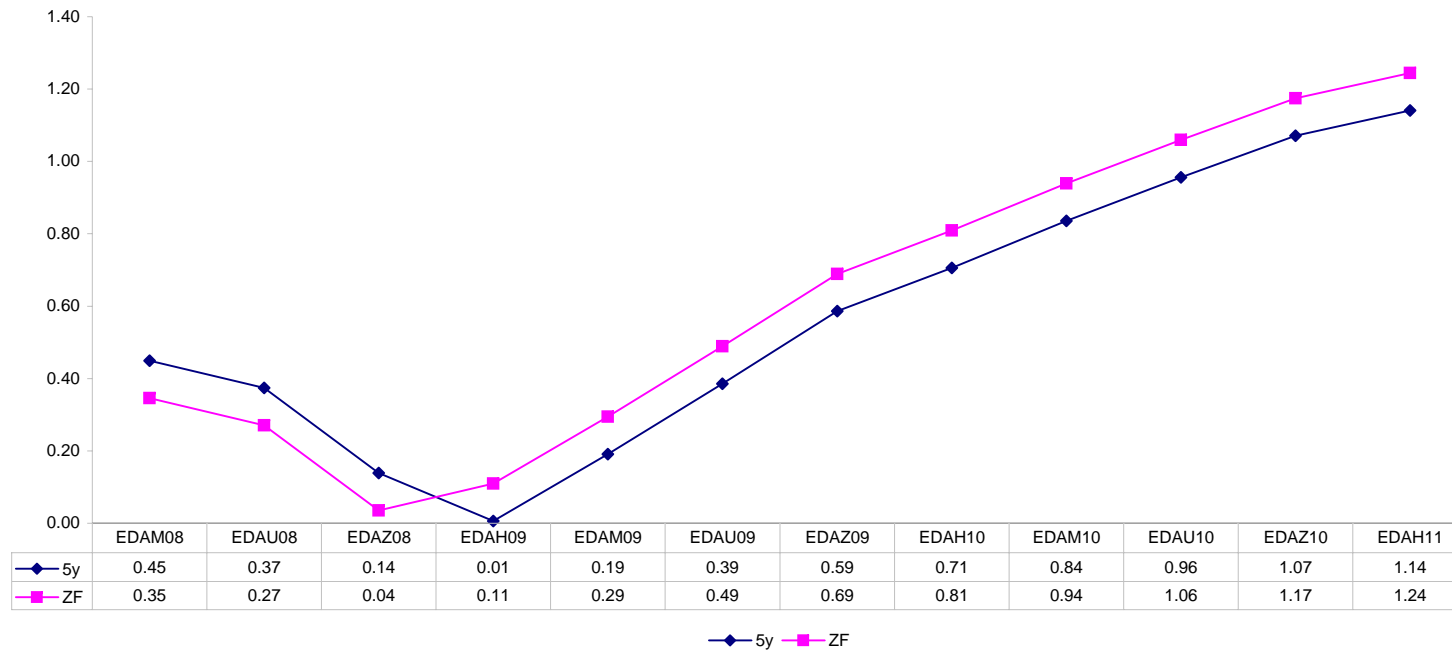
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



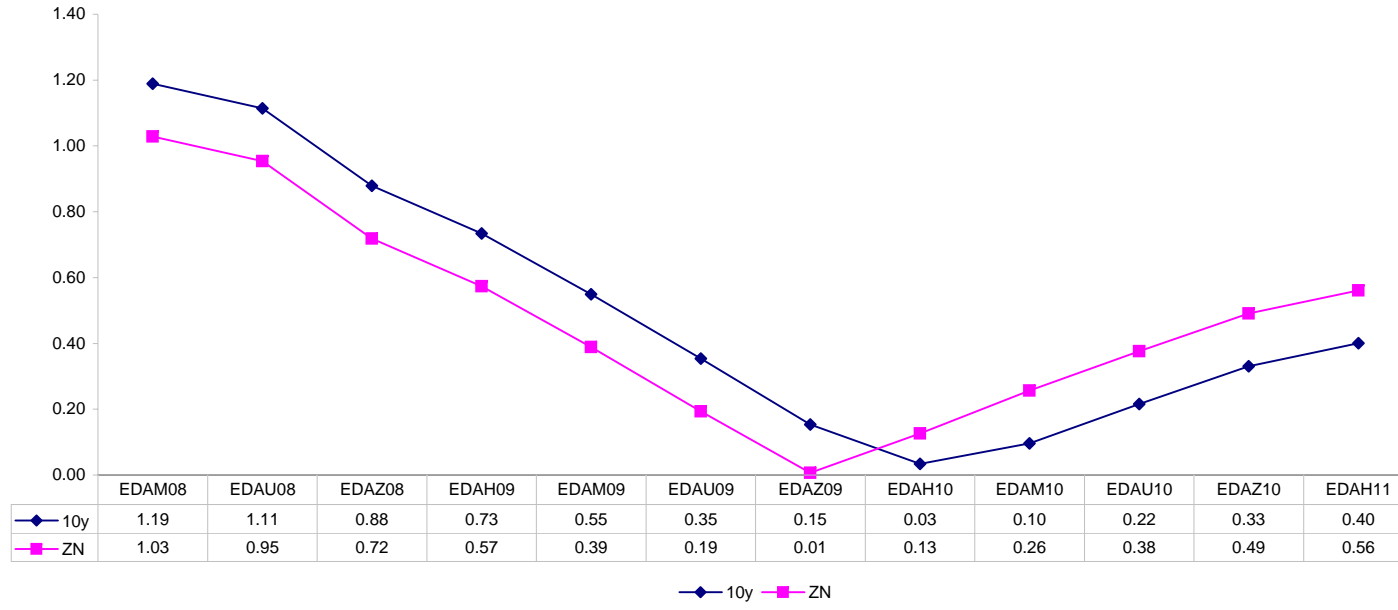
2y Basis TED Curve



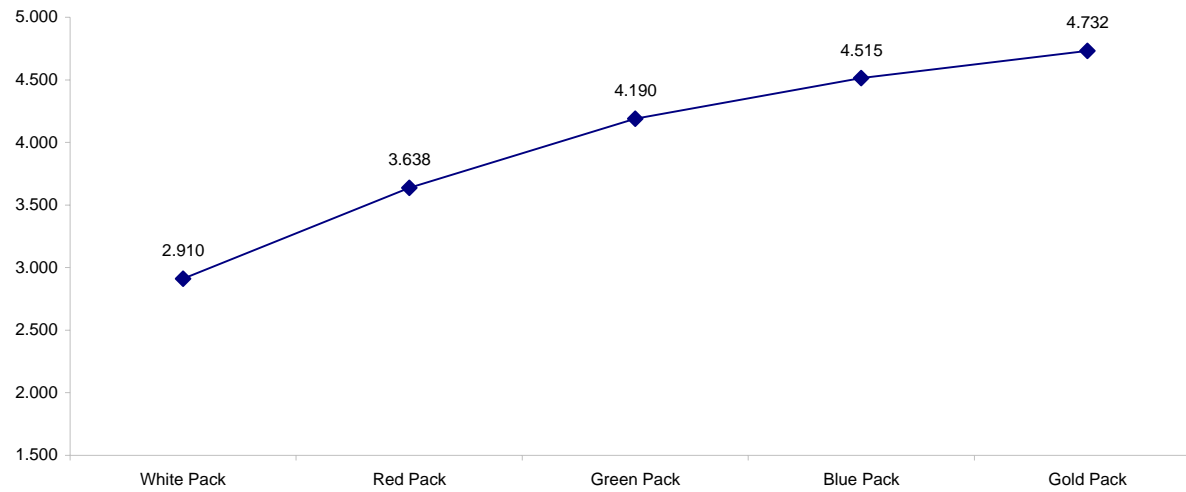
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.910	3.375	9715.000
Red Pack	3.638	6.125	9644.375
Green Pack	4.190	4.750	9591.000
Blue Pack	4.515	4.750	9559.625
Gold Pack	4.732	6.250	9538.625



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

