

## **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	104.9750	104.312	2.835	1.90
ZF	109.6875	109.220	3.417	4.11
ZN	112.6406	112.205	3.709	5.98
2y	99.578	99.1850	2.847	1.90
5y	100.069	100.0220	3.483	4.52
10y	98.672	98.2150	4.038	8.13

Eurodollars (ED)					
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month
EDAM08	97.203	2.798	6	0.016	JUN
EDAU08	96.815	3.185	97	0.265	SEP White
EDAZ08	96.485	3.515	188	0.514	DEC Pack
EDAH09	96.305	3.695	279	0.764	MAR
EDAM09	96.100	3.900	370	1.013	JUN
EDAU09	95.890	4.110	461	1.262	SEP Red Pack
EDAZ09	95.655	4.345	552	1.512	DEC
EDAH10	95.490	4.510	643	1.761	MAR
EDAM10	95.330	4.670	734	2.010	JUN
EDAU10	95.215	4.785	825	2.260	SEP Green
EDAZ10	95.115	4.885	916	2.509	DEC Pack
EDAH11	95.080	4.920	1007	2.758	MAR
EDAM11	95.045	4.955	1098	3.008	JUN
EDAU11	95.030	4.970	1196	3.276	SEP Blue Pack
EDAZ11	95.005	4.995	1287	3.525	DEC
EDAH12	94.945	5.055	1378	3.775	MAR
EDAM12	94.925	5.075	1469	4.024	JUN
EDAU12	94.935	5.065	1560	4.273	SEP Gold Pack
EDAZ12	94.870	5.130	1651	4.523	DEC
EDAH13	94.850	5.150	1742	4.772	MAR

	Last Yield	Net Yield	Last Price	
White Pack	3.371	-8.688	9670.313	Pack Prices
Red Pack	4.318	-14.375	9578.625	
Green Pack	4.941	-10.375	9518.500	
Blue Pack	5.127	-8.250	9500.625	
Gold Pack	5.243	-6.875	9489.500	

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)

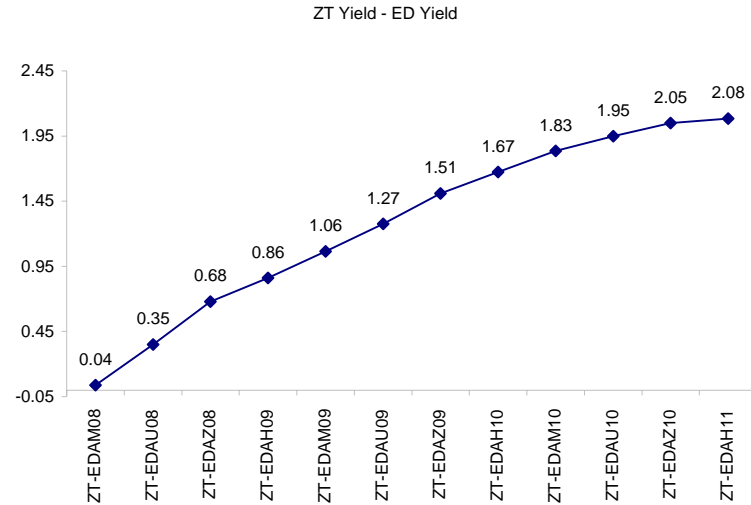
**Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations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

ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	7.772	0.04	ZT-EDAM08	63.159
EDAU08	8.160	0.35	ZT-EDAU08	75.517
EDAZ08	8.490	0.68	ZT-EDAZ08	86.028
EDAH09	8.670	0.86	ZT-EDAH09	95.554
EDAM09	8.875	1.06	ZT-EDAM09	98.577
EDAU09	9.085	1.27	ZT-EDAU09	98.493
EDAZ09	9.320	1.51	ZT-EDAZ09	96.174
EDAH10	9.485	1.67	ZT-EDAH10	92.406
EDAM10	9.645	1.83	ZT-EDAM10	88.098
EDAU10	9.760	1.95	ZT-EDAU10	84.217
EDAZ10	9.860	2.05	ZT-EDAZ10	81.301
EDAH11	9.895	2.08	ZT-EDAH11	79.010

Price = Outright Decimal Price - Euro Contract Price

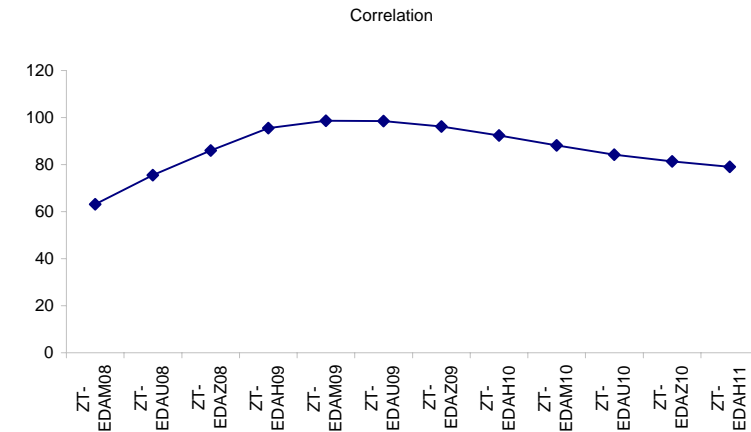
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				
	ZT Duration	Spread Duration		
EDAM08	0.016	1.90	1.88	ZT-EDAM08
EDAU08	0.265	1.90	1.63	ZT-EDAU08
EDAZ08	0.514	1.90	1.38	ZT-EDAZ08
EDAH09	0.764	1.90	1.13	ZT-EDAH09
EDAM09	1.013	1.90	0.88	ZT-EDAM09
EDAU09	1.262	1.90	0.64	ZT-EDAU09
EDAZ09	1.512	1.90	0.39	ZT-EDAZ09
EDAH10	1.761	1.90	0.14	ZT-EDAH10
EDAM10	2.010	1.90	(0.11)	ZT-EDAM10
EDAU10	2.260	1.90	(0.36)	ZT-EDAU10
EDAZ10	2.509	1.90	(0.61)	ZT-EDAZ10
EDAH11	2.758	1.90	(0.86)	ZT-EDAH11

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

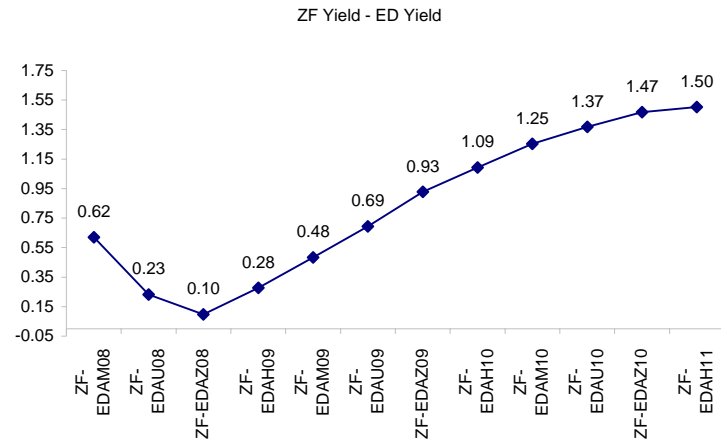


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	12.485	0.62	ZF-EDAM08	50.465
EDAU08	12.873	0.23	ZF-EDAU08	61.226
EDAZ08	13.203	0.10	ZF-EDAZ08	73.789
EDAH09	13.383	0.28	ZF-EDAH09	86.381
EDAM09	13.588	0.48	ZF-EDAM09	91.971
EDAU09	13.798	0.69	ZF-EDAU09	92.441
EDAZ09	14.033	0.93	ZF-EDAZ09	89.502
EDAH10	14.198	1.09	ZF-EDAH10	84.804
EDAM10	14.358	1.25	ZF-EDAM10	80.143
EDAU10	14.473	1.37	ZF-EDAU10	76.691
EDAZ10	14.573	1.47	ZF-EDAZ10	74.852
EDAH11	14.608	1.50	ZF-EDAH11	74.150

Price = Outright Decimal Price - Euro Contract Price

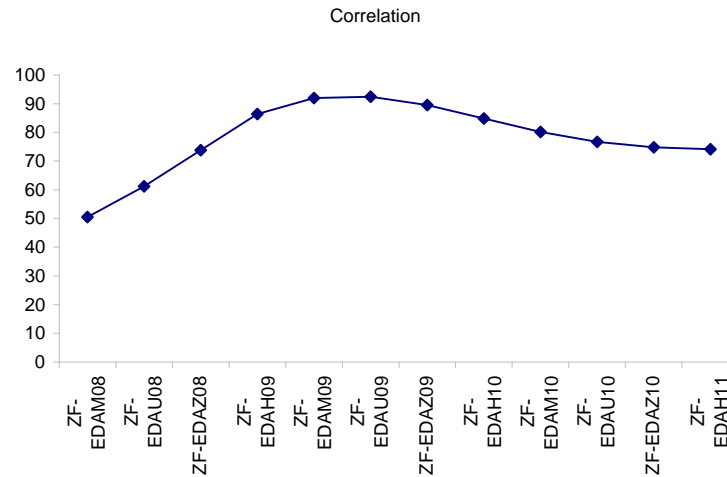
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



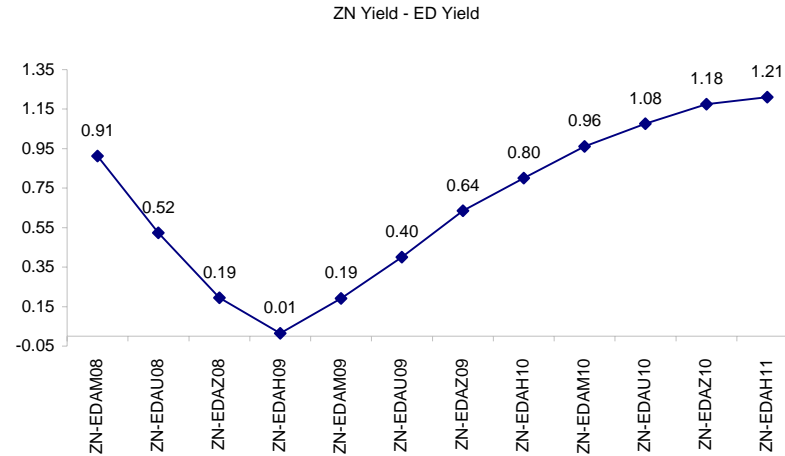
	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAM08	0.016	4.11	4.10	ZF-EDAM08	
EDAU08	0.265	4.11	3.85	ZF-EDAU08	
EDAZ08	0.514	4.11	3.60	ZF-EDAZ08	
EDAH09	0.764	4.11	3.35	ZF-EDAH09	
EDAM09	1.013	4.11	3.10	ZF-EDAM09	
EDAU09	1.262	4.11	2.85	ZF-EDAU09	
EDAZ09	1.512	4.11	2.60	ZF-EDAZ09	
EDAH10	1.761	4.11	2.35	ZF-EDAH10	
EDAM10	2.010	4.11	2.10	ZF-EDAM10	
EDAU10	2.260	4.11	1.85	ZF-EDAU10	
EDAZ10	2.509	4.11	1.60	ZF-EDAZ10	
EDAH11	2.758	4.11	1.35	ZF-EDAH11	

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



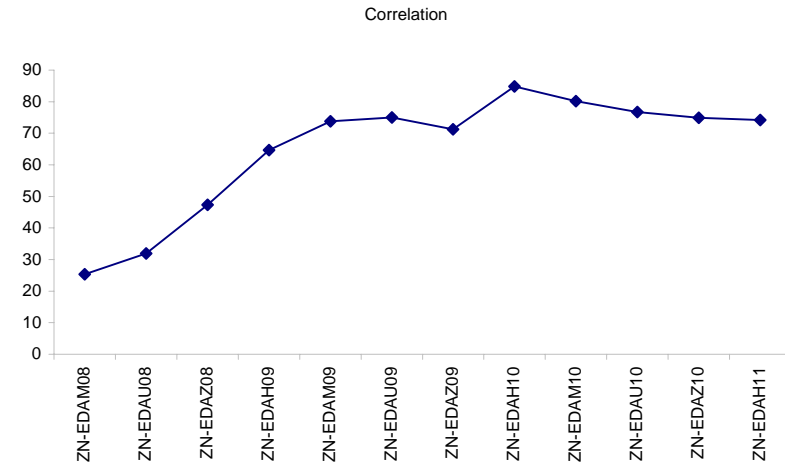
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	15.438	0.91	ZN-EDAM08	25.352
EDAU08	15.826	0.52	ZN-EDAU08	31.974
EDAZ08	16.156	0.19	ZN-EDAZ08	47.346
EDAH09	16.336	0.01	ZN-EDAH09	64.624
EDAM09	16.541	0.19	ZN-EDAM09	73.768
EDAU09	16.751	0.40	ZN-EDAU09	75.032
EDAZ09	16.986	0.64	ZN-EDAZ09	71.205
EDAH10	17.151	0.80	ZN-EDAH10	84.804
EDAM10	17.311	0.96	ZN-EDAM10	80.143
EDAU10	17.426	1.08	ZN-EDAU10	76.691
EDAZ10	17.526	1.18	ZN-EDAZ10	74.852
EDAH11	17.561	1.21	ZN-EDAH11	74.150

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	0.016	5.98	5.96	ZN-EDAM08
EDAU08	0.265	5.98	5.71	ZN-EDAU08
EDAZ08	0.514	5.98	5.47	ZN-EDAZ08
EDAH09	0.764	5.98	5.22	ZN-EDAH09
EDAM09	1.013	5.98	4.97	ZN-EDAM09
EDAU09	1.262	5.98	4.72	ZN-EDAU09
EDAZ09	1.512	5.98	4.47	ZN-EDAZ09
EDAH10	1.761	5.98	4.22	ZN-EDAH10
EDAM10	2.010	5.98	3.97	ZN-EDAM10
EDAU10	2.260	5.98	3.72	ZN-EDAU10
EDAZ10	2.509	5.98	3.47	ZN-EDAZ10
EDAH11	2.758	5.98	3.22	ZN-EDAH11

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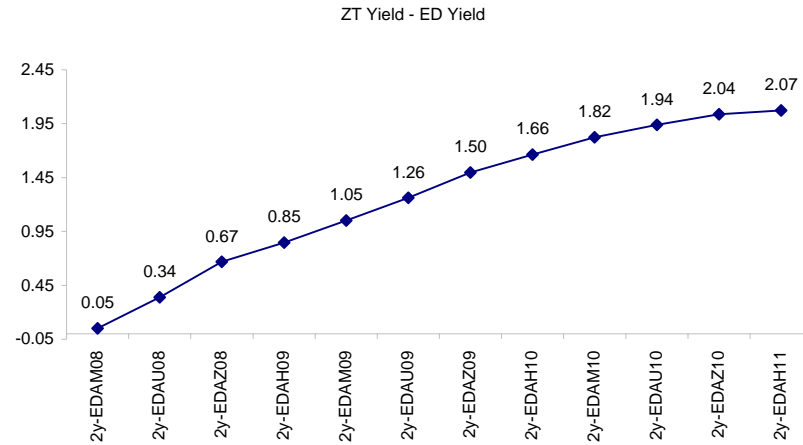


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	2.376	0.05	2y-EDAM08	-69.866
EDAU08	2.763	0.34	2y-EDAU08	-81.113
EDAZ08	3.093	0.67	2y-EDAZ08	-89.793
EDAH09	3.273	0.85	2y-EDAH09	-96.615
EDAM09	3.478	1.05	2y-EDAM09	-98.465
EDAU09	3.688	1.26	2y-EDAU09	-98.473
EDAZ09	3.923	1.50	2y-EDAZ09	-97.101
EDAH10	4.088	1.66	2y-EDAH10	-94.448
EDAM10	4.248	1.82	2y-EDAM10	-91.364
EDAU10	4.363	1.94	2y-EDAU10	-88.717
EDAZ10	4.463	2.04	2y-EDAZ10	-86.736
EDAH11	4.498	2.07	2y-EDAH11	-85.101

Price = Outright Decimal Price - Euro Contract Price

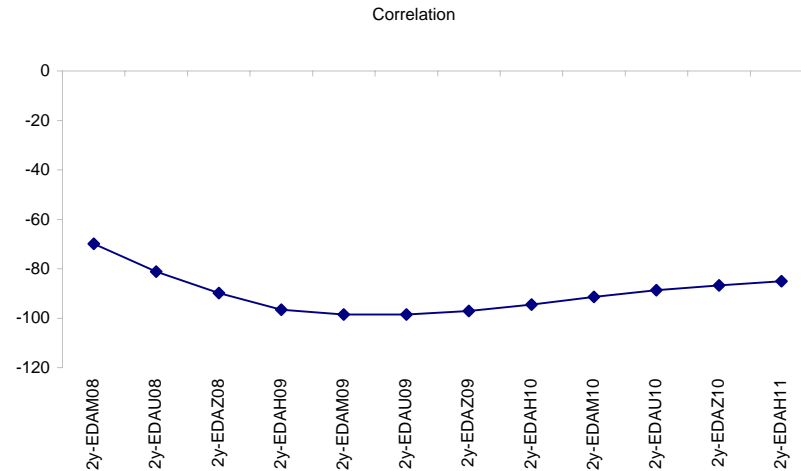
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAM08	0.016	1.90	1.89	2y-EDAM08	
EDAU08	0.265	1.90	1.64	2y-EDAU08	
EDAZ08	0.514	1.90	1.39	2y-EDAZ08	
EDAH09	0.764	1.90	1.14	2y-EDAH09	
EDAM09	1.013	1.90	0.89	2y-EDAM09	
EDAU09	1.262	1.90	0.64	2y-EDAU09	
EDAZ09	1.512	1.90	0.39	2y-EDAZ09	
EDAH10	1.761	1.90	0.14	2y-EDAH10	
EDAM10	2.010	1.90	(0.11)	2y-EDAM10	
EDAU10	2.260	1.90	(0.36)	2y-EDAU10	
EDAZ10	2.509	1.90	(0.60)	2y-EDAZ10	
EDAH11	2.758	1.90	(0.85)	2y-EDAH11	

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

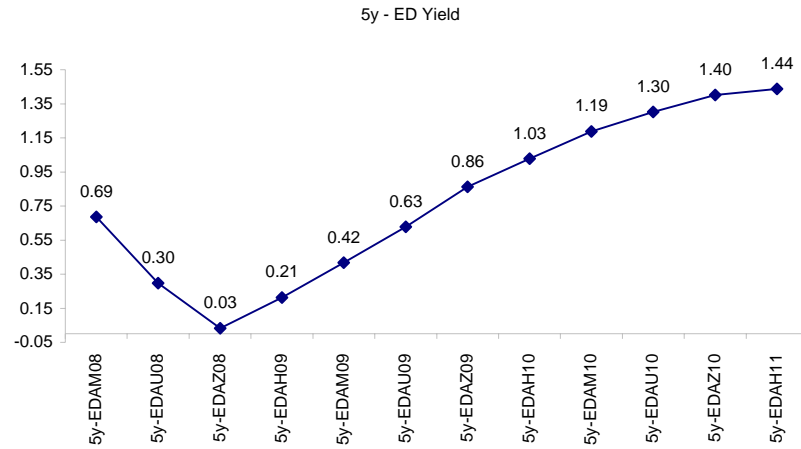


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	2.866	0.69	5y-EDAM08	-59.034
EDAU08	3.254	0.30	5y-EDAU08	-67.398
EDAZ08	3.584	0.03	5y-EDAZ08	-59.034
EDAH09	3.764	0.21	5y-EDAH09	-85.864
EDAM09	3.969	0.42	5y-EDAM09	-89.777
EDAU09	4.179	0.63	5y-EDAU09	-90.391
EDAZ09	4.414	0.86	5y-EDAZ09	-88.950
EDAH10	4.579	1.03	5y-EDAH10	-85.948
EDAM10	4.739	1.19	5y-EDAM10	-83.115
EDAU10	4.854	1.30	5y-EDAU10	-81.521
EDAZ10	4.954	1.40	5y-EDAZ10	-81.160
EDAH11	4.989	1.44	5y-EDAH11	-81.558

Price = Outright Decimal Price - Euro Contract Price

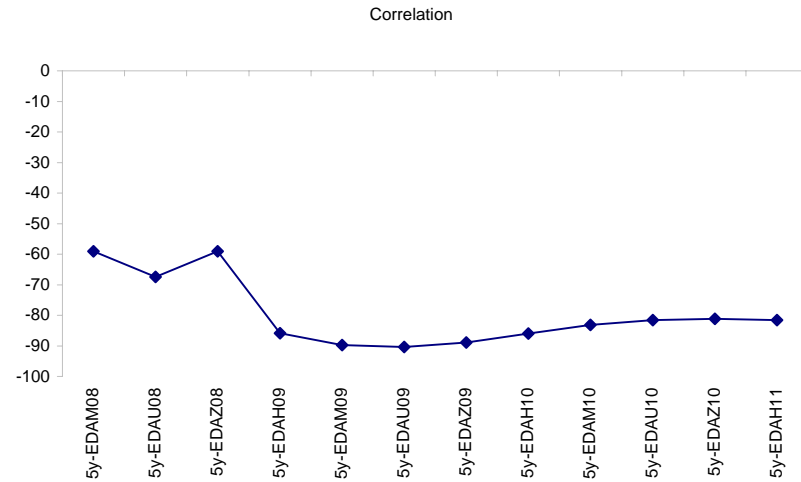
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAM08	0.016	4.52	4.51	5y-EDAM08
EDAU08	0.265	4.52	4.26	5y-EDAU08
EDAZ08	0.514	4.52	4.01	5y-EDAZ08
EDAH09	0.764	4.52	3.76	5y-EDAH09
EDAM09	1.013	4.52	3.51	5y-EDAM09
EDAU09	1.262	4.52	3.26	5y-EDAU09
EDAZ09	1.512	4.52	3.01	5y-EDAZ09
EDAH10	1.761	4.52	2.76	5y-EDAH10
EDAM10	2.010	4.52	2.51	5y-EDAM10
EDAU10	2.260	4.52	2.26	5y-EDAU10
EDAZ10	2.509	4.52	2.01	5y-EDAZ10
EDAH11	2.758	4.52	1.76	5y-EDAH11

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



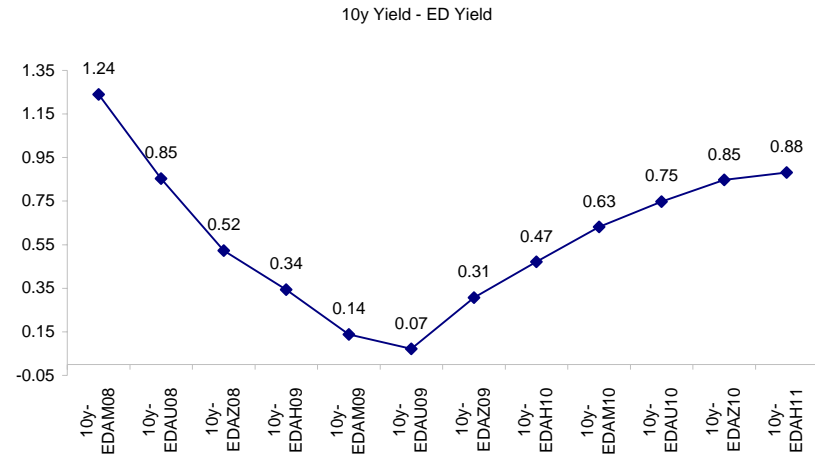


10y				Correlation* (percent)
Spread Price	Spread Yield	Spread Name		
EDAM08	2.866	1.24	10y-EDAM08	-38.011
EDAU08	3.254	0.85	10y-EDAU08	-38.756
EDAZ08	3.584	0.52	10y-EDAZ08	-38.011
EDAH09	3.764	0.34	10y-EDAH09	-58.860
EDAM09	3.969	0.14	10y-EDAM09	-65.352
EDAU09	4.179	0.07	10y-EDAU09	-66.925
EDAZ09	4.414	0.31	10y-EDAZ09	-65.831
EDAH10	4.579	0.47	10y-EDAH10	-62.722
EDAM10	4.739	0.63	10y-EDAM10	-60.689
EDAU10	4.854	0.75	10y-EDAU10	-60.775
EDAZ10	4.954	0.85	10y-EDAZ10	-62.592
EDAH11	4.989	0.88	10y-EDAH11	-65.598

Price = Outright Decimal Price - Euro Contract Price

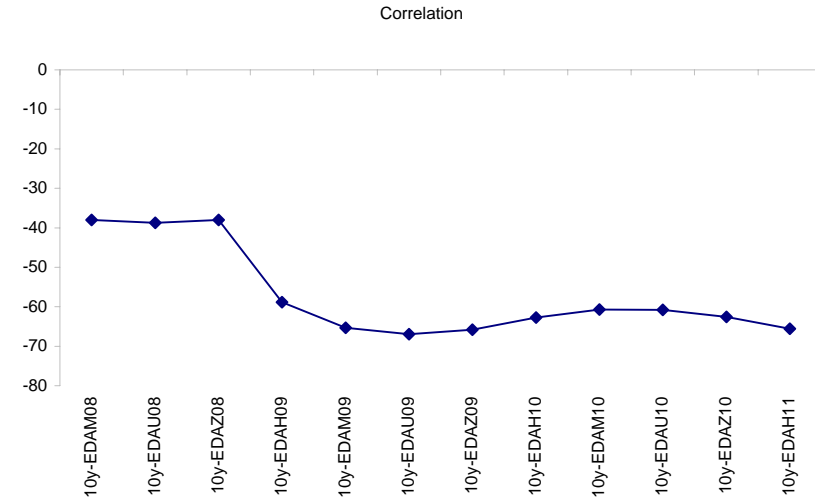
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as				Spread Duration	Contract Name
Fraction of year	10Y Duration	Spread Duration			
EDAM08	0.016	8.13	8.12	10y-EDAM08	
EDAU08	0.265	8.13	7.87	10y-EDAU08	
EDAZ08	0.514	8.13	7.62	10y-EDAZ08	
EDAH09	0.764	8.13	7.37	10y-EDAH09	
EDAM09	1.013	8.13	7.12	10y-EDAM09	
EDAU09	1.262	8.13	6.87	10y-EDAU09	
EDAZ09	1.512	8.13	6.62	10y-EDAZ09	
EDAH10	1.761	8.13	6.37	10y-EDAH10	
EDAM10	2.010	8.13	6.12	10y-EDAM10	
EDAU10	2.260	8.13	5.87	10y-EDAU10	
EDAZ10	2.509	8.13	5.62	10y-EDAZ10	
EDAH11	2.758	8.13	5.38	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.

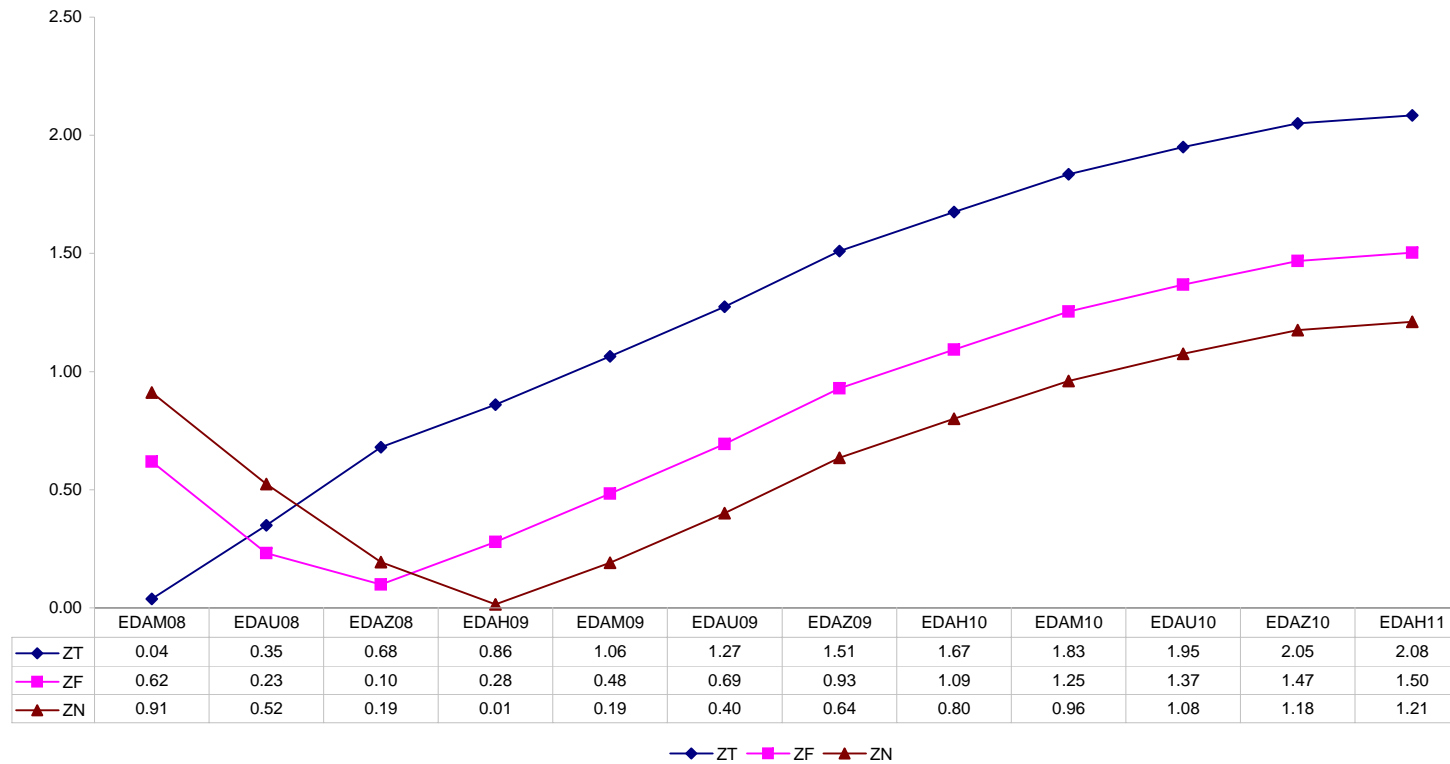
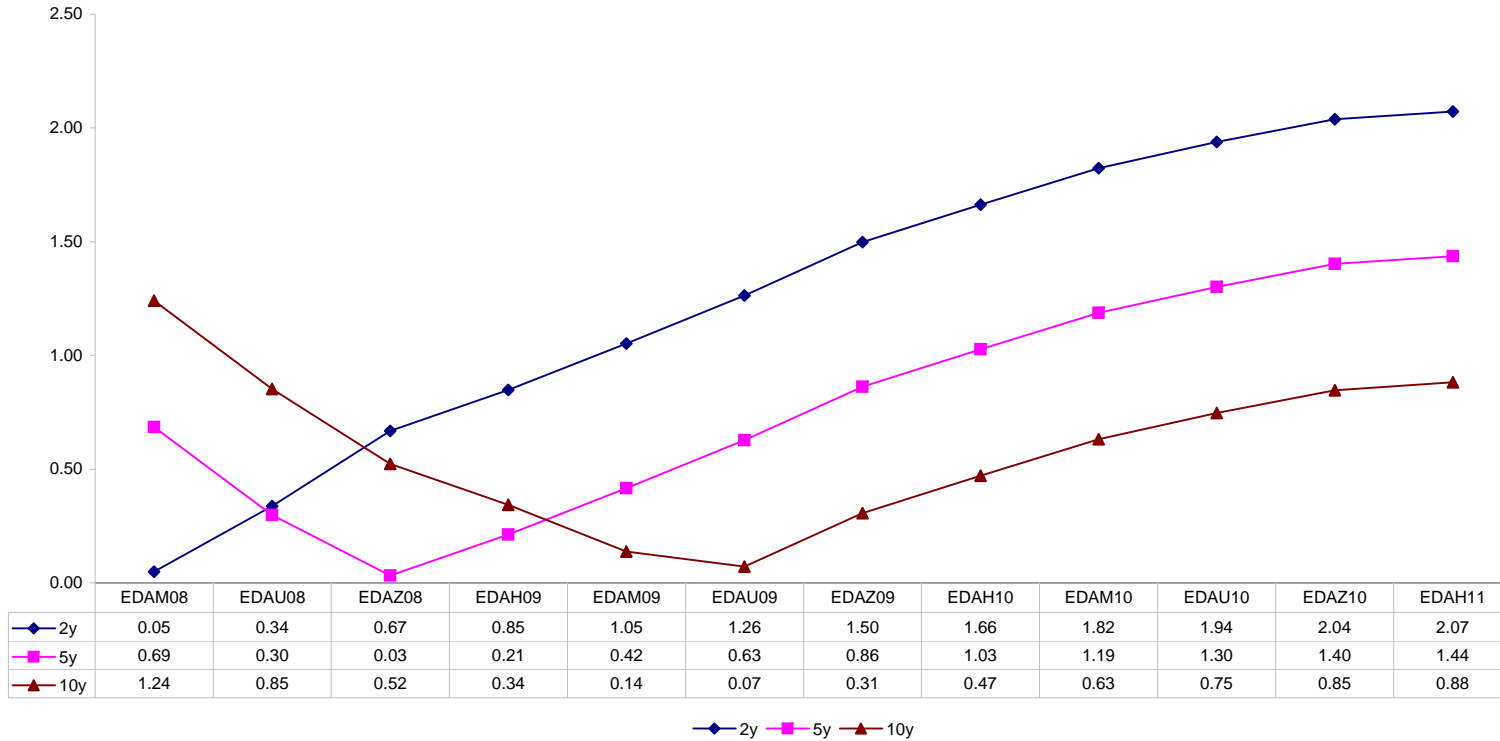
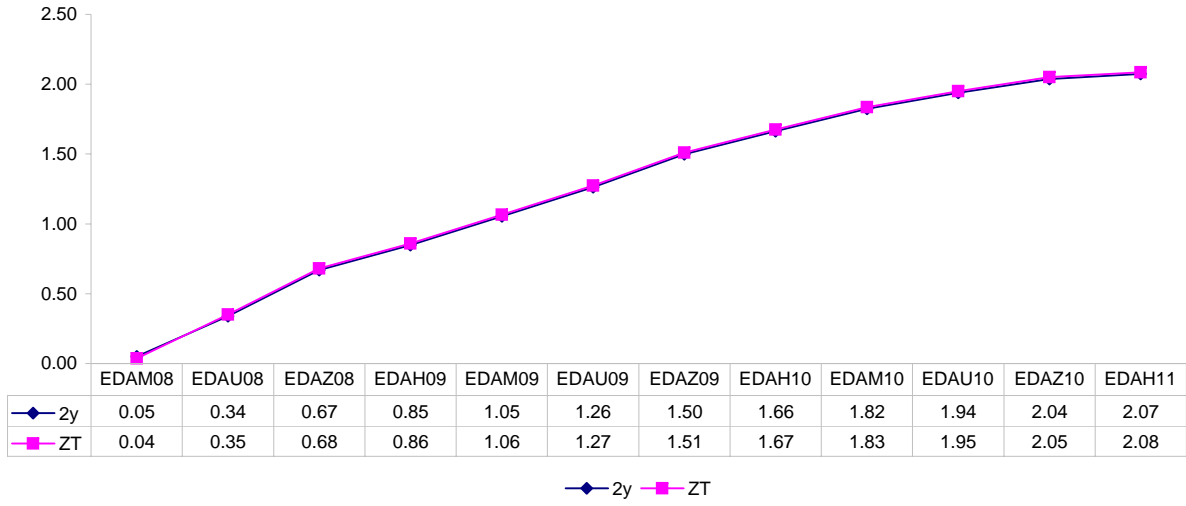


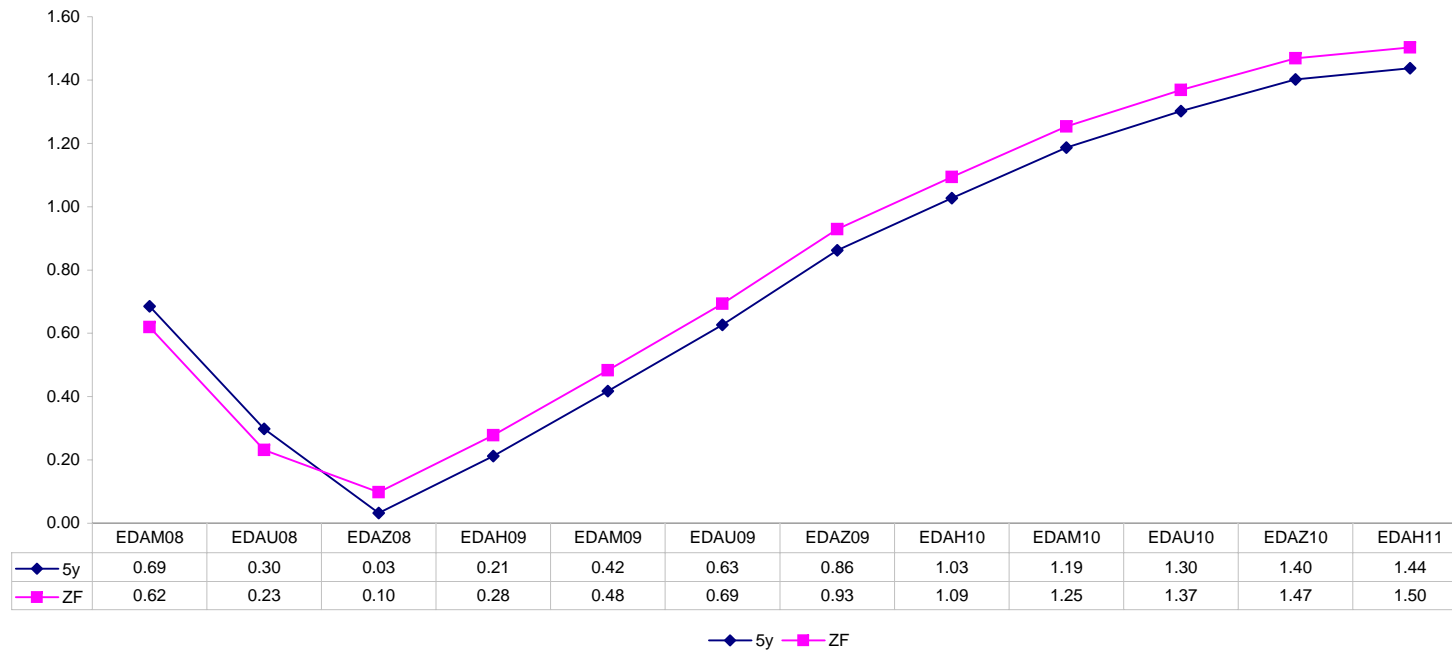
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



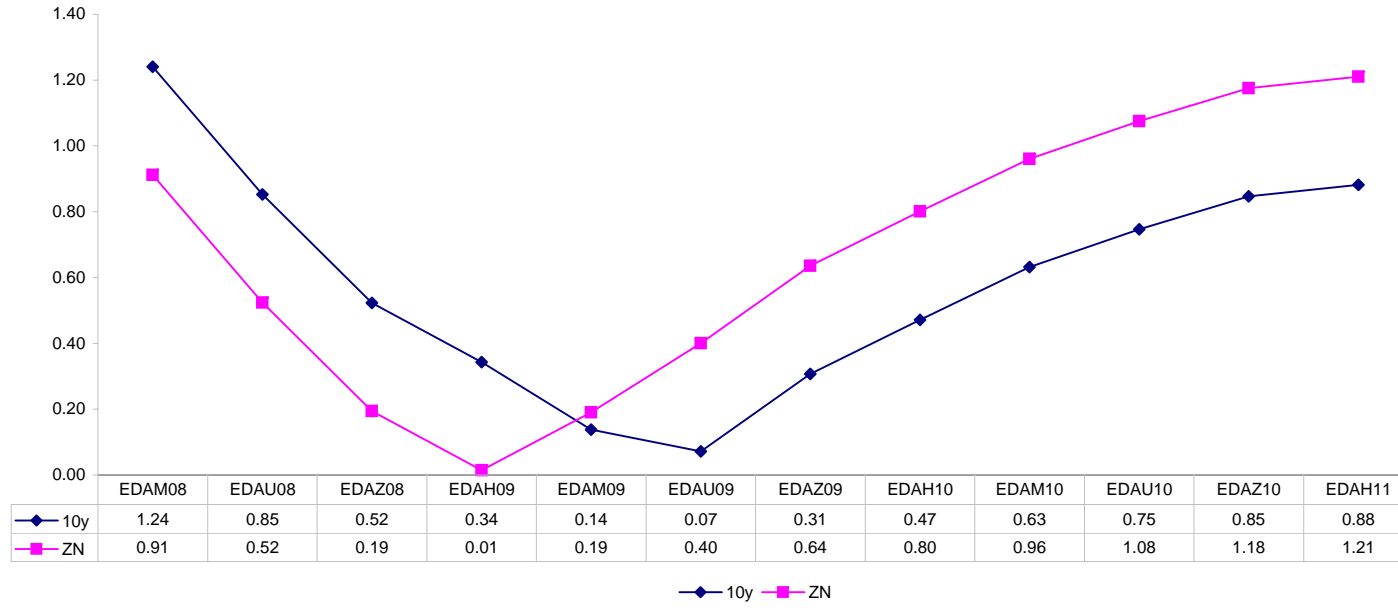
2y Basis TED Curve



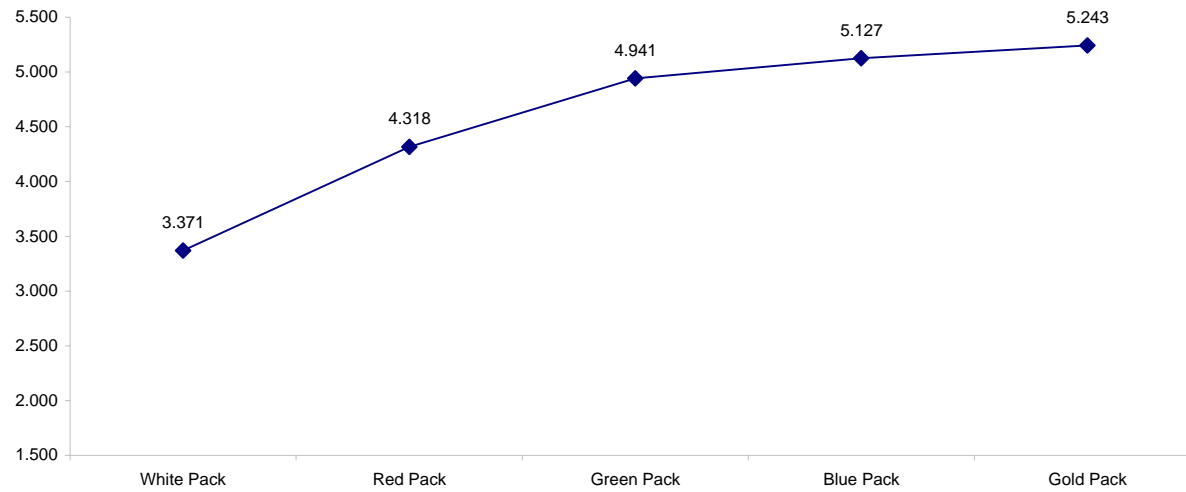
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	3.371	-8.688	9670.313
Red Pack	4.318	-14.375	9578.625
Green Pack	4.941	-10.375	9518.500
Blue Pack	5.127	-8.250	9500.625
Gold Pack	5.243	-6.875	9489.500



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

