

## **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	107.8656	107.277	1.163	1.78
ZF	115.0625	115.020	2.502	4.32
ZN	114.5156	114.165	3.717	6.42
2y	100.188	100.0600	1.404	1.93
5y	100.516	100.1650	2.637	4.62
10y	101.297	101.0950	3.837	7.96

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.975	2.025	35	0.095	DEC	
EDAH09	98.075	1.925	126	0.345	MAR	White Pack
EDAM09	97.970	2.030	217	0.594	JUN	
EDAU09	97.785	2.215	308	0.843	SEP	
EDAZ09	97.520	2.480	399	1.092	DEC	
EDAH10	97.355	2.645	490	1.342	MAR	Red Pack
EDAM10	97.060	2.940	581	1.591	JUN	
EDAU10	96.720	3.280	672	1.840	SEP	
EDAZ10	96.300	3.700	763	2.090	DEC	
EDAH11	96.025	3.975	854	2.339	MAR	Green Pack
EDAM11	95.760	4.240	945	2.588	JUN	
EDAU11	95.570	4.430	1043	2.857	SEP	
EDAZ11	95.420	4.580	1134	3.106	DEC	
EDAH12	95.365	4.635	1225	3.355	MAR	Blue Pack
EDAM12	95.270	4.730	1316	3.605	JUN	
EDAU12	95.195	4.805	1407	3.854	SEP	
EDAZ12	#VALUE!	#VALUE!	1498	4.103	DEC	
EDAH13	95.045	4.955	1589	4.353	MAR	Gold Pack
EDAM13	94.965	5.035	1680	4.602	JUN	
EDZU13	#VALUE!	#VALUE!	1862	5.101	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.088	-0.250	9795.125	Pack Prices
Red Pack	2.896	-4.250	9716.375	
Green Pack	4.186	-6.125	9591.375	
Blue Pack	4.809	-6.125	9531.250	
Gold Pack		-6.500	9501.875	

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.

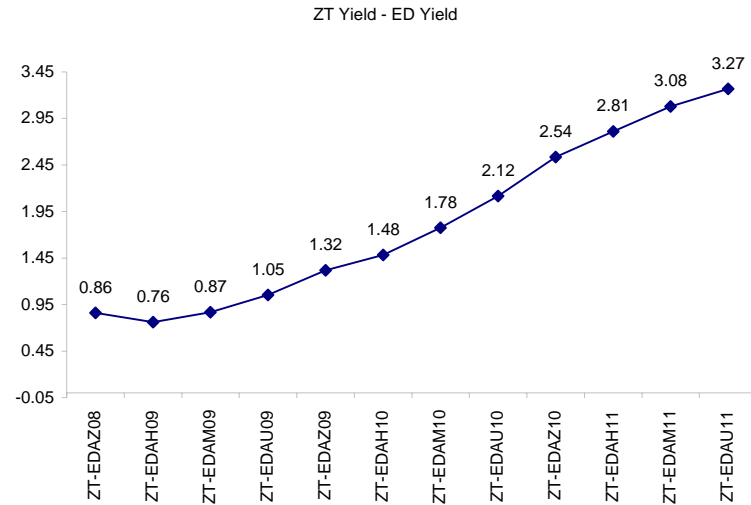
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

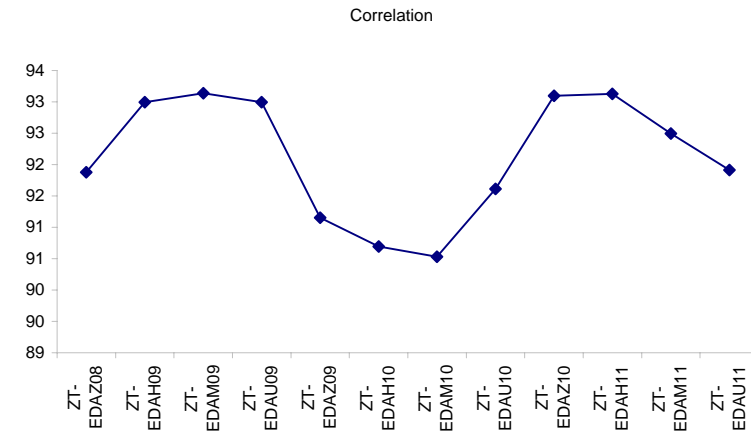
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	9.891	0.86	ZT-EDAZ08	91.876
EDAH09	9.791	0.76	ZT-EDAH09	92.993
EDAM09	9.896	0.87	ZT-EDAM09	93.136
EDAU09	10.081	1.05	ZT-EDAU09	92.993
EDAZ09	10.346	1.32	ZT-EDAZ09	91.153
EDAH10	10.511	1.48	ZT-EDAH10	90.696
EDAM10	10.806	1.78	ZT-EDAM10	90.531
EDAU10	11.146	2.12	ZT-EDAU10	91.614
EDAZ10	11.566	2.54	ZT-EDAZ10	93.096
EDAH11	11.841	2.81	ZT-EDAH11	93.130
EDAM11	12.106	3.08	ZT-EDAM11	92.497
EDAU11	12.296	3.27	ZT-EDAU11	91.912

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	
EDAZ08	0.095	1.78	1.68	ZT-EDAZ08		
EDAH09	0.345	1.78	1.43	ZT-EDAH09		
EDAM09	0.594	1.78	1.18	ZT-EDAM09		
EDAU09	0.843	1.78	0.93	ZT-EDAU09		
EDAZ09	1.092	1.78	0.69	ZT-EDAZ09		
EDAH10	1.342	1.78	0.44	ZT-EDAH10		
EDAM10	1.591	1.78	0.19	ZT-EDAM10		
EDAU10	1.840	1.78	(0.06)	ZT-EDAU10		
EDAZ10	2.090	1.78	(0.31)	ZT-EDAZ10		
EDAH11	2.339	1.78	(0.56)	ZT-EDAH11		
EDAM11	2.588	1.78	(0.81)	ZT-EDAM11		
EDAU11	2.857	1.78	(1.08)	ZT-EDAU11		

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

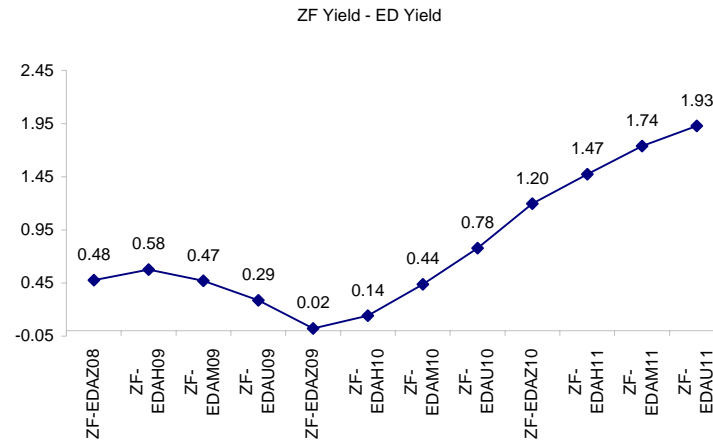


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	17.088	0.48	ZF-EDAZ08	93.229
EDAH09	16.988	0.58	ZF-EDAH09	95.615
EDAM09	17.093	0.47	ZF-EDAM09	94.267
EDAU09	17.278	0.29	ZF-EDAU09	94.102
EDAZ09	17.543	0.02	ZF-EDAZ09	92.819
EDAH10	17.708	0.14	ZF-EDAH10	93.670
EDAM10	18.003	0.44	ZF-EDAM10	94.445
EDAU10	18.343	0.78	ZF-EDAU10	96.248
EDAZ10	18.763	1.20	ZF-EDAZ10	97.288
EDAH11	19.038	1.47	ZF-EDAH11	97.172
EDAM11	19.303	1.74	ZF-EDAM11	95.859
EDAU11	19.493	1.93	ZF-EDAU11	95.451

Price = Outright Decimal Price - Euro Contract Price

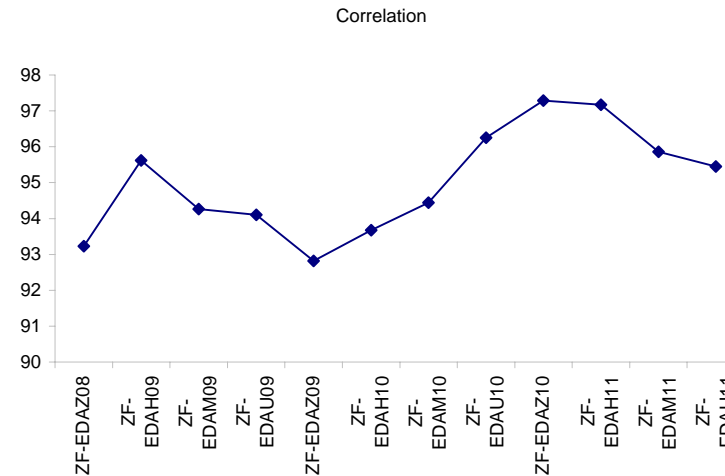
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			ZF Duration	Spread Duration	
EDAZ08	0.095	4.32	4.22	ZF-EDAZ08		
EDAH09	0.345	4.32	3.97	ZF-EDAH09		
EDAM09	0.594	4.32	3.72	ZF-EDAM09		
EDAU09	0.843	4.32	3.47	ZF-EDAU09		
EDAZ09	1.092	4.32	3.22	ZF-EDAZ09		
EDAH10	1.342	4.32	2.98	ZF-EDAH10		
EDAM10	1.591	4.32	2.73	ZF-EDAM10		
EDAU10	1.840	4.32	2.48	ZF-EDAU10		
EDAZ10	2.090	4.32	2.23	ZF-EDAZ10		
EDAH11	2.339	4.32	1.98	ZF-EDAH11		
EDAM11	2.588	4.32	1.73	ZF-EDAM11		
EDAU11	2.857	4.32	1.46	ZF-EDAU11		

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

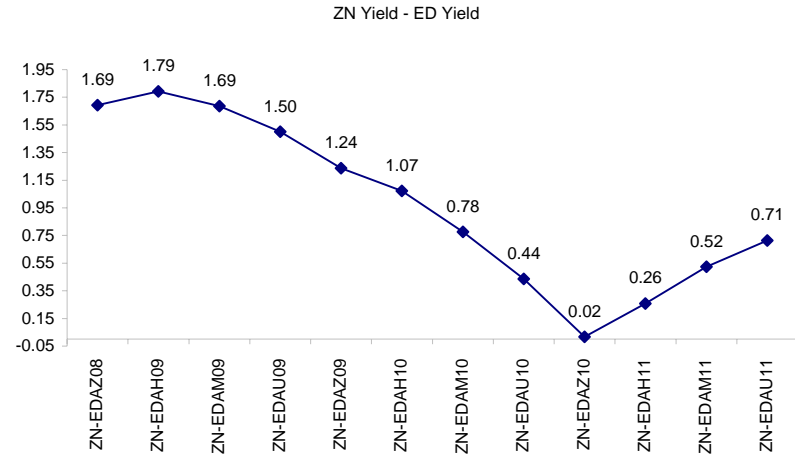


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	16.541	1.69	ZN-EDAZ08	68.660
EDAH09	16.441	1.79	ZN-EDAH09	80.361
EDAM09	16.546	1.69	ZN-EDAM09	85.670
EDAU09	16.731	1.50	ZN-EDAU09	89.375
EDAZ09	16.996	1.24	ZN-EDAZ09	92.280
EDAH10	17.161	1.07	ZN-EDAH10	94.362
EDAM10	17.456	0.78	ZN-EDAM10	94.445
EDAU10	17.796	0.44	ZN-EDAU10	96.248
EDAZ10	18.216	0.02	ZN-EDAZ10	97.288
EDAH11	18.491	0.26	ZN-EDAH11	97.172
EDAM11	18.756	0.52	ZN-EDAM11	95.859
EDAU11	18.946	0.71	ZN-EDAU11	95.451

Price = Outright Decimal Price - Euro Contract Price

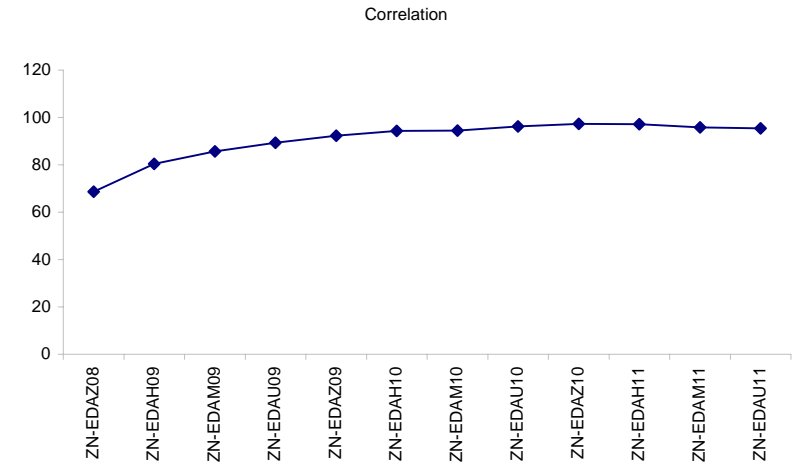
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.095	6.42	6.32	ZN-EDAZ08		
EDAH09	0.345	6.42	6.07	ZN-EDAH09		
EDAM09	0.594	6.42	5.82	ZN-EDAM09		
EDAU09	0.843	6.42	5.58	ZN-EDAU09		
EDAZ09	1.092	6.42	5.33	ZN-EDAZ09		
EDAH10	1.342	6.42	5.08	ZN-EDAH10		
EDAM10	1.591	6.42	4.83	ZN-EDAM10		
EDAU10	1.840	6.42	4.58	ZN-EDAU10		
EDAZ10	2.090	6.42	4.33	ZN-EDAZ10		
EDAH11	2.339	6.42	4.08	ZN-EDAH11		
EDAM11	2.588	6.42	3.83	ZN-EDAM11		
EDAU11	2.857	6.42	3.56	ZN-EDAU11		

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

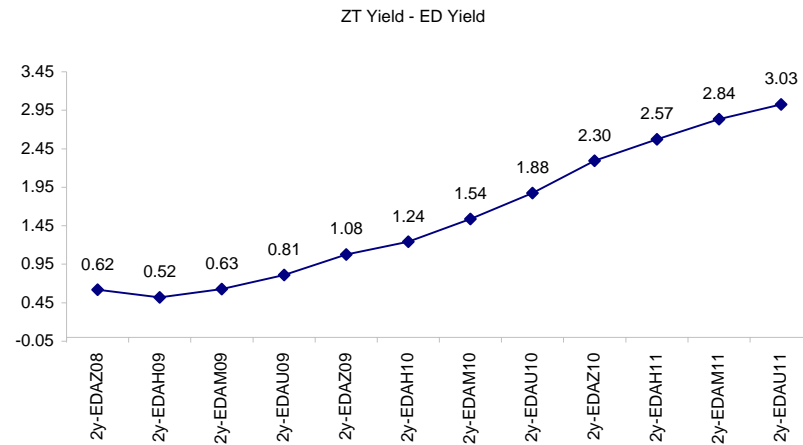


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.212	0.62	2y-EDAZ08	-93.452
EDAH09	2.113	0.52	2y-EDAH09	-92.767
EDAM09	2.218	0.63	2y-EDAM09	-89.872
EDAU09	2.403	0.81	2y-EDAU09	-89.593
EDAZ09	2.668	1.08	2y-EDAZ09	-88.031
EDAH10	2.833	1.24	2y-EDAH10	-89.217
EDAM10	3.128	1.54	2y-EDAM10	-91.029
EDAU10	3.468	1.88	2y-EDAU10	-93.673
EDAZ10	3.888	2.30	2y-EDAZ10	-95.709
EDAH11	4.162	2.57	2y-EDAH11	-95.770
EDAM11	4.427	2.84	2y-EDAM11	-95.085
EDAU11	4.617	3.03	2y-EDAU11	-94.365

Price = Outright Decimal Price - Euro Contract Price

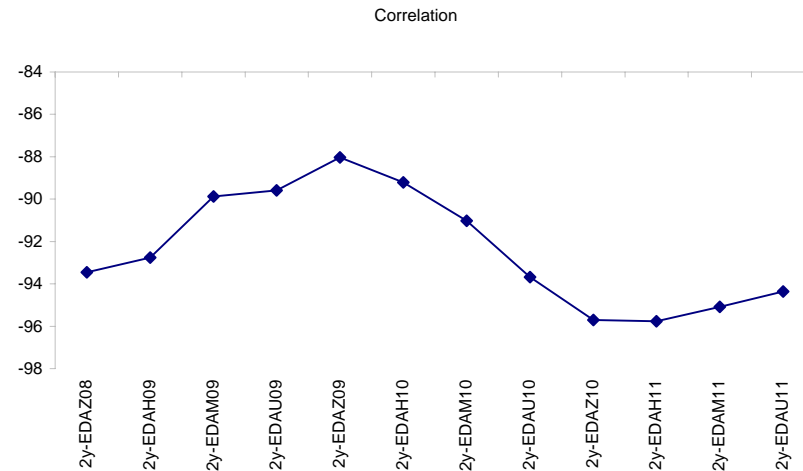
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.095	1.93	1.84	2y-EDAZ08	
EDAH09	0.345	1.93	1.59	2y-EDAH09	
EDAM09	0.594	1.93	1.34	2y-EDAM09	
EDAU09	0.843	1.93	1.09	2y-EDAU09	
EDAZ09	1.092	1.93	0.84	2y-EDAZ09	
EDAH10	1.342	1.93	0.59	2y-EDAH10	
EDAM10	1.591	1.93	0.34	2y-EDAM10	
EDAU10	1.840	1.93	0.09	2y-EDAU10	
EDAZ10	2.090	1.93	(0.16)	2y-EDAZ10	
EDAH11	2.339	1.93	(0.41)	2y-EDAH11	
EDAM11	2.588	1.93	(0.66)	2y-EDAM11	
EDAU11	2.857	1.93	(0.93)	2y-EDAU11	

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

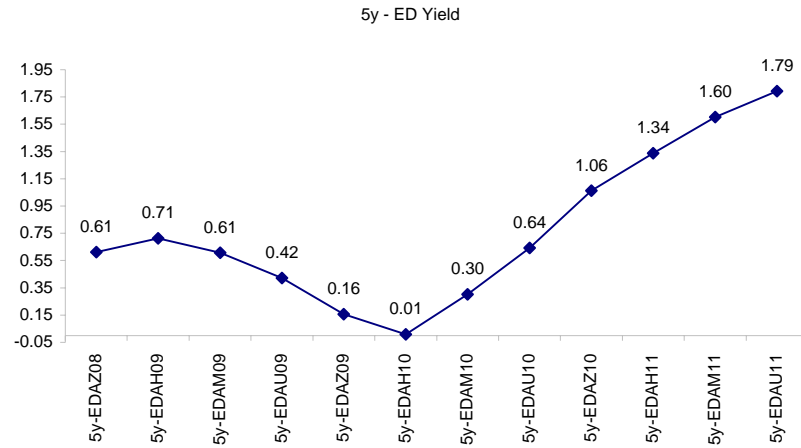


	5y			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAZ08	2.541	0.61	5y-EDAZ08	-82.062
EDAH09	2.441	0.71	5y-EDAH09	-87.029
EDAM09	2.546	0.61	5y-EDAM09	-88.180
EDAU09	2.731	0.42	5y-EDAU09	-90.628
EDAZ09	2.996	0.16	5y-EDAZ09	-92.237
EDAH10	3.161	0.01	5y-EDAH10	-94.243
EDAM10	3.456	0.30	5y-EDAM10	-95.398
EDAU10	3.796	0.64	5y-EDAU10	-95.793
EDAZ10	4.216	1.06	5y-EDAZ10	-94.951
EDAH11	4.491	1.34	5y-EDAH11	-93.802
EDAM11	4.756	1.60	5y-EDAM11	-94.255
EDAU11	4.946	1.79	5y-EDAU11	-94.084

Price = Outright Decimal Price - Euro Contract Price

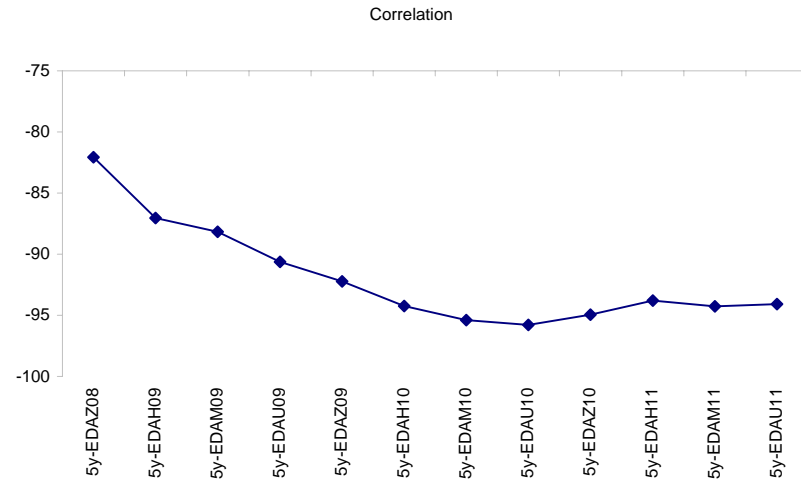
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			Spread Duration	
	Fraction of year	5Y Duration	5Y Duration		
EDAZ08	0.095	4.62	4.52	5y-EDAZ08	
EDAH09	0.345	4.62	4.27	5y-EDAH09	
EDAM09	0.594	4.62	4.02	5y-EDAM09	
EDAU09	0.843	4.62	3.77	5y-EDAU09	
EDAZ09	1.092	4.62	3.52	5y-EDAZ09	
EDAH10	1.342	4.62	3.27	5y-EDAH10	
EDAM10	1.591	4.62	3.02	5y-EDAM10	
EDAU10	1.840	4.62	2.77	5y-EDAU10	
EDAZ10	2.090	4.62	2.53	5y-EDAZ10	
EDAH11	2.339	4.62	2.28	5y-EDAH11	
EDAM11	2.588	4.62	2.03	5y-EDAM11	
EDAU11	2.857	4.62	1.76	5y-EDAU11	

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

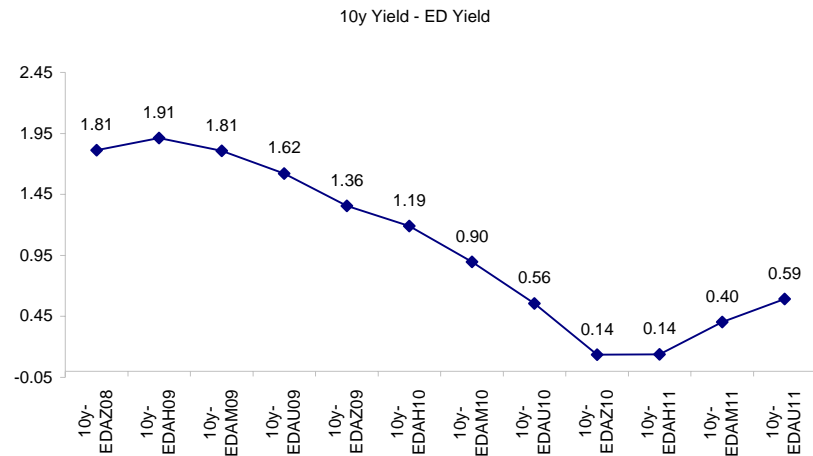


	10y			Correlation*
	Spread Price	Spread Yield	Spread Name	(percent)
EDAZ08	2.541	1.81	10y-EDAZ08	-65.584
EDAH09	2.441	1.91	10y-EDAH09	-74.591
EDAM09	2.546	1.81	10y-EDAM09	-78.982
EDAU09	2.731	1.62	10y-EDAU09	-83.446
EDAZ09	2.996	1.36	10y-EDAZ09	-87.629
EDAH10	3.161	1.19	10y-EDAH10	-90.555
EDAM10	3.456	0.90	10y-EDAM10	-91.559
EDAU10	3.796	0.56	10y-EDAU10	-90.239
EDAZ10	4.216	0.14	10y-EDAZ10	-86.744
EDAH11	4.491	0.14	10y-EDAH11	-84.320
EDAM11	4.756	0.40	10y-EDAM11	-85.078
EDAU11	4.946	0.59	10y-EDAU11	-85.274

Price = Outright Decimal Price - Euro Contract Price

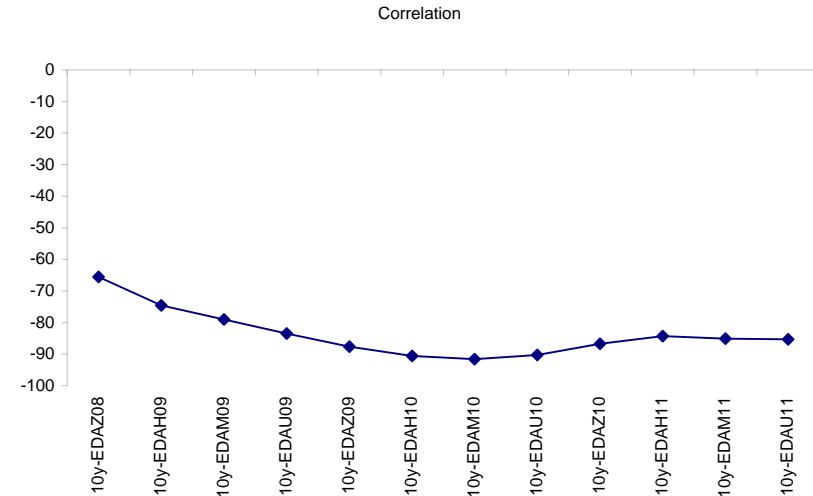
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.095	7.96	7.87	10y-EDAZ08
EDAH09	0.345	7.96	7.62	10y-EDAH09
EDAM09	0.594	7.96	7.37	10y-EDAM09
EDAU09	0.843	7.96	7.12	10y-EDAU09
EDAZ09	1.092	7.96	6.87	10y-EDAZ09
EDAH10	1.342	7.96	6.62	10y-EDAH10
EDAM10	1.591	7.96	6.37	10y-EDAM10
EDAU10	1.840	7.96	6.12	10y-EDAU10
EDAZ10	2.090	7.96	5.87	10y-EDAZ10
EDAH11	2.339	7.96	5.62	10y-EDAH11
EDAM11	2.588	7.96	5.37	10y-EDAM11
EDAU11	2.857	7.96	5.10	10y-EDAU11

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.

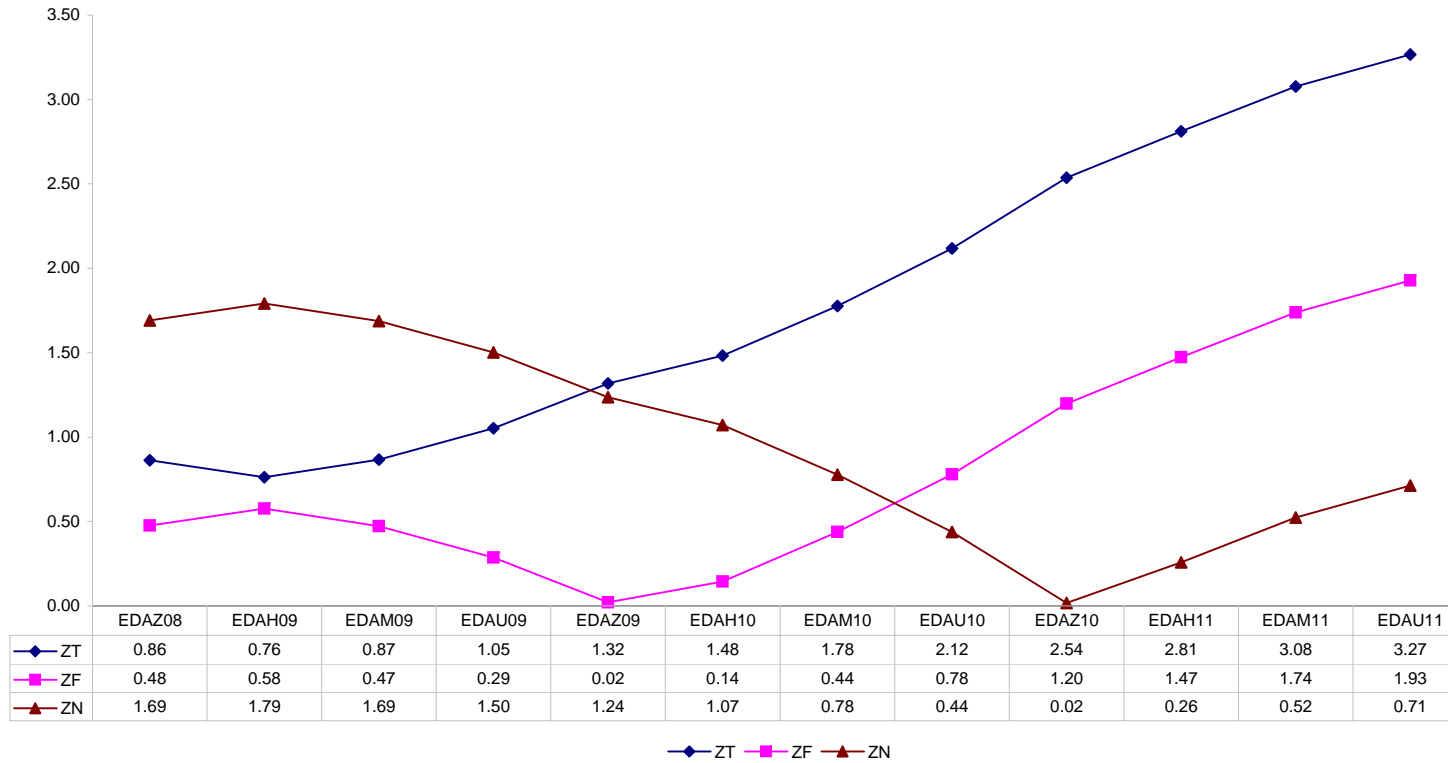
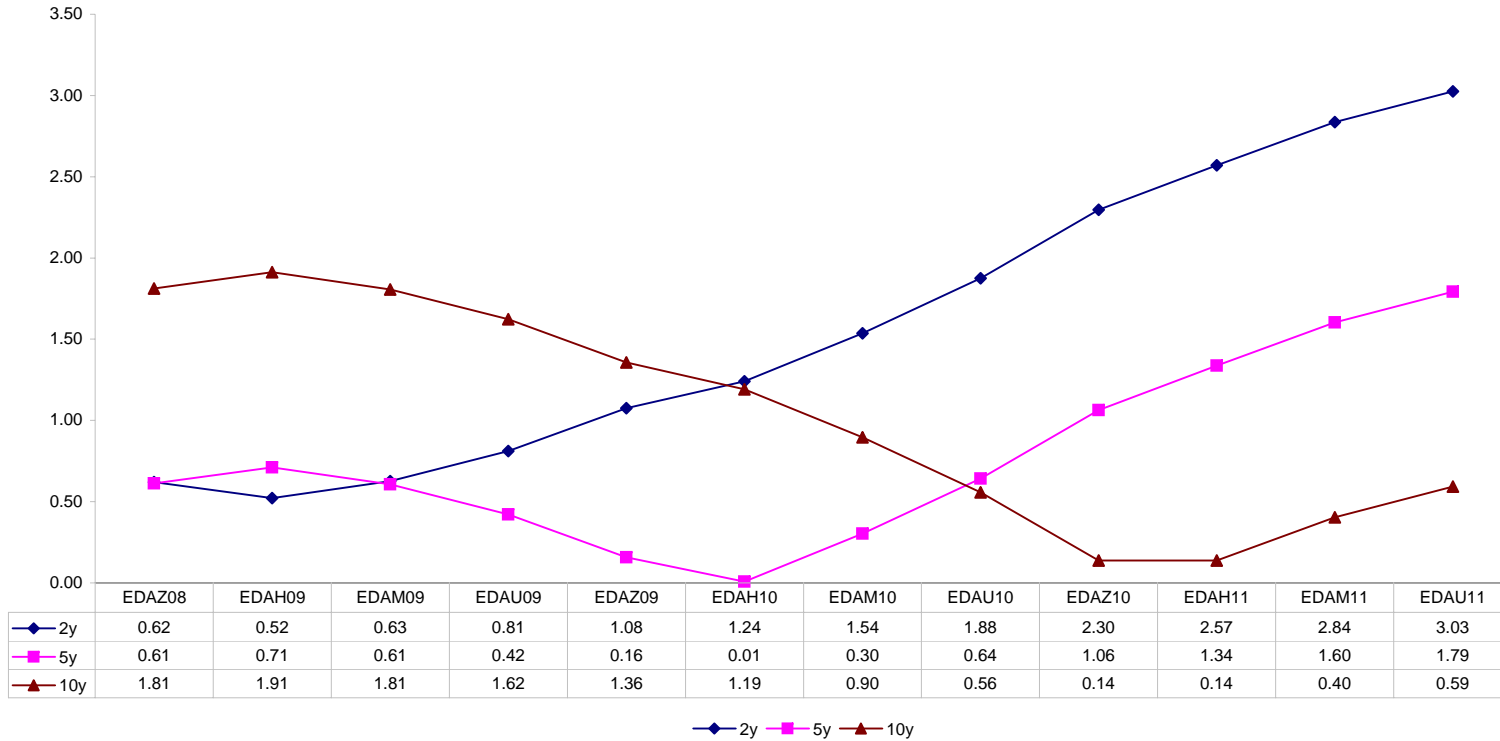
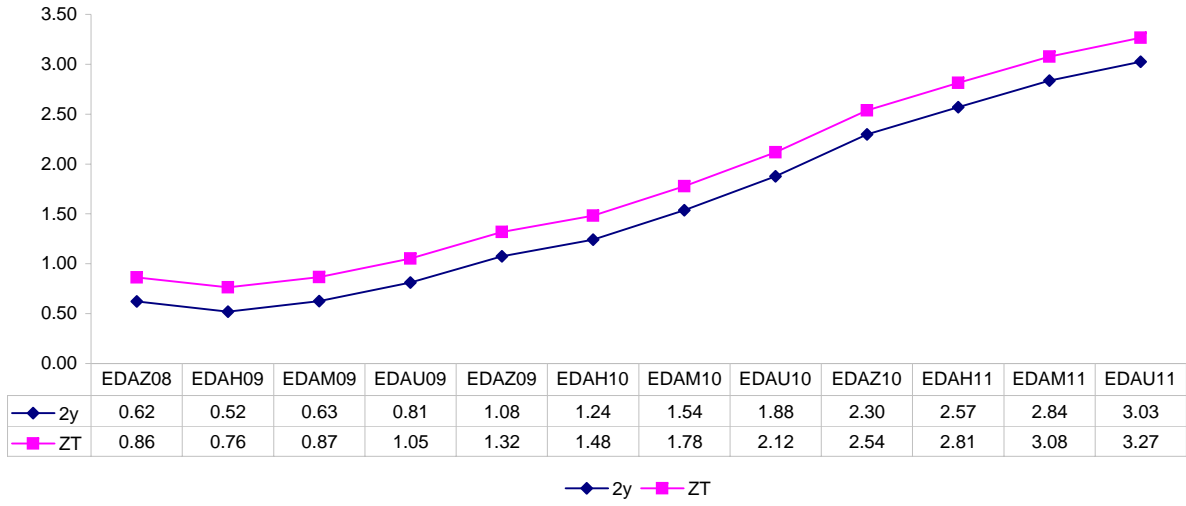


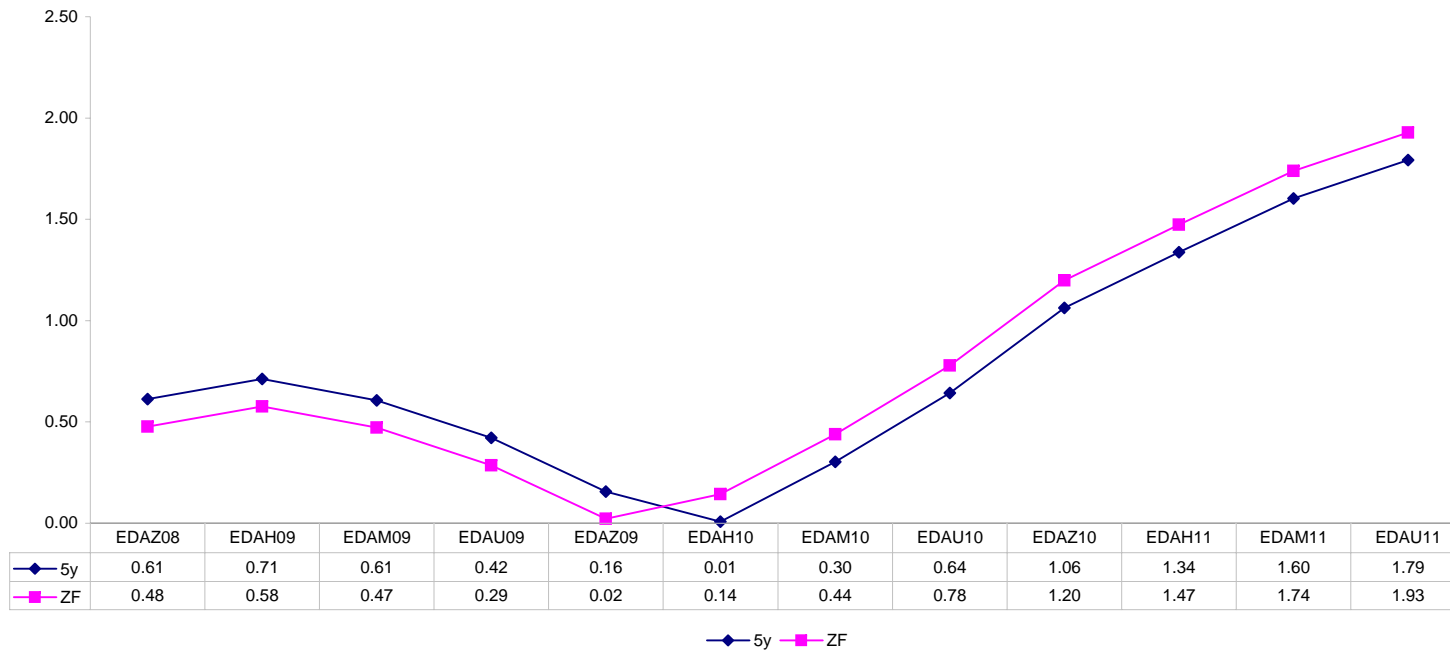
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



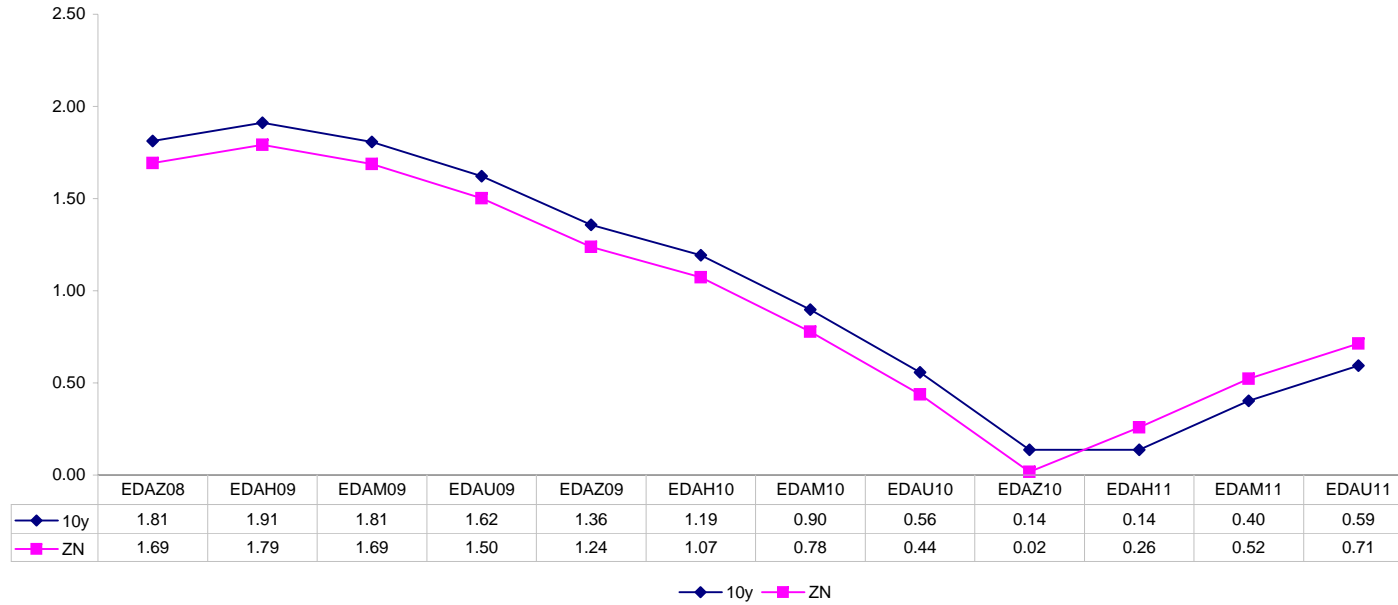
2y Basis TED Curve



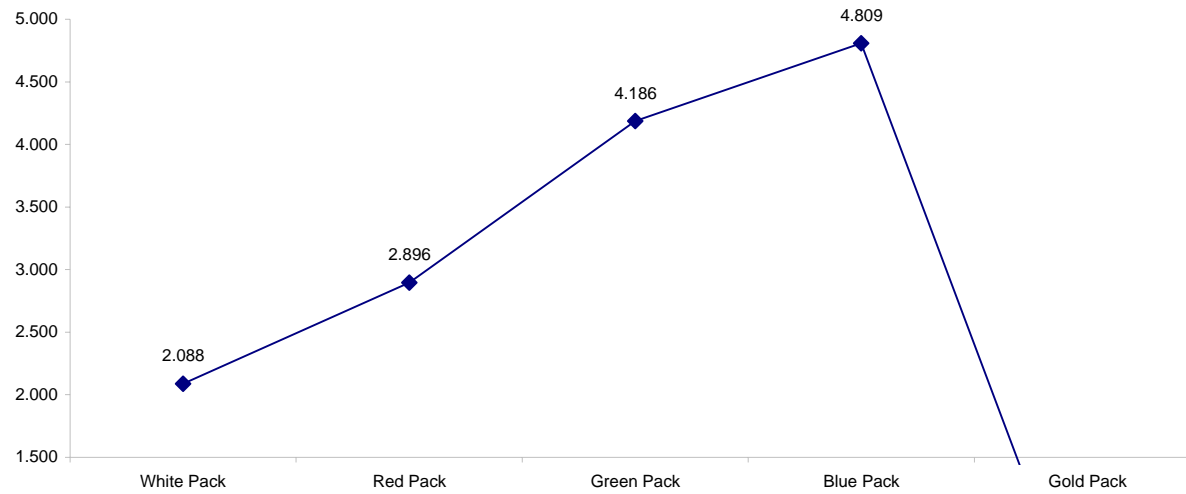
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.088	-0.250	9795.125
Red Pack	2.896	-4.250	9716.375
Green Pack	4.186	-6.125	9591.375
Blue Pack	4.809	-6.125	9531.250
Gold Pack		-6.500	9501.875



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

