

## **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	107.7344	107.235	1.347	1.86
ZF	114.1625	114.052	2.461	4.16
ZN	113.5625	113.180	3.807	6.14
2y	100.078	100.0250	1.461	1.95
5y	100.188	100.0600	2.698	4.63
10y	100.656	100.2100	3.918	7.97

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.885	2.115	41	0.112	DEC	
EDAH09	97.885	2.115	132	0.361	MAR	White Pack
EDAM09	97.700	2.300	223	0.610	JUN	
EDAU09	97.500	2.500	314	0.860	SEP	
EDAZ09	97.240	2.760	405	1.109	DEC	
EDAH10	97.105	2.895	496	1.358	MAR	Red Pack
EDAM10	96.840	3.160	587	1.608	JUN	
EDAU10	96.535	3.465	678	1.857	SEP	
EDAZ10	96.140	3.860	769	2.106	DEC	
EDAH11	95.875	4.125	860	2.356	MAR	Green Pack
EDAM11	95.625	4.375	951	2.605	JUN	
EDAU11	95.455	4.545	1049	2.873	SEP	
EDAZ11	95.280	4.720	1140	3.123	DEC	
EDAH12	95.265	4.735	1231	3.372	MAR	Blue Pack
EDAM12	95.150	4.850	1322	3.621	JUN	
EDAU12	95.030	4.970	1413	3.871	SEP	
EDAZ12	94.890	5.110	1504	4.120	DEC	
EDAH13	94.895	5.105	1595	4.369	MAR	Gold Pack
EDAM13	94.825	5.175	1686	4.619	JUN	
EDZU13	94.605	5.395	1868	5.117	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.302	1.875	9774.250	
Red Pack	3.137	-2.750	9693.000	Pack Prices
Green Pack	4.331	-0.500	9577.375	
Blue Pack		1.375	9518.250	
Gold Pack		0.000	9482.250	

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)**

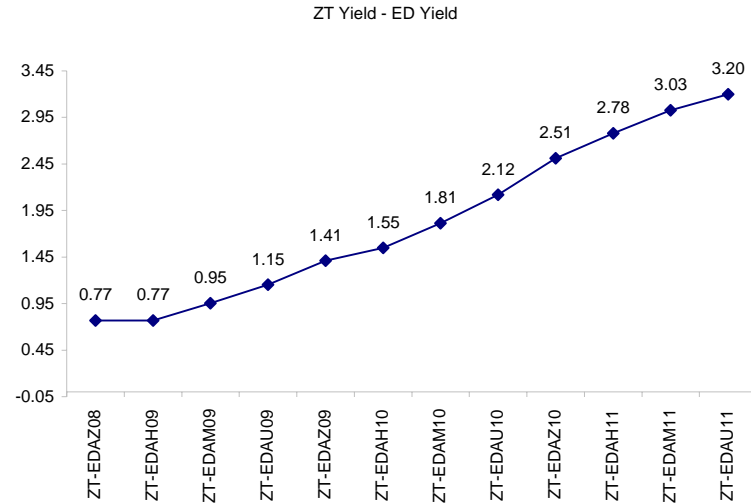
Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based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

ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	9.849	0.77	ZT-EDAZ08	62.969
EDAH09	9.849	0.77	ZT-EDAH09	10.210
EDAM09	10.034	0.95	ZT-EDAM09	43.635
EDAU09	10.234	1.15	ZT-EDAU09	10.210
EDAZ09	10.494	1.41	ZT-EDAZ09	-19.034
EDAH10	10.629	1.55	ZT-EDAH10	-31.155
EDAM10	10.894	1.81	ZT-EDAM10	-35.635
EDAU10	11.199	2.12	ZT-EDAU10	-31.786
EDAZ10	11.594	2.51	ZT-EDAZ10	-22.714
EDAH11	11.859	2.78	ZT-EDAH11	-19.156
EDAM11	12.109	3.03	ZT-EDAM11	-20.372
EDAU11	12.279	3.20	ZT-EDAU11	-17.036

Price = Outright Decimal Price - Euro Contract Price

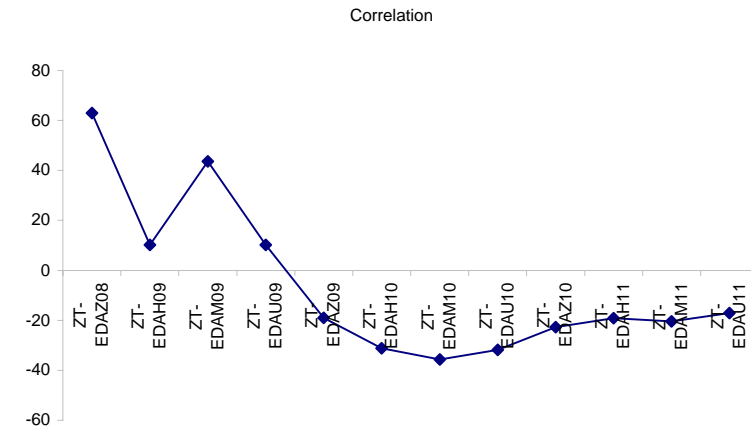
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZT Duration	Spread Duration	
EDAZ08	0.112	1.86	1.75	ZT-EDAZ08		
EDAH09	0.361	1.86	1.50	ZT-EDAH09		
EDAM09	0.610	1.86	1.25	ZT-EDAM09		
EDAU09	0.860	1.86	1.00	ZT-EDAU09		
EDAZ09	1.109	1.86	0.75	ZT-EDAZ09		
EDAH10	1.358	1.86	0.50	ZT-EDAH10		
EDAM10	1.608	1.86	0.25	ZT-EDAM10		
EDAU10	1.857	1.86	0.00	ZT-EDAU10		
EDAZ10	2.106	1.86	(0.25)	ZT-EDAZ10		
EDAH11	2.356	1.86	(0.50)	ZT-EDAH11		
EDAM11	2.605	1.86	(0.75)	ZT-EDAM11		
EDAU11	2.873	1.86	(1.01)	ZT-EDAU11		

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

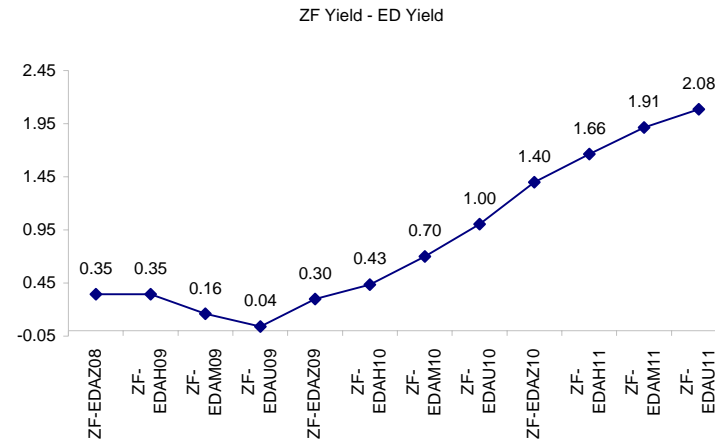


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	16.278	0.35	ZF-EDAZ08	6.195
EDAH09	16.278	0.35	ZF-EDAH09	-6.270
EDAM09	16.463	0.16	ZF-EDAM09	8.739
EDAU09	16.663	0.04	ZF-EDAU09	29.468
EDAZ09	16.923	0.30	ZF-EDAZ09	30.924
EDAH10	17.058	0.43	ZF-EDAH10	32.127
EDAM10	17.323	0.70	ZF-EDAM10	33.431
EDAU10	17.628	1.00	ZF-EDAU10	40.205
EDAZ10	18.023	1.40	ZF-EDAZ10	48.046
EDAH11	18.288	1.66	ZF-EDAH11	49.109
EDAM11	18.538	1.91	ZF-EDAM11	45.726
EDAU11	18.708	2.08	ZF-EDAU11	47.754

Price = Outright Decimal Price - Euro Contract Price

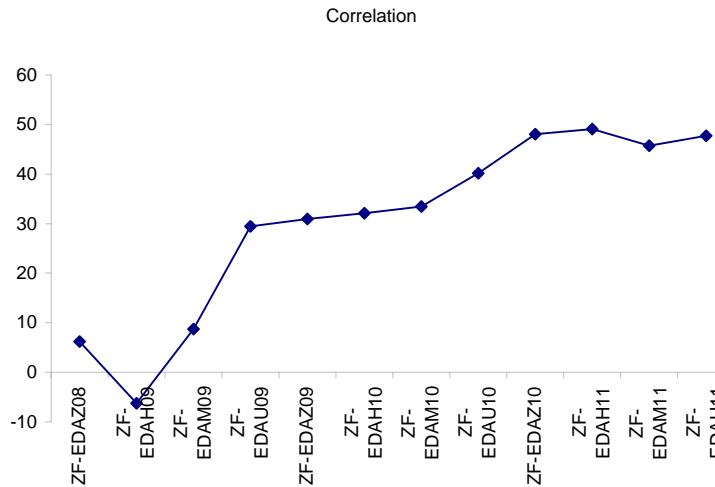
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



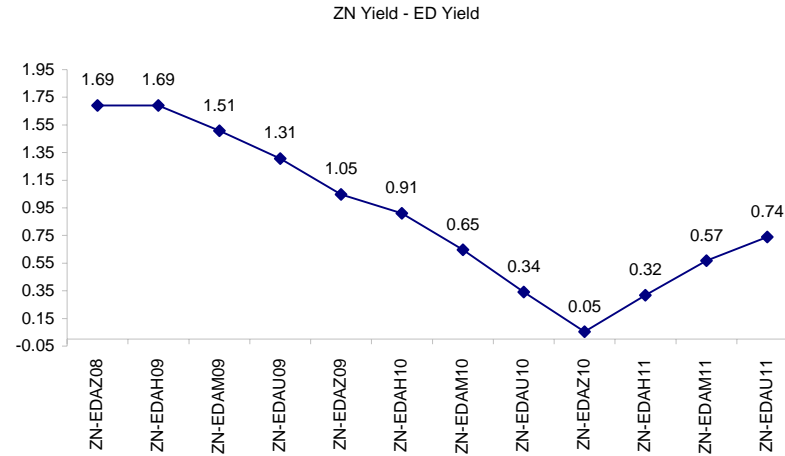
ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAZ08	0.112	4.16	4.05	ZF-EDAZ08		
EDAH09	0.361	4.16	3.80	ZF-EDAH09		
EDAM09	0.610	4.16	3.55	ZF-EDAM09		
EDAU09	0.860	4.16	3.30	ZF-EDAU09		
EDAZ09	1.109	4.16	3.05	ZF-EDAZ09		
EDAH10	1.358	4.16	2.80	ZF-EDAH10		
EDAM10	1.608	4.16	2.55	ZF-EDAM10		
EDAU10	1.857	4.16	2.30	ZF-EDAU10		
EDAZ10	2.106	4.16	2.05	ZF-EDAZ10		
EDAH11	2.356	4.16	1.80	ZF-EDAH11		
EDAM11	2.605	4.16	1.55	ZF-EDAM11		
EDAU11	2.873	4.16	1.28	ZF-EDAU11		

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



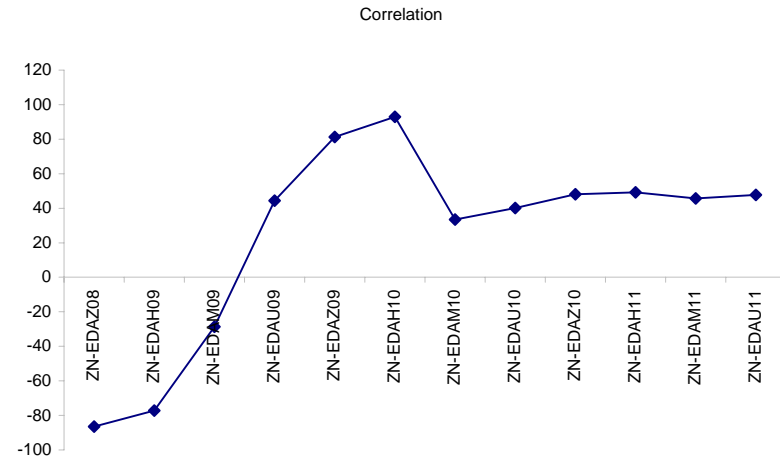
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	15.678	1.69	ZN-EDAZ08	-86.546
EDAH09	15.678	1.69	ZN-EDAH09	-77.248
EDAM09	15.863	1.51	ZN-EDAM09	-28.565
EDAU09	16.063	1.31	ZN-EDAU09	44.347
EDAZ09	16.323	1.05	ZN-EDAZ09	81.249
EDAH10	16.458	0.91	ZN-EDAH10	92.955
EDAM10	16.723	0.65	ZN-EDAM10	33.431
EDAU10	17.028	0.34	ZN-EDAU10	40.205
EDAZ10	17.423	0.05	ZN-EDAZ10	48.046
EDAH11	17.688	0.32	ZN-EDAH11	49.109
EDAM11	17.938	0.57	ZN-EDAM11	45.726
EDAU11	18.108	0.74	ZN-EDAU11	47.754

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	0.112	6.14	6.03	ZN-EDAZ08		
EDAH09	0.361	6.14	5.78	ZN-EDAH09		
EDAM09	0.610	6.14	5.53	ZN-EDAM09		
EDAU09	0.860	6.14	5.28	ZN-EDAU09		
EDAZ09	1.109	6.14	5.03	ZN-EDAZ09		
EDAH10	1.358	6.14	4.78	ZN-EDAH10		
EDAM10	1.608	6.14	4.53	ZN-EDAM10		
EDAU10	1.857	6.14	4.29	ZN-EDAU10		
EDAZ10	2.106	6.14	4.04	ZN-EDAZ10		
EDAH11	2.356	6.14	3.79	ZN-EDAH11		
EDAM11	2.605	6.14	3.54	ZN-EDAM11		
EDAU11	2.873	6.14	3.27	ZN-EDAU11		

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

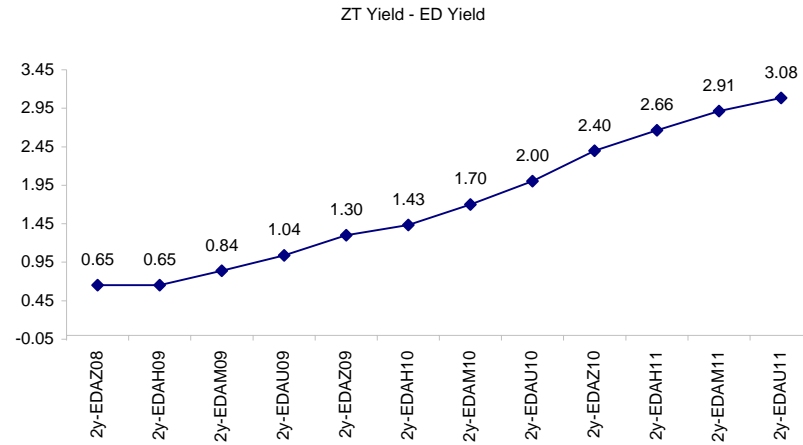


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.193	0.65	2y-EDAZ08	-34.314
EDAH09	2.193	0.65	2y-EDAH09	-13.593
EDAM09	2.378	0.84	2y-EDAM09	-4.305
EDAU09	2.578	1.04	2y-EDAU09	-0.415
EDAZ09	2.838	1.30	2y-EDAZ09	6.309
EDAH10	2.973	1.43	2y-EDAH10	7.054
EDAM10	3.238	1.70	2y-EDAM10	5.628
EDAU10	3.543	2.00	2y-EDAU10	0.327
EDAZ10	3.938	2.40	2y-EDAZ10	-5.832
EDAH11	4.203	2.66	2y-EDAH11	-6.559
EDAM11	4.453	2.91	2y-EDAM11	-3.584
EDAU11	4.623	3.08	2y-EDAU11	-4.792

Price = Outright Decimal Price - Euro Contract Price

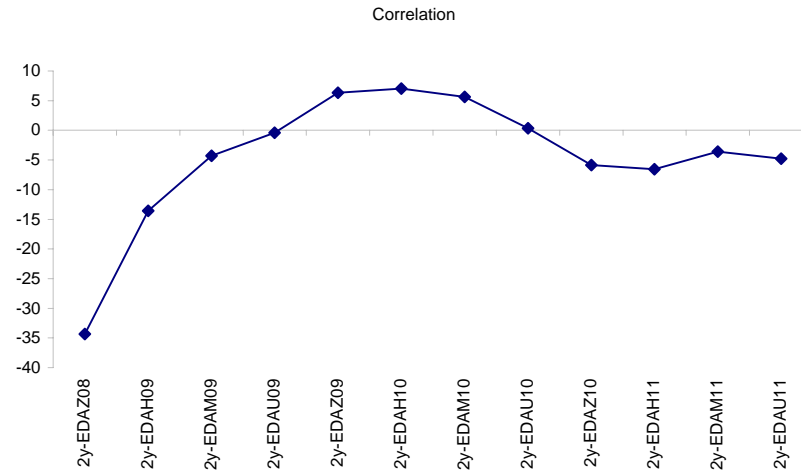
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.112	1.95	1.84	2y-EDAZ08	
EDAH09	0.361	1.95	1.59	2y-EDAH09	
EDAM09	0.610	1.95	1.34	2y-EDAM09	
EDAU09	0.860	1.95	1.09	2y-EDAU09	
EDAZ09	1.109	1.95	0.84	2y-EDAZ09	
EDAH10	1.358	1.95	0.59	2y-EDAH10	
EDAM10	1.608	1.95	0.34	2y-EDAM10	
EDAU10	1.857	1.95	0.09	2y-EDAU10	
EDAZ10	2.106	1.95	(0.16)	2y-EDAZ10	
EDAH11	2.356	1.95	(0.41)	2y-EDAH11	
EDAM11	2.605	1.95	(0.66)	2y-EDAM11	
EDAU11	2.873	1.95	(0.93)	2y-EDAU11	

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

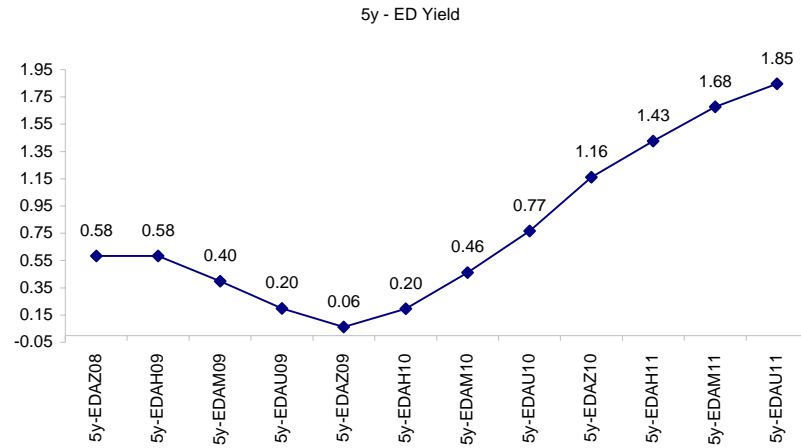


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.302	0.58	5y-EDAZ08	64.206
EDAH09	2.302	0.58	5y-EDAH09	64.122
EDAM09	2.488	0.40	5y-EDAM09	24.373
EDAU09	2.688	0.20	5y-EDAU09	-41.140
EDAZ09	2.947	0.06	5y-EDAZ09	-72.324
EDAH10	3.083	0.20	5y-EDAH10	-82.486
EDAM10	3.348	0.46	5y-EDAM10	-84.862
EDAU10	3.653	0.77	5y-EDAU10	-84.778
EDAZ10	4.048	1.16	5y-EDAZ10	-81.530
EDAH11	4.313	1.43	5y-EDAH11	-77.441
EDAM11	4.563	1.68	5y-EDAM11	-74.971
EDAU11	4.733	1.85	5y-EDAU11	-73.084

Price = Outright Decimal Price - Euro Contract Price

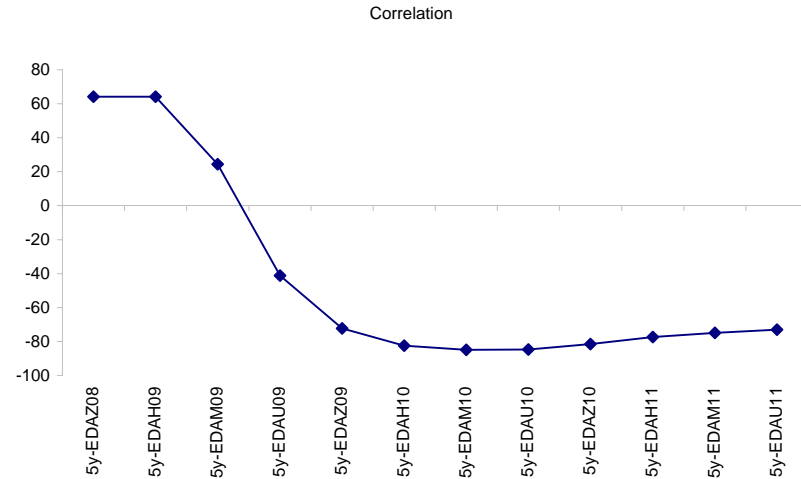
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.112	4.63	4.52	5y-EDAZ08
EDAH09	0.361	4.63	4.27	5y-EDAH09
EDAM09	0.610	4.63	4.02	5y-EDAM09
EDAU09	0.860	4.63	3.77	5y-EDAU09
EDAZ09	1.109	4.63	3.52	5y-EDAZ09
EDAH10	1.358	4.63	3.27	5y-EDAH10
EDAM10	1.608	4.63	3.02	5y-EDAM10
EDAU10	1.857	4.63	2.77	5y-EDAU10
EDAZ10	2.106	4.63	2.52	5y-EDAZ10
EDAH11	2.356	4.63	2.27	5y-EDAH11
EDAM11	2.605	4.63	2.02	5y-EDAM11
EDAU11	2.873	4.63	1.76	5y-EDAU11

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



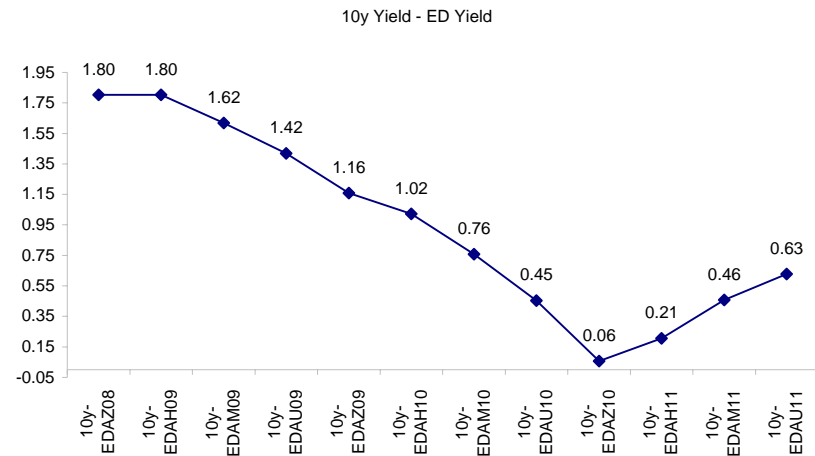


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.302	1.80	10y-EDAZ08	82.070
EDAH09	2.302	1.80	10y-EDAH09	76.057
EDAM09	2.488	1.62	10y-EDAM09	30.746
EDAU09	2.688	1.42	10y-EDAU09	-42.018
EDAZ09	2.947	1.16	10y-EDAZ09	-79.189
EDAH10	3.083	1.02	10y-EDAH10	-91.244
EDAM10	3.348	0.76	10y-EDAM10	-94.109
EDAU10	3.653	0.45	10y-EDAU10	-92.660
EDAZ10	4.048	0.06	10y-EDAZ10	-87.031
EDAH11	4.313	0.21	10y-EDAH11	-82.204
EDAM11	4.563	0.46	10y-EDAM11	-80.277
EDAU11	4.733	0.63	10y-EDAU11	-77.423

Price = Outright Decimal Price - Euro Contract Price

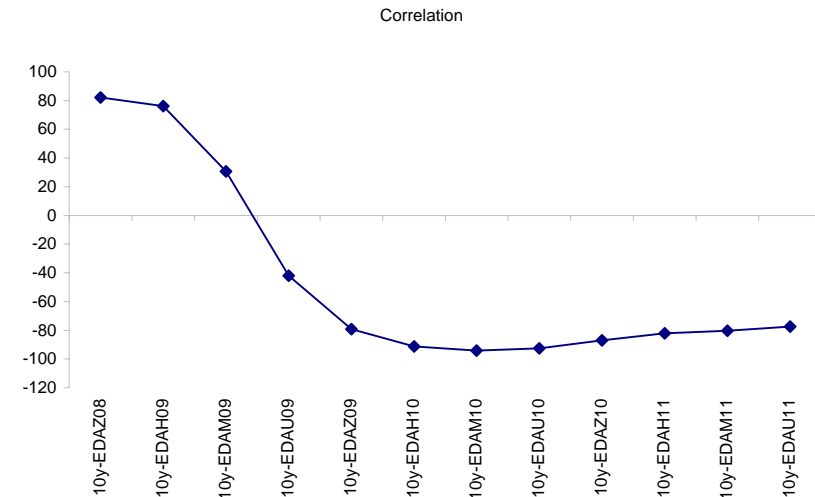
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.112	7.97	7.86	10y-EDAZ08
EDAH09	0.361	7.97	7.61	10y-EDAH09
EDAM09	0.610	7.97	7.36	10y-EDAM09
EDAU09	0.860	7.97	7.11	10y-EDAU09
EDAZ09	1.109	7.97	6.86	10y-EDAZ09
EDAH10	1.358	7.97	6.61	10y-EDAH10
EDAM10	1.608	7.97	6.36	10y-EDAM10
EDAU10	1.857	7.97	6.11	10y-EDAU10
EDAZ10	2.106	7.97	5.86	10y-EDAZ10
EDAH11	2.356	7.97	5.61	10y-EDAH11
EDAM11	2.605	7.97	5.36	10y-EDAM11
EDAU11	2.873	7.97	5.09	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.

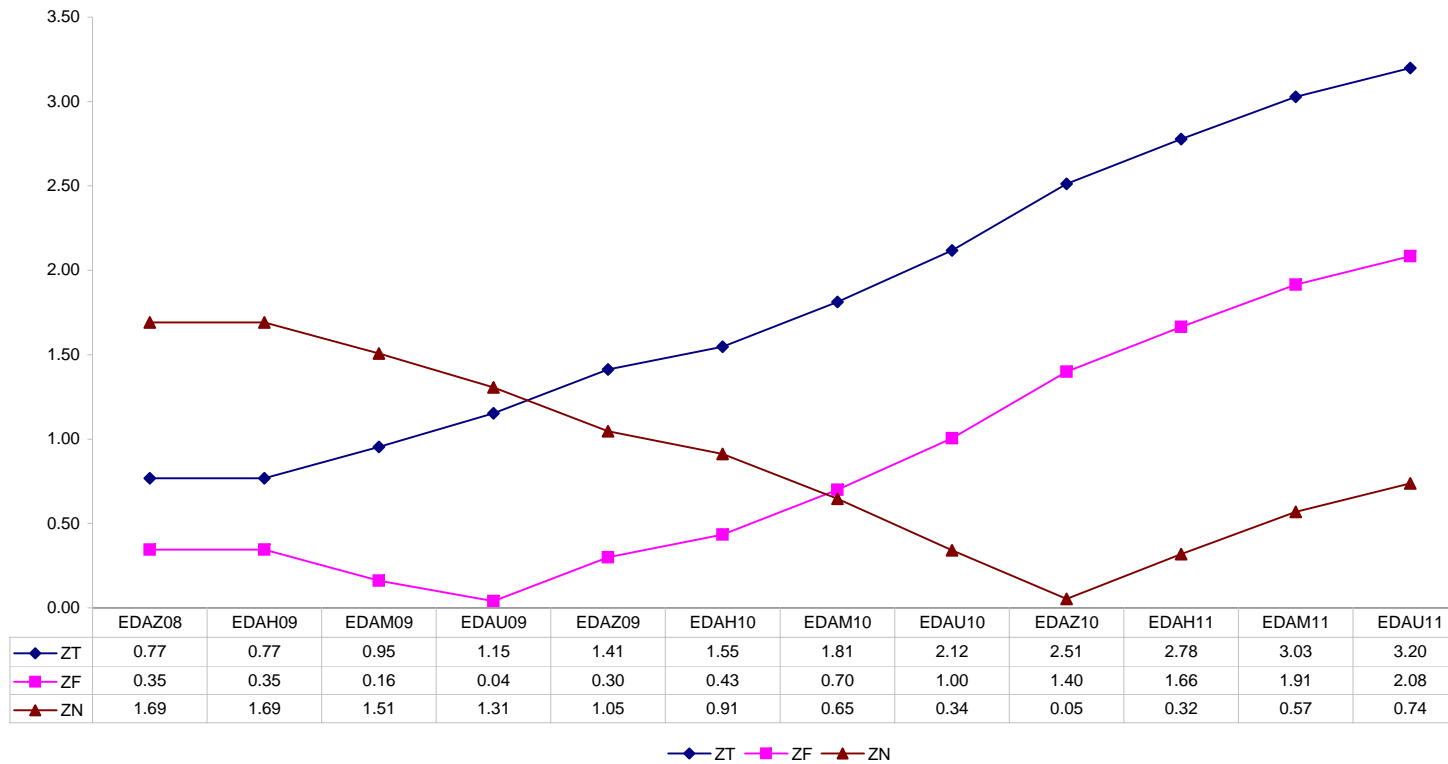
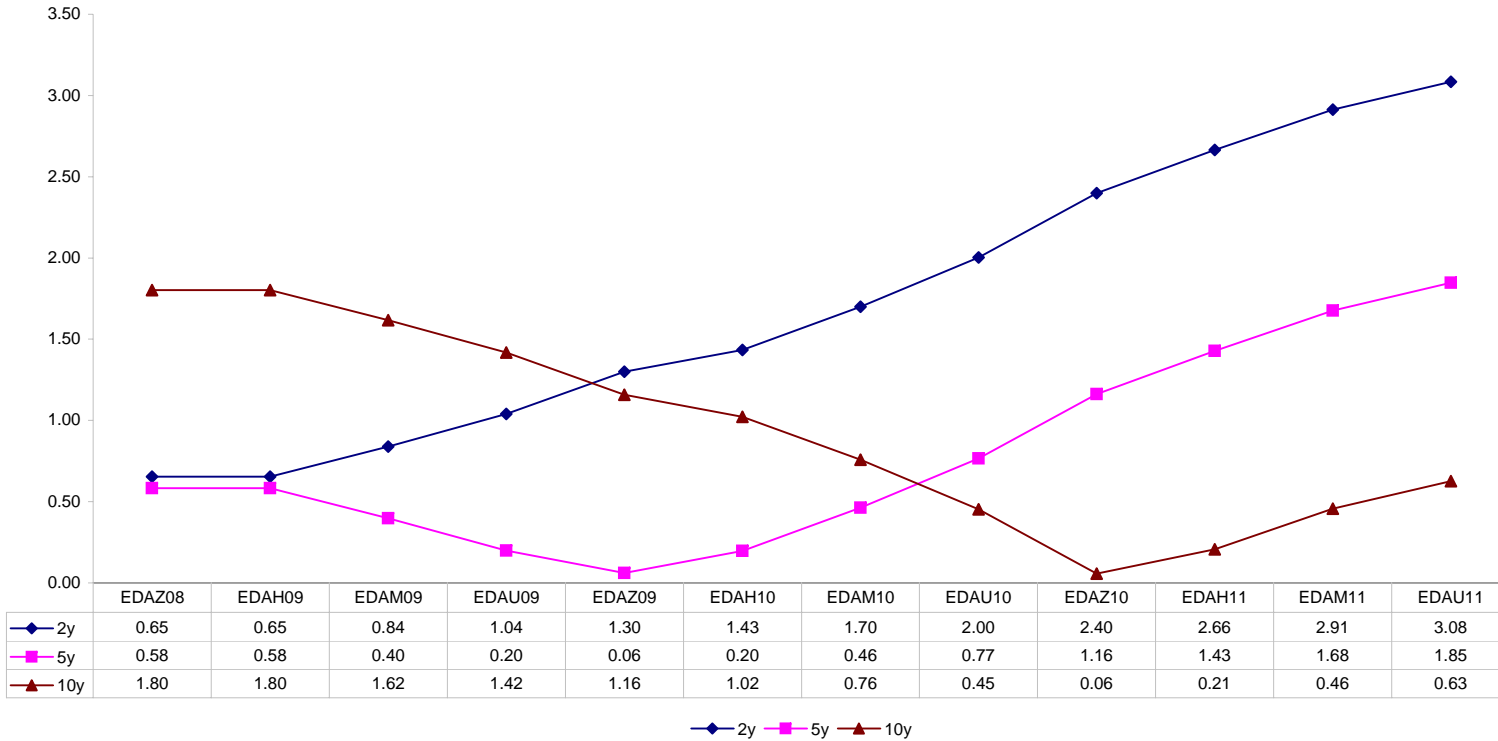
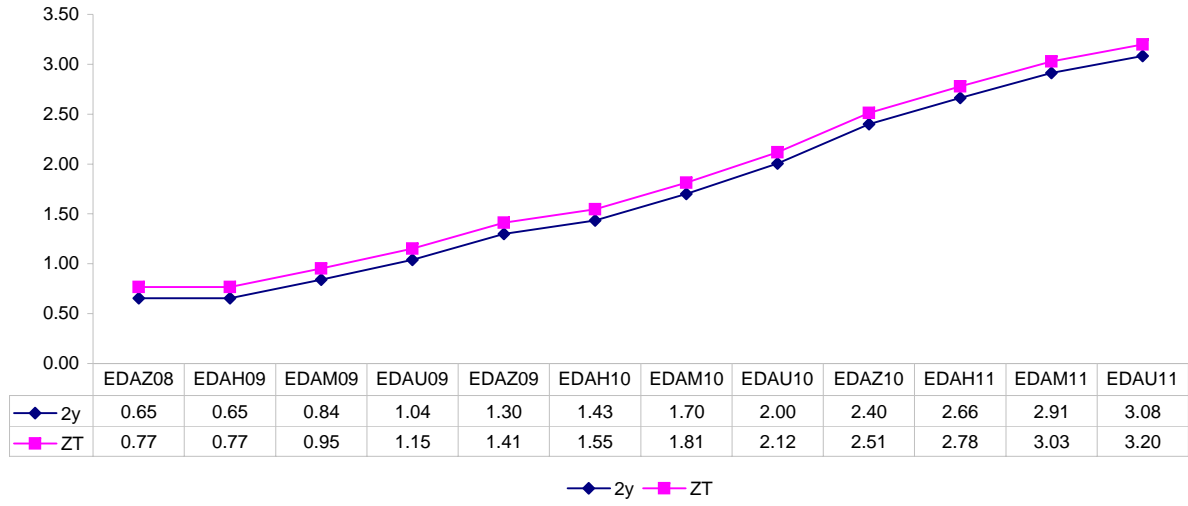


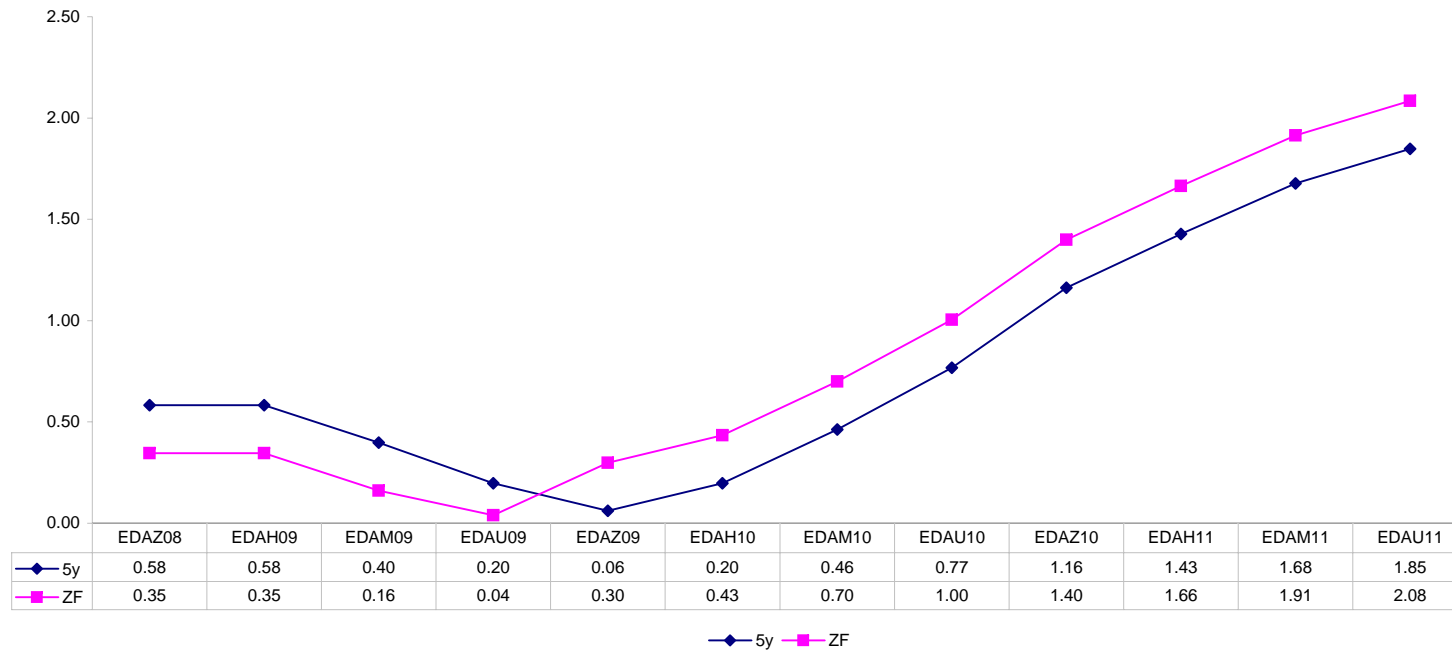
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



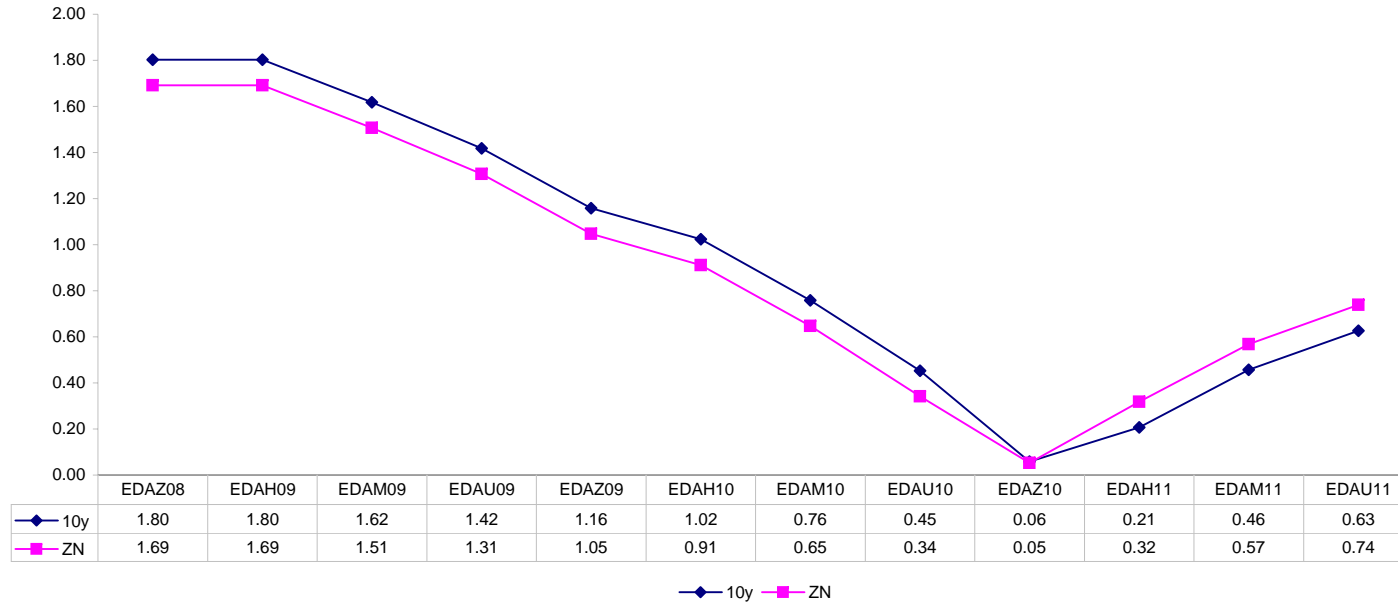
2y Basis TED Curve



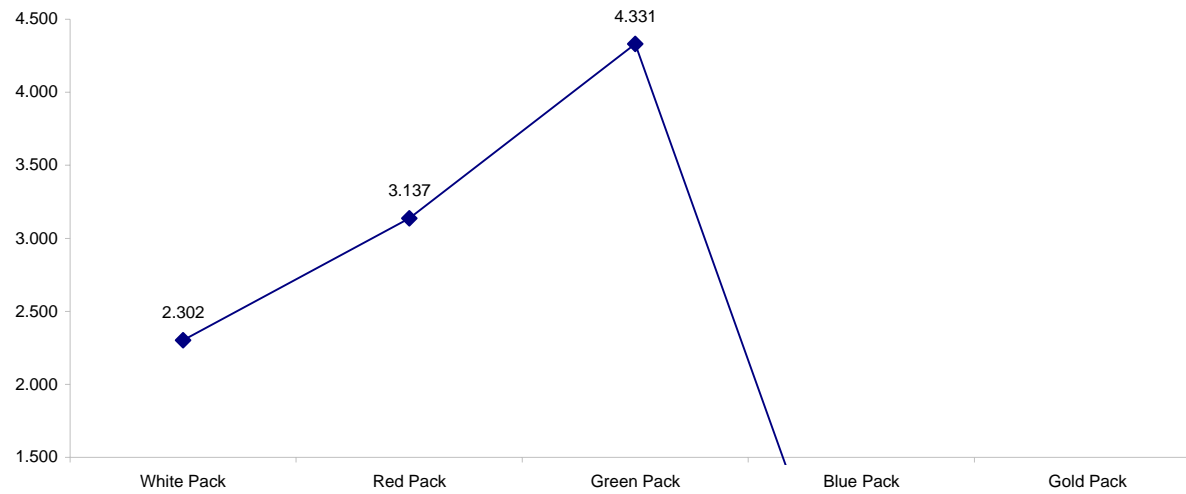
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.302	1.875	9774.250
Red Pack	3.137	-2.750	9693.000
Green Pack	4.331	-0.500	9577.375
Blue Pack		1.375	9518.250
Gold Pack		0.000	9482.250



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

