

## **The Morning Email: TERM TEDS & Dirty TEDS**

### **Table of Contents**

- Pg 1** Quotes
- Pg 2** Dirty TED: ZT vs Eurodollar Contracts
- Pg 3** Dirty TED: ZF vs Eurodollar Contracts
- Pg 4** Dirty TED: ZN vs Eurodollar Contracts
- Pg 5** TERM TED: 2y vs Eurodollar Contracts
- Pg 6** TERM TED: 5y vs Eurodollar Contracts
- Pg 7** TERM TED: 10y vs Eurodollar Contracts
- Pg 8** Dirty TED Curve
- Pg 9** TED Curve
- Pg 10** 2y Basis TED Curve
- Pg 11** 5y Basis TED Curve
- Pg 12** 10y Basis TED Curve
- Pg 13** Packs
- Pg 14** 2y, 5y, 10y Basis Curves vs ED

Want something added? Let me know: [jgoulding@ghco.com](mailto:jgoulding@ghco.com)

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Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	108.0781	108.025	0.670	1.91
ZF	117.4281	117.137	1.480	1.48
ZN	125.0938	125.030	2.465	6.44
2y	100.609	100.1950	0.930	1.94
5y	101.116	101.0370	1.760	4.72
10y	108.625	108.2000	2.744	8.32

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.903	2.098	6	0.016	DEC	
EDAH09	98.115	1.885	97	0.265	MAR	White Pack
EDAM09	98.125	1.875	188	0.514	JUN	
EDAU09	98.045	1.955	279	0.764	SEP	
EDAZ09	97.890	2.110	370	1.013	DEC	
EDAH10	97.820	2.180	461	1.262	MAR	Red Pack
EDAM10	97.675	2.325	552	1.512	JUN	
EDAU10	97.530	2.470	643	1.761	SEP	
EDAZ10	97.330	2.670	734	2.010	DEC	
EDAH11	97.235	2.765	825	2.260	MAR	Green Pack
EDAM11	97.035	2.965	916	2.509	JUN	
EDAU11	96.965	3.035	1014	2.777	SEP	
EDAZ11	96.850	3.150	1105	3.027	DEC	
EDAH12	96.835	3.165	1196	3.276	MAR	Blue Pack
EDAM12	96.805	3.195	1287	3.525	JUN	
EDAU12	96.755	3.245	1378	3.775	SEP	
EDAZ12	96.730	3.270	1469	4.024	DEC	
EDAH13	96.700	3.300	1560	4.273	MAR	Gold Pack
EDAM13	96.655	3.345	1651	4.523	JUN	
EDZU13	96.555	3.445	1833	5.021	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	1.990	0.625	9804.688	Pack Prices
Red Pack	2.316	0.250	9772.875	
Green Pack	2.919	0.000	9714.125	
Blue Pack		1.125	9681.375	
Gold Pack		0.875	9668.000	

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.

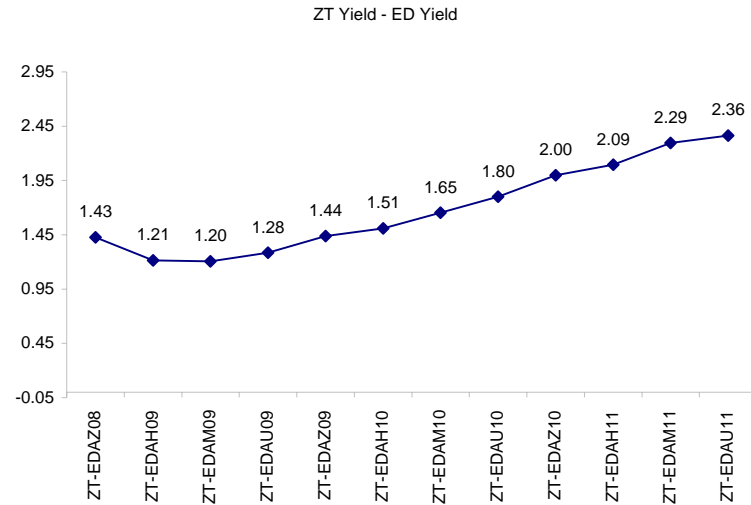
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

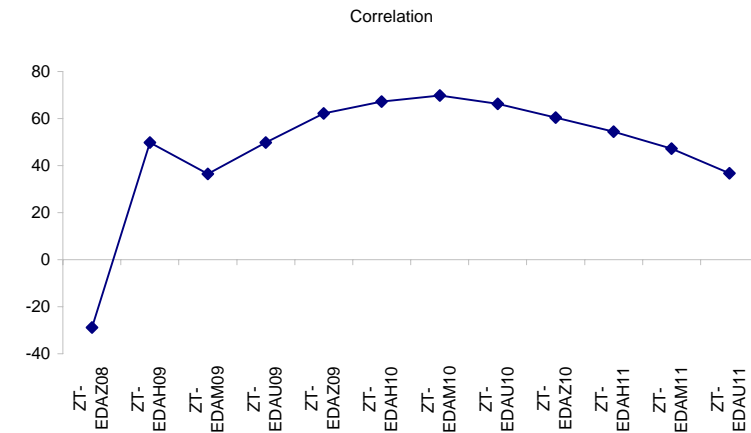
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.176	1.43	ZT-EDAZ08	-28.799
EDAH09	9.963	1.21	ZT-EDAH09	49.756
EDAM09	9.953	1.20	ZT-EDAM09	36.487
EDAU09	10.033	1.28	ZT-EDAU09	49.756
EDAZ09	10.188	1.44	ZT-EDAZ09	62.178
EDAH10	10.258	1.51	ZT-EDAH10	67.235
EDAM10	10.403	1.65	ZT-EDAM10	69.760
EDAU10	10.548	1.80	ZT-EDAU10	66.232
EDAZ10	10.748	2.00	ZT-EDAZ10	60.451
EDAH11	10.843	2.09	ZT-EDAH11	54.385
EDAM11	11.043	2.29	ZT-EDAM11	47.194
EDAU11	11.113	2.36	ZT-EDAU11	36.764

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	0.016	1.91	1.89
EDAH09	0.265	1.91	1.64
EDAM09	0.514	1.91	1.39
EDAU09	0.764	1.91	1.14
EDAZ09	1.013	1.91	0.89
EDAH10	1.262	1.91	0.65
EDAM10	1.512	1.91	0.40
EDAU10	1.761	1.91	0.15
EDAZ10	2.010	1.91	(0.10)
EDAH11	2.260	1.91	(0.35)
EDAM11	2.509	1.91	(0.60)
EDAU11	2.777	1.91	(0.87)

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

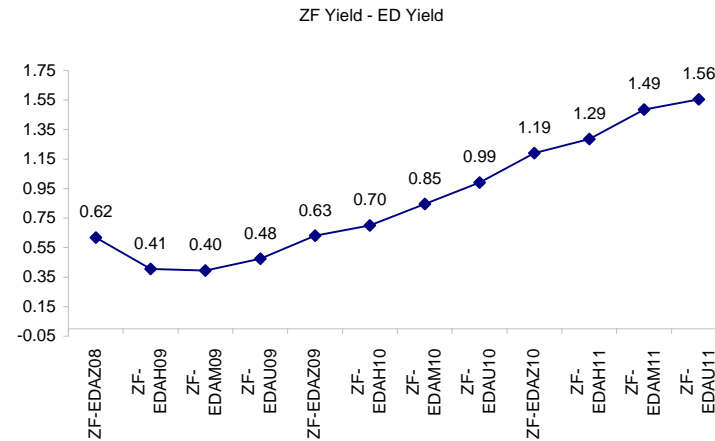


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.526	0.62	ZF-EDAZ08	5.119
EDAH09	19.313	0.41	ZF-EDAH09	61.175
EDAM09	19.303	0.40	ZF-EDAM09	77.805
EDAU09	19.383	0.48	ZF-EDAU09	77.234
EDAZ09	19.538	0.63	ZF-EDAZ09	70.333
EDAH10	19.608	0.70	ZF-EDAH10	61.343
EDAM10	19.753	0.85	ZF-EDAM10	58.667
EDAU10	19.898	0.99	ZF-EDAU10	68.599
EDAZ10	20.098	1.19	ZF-EDAZ10	83.739
EDAH11	20.193	1.29	ZF-EDAH11	88.195
EDAM11	20.393	1.49	ZF-EDAM11	88.502
EDAU11	20.463	1.56	ZF-EDAU11	93.778

Price = Outright Decimal Price - Euro Contract Price

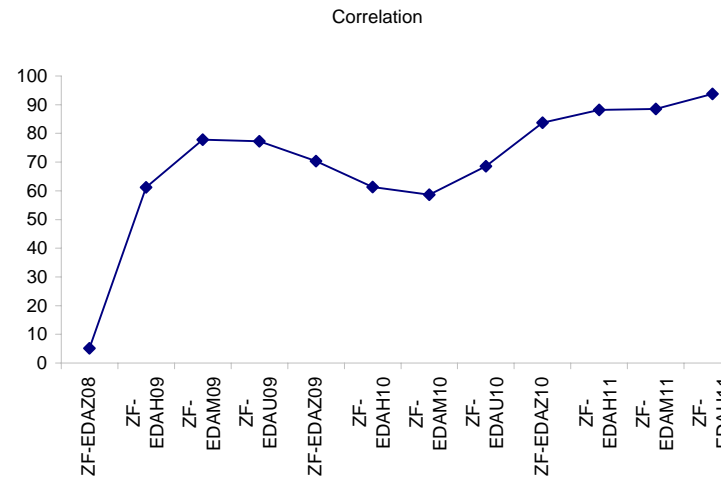
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year			
	ZF Duration	Spread Duration	
EDAZ08	0.016	1.48	1.46
EDAH09	0.265	1.48	1.21
EDAM09	0.514	1.48	0.97
EDAU09	0.764	1.48	0.72
EDAZ09	1.013	1.48	0.47
EDAH10	1.262	1.48	0.22
EDAM10	1.512	1.48	(0.03)
EDAU10	1.761	1.48	(0.28)
EDAZ10	2.010	1.48	(0.53)
EDAH11	2.260	1.48	(0.78)
EDAM11	2.509	1.48	(1.03)
EDAU11	2.777	1.48	(1.30)

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

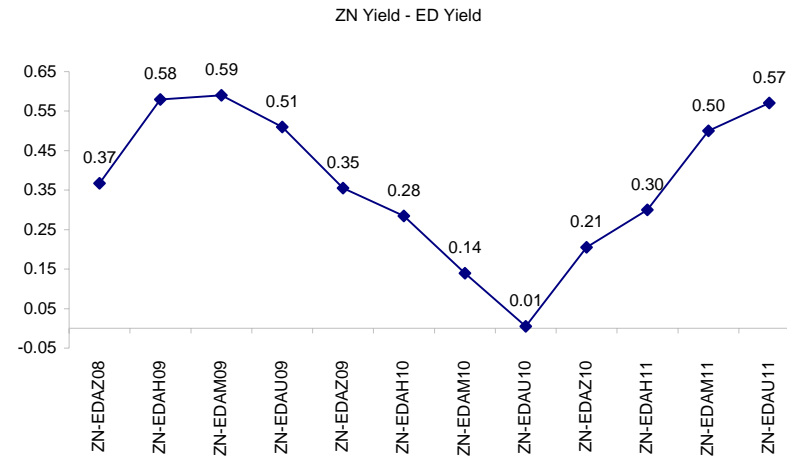


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	27.191	0.37	ZN-EDAZ08	4.177
EDAH09	26.979	0.58	ZN-EDAH09	56.085
EDAM09	26.969	0.59	ZN-EDAM09	73.764
EDAU09	27.049	0.51	ZN-EDAU09	71.604
EDAZ09	27.204	0.35	ZN-EDAZ09	62.985
EDAH10	27.274	0.28	ZN-EDAH10	52.946
EDAM10	27.419	0.14	ZN-EDAM10	58.667
EDAU10	27.564	0.01	ZN-EDAU10	68.599
EDAZ10	27.764	0.21	ZN-EDAZ10	83.739
EDAH11	27.859	0.30	ZN-EDAH11	88.195
EDAM11	28.059	0.50	ZN-EDAM11	88.502
EDAU11	28.129	0.57	ZN-EDAU11	93.778

Price = Outright Decimal Price - Euro Contract Price

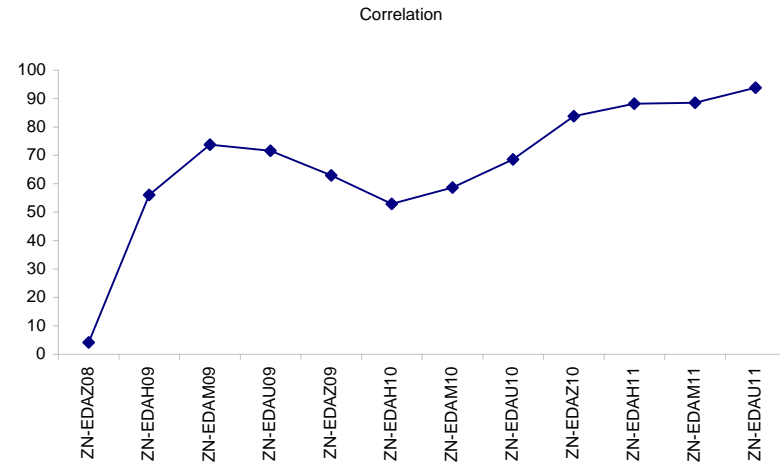
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.016	6.44	6.42	ZN-EDAZ08		
EDAH09	0.265	6.44	6.17	ZN-EDAH09		
EDAM09	0.514	6.44	5.92	ZN-EDAM09		
EDAU09	0.764	6.44	5.68	ZN-EDAU09		
EDAZ09	1.013	6.44	5.43	ZN-EDAZ09		
EDAH10	1.262	6.44	5.18	ZN-EDAH10		
EDAM10	1.512	6.44	4.93	ZN-EDAM10		
EDAU10	1.761	6.44	4.68	ZN-EDAU10		
EDAZ10	2.010	6.44	4.43	ZN-EDAZ10		
EDAH11	2.260	6.44	4.18	ZN-EDAH11		
EDAM11	2.509	6.44	3.93	ZN-EDAM11		
EDAU11	2.777	6.44	3.66	ZN-EDAU11		

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

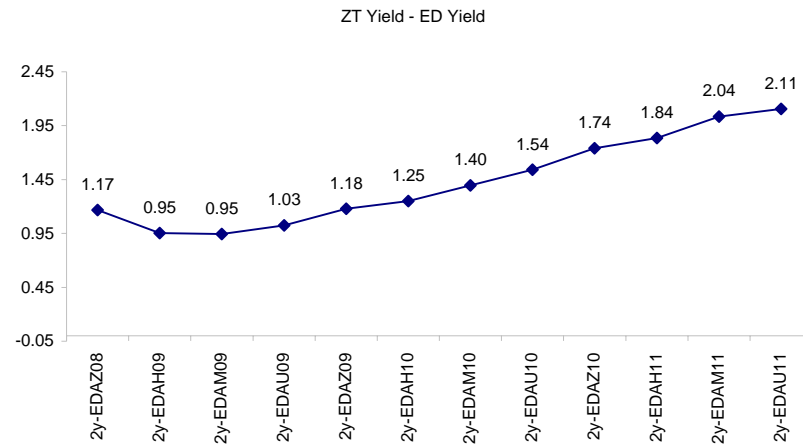


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.707	1.17	2y-EDAZ08	53.773
EDAH09	2.494	0.95	2y-EDAH09	-23.920
EDAM09	2.484	0.95	2y-EDAM09	-54.507
EDAU09	2.564	1.03	2y-EDAU09	-64.847
EDAZ09	2.719	1.18	2y-EDAZ09	-63.688
EDAH10	2.789	1.25	2y-EDAH10	-58.234
EDAM10	2.934	1.40	2y-EDAM10	-57.815
EDAU10	3.079	1.54	2y-EDAU10	-69.650
EDAZ10	3.279	1.74	2y-EDAZ10	-82.346
EDAH11	3.374	1.84	2y-EDAH11	-87.248
EDAM11	3.574	2.04	2y-EDAM11	-88.730
EDAU11	3.644	2.11	2y-EDAU11	-93.838

Price = Outright Decimal Price - Euro Contract Price

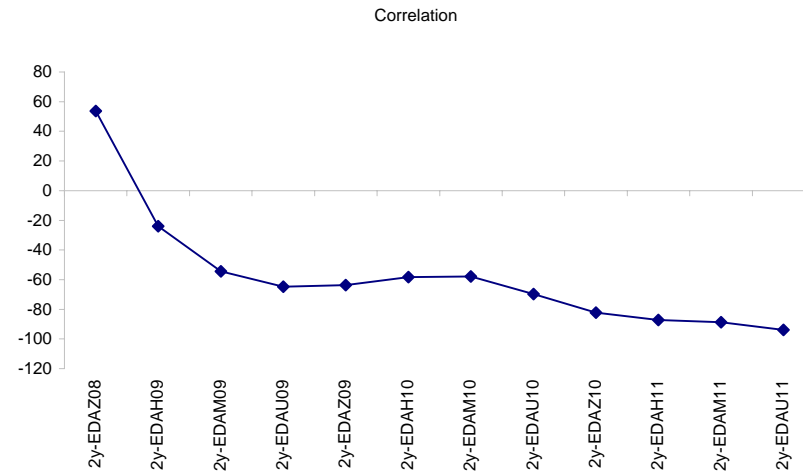
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.016	1.94	1.93	2y-EDAZ08	
EDAH09	0.265	1.94	1.68	2y-EDAH09	
EDAM09	0.514	1.94	1.43	2y-EDAM09	
EDAU09	0.764	1.94	1.18	2y-EDAU09	
EDAZ09	1.013	1.94	0.93	2y-EDAZ09	
EDAH10	1.262	1.94	0.68	2y-EDAH10	
EDAM10	1.512	1.94	0.43	2y-EDAM10	
EDAU10	1.761	1.94	0.18	2y-EDAU10	
EDAZ10	2.010	1.94	(0.07)	2y-EDAZ10	
EDAH11	2.260	1.94	(0.31)	2y-EDAH11	
EDAM11	2.509	1.94	(0.56)	2y-EDAM11	
EDAU11	2.777	1.94	(0.83)	2y-EDAU11	

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

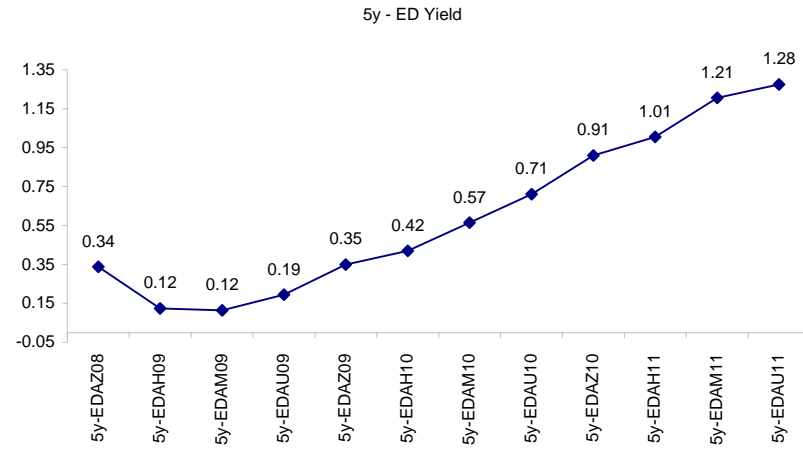


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.213	0.34	5y-EDAZ08	39.328
EDAH09	3.001	0.12	5y-EDAH09	-34.448
EDAM09	2.991	0.12	5y-EDAM09	-63.826
EDAU09	3.071	0.19	5y-EDAU09	-70.018
EDAZ09	3.226	0.35	5y-EDAZ09	-65.315
EDAH10	3.296	0.42	5y-EDAH10	-58.452
EDAM10	3.441	0.57	5y-EDAM10	-57.194
EDAU10	3.586	0.71	5y-EDAU10	-69.610
EDAZ10	3.786	0.91	5y-EDAZ10	-83.637
EDAH11	3.881	1.01	5y-EDAH11	-88.646
EDAM11	4.081	1.21	5y-EDAM11	-90.601
EDAU11	4.151	1.28	5y-EDAU11	-95.020

Price = Outright Decimal Price - Euro Contract Price

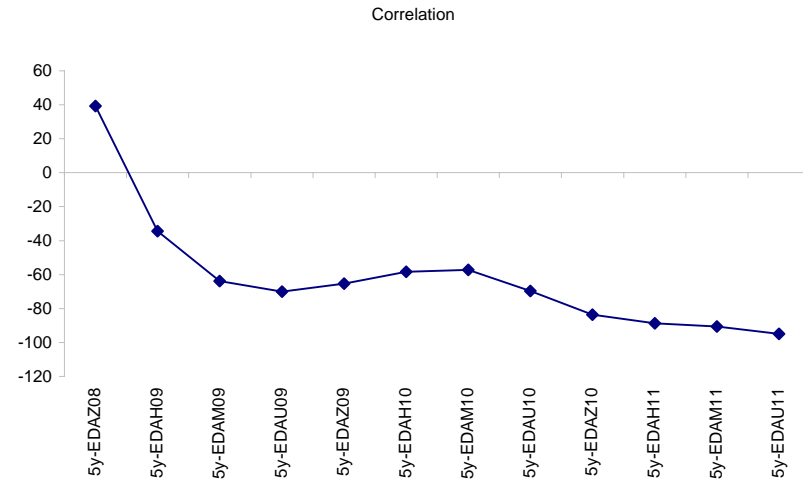
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		5Y Duration	Spread Duration	
EDAZ08	0.016	4.72	4.70	5y-EDAZ08	
EDAH09	0.265	4.72	4.45	5y-EDAH09	
EDAM09	0.514	4.72	4.20	5y-EDAM09	
EDAU09	0.764	4.72	3.95	5y-EDAU09	
EDAZ09	1.013	4.72	3.70	5y-EDAZ09	
EDAH10	1.262	4.72	3.45	5y-EDAH10	
EDAM10	1.512	4.72	3.20	5y-EDAM10	
EDAU10	1.761	4.72	2.95	5y-EDAU10	
EDAZ10	2.010	4.72	2.71	5y-EDAZ10	
EDAH11	2.260	4.72	2.46	5y-EDAH11	
EDAM11	2.509	4.72	2.21	5y-EDAM11	
EDAU11	2.777	4.72	1.94	5y-EDAU11	

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



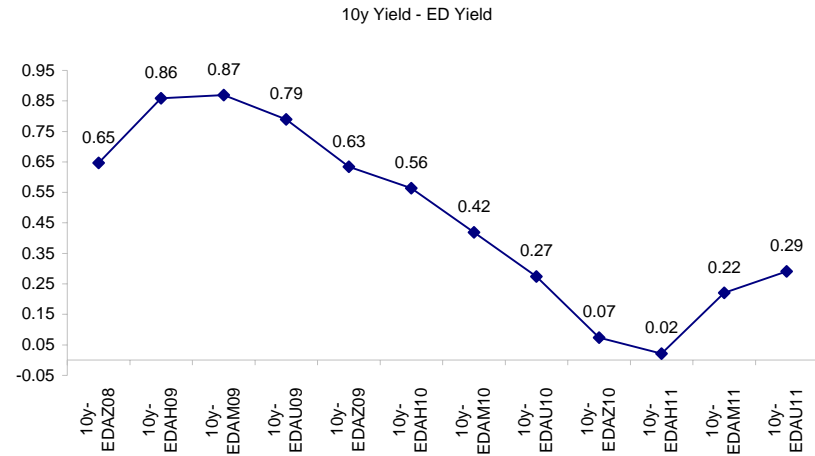


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.213	0.65	10y-EDAZ08	47.497
EDAH09	3.001	0.86	10y-EDAH09	-26.036
EDAM09	2.991	0.87	10y-EDAM09	-56.318
EDAU09	3.071	0.79	10y-EDAU09	-63.816
EDAZ09	3.226	0.63	10y-EDAZ09	-60.104
EDAH10	3.296	0.56	10y-EDAH10	-53.709
EDAM10	3.441	0.42	10y-EDAM10	-53.064
EDAU10	3.586	0.27	10y-EDAU10	-66.178
EDAZ10	3.786	0.07	10y-EDAZ10	-80.877
EDAH11	3.881	0.02	10y-EDAH11	-86.708
EDAM11	4.081	0.22	10y-EDAM11	-88.727
EDAU11	4.151	0.29	10y-EDAU11	-94.809

Price = Outright Decimal Price - Euro Contract Price

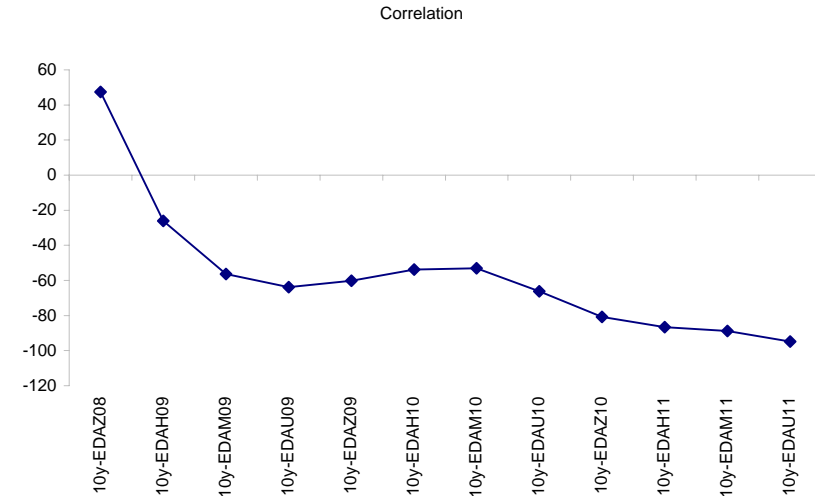
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.016	8.32	8.31	10y-EDAZ08
EDAH09	0.265	8.32	8.06	10y-EDAH09
EDAM09	0.514	8.32	7.81	10y-EDAM09
EDAU09	0.764	8.32	7.56	10y-EDAU09
EDAZ09	1.013	8.32	7.31	10y-EDAZ09
EDAH10	1.262	8.32	7.06	10y-EDAH10
EDAM10	1.512	8.32	6.81	10y-EDAM10
EDAU10	1.761	8.32	6.56	10y-EDAU10
EDAZ10	2.010	8.32	6.31	10y-EDAZ10
EDAH11	2.260	8.32	6.07	10y-EDAH11
EDAM11	2.509	8.32	5.82	10y-EDAM11
EDAU11	2.777	8.32	5.55	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.

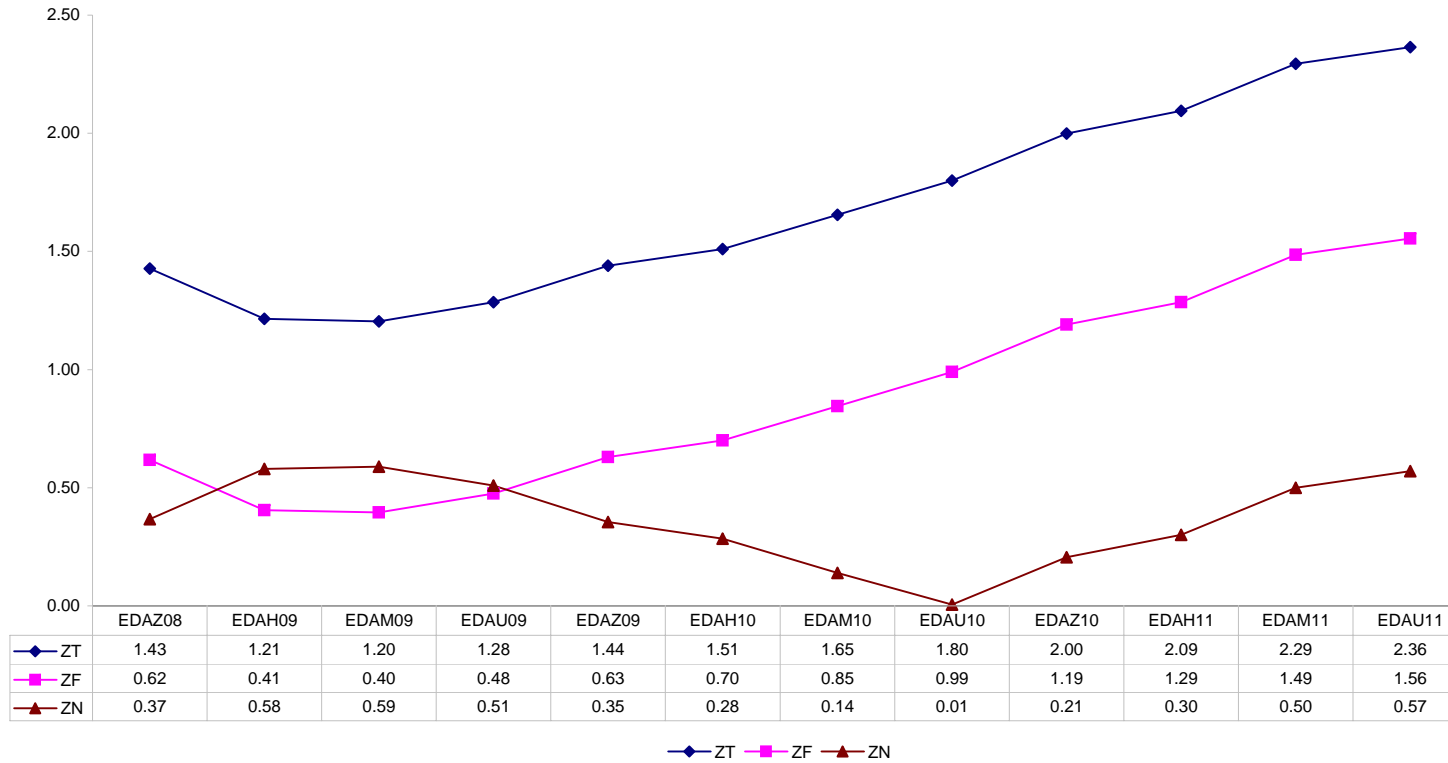
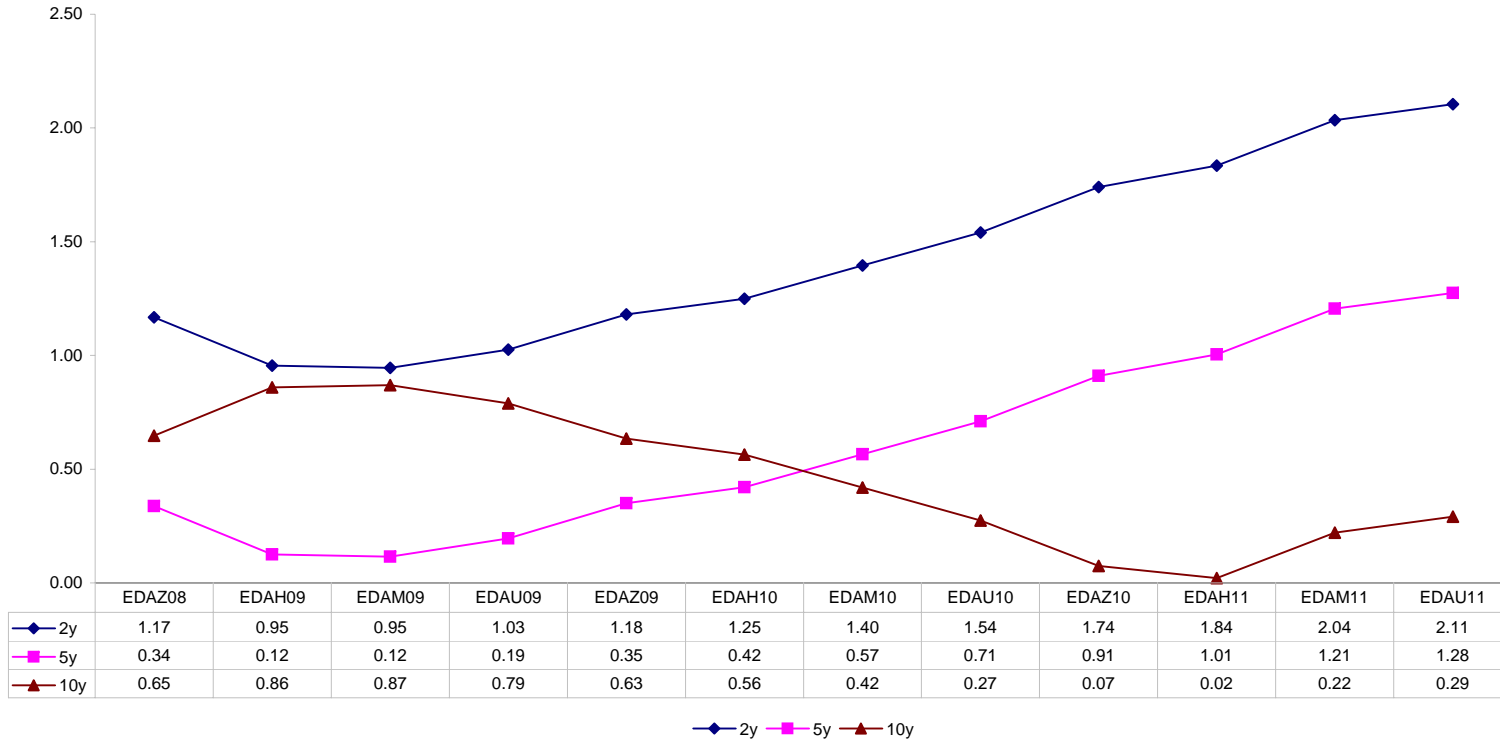
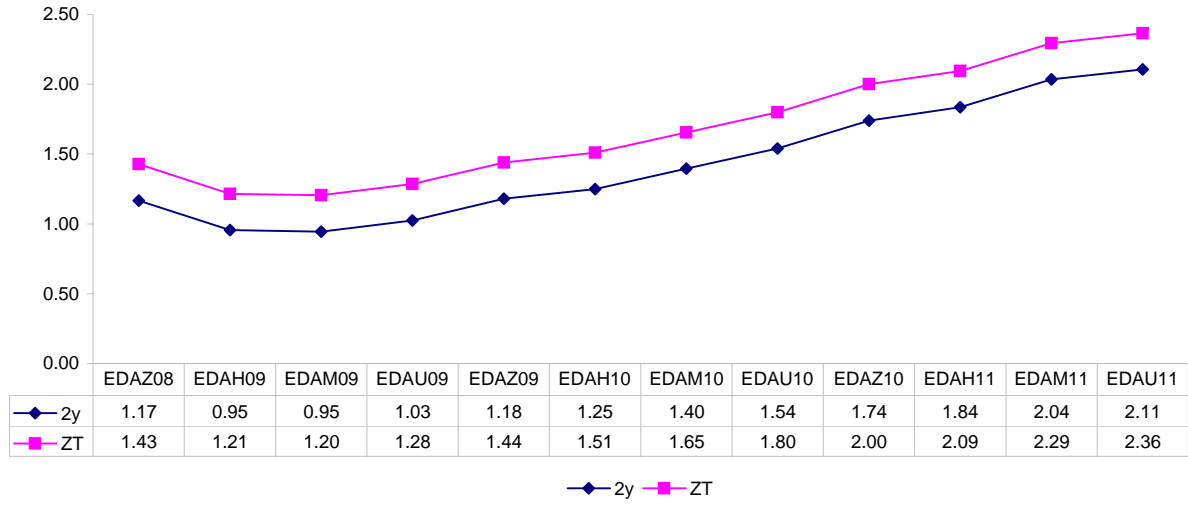


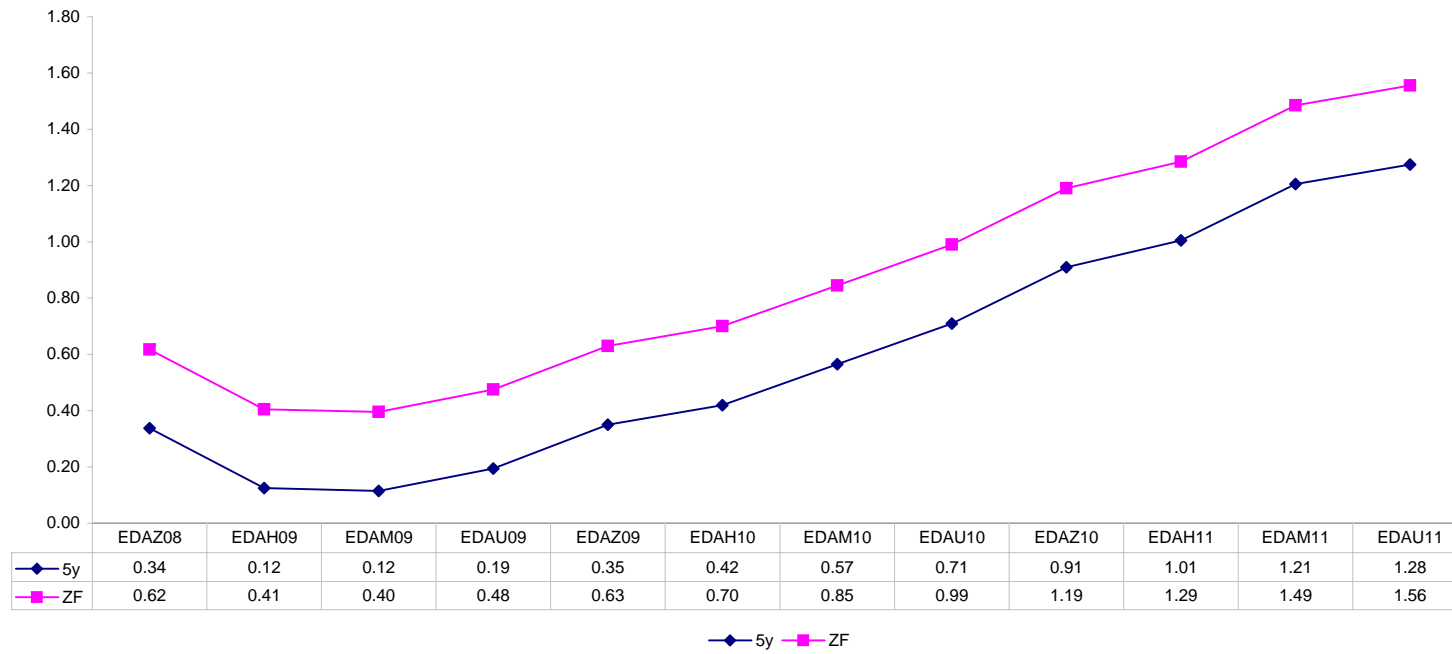
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



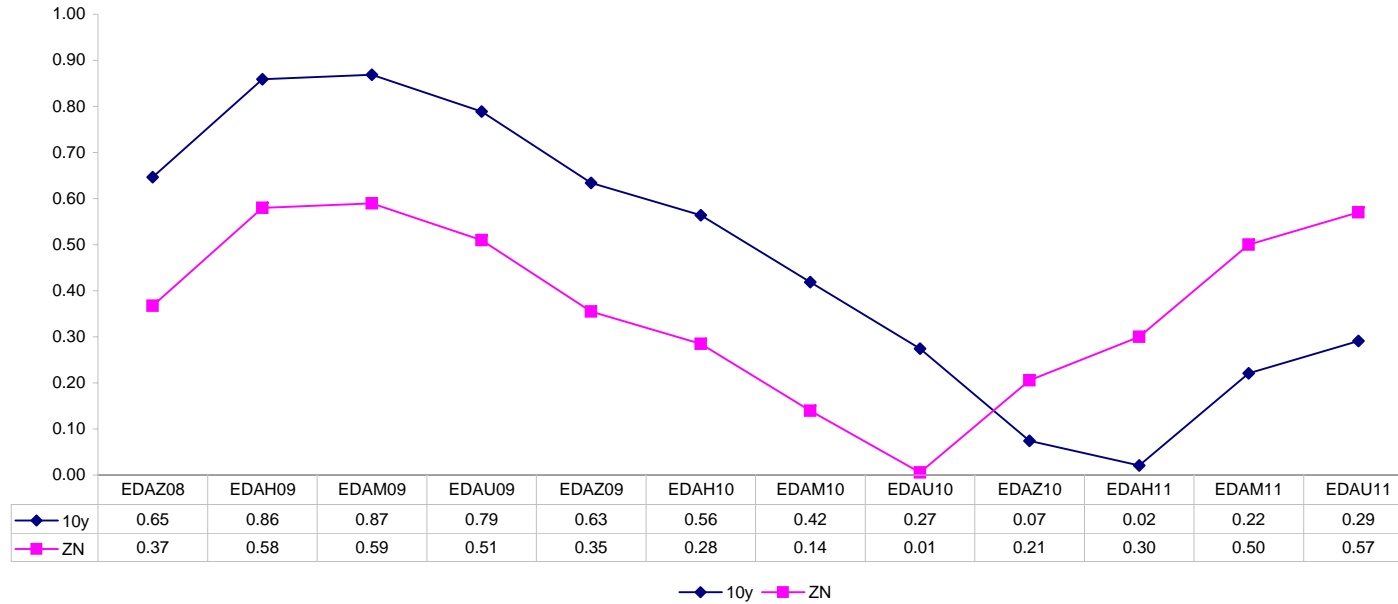
2y Basis TED Curve



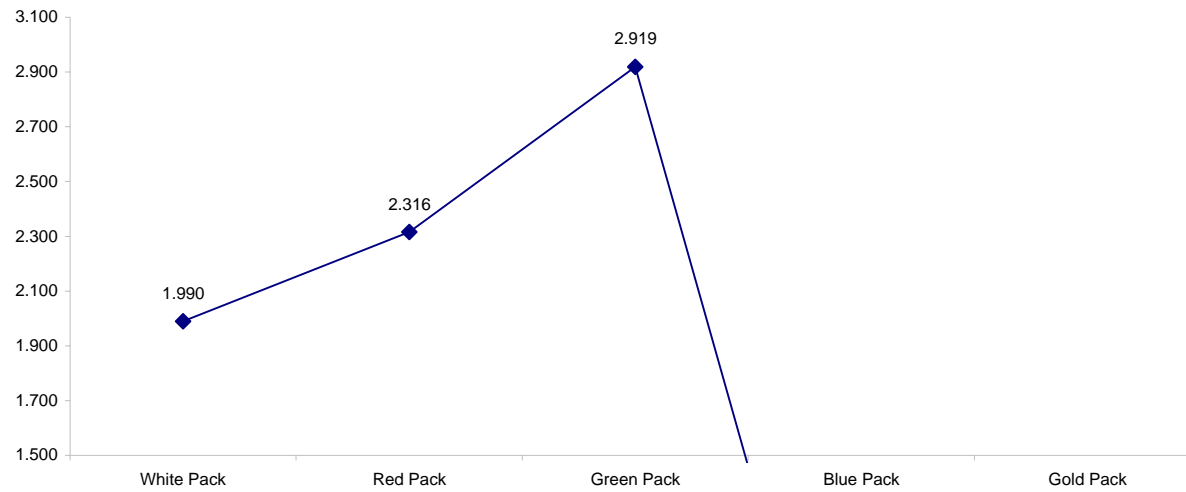
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	1.990	0.625	9804.688
Red Pack	2.316	0.250	9772.875
Green Pack	2.919	0.000	9714.125
Blue Pack		1.125	9681.375
Gold Pack		0.875	9668.000



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

