

## **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	106.0000	106.000	2.471	1.82
ZF	111.5625	111.180	3.104	3.95
ZN	115.1094	115.035	3.739	6.51
2y	100.444	100.1420	2.513	1.90
5y	100.663	100.2120	3.229	4.54
10y	100.219	100.0700	3.971	8.02

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU08	97.175	2.825	34	0.092	SEP	
EDAZ08	96.965	3.035	125	0.342	DEC	White Pack
EDAH09	96.875	3.125	216	0.591	MAR	
EDAM09	96.705	3.295	307	0.840	JUN	
EDAU09	96.480	3.520	398	1.090	SEP	
EDAZ09	96.185	3.815	489	1.339	DEC	Red Pack
EDAH10	95.945	4.055	580	1.588	MAR	
EDAM10	95.725	4.275	671	1.838	JUN	
EDAU10	95.560	4.440	762	2.087	SEP	
EDAZ10	95.425	4.575	853	2.336	DEC	Green Pack
EDAH11	95.355	4.645	944	2.586	MAR	
EDAM11	95.280	4.720	1035	2.835	JUN	
EDAU11	95.230	4.770	1133	3.103	SEP	
EDAZ11	95.170	4.830	1224	3.353	DEC	Blue Pack
EDAH12	95.140	4.860	1315	3.602	MAR	
EDAM12	95.085	4.915	1406	3.851	JUN	
EDAU12	95.075	4.925	1497	4.101	SEP	
EDAZ12	95.010	4.990	1588	4.350	DEC	Gold Pack
EDAH13	94.955	5.045	1679	4.599	MAR	
EDAM13	94.900	5.100	1770	4.849	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	3.137	1.875	9693.000	
Red Pack	4.010	4.375	9608.375	Pack Prices
Green Pack	4.713	4.000	9540.500	
Blue Pack		2.250	9515.125	
Gold Pack		3.000	9497.875	

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.

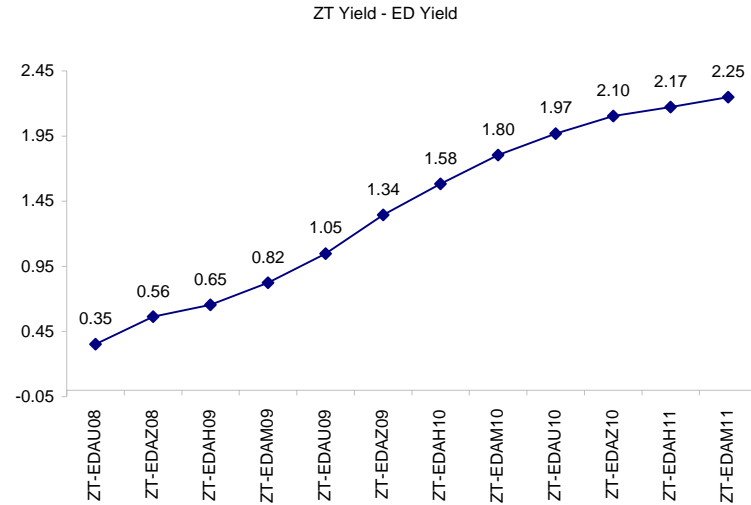
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### 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.**

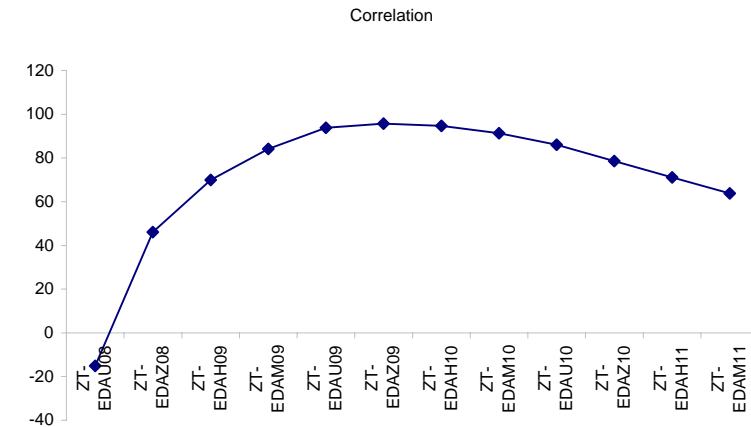
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	8.825	0.35	ZT-EDAU08	-15.123
EDAZ08	9.035	0.56	ZT-EDAZ08	46.091
EDAH09	9.125	0.65	ZT-EDAH09	69.941
EDAM09	9.295	0.82	ZT-EDAM09	84.138
EDAU09	9.520	1.05	ZT-EDAU09	93.768
EDAZ09	9.815	1.34	ZT-EDAZ09	95.717
EDAH10	10.055	1.58	ZT-EDAH10	94.733
EDAM10	10.275	1.80	ZT-EDAM10	91.272
EDAU10	10.440	1.97	ZT-EDAU10	86.088
EDAZ10	10.575	2.10	ZT-EDAZ10	78.633
EDAH11	10.645	2.17	ZT-EDAH11	71.072
EDAM11	10.720	2.25	ZT-EDAM11	63.743

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	
EDAU08	0.092	1.82	1.72		ZT-EDAU08
EDAZ08	0.342	1.82	1.47		ZT-EDAZ08
EDAH09	0.591	1.82	1.22		ZT-EDAH09
EDAM09	0.840	1.82	0.98		ZT-EDAM09
EDAU09	1.090	1.82	0.73		ZT-EDAU09
EDAZ09	1.339	1.82	0.48		ZT-EDAZ09
EDAH10	1.588	1.82	0.23		ZT-EDAH10
EDAM10	1.838	1.82	(0.02)		ZT-EDAM10
EDAU10	2.087	1.82	(0.27)		ZT-EDAU10
EDAZ10	2.336	1.82	(0.52)		ZT-EDAZ10
EDAH11	2.586	1.82	(0.77)		ZT-EDAH11
EDAM11	2.835	1.82	(1.02)		ZT-EDAM11

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

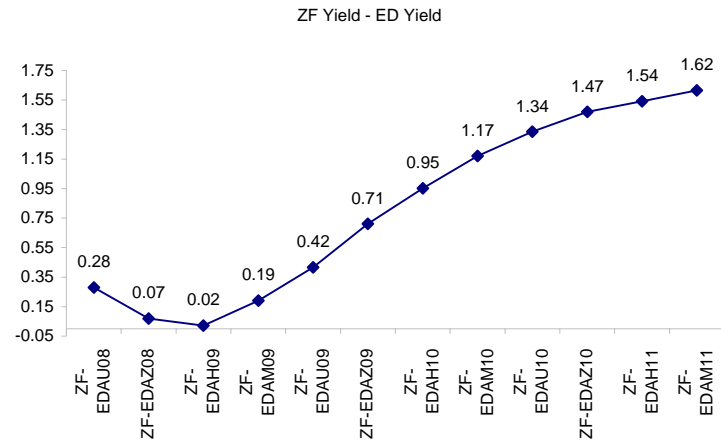


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	14.388	0.28	ZF-EDAU08	-16.826
EDAZ08	14.598	0.07	ZF-EDAZ08	35.590
EDAH09	14.688	0.02	ZF-EDAH09	61.228
EDAM09	14.858	0.19	ZF-EDAM09	76.889
EDAU09	15.083	0.42	ZF-EDAU09	92.283
EDAZ09	15.378	0.71	ZF-EDAZ09	97.764
EDAH10	15.618	0.95	ZF-EDAH10	96.847
EDAM10	15.838	1.17	ZF-EDAM10	91.142
EDAU10	16.003	1.34	ZF-EDAU10	82.342
EDAZ10	16.138	1.47	ZF-EDAZ10	72.258
EDAH11	16.208	1.54	ZF-EDAH11	61.924
EDAM11	16.283	1.62	ZF-EDAM11	52.322

Price = Outright Decimal Price - Euro Contract Price

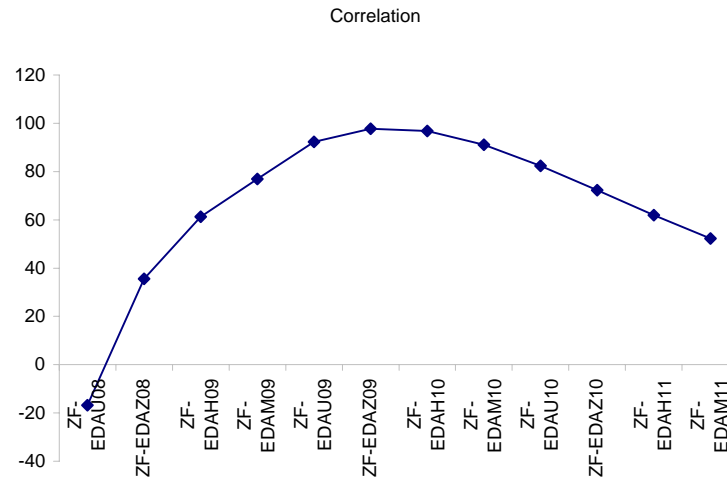
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



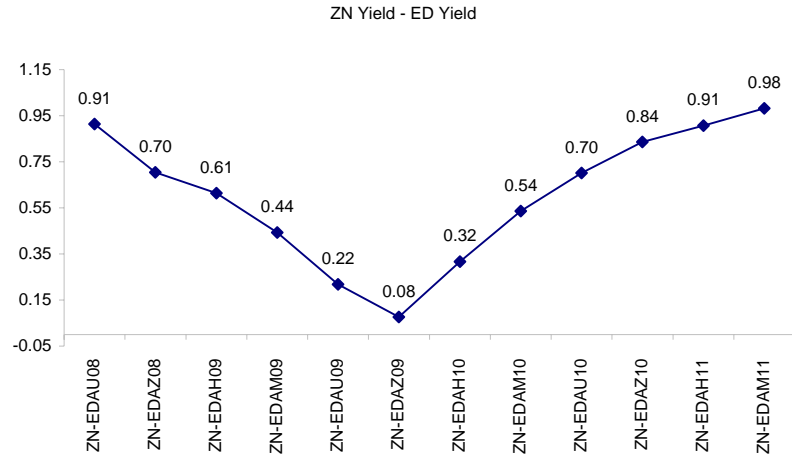
ED Duration as Fraction of year				
	ZF Duration	Spread Duration		
EDAU08	0.092	3.95	3.86	ZF-EDAU08
EDAZ08	0.342	3.95	3.61	ZF-EDAZ08
EDAH09	0.591	3.95	3.36	ZF-EDAH09
EDAM09	0.840	3.95	3.11	ZF-EDAM09
EDAU09	1.090	3.95	2.86	ZF-EDAU09
EDAZ09	1.339	3.95	2.61	ZF-EDAZ09
EDAH10	1.588	3.95	2.36	ZF-EDAH10
EDAM10	1.838	3.95	2.11	ZF-EDAM10
EDAU10	2.087	3.95	1.86	ZF-EDAU10
EDAZ10	2.336	3.95	1.61	ZF-EDAZ10
EDAH11	2.586	3.95	1.37	ZF-EDAH11
EDAM11	2.835	3.95	1.12	ZF-EDAM11

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



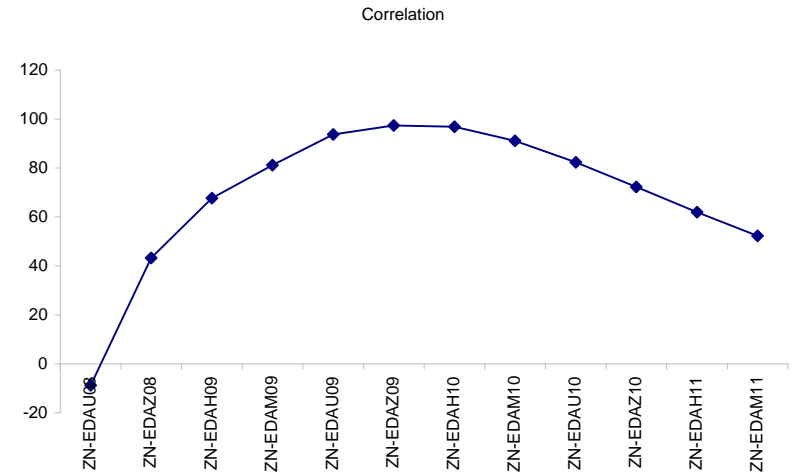
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	17.934	0.91	ZN-EDAU08	-8.759
EDAZ08	18.144	0.70	ZN-EDAZ08	43.262
EDAH09	18.234	0.61	ZN-EDAH09	67.685
EDAM09	18.404	0.44	ZN-EDAM09	81.151
EDAU09	18.629	0.22	ZN-EDAU09	93.741
EDAZ09	18.924	0.08	ZN-EDAZ09	97.352
EDAH10	19.164	0.32	ZN-EDAH10	96.847
EDAM10	19.384	0.54	ZN-EDAM10	91.142
EDAU10	19.549	0.70	ZN-EDAU10	82.342
EDAZ10	19.684	0.84	ZN-EDAZ10	72.258
EDAH11	19.754	0.91	ZN-EDAH11	61.924
EDAM11	19.829	0.98	ZN-EDAM11	52.322

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	
EDAU08	0.092	6.51	6.42	ZN-EDAU08		
EDAZ08	0.342	6.51	6.17	ZN-EDAZ08		
EDAH09	0.591	6.51	5.92	ZN-EDAH09		
EDAM09	0.840	6.51	5.67	ZN-EDAM09		
EDAU09	1.090	6.51	5.42	ZN-EDAU09		
EDAZ09	1.339	6.51	5.17	ZN-EDAZ09		
EDAH10	1.588	6.51	4.92	ZN-EDAH10		
EDAM10	1.838	6.51	4.67	ZN-EDAM10		
EDAU10	2.087	6.51	4.42	ZN-EDAU10		
EDAZ10	2.336	6.51	4.17	ZN-EDAZ10		
EDAH11	2.586	6.51	3.92	ZN-EDAH11		
EDAM11	2.835	6.51	3.67	ZN-EDAM11		

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

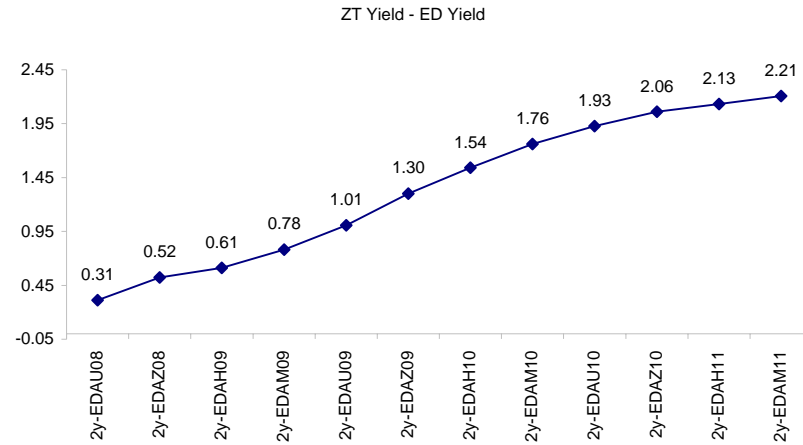


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.269	0.31	2y-EDAU08	17.634
EDAZ08	3.479	0.52	2y-EDAZ08	-42.196
EDAH09	3.569	0.61	2y-EDAH09	-66.181
EDAM09	3.739	0.78	2y-EDAM09	-81.876
EDAU09	3.964	1.01	2y-EDAU09	-91.777
EDAZ09	4.259	1.30	2y-EDAZ09	-94.993
EDAH10	4.499	1.54	2y-EDAH10	-95.815
EDAM10	4.719	1.76	2y-EDAM10	-94.341
EDAU10	4.884	1.93	2y-EDAU10	-90.355
EDAZ10	5.019	2.06	2y-EDAZ10	-84.037
EDAH11	5.089	2.13	2y-EDAH11	-76.727
EDAM11	5.164	2.21	2y-EDAM11	-69.850

Price = Outright Decimal Price - Euro Contract Price

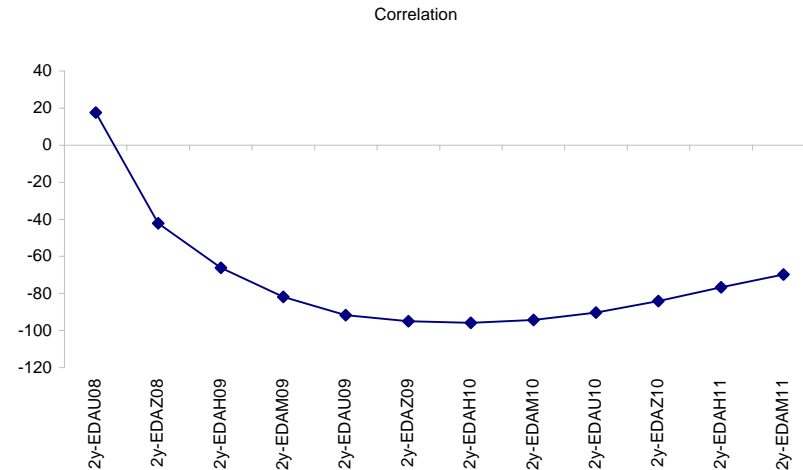
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAU08	0.092	1.90	1.81	2y-EDAU08	
EDAZ08	0.342	1.90	1.56	2y-EDAZ08	
EDAH09	0.591	1.90	1.31	2y-EDAH09	
EDAM09	0.840	1.90	1.06	2y-EDAM09	
EDAU09	1.090	1.90	0.81	2y-EDAU09	
EDAZ09	1.339	1.90	0.56	2y-EDAZ09	
EDAH10	1.588	1.90	0.31	2y-EDAH10	
EDAM10	1.838	1.90	0.06	2y-EDAM10	
EDAU10	2.087	1.90	(0.19)	2y-EDAU10	
EDAZ10	2.336	1.90	(0.44)	2y-EDAZ10	
EDAH11	2.586	1.90	(0.69)	2y-EDAH11	
EDAM11	2.835	1.90	(0.93)	2y-EDAM11	

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

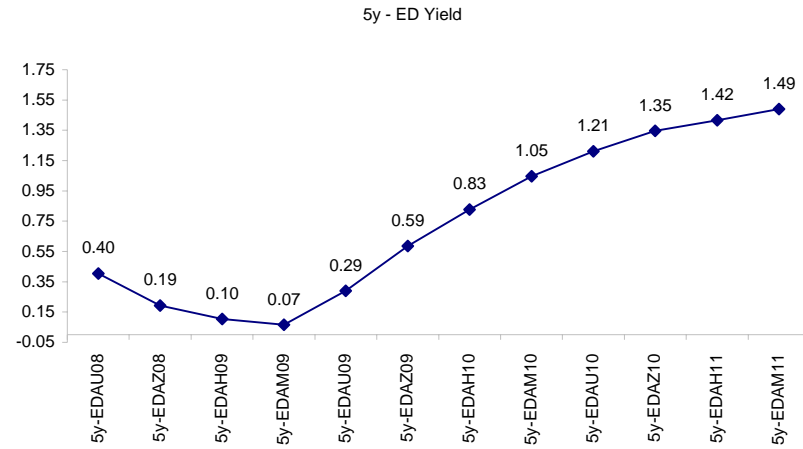


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.488	0.40	5y-EDAU08	10.459
EDAZ08	3.698	0.19	5y-EDAZ08	-43.065
EDAH09	3.788	0.10	5y-EDAH09	-68.194
EDAM09	3.958	0.07	5y-EDAM09	-83.383
EDAU09	4.183	0.29	5y-EDAU09	-94.551
EDAZ09	4.478	0.59	5y-EDAZ09	-97.838
EDAH10	4.718	0.83	5y-EDAH10	-97.449
EDAM10	4.938	1.05	5y-EDAM10	-94.668
EDAU10	5.103	1.21	5y-EDAU10	-88.534
EDAZ10	5.238	1.35	5y-EDAZ10	-80.239
EDAH11	5.308	1.42	5y-EDAH11	-71.417
EDAM11	5.383	1.49	5y-EDAM11	-63.156

Price = Outright Decimal Price - Euro Contract Price

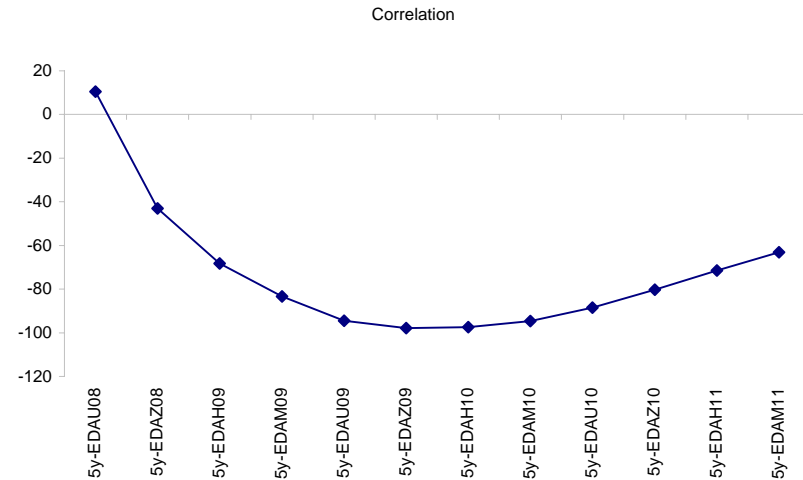
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		5Y Duration	Spread Duration	
EDAU08	0.092	4.54	4.44	5y-EDAU08	
EDAZ08	0.342	4.54	4.19	5y-EDAZ08	
EDAH09	0.591	4.54	3.94	5y-EDAH09	
EDAM09	0.840	4.54	3.70	5y-EDAM09	
EDAU09	1.090	4.54	3.45	5y-EDAU09	
EDAZ09	1.339	4.54	3.20	5y-EDAZ09	
EDAH10	1.588	4.54	2.95	5y-EDAH10	
EDAM10	1.838	4.54	2.70	5y-EDAM10	
EDAU10	2.087	4.54	2.45	5y-EDAU10	
EDAZ10	2.336	4.54	2.20	5y-EDAZ10	
EDAH11	2.586	4.54	1.95	5y-EDAH11	
EDAM11	2.835	4.54	1.70	5y-EDAM11	

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



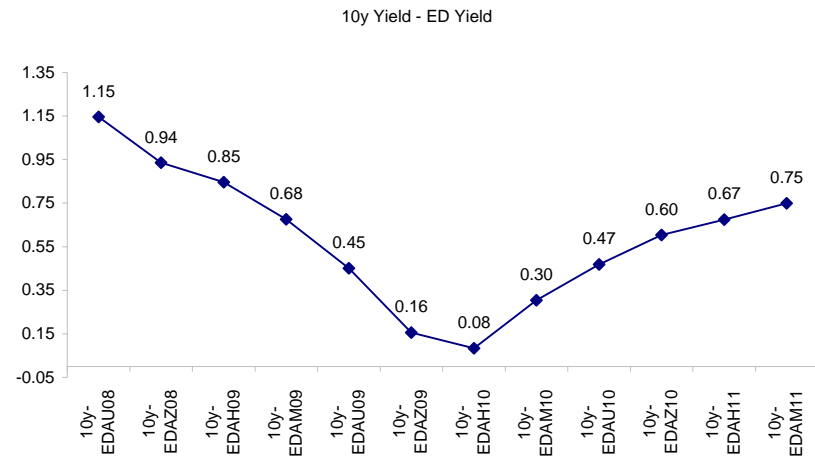


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.488	1.15	10y-EDAU08	5.757
EDAZ08	3.698	0.94	10y-EDAZ08	-42.160
EDAH09	3.788	0.85	10y-EDAH09	-66.252
EDAM09	3.958	0.68	10y-EDAM09	-82.438
EDAU09	4.183	0.45	10y-EDAU09	-89.721
EDAZ09	4.478	0.16	10y-EDAZ09	-91.176
EDAH10	4.718	0.08	10y-EDAH10	-92.688
EDAM10	4.938	0.30	10y-EDAM10	-95.313
EDAU10	5.103	0.47	10y-EDAU10	-93.988
EDAZ10	5.238	0.60	10y-EDAZ10	-89.657
EDAH11	5.308	0.67	10y-EDAH11	-83.988
EDAM11	5.383	0.75	10y-EDAM11	-78.168

Price = Outright Decimal Price - Euro Contract Price

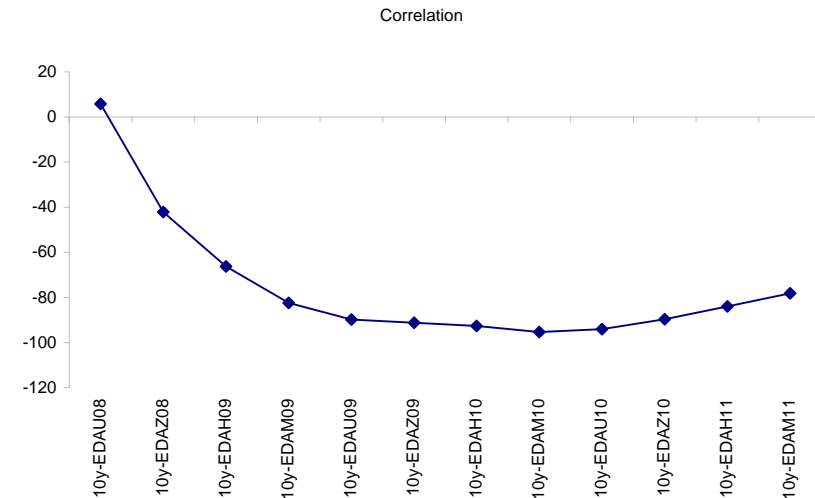
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAU08	0.092	8.02	7.93	10y-EDAU08
EDAZ08	0.342	8.02	7.68	10y-EDAZ08
EDAH09	0.591	8.02	7.43	10y-EDAH09
EDAM09	0.840	8.02	7.18	10y-EDAM09
EDAU09	1.090	8.02	6.93	10y-EDAU09
EDAZ09	1.339	8.02	6.69	10y-EDAZ09
EDAH10	1.588	8.02	6.44	10y-EDAH10
EDAM10	1.838	8.02	6.19	10y-EDAM10
EDAU10	2.087	8.02	5.94	10y-EDAU10
EDAZ10	2.336	8.02	5.69	10y-EDAZ10
EDAH11	2.586	8.02	5.44	10y-EDAH11
EDAM11	2.835	8.02	5.19	10y-EDAM11

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.

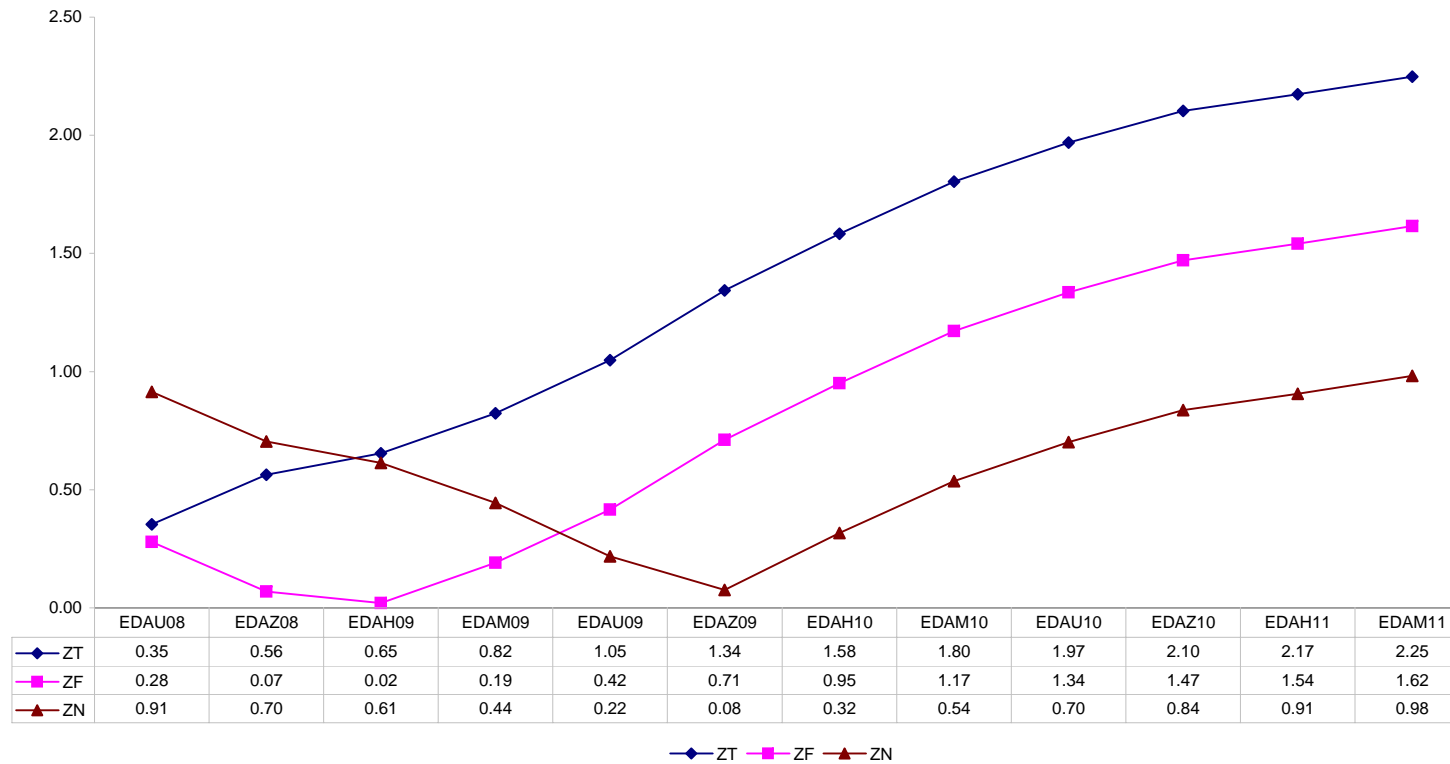
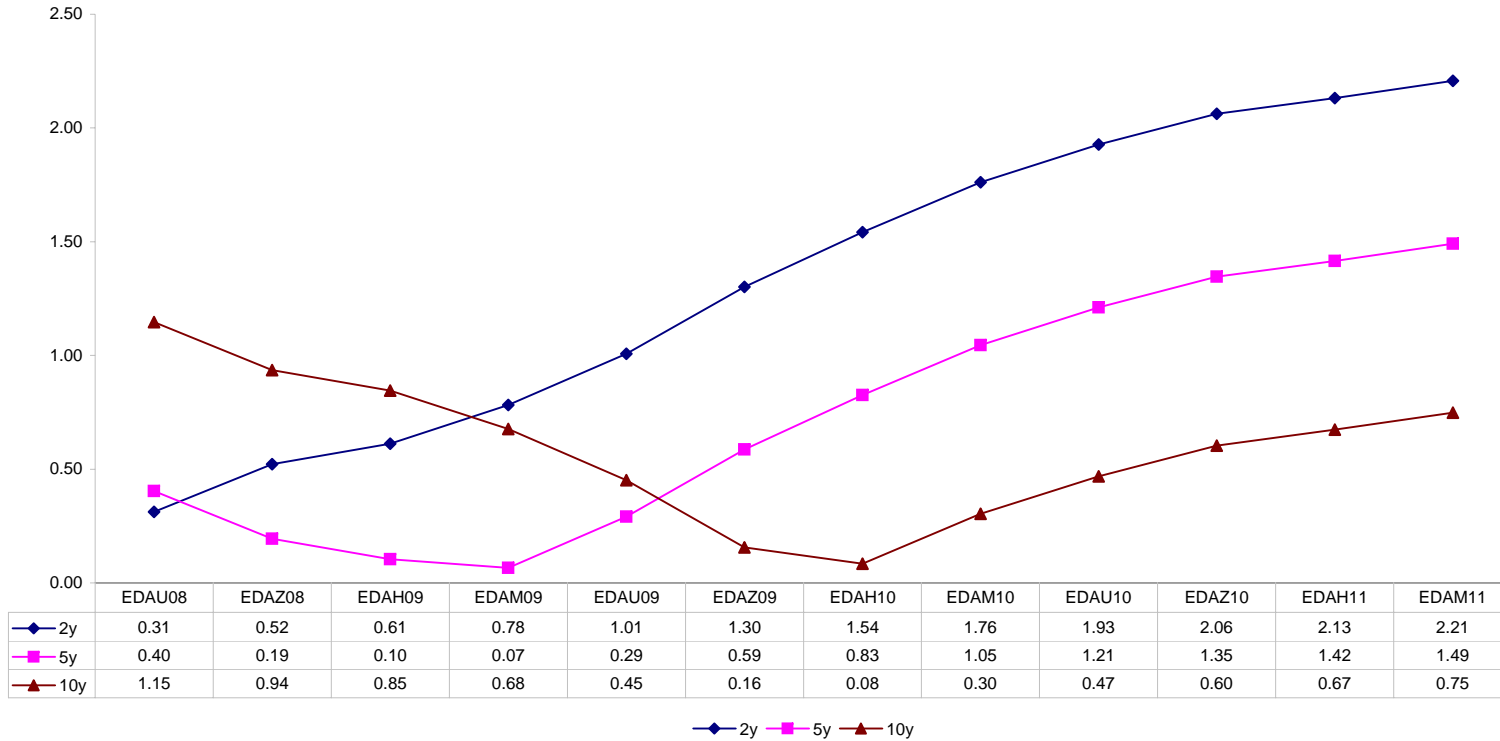
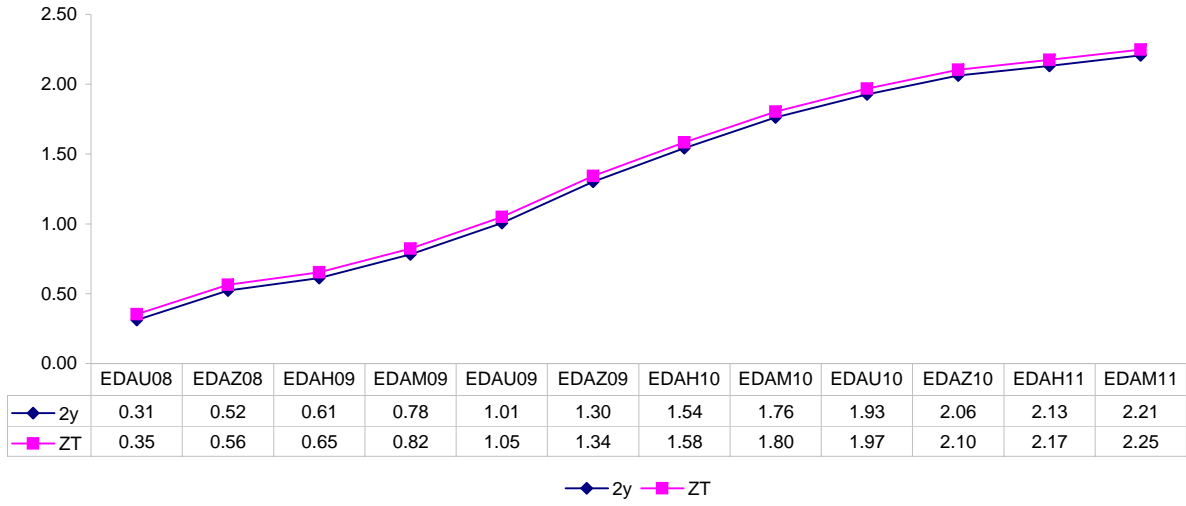


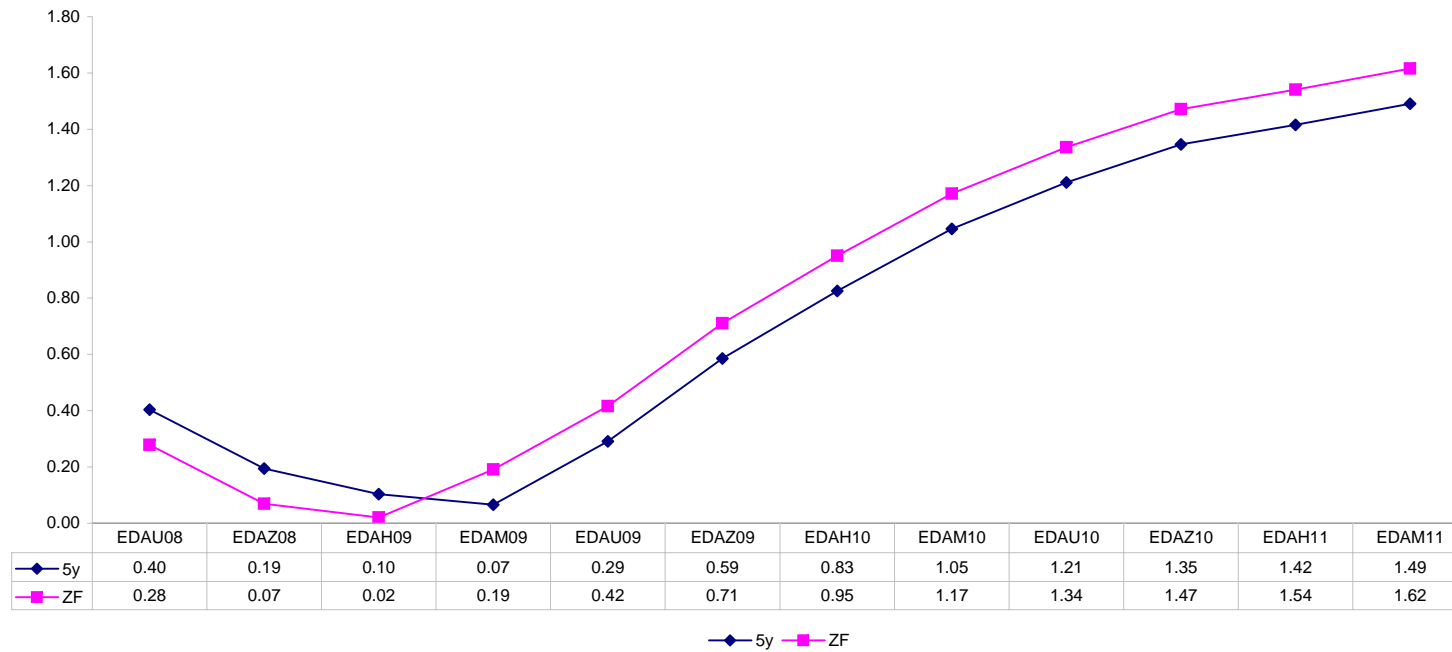
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



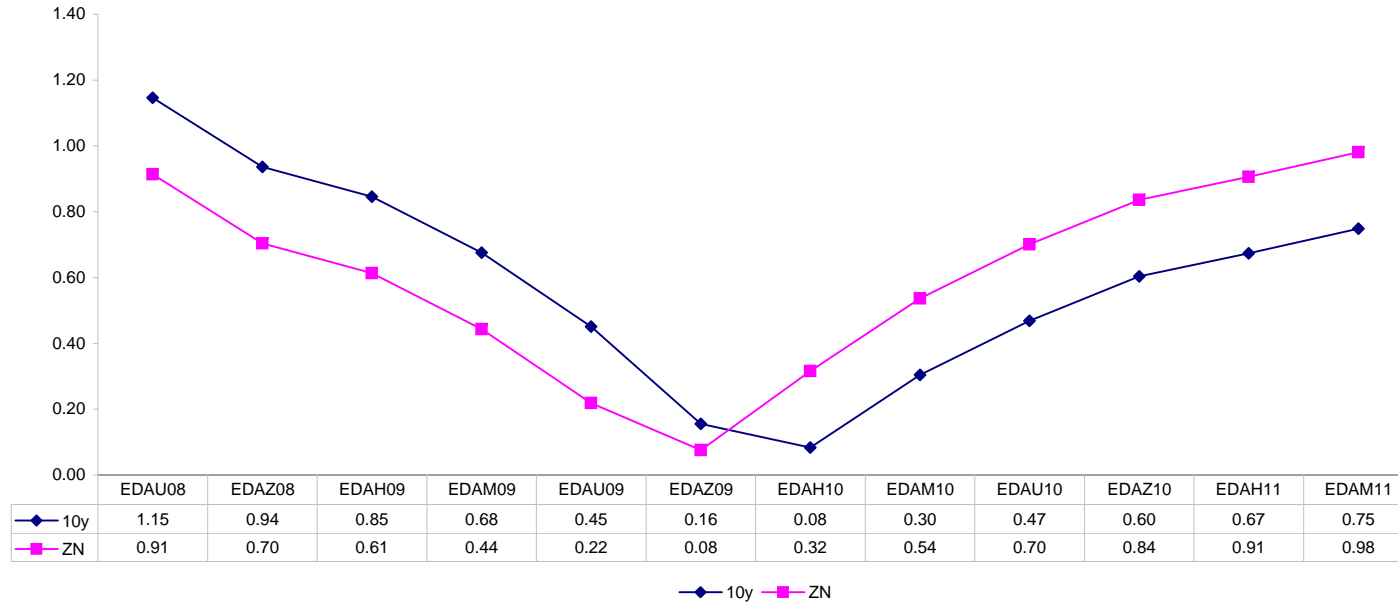
2y Basis TED Curve



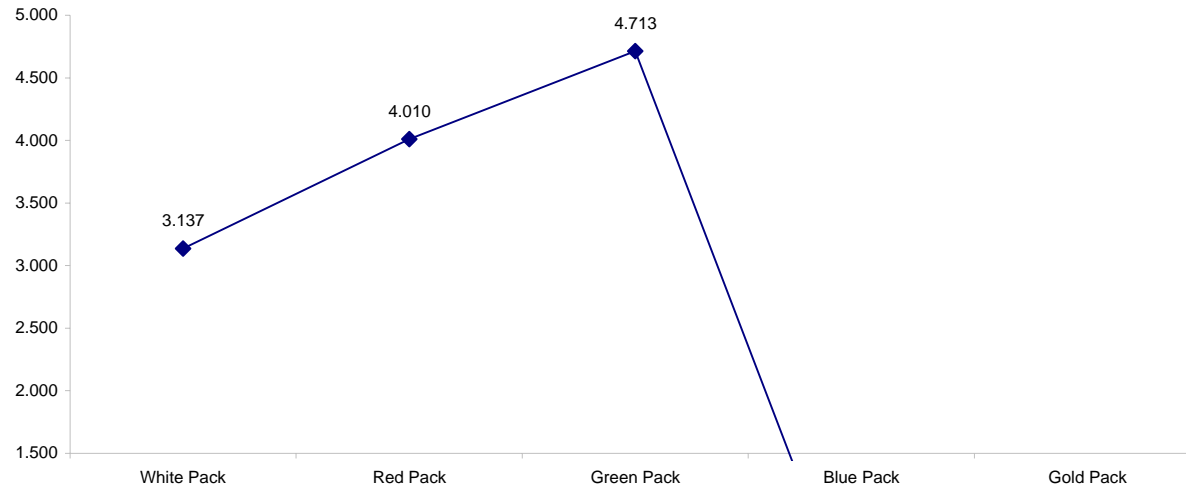
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	3.137	1.875	9693.000
Red Pack	4.010	4.375	9608.375
Green Pack	4.713	4.000	9540.500
Blue Pack		2.250	9515.125
Gold Pack		3.000	9497.875



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

