

## The Morning Email: TERM TEDS & Dirty TEDS

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**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.**

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.

**Quotes**

F.I. Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	106.5625	106.180	2.145	1.74
ZF	112.4219	112.135	2.867	3.84
ZN	115.4063	115.130	3.390	5.78
2y	99.881	99.2820	2.187	1.89
5y	99.453	99.1450	2.995	4.56
10y	96.734	96.2350	3.898	8.31

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAH08	97.015	2.985	25	0.068	MAR	White Pack
EDAM08	97.295	2.705	116	0.317	JUN	
EDAU08	97.370	2.630	207	0.566	SEP	
EDAZ08	97.275	2.725	298	0.816	DEC	Red Pack
EDAH09	97.100	2.900	389	1.065	MAR	
EDAM09	96.855	3.145	480	1.314	JUN	
EDAU09	96.625	3.375	571	1.564	SEP	Green Pack
EDAZ09	96.400	3.600	662	1.813	DEC	
EDAH10	96.220	3.780	753	2.062	MAR	
EDAM10	96.045	3.955	844	2.312	JUN	Blue Pack
EDAU10	95.870	4.130	935	2.561	SEP	
EDAZ10	95.705	4.295	1026	2.810	DEC	
EDAH11	95.570	4.430	1117	3.060	MAR	Gold Pack
EDAM11	95.440	4.560	1208	3.309	JUN	
EDAU11	95.295	4.705	1306	3.577	SEP	
EDAZ11	95.175	4.825	1397	3.827	DEC	
EDAH12	95.020	4.980	1488	4.076	MAR	
EDAM12	94.905	5.095	1579	4.325	JUN	
EDAU12	94.795	5.205	1670	4.575	SEP	
EDAU12	94.795	5.205	1670	4.575	SEP	

Notes

Futures use CTD for Last Yield

Mduration = Modified Macaulay Duration

#VALUE! = no quote being provided by exchange.

	Last Yield	Net Yield	Last Price	
Q.ED.White	2.819	-4.062	9723.875	Pack Prices
Q.ED.Red	3.327	-2.625	9674.500	
Q.ED.Green	4.138	0.375	9596.000	
Q.ED.Blue	4.749	3.750	9537.000	
Q.ED.Gold	5.284	-0.375	9485.500	

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

## Overview of Hedging

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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)

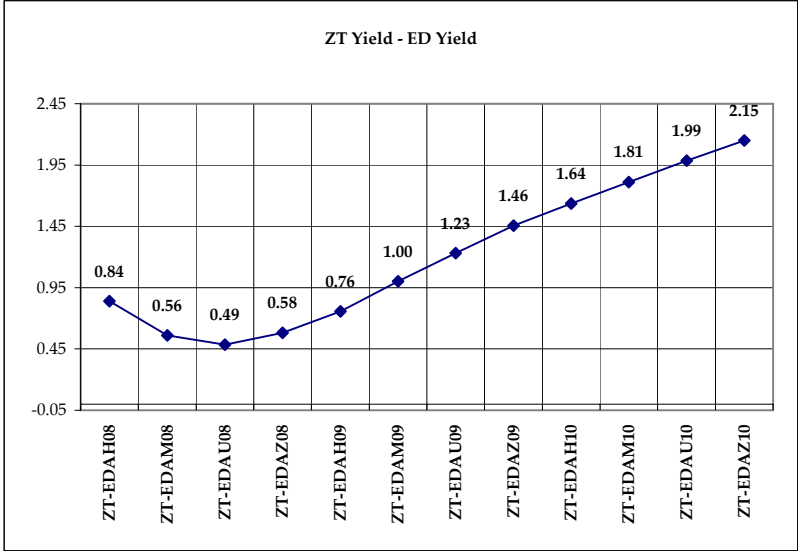
### Eurodollar Color Codes for Individual Year Strips:

Color	Year	Contracts
White	One	1 – 4
Red	Two	5 – 8
Green	Three	9 – 12
Blue	Four	13 – 16
Gold	Five	17 – 20
Purple	Six	21 – 24
Orange	Seven	25 – 28
Pink	Eight	29 – 32
Silver	Nine	33 – 36
Copper	Ten	37 – 40

Dirty TED: ZT vs Eurodollar Contracts

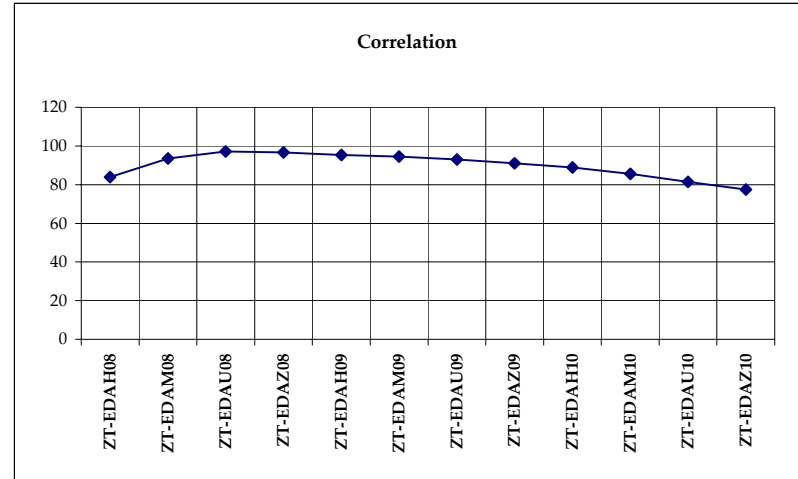
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	9.548	0.84	ZT-EDAH08	83.849
EDAM08	9.268	0.56	ZT-EDAM08	93.535
EDAU08	9.193	0.49	ZT-EDAU08	97.143
EDAZ08	9.288	0.58	ZT-EDAZ08	96.720
EDAH09	9.463	0.76	ZT-EDAH09	95.384
EDAM09	9.708	1.00	ZT-EDAM09	94.432
EDAU09	9.938	1.23	ZT-EDAU09	92.971
EDAZ09	10.163	1.46	ZT-EDAZ09	91.044
EDAH10	10.343	1.64	ZT-EDAH10	88.841
EDAM10	10.518	1.81	ZT-EDAM10	85.591
EDAU10	10.693	1.99	ZT-EDAU10	81.464
EDAZ10	10.858	2.15	ZT-EDAZ10	77.464

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year				
	ZT Duration	Spread Duration		
EDAH08	0.068	1.74	1.67	ZT-EDAH08
EDAM08	0.317	1.74	1.43	ZT-EDAM08
EDAU08	0.566	1.74	1.18	ZT-EDAU08
EDAZ08	0.816	1.74	0.93	ZT-EDAZ08
EDAH09	1.065	1.74	0.68	ZT-EDAH09
EDAM09	1.314	1.74	0.43	ZT-EDAM09
EDAU09	1.564	1.74	0.18	ZT-EDAU09
EDAZ09	1.813	1.74	(0.07)	ZT-EDAZ09
EDAH10	2.062	1.74	(0.32)	ZT-EDAH10
EDAM10	2.312	1.74	(0.57)	ZT-EDAM10
EDAU10	2.561	1.74	(0.82)	ZT-EDAU10
EDAZ10	2.810	1.74	(1.07)	ZT-EDAZ10

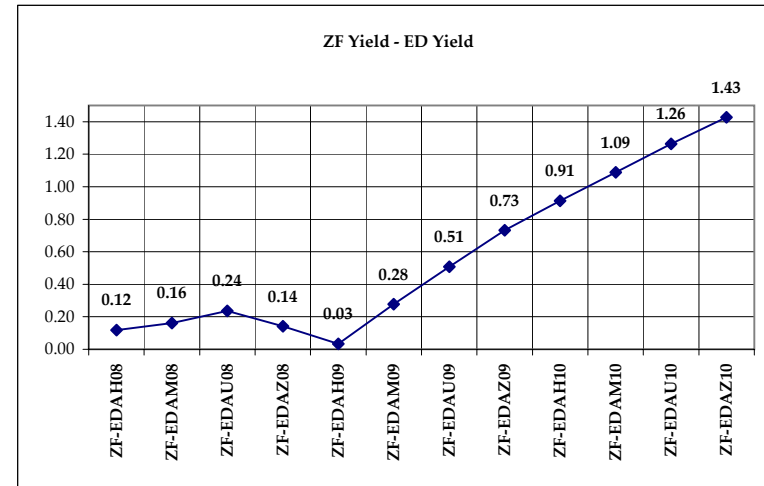
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	15.41	0.12	ZF-EDAH08	95.253
EDAM08	15.13	0.16	ZF-EDAM08	97.836
EDAU08	15.05	0.24	ZF-EDAU08	95.209
EDAZ08	15.15	0.14	ZF-EDAZ08	96.268
EDAH09	15.32	0.03	ZF-EDAH09	97.941
EDAM09	15.57	0.28	ZF-EDAM09	98.505
EDAU09	15.80	0.51	ZF-EDAU09	98.805
EDAZ09	16.02	0.73	ZF-EDAZ09	99.074
EDAH10	16.20	0.91	ZF-EDAH10	99.127
EDAM10	16.38	1.09	ZF-EDAM10	98.685
EDAU10	16.55	1.26	ZF-EDAU10	97.738
EDAZ10	16.72	1.43	ZF-EDAZ10	96.459

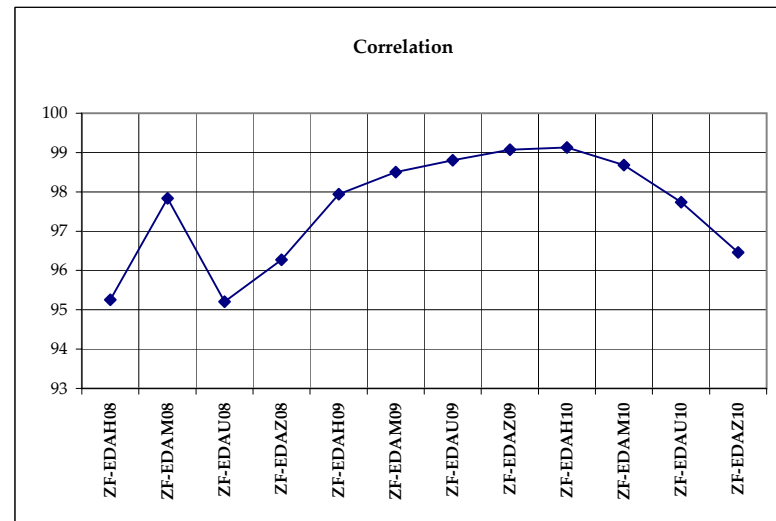
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	ZF Duration	Spread Duration	
EDAH08	0.068	3.84	ZF-EDAH08
EDAM08	0.317	3.84	ZF-EDAM08
EDAU08	0.566	3.84	ZF-EDAU08
EDAZ08	0.816	3.84	ZF-EDAZ08
EDAH09	1.065	3.84	ZF-EDAH09
EDAM09	1.314	3.84	ZF-EDAM09
EDAU09	1.564	3.84	ZF-EDAU09
EDAZ09	1.813	3.84	ZF-EDAZ09
EDAH10	2.062	3.84	ZF-EDAH10
EDAM10	2.312	3.84	ZF-EDAM10
EDAU10	2.561	3.84	ZF-EDAU10
EDAZ10	2.810	3.84	ZF-EDAZ10

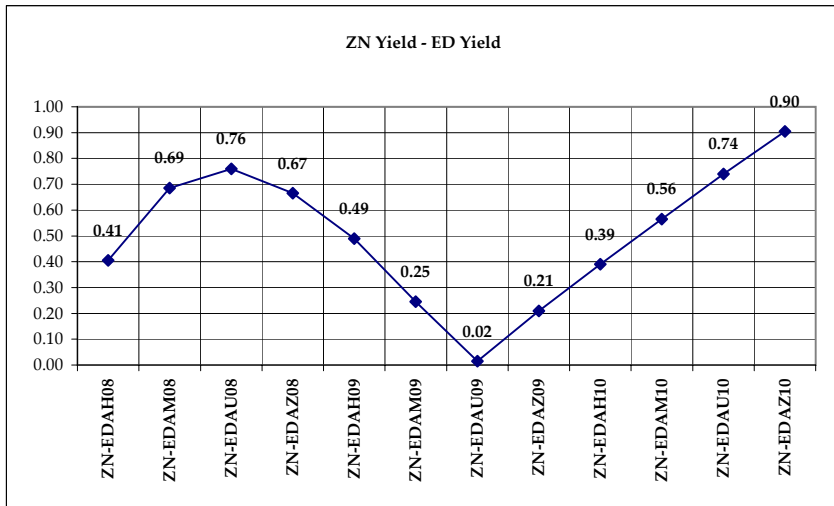
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

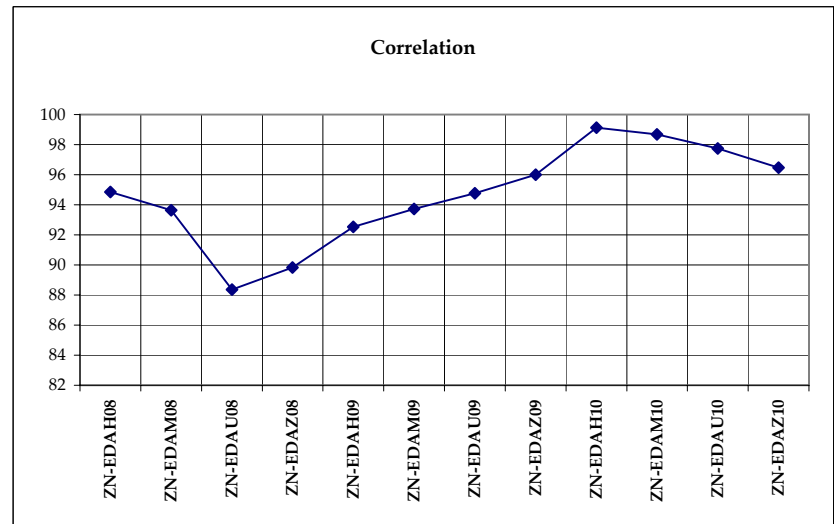
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	18.39	0.41	ZN-EDAH08	94.85
EDAM08	18.11	0.69	ZN-EDAM08	93.65
EDAU08	18.04	0.76	ZN-EDAU08	88.36
EDAZ08	18.13	0.67	ZN-EDAZ08	89.82
EDAH09	18.31	0.49	ZN-EDAH09	92.53
EDAM09	18.55	0.25	ZN-EDAM09	93.71
EDAU09	18.78	0.02	ZN-EDAU09	94.77
EDAZ09	19.01	0.21	ZN-EDAZ09	95.99
EDAH10	19.19	0.39	ZN-EDAH10	99.13
EDAM10	19.36	0.56	ZN-EDAM10	98.68
EDAU10	19.54	0.74	ZN-EDAU10	97.74
EDAZ10	19.70	0.90	ZN-EDAZ10	96.46

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year	ZN Duration	Spread Duration	
EDAH08	0.068	5.78	ZN-EDAH08
EDAM08	0.317	5.78	ZN-EDAM08
EDAU08	0.566	5.78	ZN-EDAU08
EDAZ08	0.816	5.78	ZN-EDAZ08
EDAH09	1.065	5.78	ZN-EDAH09
EDAM09	1.314	5.78	ZN-EDAM09
EDAU09	1.564	5.78	ZN-EDAU09
EDAZ09	1.813	5.78	ZN-EDAZ09
EDAH10	2.062	5.78	ZN-EDAH10
EDAM10	2.312	5.78	ZN-EDAM10
EDAU10	2.561	5.78	ZN-EDAU10
EDAZ10	2.810	5.78	ZN-EDAZ10

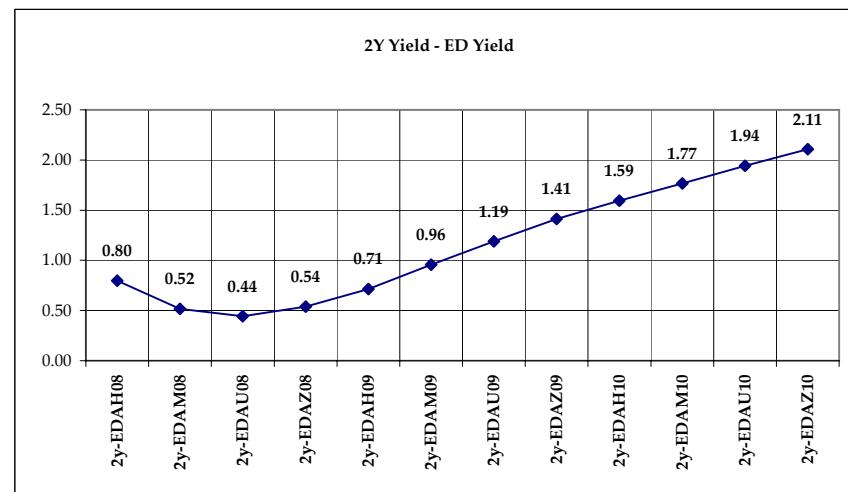
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	2.87	0.80	2y-EDAH08	-84.089
EDAM08	2.59	0.52	2y-EDAM08	-90.830
EDAU08	2.51	0.44	2y-EDAU08	-93.906
EDAZ08	2.61	0.54	2y-EDAZ08	-90.830
EDAH09	2.78	0.71	2y-EDAH09	-91.727
EDAM09	3.03	0.96	2y-EDAM09	-90.927
EDAU09	3.26	1.19	2y-EDAU09	-90.105
EDAZ09	3.48	1.41	2y-EDAZ09	-88.425
EDAH10	3.66	1.59	2y-EDAH10	-86.650
EDAM10	3.84	1.77	2y-EDAM10	-83.455
EDAU10	4.01	1.94	2y-EDAU10	-79.360
EDAZ10	4.18	2.11	2y-EDAZ10	-75.258

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days.  
 These are measuring YIELD correlations.

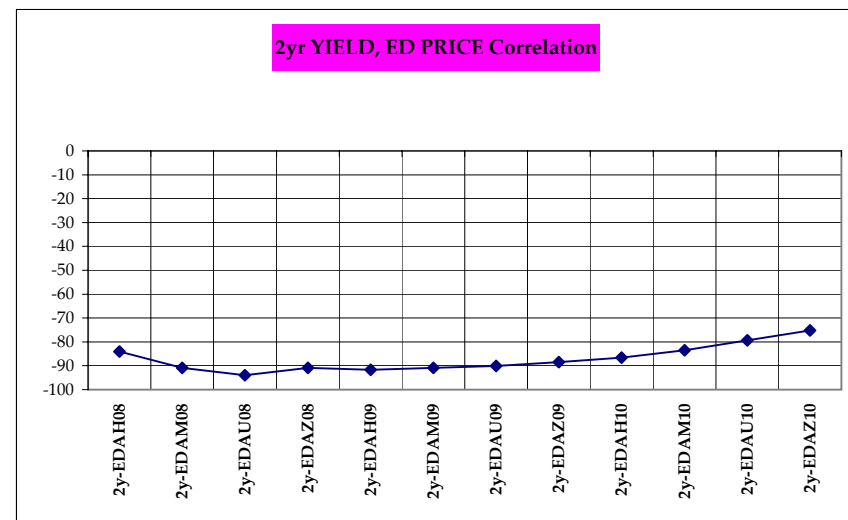


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAH08	0.068	1.89	2y-EDAH08
EDAM08	0.317	1.89	2y-EDAM08
EDAU08	0.566	1.89	2y-EDAU08
EDAZ08	0.816	1.89	2y-EDAZ08
EDAH09	1.065	1.89	2y-EDAH09
EDAM09	1.314	1.89	2y-EDAM09
EDAU09	1.564	1.89	2y-EDAU09
EDAZ09	1.813	1.89	2y-EDAZ09
EDAH10	2.062	1.89	2y-EDAH10
EDAM10	2.312	1.89	2y-EDAM10
EDAU10	2.561	1.89	2y-EDAU10
EDAZ10	2.810	1.89	2y-EDAZ10

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

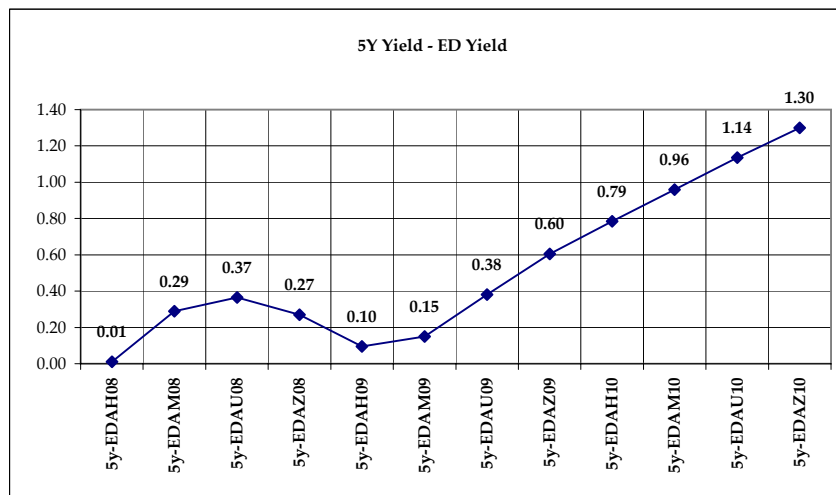
2yr YIELD, ED PRICE Correlation



**TERM TED: 5y vs Eurodollar Contracts**

5y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	2.44	0.01	5y-EDAH08	-94.873
EDAM08	2.16	0.29	5y-EDAM08	-95.333
EDAU08	2.08	0.37	5y-EDAU08	-93.945
EDAZ08	2.18	0.27	5y-EDAZ08	-95.333
EDAH09	2.35	0.10	5y-EDAH09	-95.138
EDAM09	2.60	0.15	5y-EDAM09	-95.399
EDAU09	2.83	0.38	5y-EDAU09	-95.781
EDAZ09	3.05	0.60	5y-EDAZ09	-95.832
EDAH10	3.23	0.79	5y-EDAH10	-95.842
EDAM10	3.41	0.96	5y-EDAM10	-95.358
EDAU10	3.58	1.14	5y-EDAU10	-94.097
EDAZ10	3.75	1.30	5y-EDAZ10	-92.335

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days  
 These are measuring YIELD correlations.

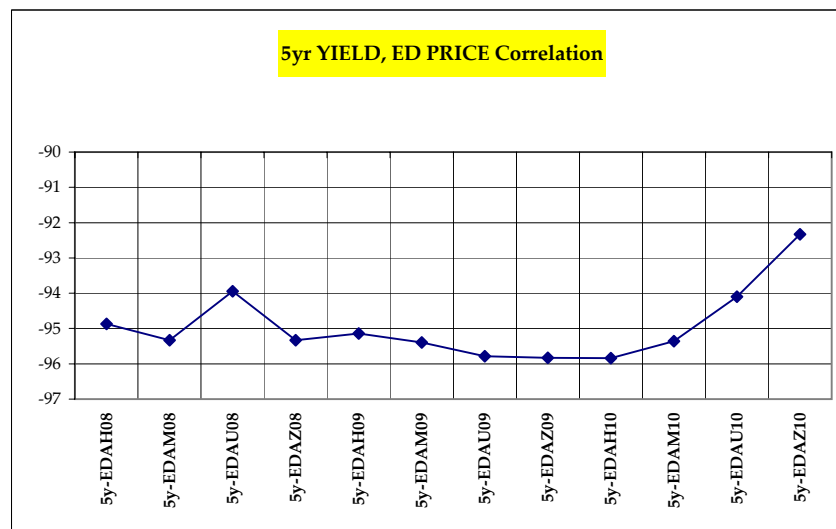


**GE Duration as Fraction of year**

	5Y Duration	Spread Duration	
EDAH08	0.068	4.56	4.50 5y-EDAH08
EDAM08	0.317	4.56	4.25 5y-EDAM08
EDAU08	0.566	4.56	4.00 5y-EDAU08
EDAZ08	0.816	4.56	3.75 5y-EDAZ08
EDAH09	1.065	4.56	3.50 5y-EDAH09
EDAM09	1.314	4.56	3.25 5y-EDAM09
EDAU09	1.564	4.56	3.00 5y-EDAU09
EDAZ09	1.813	4.56	2.75 5y-EDAZ09
EDAH10	2.062	4.56	2.50 5y-EDAH10
EDAM10	2.312	4.56	2.25 5y-EDAM10
EDAU10	2.561	4.56	2.00 5y-EDAU10
EDAZ10	2.810	4.56	1.75 5y-EDAZ10

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

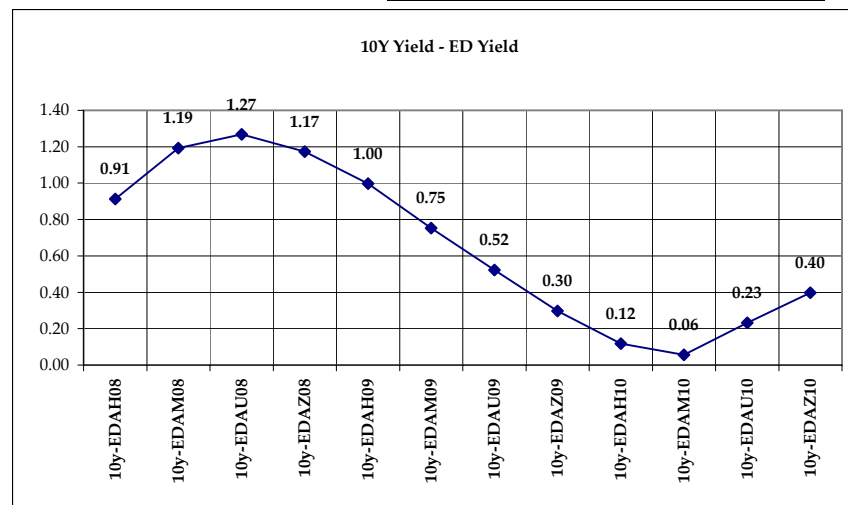
5yr YIELD, ED PRICE Correlation



**TERM TED: 10y vs Eurodollar Contracts**

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	2.44	0.91	10y-EDAH08	-93.875
EDAM08	2.16	1.19	10y-EDAM08	-86.852
EDAU08	2.08	1.27	10y-EDAU08	-81.279
EDAZ08	2.18	1.17	10y-EDAZ08	-86.852
EDAH09	2.35	1.00	10y-EDAH09	-84.875
EDAM09	2.60	0.75	10y-EDAM09	-85.972
EDAU09	2.83	0.52	10y-EDAU09	-87.221
EDAZ09	3.05	0.30	10y-EDAZ09	-88.769
EDAH10	3.23	0.12	10y-EDAH10	-90.378
EDAM10	3.41	0.06	10y-EDAM10	-92.504
EDAU10	3.58	0.23	10y-EDAU10	-94.107
EDAZ10	3.75	0.40	10y-EDAZ10	-94.881

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days  
 These are measuring YIELD correlations.

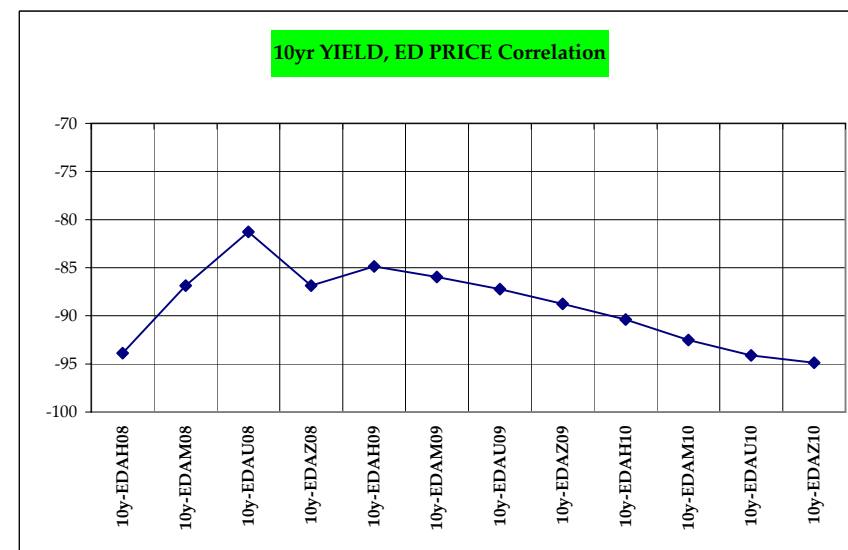


**GE Duration as**

	Fraction of year	10Y Duration	Spread Duration	
EDAH08	0.068	8.31	8.24	10y-EDAH08
EDAM08	0.317	8.31	7.99	10y-EDAM08
EDAU08	0.566	8.31	7.74	10y-EDAU08
EDAZ08	0.816	8.31	7.50	10y-EDAZ08
EDAH09	1.065	8.31	7.25	10y-EDAH09
EDAM09	1.314	8.31	7.00	10y-EDAM09
EDAU09	1.564	8.31	6.75	10y-EDAU09
EDAZ09	1.813	8.31	6.50	10y-EDAZ09
EDAH10	2.062	8.31	6.25	10y-EDAH10
EDAM10	2.312	8.31	6.00	10y-EDAM10
EDAU10	2.561	8.31	5.75	10y-EDAU10
EDAZ10	2.810	8.31	5.50	10y-EDAZ10

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

**10yr YIELD, ED PRICE Correlation**

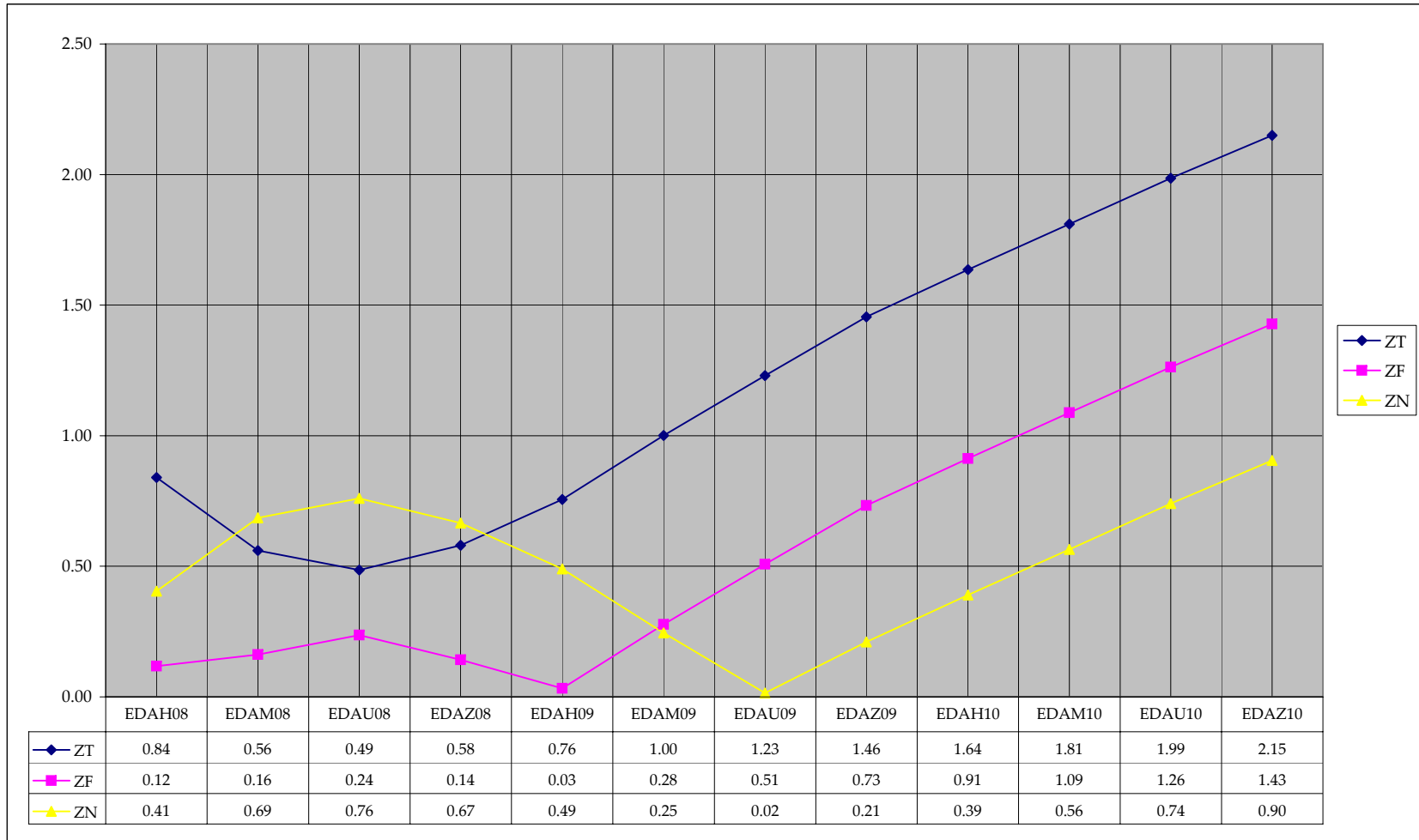


### Dirty TED Curve

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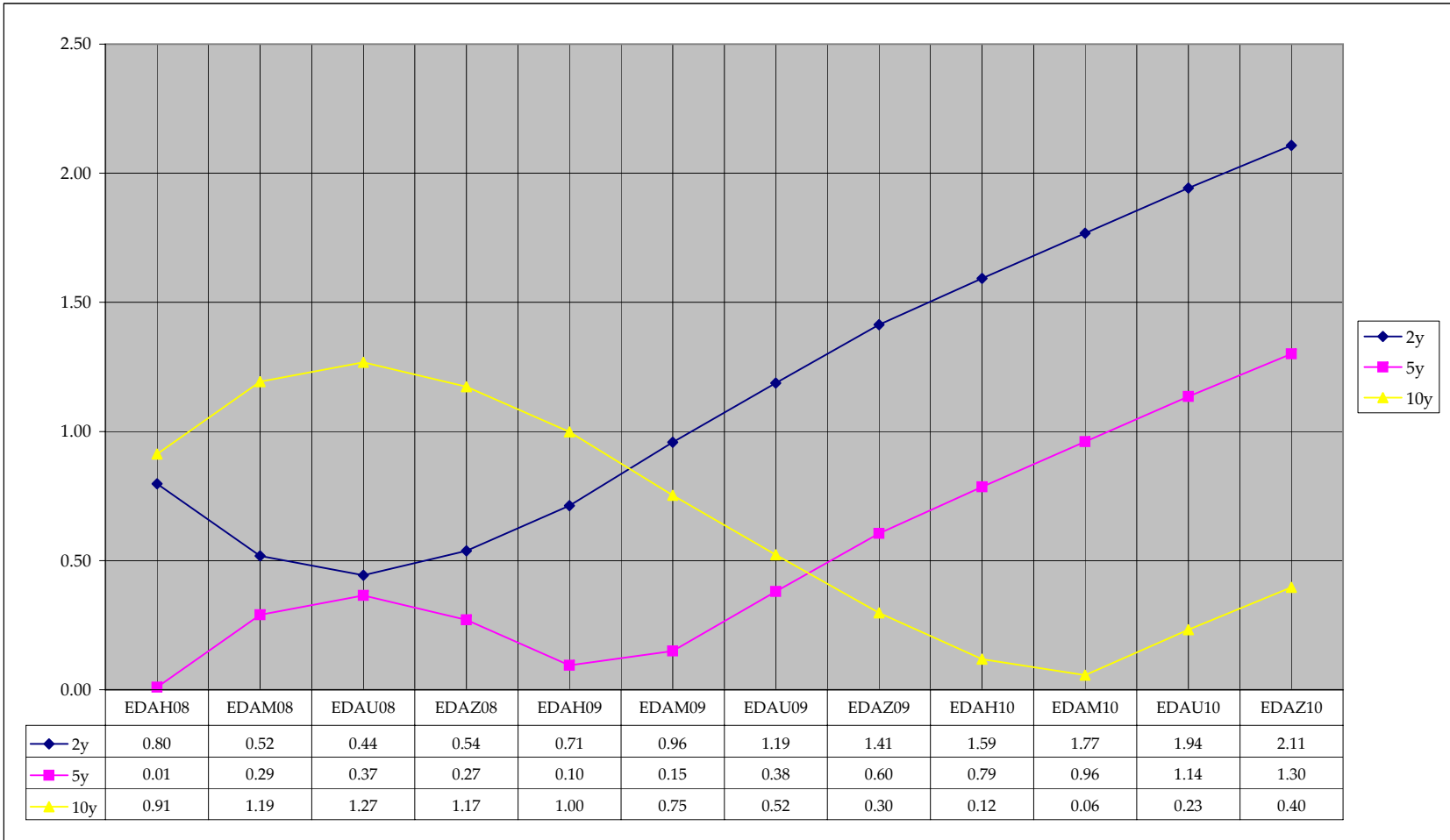
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Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis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

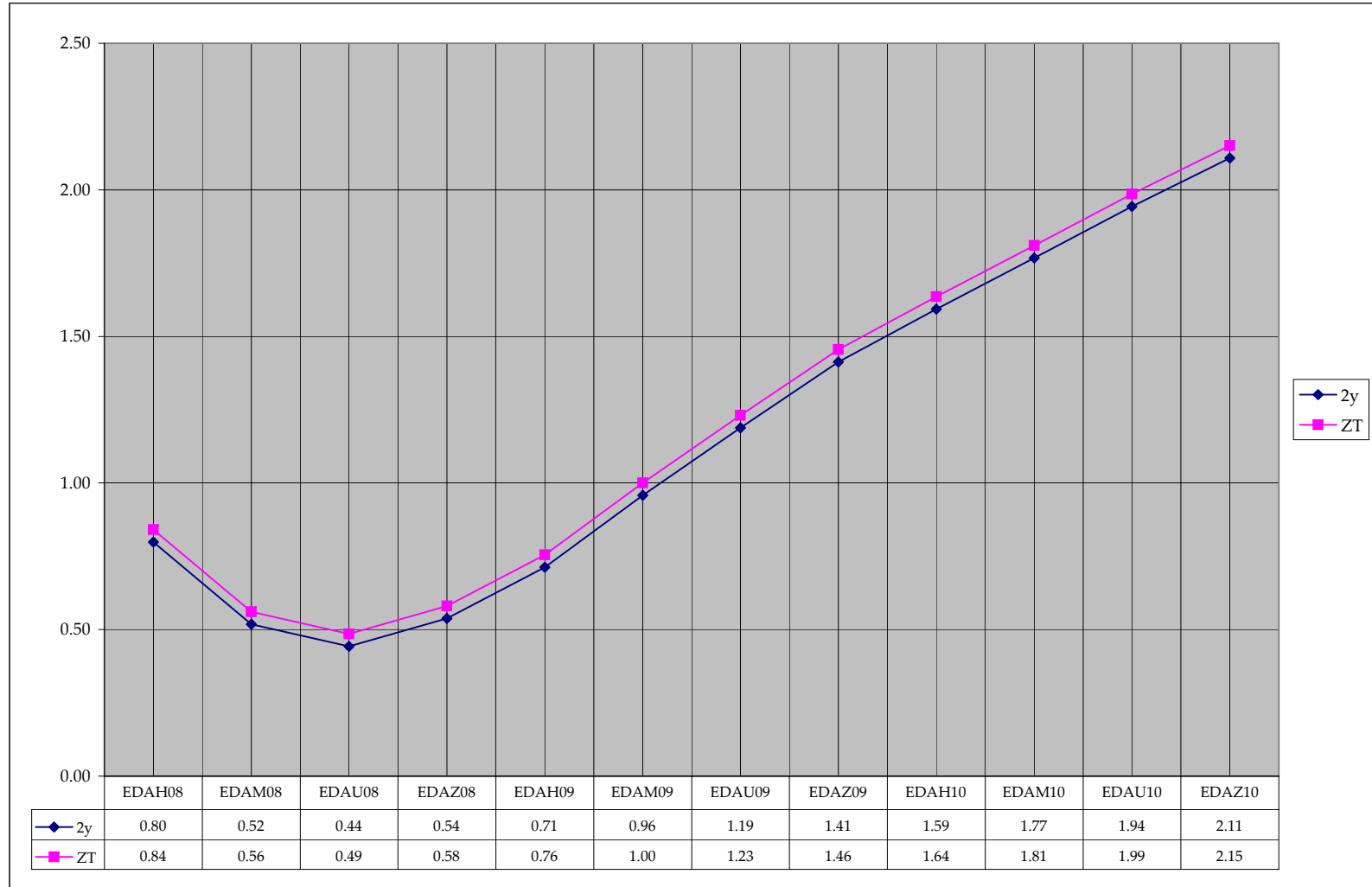


TED Curve

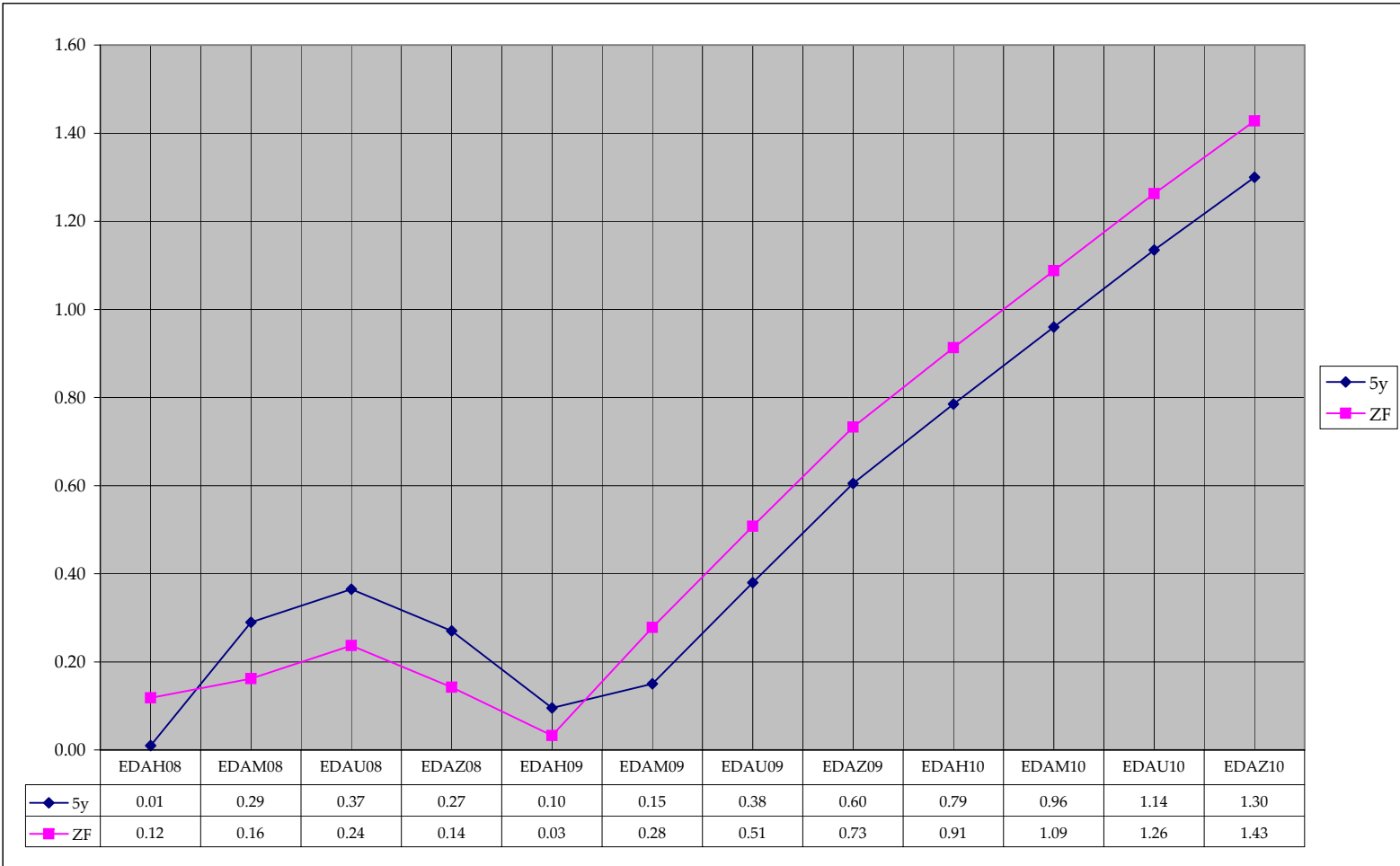
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



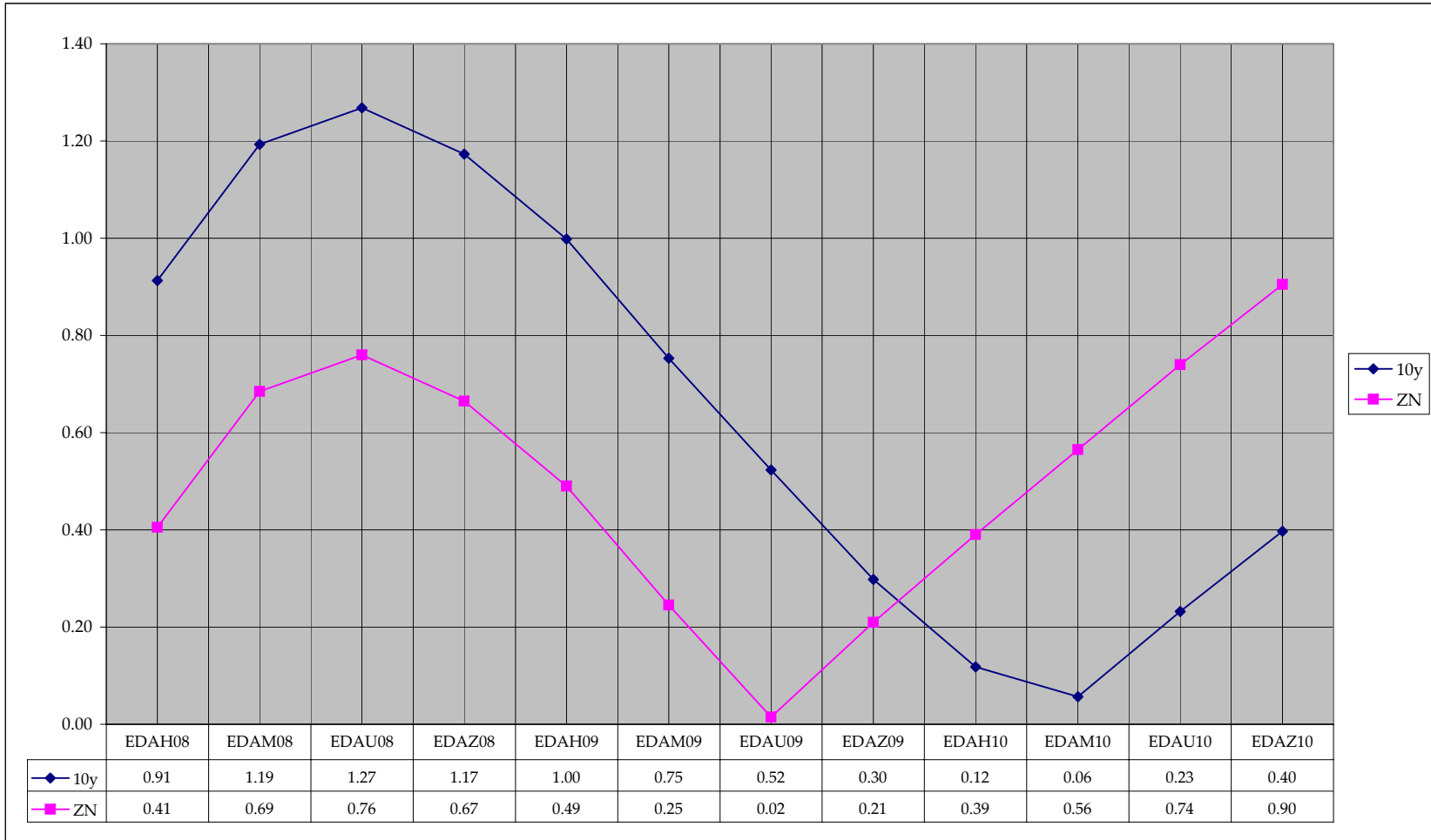
2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	2.819	-4.062	9723.875
Q.ED.Red	3.327	-2.625	9674.500
Q.ED.Green	4.138	0.375	9596.000
Q.ED.Blue	4.749	3.750	9537.000
Q.ED.Gold	5.284	-0.375	9485.500

