

## The Morning Email: TERM TEDS & Dirty TEDS

### Table of Contents

<b>PgA</b>	Quotes	<b>Pg9</b>	2y Basis TED Curve
<b>Pg1</b>	Dirty TED: ZT vs Eurodollar Contracts	<b>Pg10</b>	5y Basis TED Curve
<b>Pg2</b>	Dirty TED: ZF vs Eurodollar Contracts	<b>Pg11</b>	10y Basis TED Curve
<b>Pg3</b>	Dirty TED: ZN vs Eurodollar Contracts	<b>Pg12</b>	Packs
<b>Pg4</b>	TERM TED: 2y vs Eurodollar Contracts		
<b>Pg5</b>	TERM TED: 5y vs Eurodollar Contracts		
<b>Pg6</b>	TERM TED: 10y vs Eurodollar Contracts		
<b>Pg7</b>	Dirty TED Curve		
<b>Pg8</b>	TED Curve		

**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	106.7344	106.235	2.041	1.79	
ZF	113.2344	113.075	2.658	3.89	
ZN	116.8906	116.285	3.187	5.84	
2y	100.069	100.0220	2.089	1.93	
5y	100.484	100.1550	2.767	4.62	
10y	105.156	105.0500	3.617	7.93	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAH08	96.980	3.020	42	0.114	MAR	White Pack	
EDAM08	97.410	2.590	133	0.364	JUN		
EDAU08	97.520	2.480	224	0.613	SEP		
EDAZ08	97.470	2.530	315	0.862	DEC	Red Pack	
EDAH09	97.355	2.645	406	1.112	MAR		
EDAM09	97.180	2.820	497	1.361	JUN		
EDAU09	97.005	2.995	588	1.610	SEP	Green Pack	
EDAZ09	96.820	3.180	679	1.860	DEC		
EDAH10	96.660	3.340	770	2.109	MAR		
EDAM10	96.485	3.515	861	2.358	JUN	Blue Pack	
EDAU10	96.335	3.665	952	2.608	SEP		
EDAZ10	96.195	3.805	1043	2.857	DEC		
EDAH11	96.070	3.930	1134	3.106	MAR	Gold Pack	
EDAM11	95.960	4.040	1225	3.356	JUN		
EDAU11	95.825	4.175	1323	3.624	SEP		
EDAZ11	95.710	4.290	1414	3.873	DEC		
EDAH12	95.620	4.380	1505	4.123	MAR		
EDAM12	95.540	4.460	1596	4.372	JUN		
EDAU12	95.435	4.565	1687	4.621	SEP		
EDAU12	95.435	4.565	1687	4.621	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	2.710	-2.000	9734.500	Pack Prices
Q.ED.Red	2.972	-1.125	9709.000	
Q.ED.Green	3.664	-2.625	9641.875	
Q.ED.Blue		-0.875	9589.750	
Q.ED.Gold		0.000	9544.375	

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

2/4/2008 5:46

Page A

**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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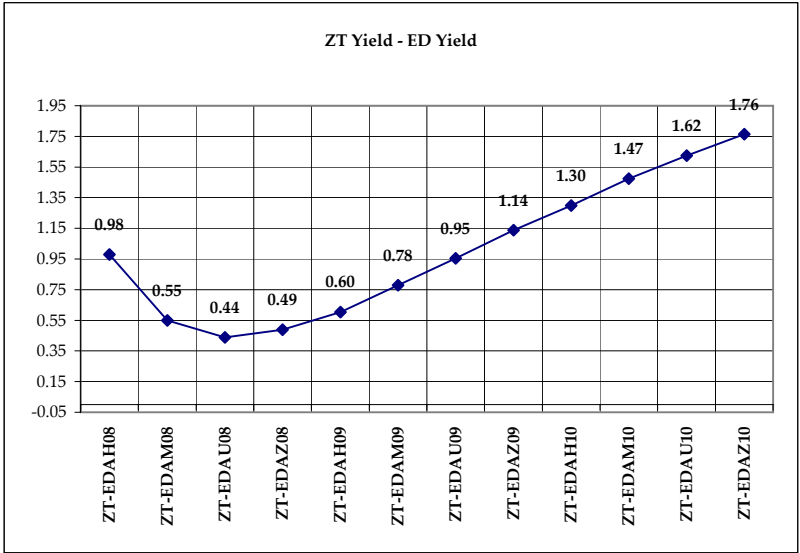
### Eurodollar Color Codes for Individual Year Strips:

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

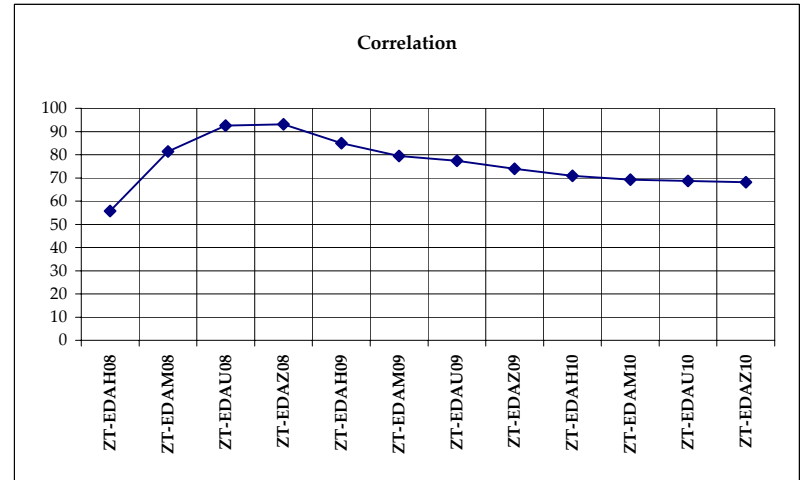
	ZT			Correlation*
	Spread Price	Spread Yield	Spread Name	(percent)
EDAH08	9.754	0.98	ZT-EDAH08	55.752
EDAM08	9.324	0.55	ZT-EDAM08	81.356
EDAU08	9.214	0.44	ZT-EDAU08	92.577
EDAZ08	9.264	0.49	ZT-EDAZ08	93.051
EDAH09	9.379	0.60	ZT-EDAH09	85.010
EDAM09	9.554	0.78	ZT-EDAM09	79.508
EDAU09	9.729	0.95	ZT-EDAU09	77.422
EDAZ09	9.914	1.14	ZT-EDAZ09	73.978
EDAH10	10.074	1.30	ZT-EDAH10	70.937
EDAM10	10.249	1.47	ZT-EDAM10	69.259
EDAU10	10.399	1.62	ZT-EDAU10	68.703
EDAZ10	10.539	1.76	ZT-EDAZ10	68.074

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	0.114	1.79	1.68	ZT-EDAH08
EDAM08	0.364	1.79	1.43	ZT-EDAM08
EDAU08	0.613	1.79	1.18	ZT-EDAU08
EDAZ08	0.862	1.79	0.93	ZT-EDAZ08
EDAH09	1.112	1.79	0.68	ZT-EDAH09
EDAM09	1.361	1.79	0.43	ZT-EDAM09
EDAU09	1.610	1.79	0.18	ZT-EDAU09
EDAZ09	1.860	1.79	(0.07)	ZT-EDAZ09
EDAH10	2.109	1.79	(0.32)	ZT-EDAH10
EDAM10	2.358	1.79	(0.57)	ZT-EDAM10
EDAU10	2.608	1.79	(0.82)	ZT-EDAU10
EDAZ10	2.857	1.79	(1.07)	ZT-EDAZ10

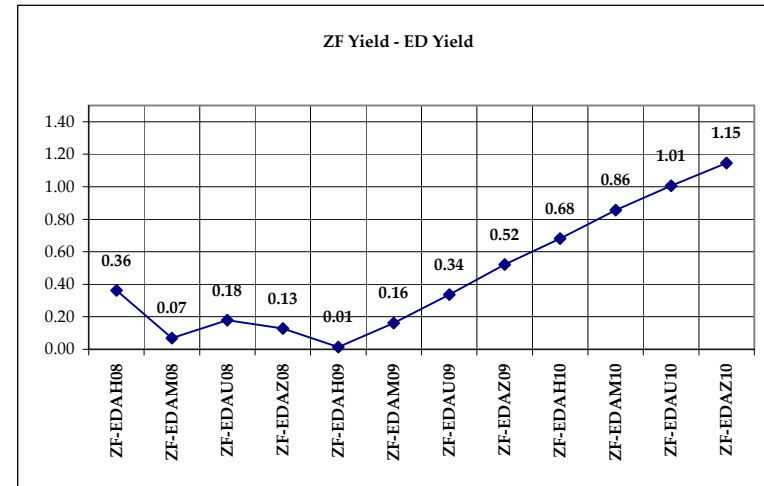
The farther away from 0 the spread duration is the riskier the trade.



**Dirty TED: ZF vs Eurodollar Contracts**

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	16.25	0.36	ZF-EDAH08	33.179
EDAM08	15.82	0.07	ZF-EDAM08	76.126
EDAU08	15.71	0.18	ZF-EDAU08	89.418
EDAZ08	15.76	0.13	ZF-EDAZ08	96.516
EDAH09	15.88	0.01	ZF-EDAH09	97.137
EDAM09	16.05	0.16	ZF-EDAM09	96.096
EDAU09	16.23	0.34	ZF-EDAU09	95.753
EDAZ09	16.41	0.52	ZF-EDAZ09	94.768
EDAH10	16.57	0.68	ZF-EDAH10	94.048
EDAM10	16.75	0.86	ZF-EDAM10	93.188
EDAU10	16.90	1.01	ZF-EDAU10	92.731
EDAZ10	17.04	1.15	ZF-EDAZ10	92.141

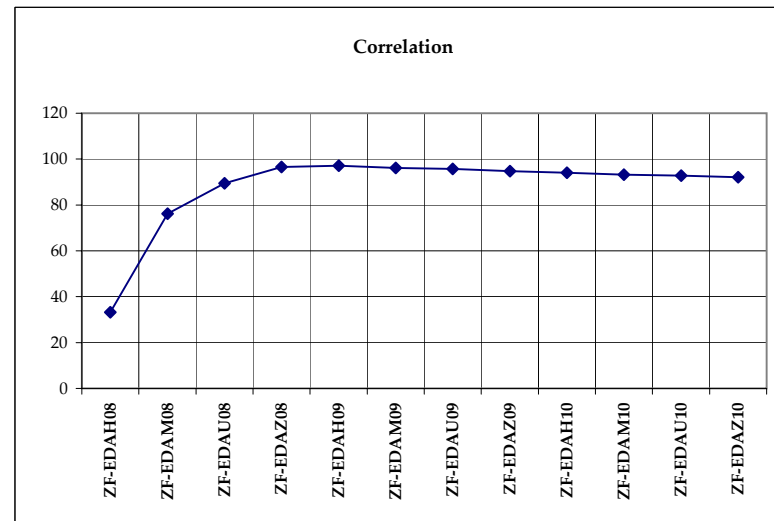
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



**GE Duration as Fraction of year**

	GE Duration as Fraction of year	ZF Duration	Spread Duration	
EDAH08	0.114	3.89	3.77	ZF-EDAH08
EDAM08	0.364	3.89	3.53	ZF-EDAM08
EDAU08	0.613	3.89	3.28	ZF-EDAU08
EDAZ08	0.862	3.89	3.03	ZF-EDAZ08
EDAH09	1.112	3.89	2.78	ZF-EDAH09
EDAM09	1.361	3.89	2.53	ZF-EDAM09
EDAU09	1.610	3.89	2.28	ZF-EDAU09
EDAZ09	1.860	3.89	2.03	ZF-EDAZ09
EDAH10	2.109	3.89	1.78	ZF-EDAH10
EDAM10	2.358	3.89	1.53	ZF-EDAM10
EDAU10	2.608	3.89	1.28	ZF-EDAU10
EDAZ10	2.857	3.89	1.03	ZF-EDAZ10

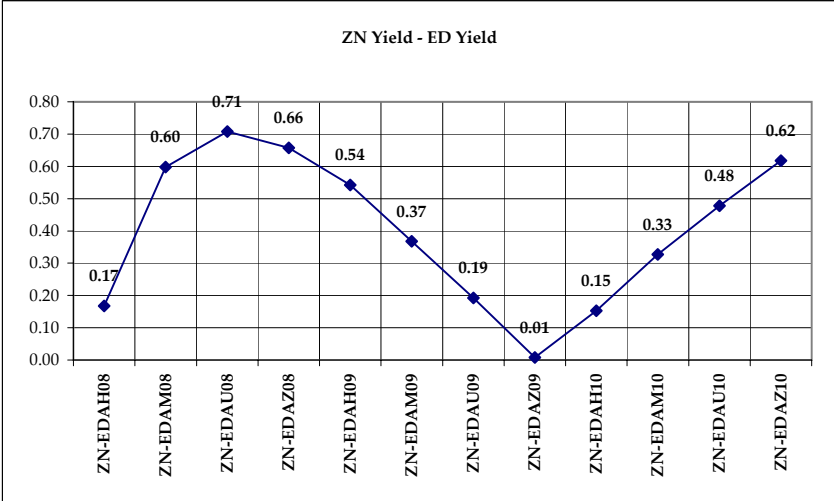
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

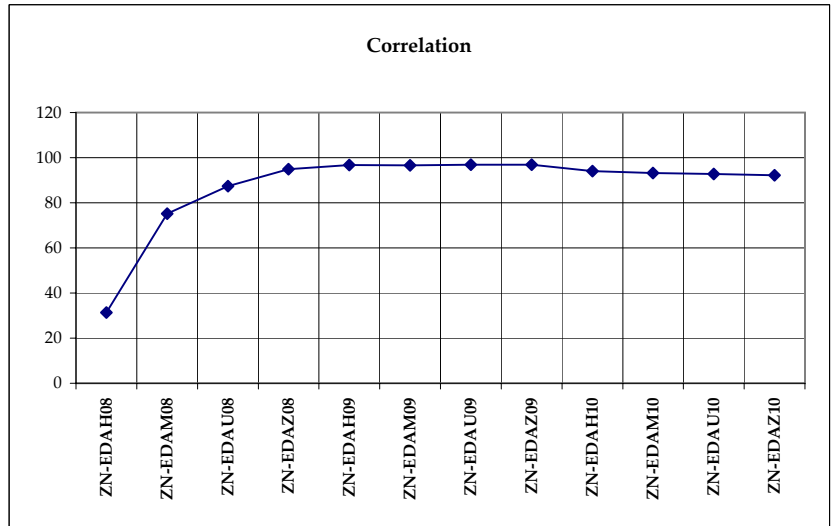
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	19.91	0.17	ZN-EDAH08	31.39
EDAM08	19.48	0.60	ZN-EDAM08	75.22
EDAU08	19.37	0.71	ZN-EDAU08	87.44
EDAZ08	19.42	0.66	ZN-EDAZ08	94.93
EDAH09	19.54	0.54	ZN-EDAH09	96.79
EDAM09	19.71	0.37	ZN-EDAM09	96.64
EDAU09	19.89	0.19	ZN-EDAU09	96.86
EDAZ09	20.07	0.01	ZN-EDAZ09	96.91
EDAH10	20.23	0.15	ZN-EDAH10	94.05
EDAM10	20.41	0.33	ZN-EDAM10	93.19
EDAU10	20.56	0.48	ZN-EDAU10	92.73
EDAZ10	20.70	0.62	ZN-EDAZ10	92.14

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	0.114	5.84	5.73	ZN-EDAH08
EDAM08	0.364	5.84	5.48	ZN-EDAM08
EDAU08	0.613	5.84	5.23	ZN-EDAU08
EDAZ08	0.862	5.84	4.98	ZN-EDAZ08
EDAH09	1.112	5.84	4.73	ZN-EDAH09
EDAM09	1.361	5.84	4.48	ZN-EDAM09
EDAU09	1.610	5.84	4.23	ZN-EDAU09
EDAZ09	1.860	5.84	3.98	ZN-EDAZ09
EDAH10	2.109	5.84	3.73	ZN-EDAH10
EDAM10	2.358	5.84	3.48	ZN-EDAM10
EDAU10	2.608	5.84	3.24	ZN-EDAU10
EDAZ10	2.857	5.84	2.99	ZN-EDAZ10

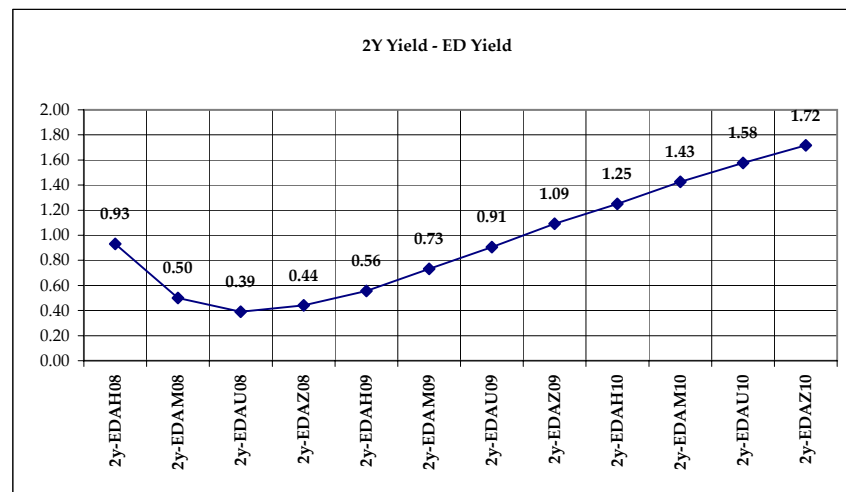
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.09	0.93	2y-EDAH08	-59.147
EDAM08	2.66	0.50	2y-EDAM08	-74.822
EDAU08	2.55	0.39	2y-EDAU08	-77.262
EDAZ08	2.60	0.44	2y-EDAZ08	-74.822
EDAH09	2.71	0.56	2y-EDAH09	-48.507
EDAM09	2.89	0.73	2y-EDAM09	-41.678
EDAU09	3.06	0.91	2y-EDAU09	-40.172
EDAZ09	3.25	1.09	2y-EDAZ09	-37.182
EDAH10	3.41	1.25	2y-EDAH10	-37.683
EDAM10	3.58	1.43	2y-EDAM10	-35.576
EDAU10	3.73	1.58	2y-EDAU10	-35.155
EDAZ10	3.87	1.72	2y-EDAZ10	-34.021

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.

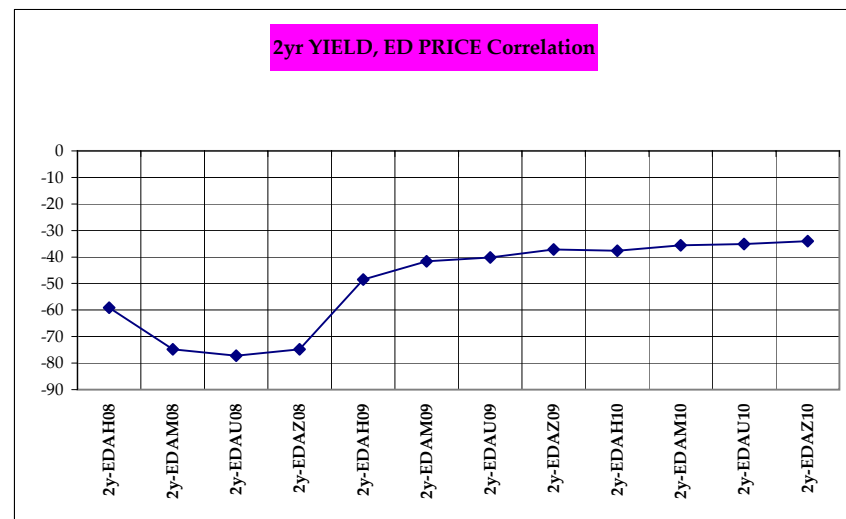


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAH08	0.114	1.93	2y-EDAH08
EDAM08	0.364	1.93	2y-EDAM08
EDAU08	0.613	1.93	2y-EDAU08
EDAZ08	0.862	1.93	2y-EDAZ08
EDAH09	1.112	1.93	2y-EDAH09
EDAM09	1.361	1.93	2y-EDAM09
EDAU09	1.610	1.93	2y-EDAU09
EDAZ09	1.860	1.93	2y-EDAZ09
EDAH10	2.109	1.93	2y-EDAH10
EDAM10	2.358	1.93	2y-EDAM10
EDAU10	2.608	1.93	2y-EDAU10
EDAZ10	2.857	1.93	2y-EDAZ10

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

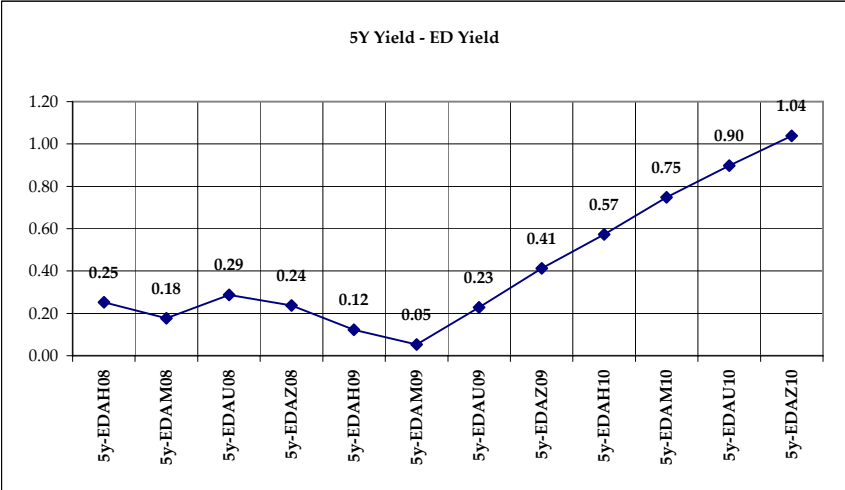
2yr YIELD, ED PRICE Correlation



TERM TED: 5y vs Eurodollar Contracts

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.50	0.25	5y-EDAH08	-40.532
EDAM08	3.07	0.18	5y-EDAM08	-77.559
EDAU08	2.96	0.29	5y-EDAU08	-82.603
EDAZ08	3.01	0.24	5y-EDAZ08	-77.559
EDAH09	3.13	0.12	5y-EDAH09	-67.751
EDAM09	3.30	0.05	5y-EDAM09	-65.292
EDAU09	3.48	0.23	5y-EDAU09	-65.708
EDAZ09	3.66	0.41	5y-EDAZ09	-65.324
EDAH10	3.82	0.57	5y-EDAH10	-68.548
EDAM10	4.00	0.75	5y-EDAM10	-67.245
EDAU10	4.15	0.90	5y-EDAU10	-66.993
EDAZ10	4.29	1.04	5y-EDAZ10	-65.908

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.

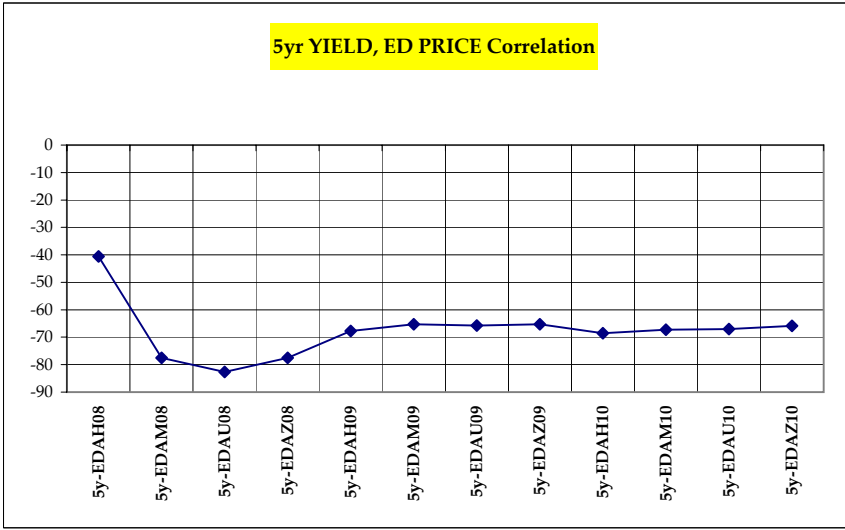


GE Duration as

	Fraction of year	5Y Duration	Spread Duration	
EDAH08	0.114	4.62	4.50	5y-EDAH08
EDAM08	0.364	4.62	4.25	5y-EDAM08
EDAU08	0.613	4.62	4.00	5y-EDAU08
EDAZ08	0.862	4.62	3.75	5y-EDAZ08
EDAH09	1.112	4.62	3.51	5y-EDAH09
EDAM09	1.361	4.62	3.26	5y-EDAM09
EDAU09	1.610	4.62	3.01	5y-EDAU09
EDAZ09	1.860	4.62	2.76	5y-EDAZ09
EDAH10	2.109	4.62	2.51	5y-EDAH10
EDAM10	2.358	4.62	2.26	5y-EDAM10
EDAU10	2.608	4.62	2.01	5y-EDAU10
EDAZ10	2.857	4.62	1.76	5y-EDAZ10

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

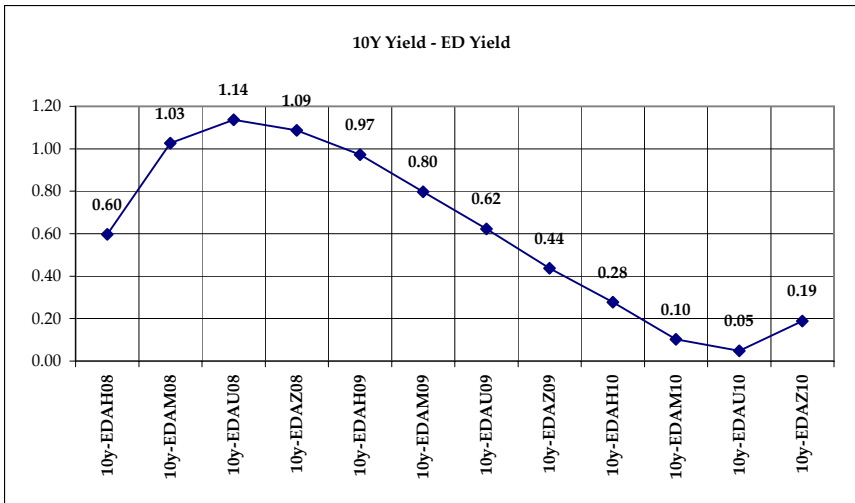
5yr YIELD, ED PRICE Correlation



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

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.50	0.60	10y-EDAH08	-29.734
EDAM08	3.07	1.03	10y-EDAM08	-67.651
EDAU08	2.96	1.14	10y-EDAU08	-69.519
EDAZ08	3.01	1.09	10y-EDAZ08	-67.651
EDAH09	3.13	0.97	10y-EDAH09	-55.238
EDAM09	3.30	0.80	10y-EDAM09	-54.523
EDAU09	3.48	0.62	10y-EDAU09	-55.837
EDAZ09	3.66	0.44	10y-EDAZ09	-56.866
EDAH10	3.82	0.28	10y-EDAH10	-61.941
EDAM10	4.00	0.10	10y-EDAM10	-60.996
EDAU10	4.15	0.05	10y-EDAU10	-60.785
EDAZ10	4.29	0.19	10y-EDAZ10	-59.655

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.

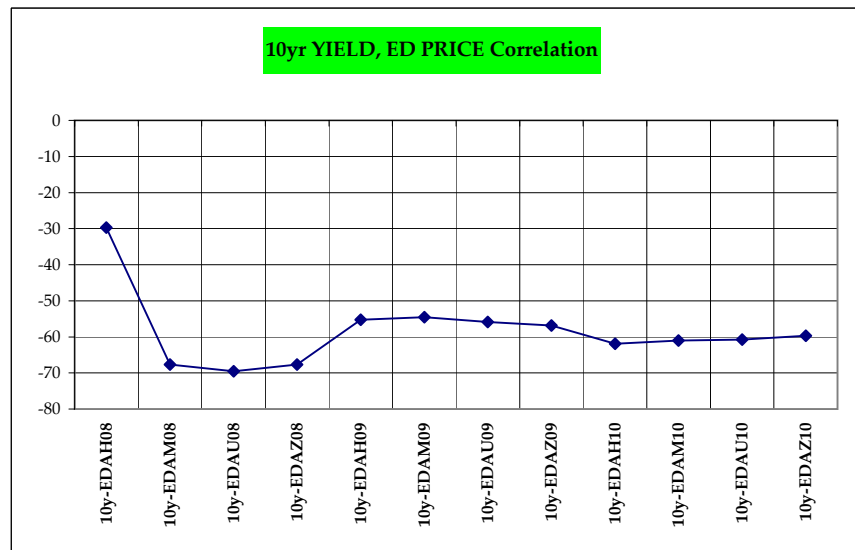


**GE Duration as**

	Fraction of year	10Y Duration	Spread Duration	
EDAH08	0.114	7.93	7.82	10y-EDAH08
EDAM08	0.364	7.93	7.57	10y-EDAM08
EDAU08	0.613	7.93	7.32	10y-EDAU08
EDAZ08	0.862	7.93	7.07	10y-EDAZ08
EDAH09	1.112	7.93	6.82	10y-EDAH09
EDAM09	1.361	7.93	6.57	10y-EDAM09
EDAU09	1.610	7.93	6.32	10y-EDAU09
EDAZ09	1.860	7.93	6.07	10y-EDAZ09
EDAH10	2.109	7.93	5.83	10y-EDAH10
EDAM10	2.358	7.93	5.58	10y-EDAM10
EDAU10	2.608	7.93	5.33	10y-EDAU10
EDAZ10	2.857	7.93	5.08	10y-EDAZ10

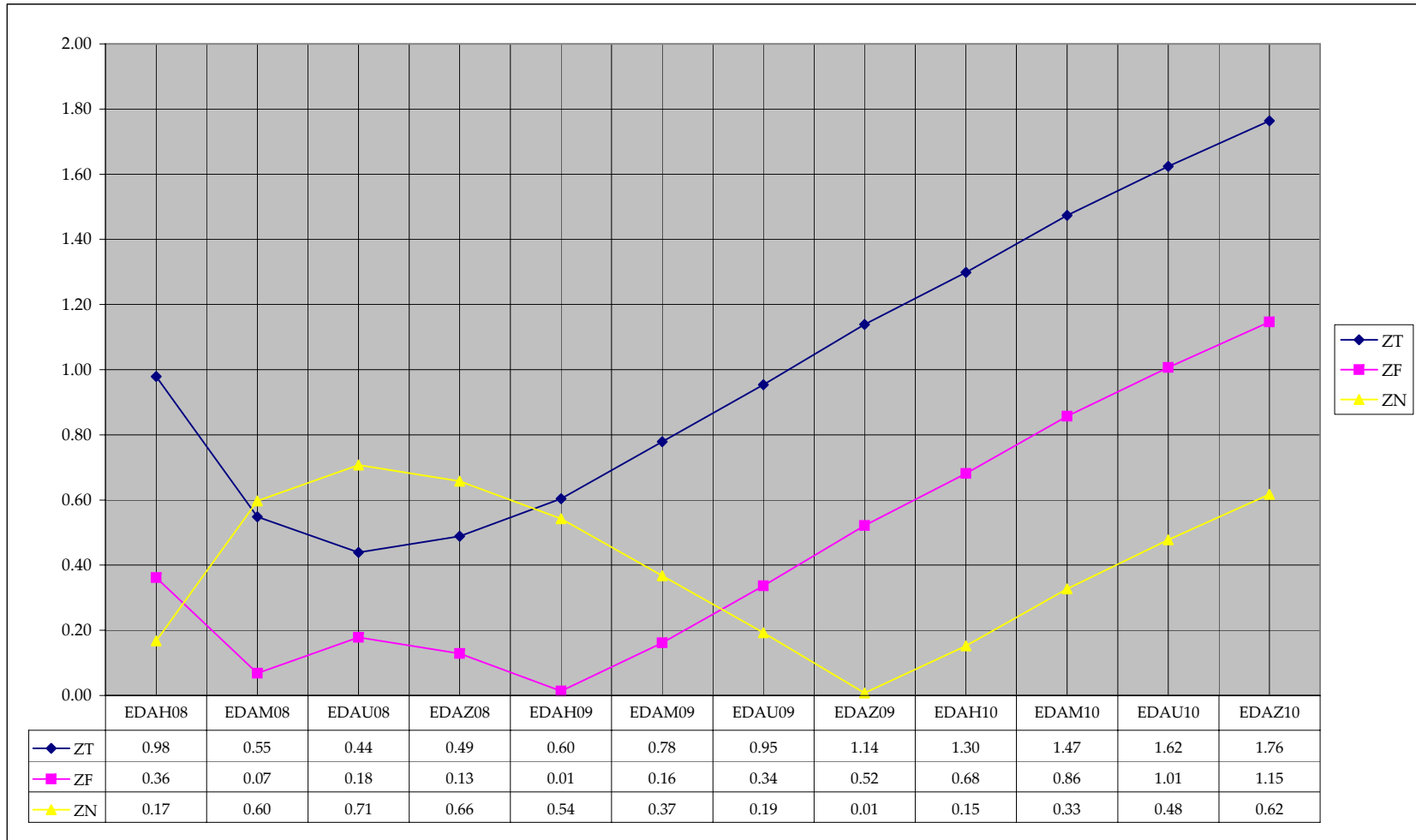
The farther away from 0 the spread duration is the riskier the trade.

**10yr YIELD, ED PRICE Correlation**



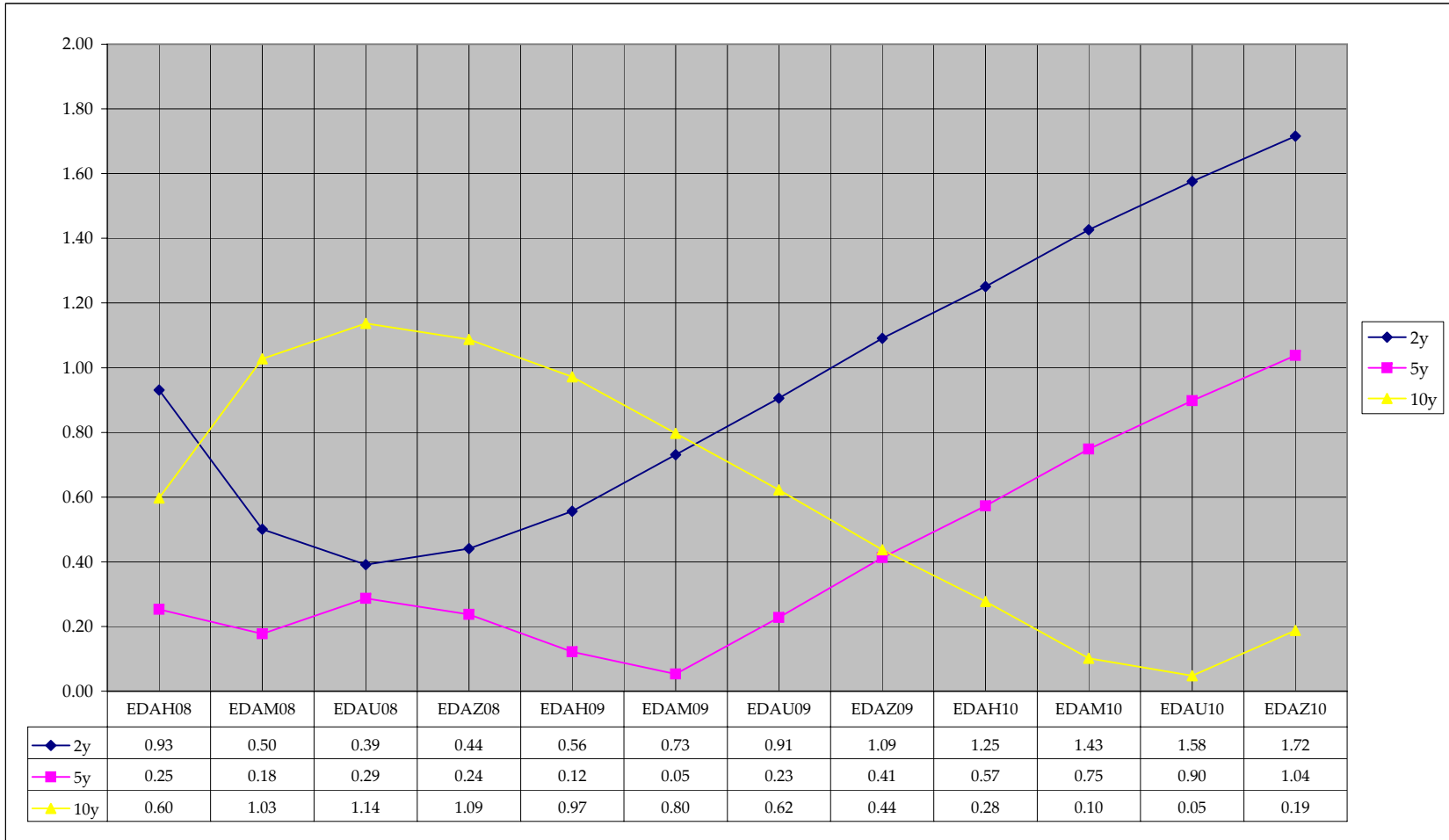
**Dirty TED Curve**

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.

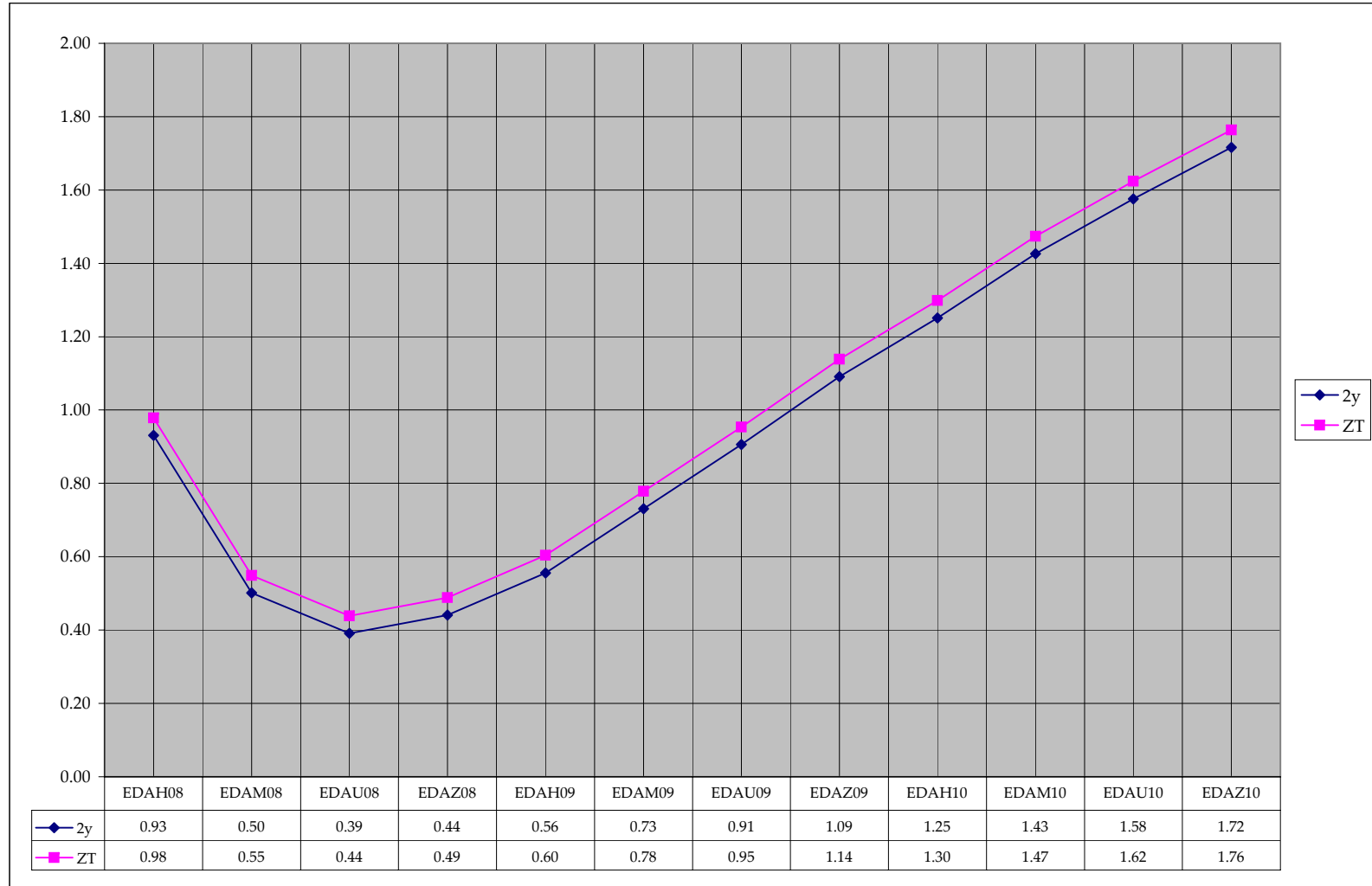


TED Curve

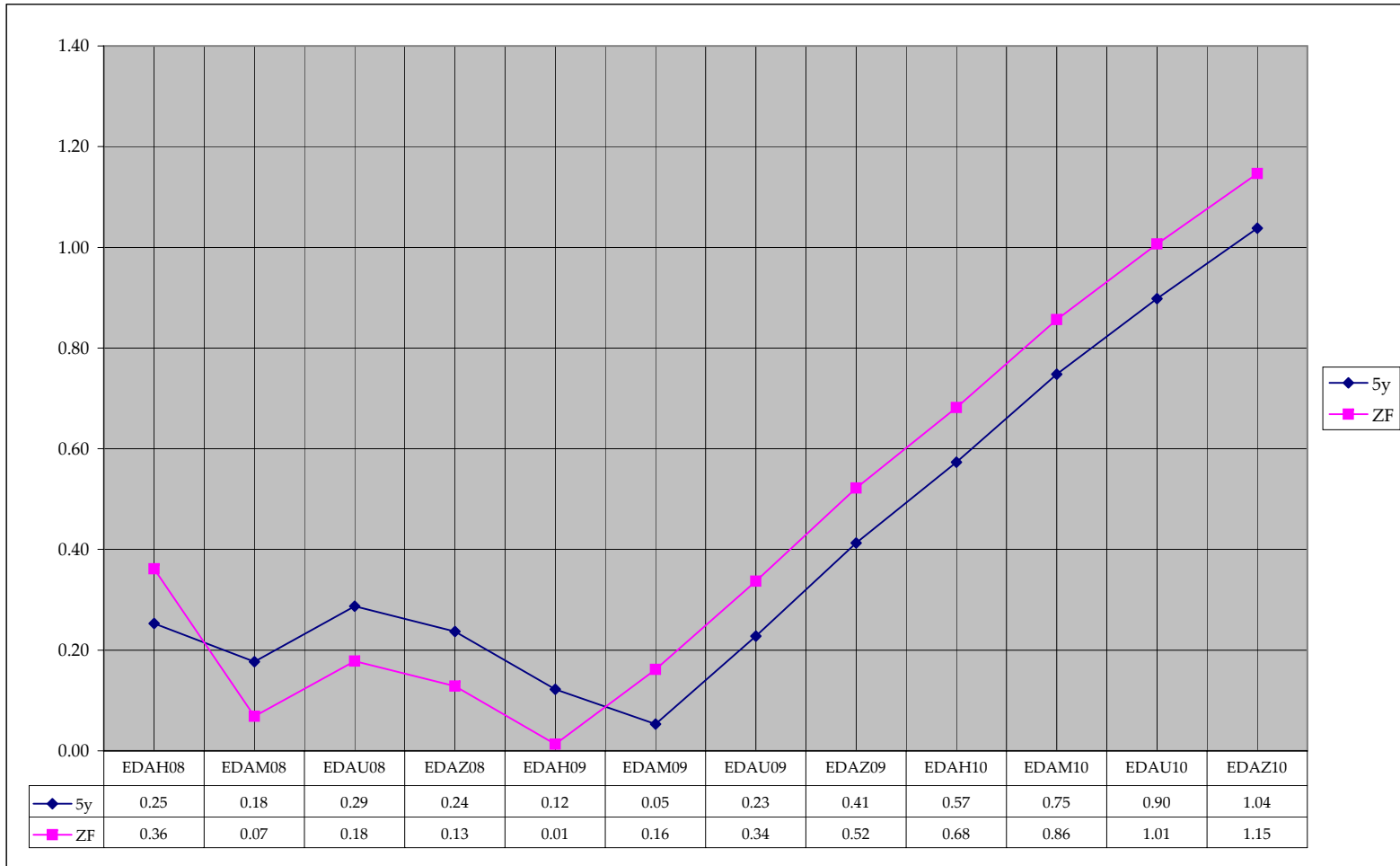
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



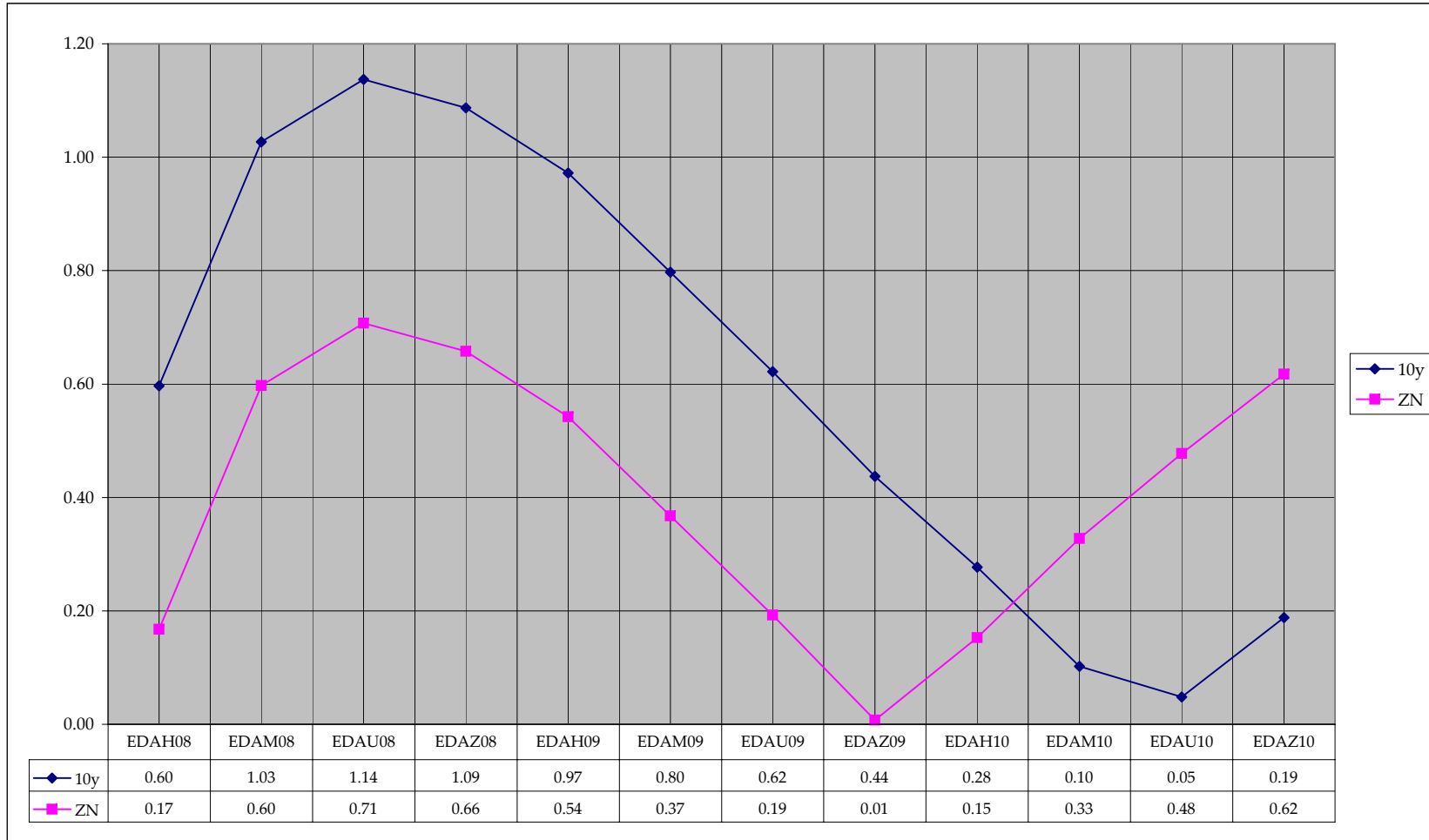
## 2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	2.710	-2.000	9734.500
Q.ED.Red	2.972	-1.125	9709.000
Q.ED.Green	3.664	-2.625	9641.875
Q.ED.Blue		-0.875	9589.750
Q.ED.Gold		0.000	9544.375

