

## 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	106.7250	106.232	2.083	1.87	
ZF	113.5781	113.185	2.592	3.92	
ZN	117.3125	117.100	3.129	5.88	
2y	102.178	102.0570	2.085	1.87	
5y	104.328	104.1050	2.679	4.44	
10y	105.797	105.2550	3.543	7.97	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAH08	97.010	2.990	53	0.145	MAR	White Pack	
EDAM08	97.490	2.510	144	0.394	JUN		
EDAU08	97.585	2.415	235	0.643	SEP		
EDAZ08	97.580	2.420	326	0.893	DEC	Red Pack	
EDAH09	97.510	2.490	417	1.142	MAR		
EDAM09	97.375	2.625	508	1.391	JUN		
EDAU09	97.205	2.795	599	1.640	SEP	Green Pack	
EDAZ09	97.045	2.955	690	1.890	DEC		
EDAH10	96.905	3.095	781	2.139	MAR		
EDAM10	96.730	3.270	872	2.388	JUN	Blue Pack	
EDAU10	96.560	3.440	963	2.638	SEP		
EDAZ10	96.425	3.575	1054	2.887	DEC		
EDAH11	96.295	3.705	1145	3.136	MAR	Gold Pack	
EDAM11	96.150	3.850	1236	3.386	JUN		
EDAU11	96.015	3.985	1334	3.654	SEP		
EDAZ11	95.885	4.115	1425	3.903	DEC		
EDAH12	95.670	4.330	1516	4.153	MAR		
EDAM12	95.765	4.235	1607	4.402	JUN		
EDAU12	95.455	4.545	1698	4.651	SEP		
EDAU12	95.455	4.545	1698	4.651	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	2.637	-8.125	9741.625	Pack Prices
Q.ED.Red	2.773	-12.000	9728.375	
Q.ED.Green	3.420	-11.375	9665.500	
Q.ED.Blue	4.007	-10.000	9608.625	
Q.ED.Gold		0.000	9571.125	

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)

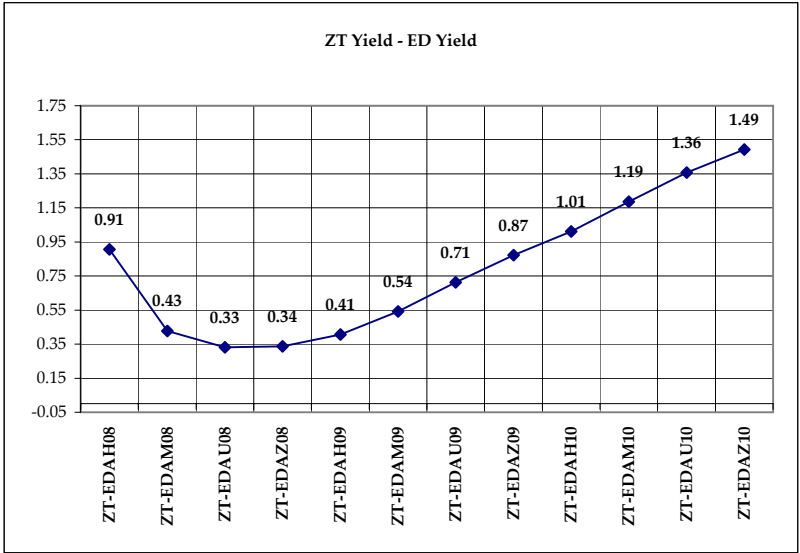
### **Eurodollar Color Codes for Individual Year Strips:**

<b>Color</b>	<b>Year</b>	<b>Contracts</b>
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

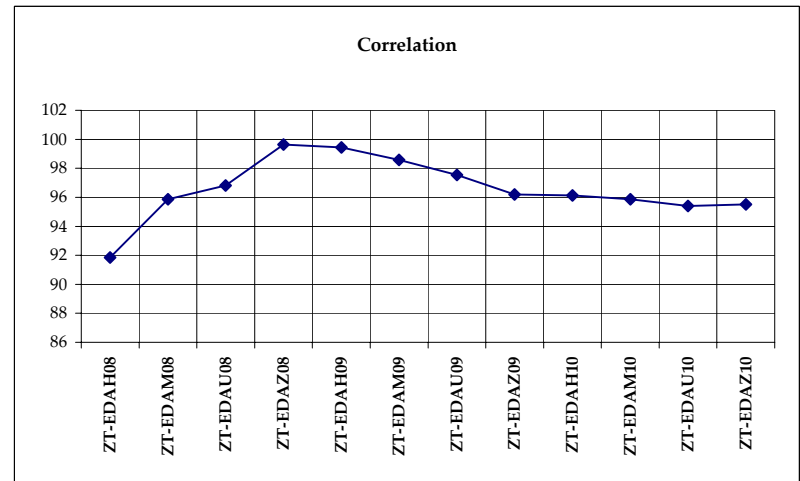
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	9.715	0.91	ZT-EDAH08	91.845
EDAM08	9.235	0.43	ZT-EDAM08	95.861
EDAU08	9.140	0.33	ZT-EDAU08	96.811
EDAZ08	9.145	0.34	ZT-EDAZ08	99.632
EDAH09	9.215	0.41	ZT-EDAH09	99.442
EDAM09	9.350	0.54	ZT-EDAM09	98.587
EDAU09	9.520	0.71	ZT-EDAU09	97.552
EDAZ09	9.680	0.87	ZT-EDAZ09	96.205
EDAH10	9.820	1.01	ZT-EDAH10	96.135
EDAM10	9.995	1.19	ZT-EDAM10	95.869
EDAU10	10.165	1.36	ZT-EDAU10	95.407
EDAZ10	10.300	1.49	ZT-EDAZ10	95.510

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	0.145	1.87	1.72	ZT-EDAH08
EDAM08	0.394	1.87	1.47	ZT-EDAM08
EDAU08	0.643	1.87	1.22	ZT-EDAU08
EDAZ08	0.893	1.87	0.97	ZT-EDAZ08
EDAH09	1.142	1.87	0.72	ZT-EDAH09
EDAM09	1.391	1.87	0.47	ZT-EDAM09
EDAU09	1.640	1.87	0.22	ZT-EDAU09
EDAZ09	1.890	1.87	(0.02)	ZT-EDAZ09
EDAH10	2.139	1.87	(0.27)	ZT-EDAH10
EDAM10	2.388	1.87	(0.52)	ZT-EDAM10
EDAU10	2.638	1.87	(0.77)	ZT-EDAU10
EDAZ10	2.887	1.87	(1.02)	ZT-EDAZ10

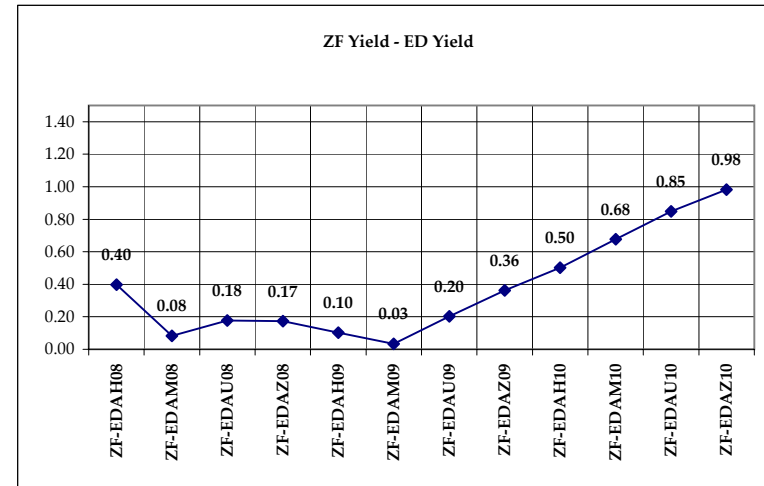
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	16.57	0.40	ZF-EDAH08	89.097
EDAM08	16.09	0.08	ZF-EDAM08	94.105
EDAU08	15.99	0.18	ZF-EDAU08	95.141
EDAZ08	16.00	0.17	ZF-EDAZ08	99.029
EDAH09	16.07	0.10	ZF-EDAH09	99.595
EDAM09	16.20	0.03	ZF-EDAM09	99.434
EDAU09	16.37	0.20	ZF-EDAU09	98.949
EDAZ09	16.53	0.36	ZF-EDAZ09	96.112
EDAH10	16.67	0.50	ZF-EDAH10	95.959
EDAM10	16.85	0.68	ZF-EDAM10	95.716
EDAU10	17.02	0.85	ZF-EDAU10	95.289
EDAZ10	17.15	0.98	ZF-EDAZ10	95.325

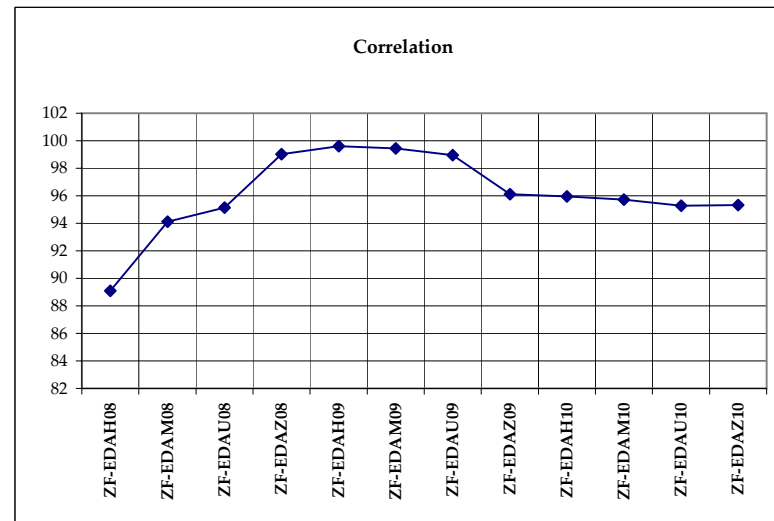
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	GE Duration as Fraction of year	ZF Duration	Spread Duration	
EDAH08	0.145	3.92	3.78	ZF-EDAH08
EDAM08	0.394	3.92	3.53	ZF-EDAM08
EDAU08	0.643	3.92	3.28	ZF-EDAU08
EDAZ08	0.893	3.92	3.03	ZF-EDAZ08
EDAH09	1.142	3.92	2.78	ZF-EDAH09
EDAM09	1.391	3.92	2.53	ZF-EDAM09
EDAU09	1.640	3.92	2.28	ZF-EDAU09
EDAZ09	1.890	3.92	2.03	ZF-EDAZ09
EDAH10	2.139	3.92	1.78	ZF-EDAH10
EDAM10	2.388	3.92	1.53	ZF-EDAM10
EDAU10	2.638	3.92	1.28	ZF-EDAU10
EDAZ10	2.887	3.92	1.03	ZF-EDAZ10

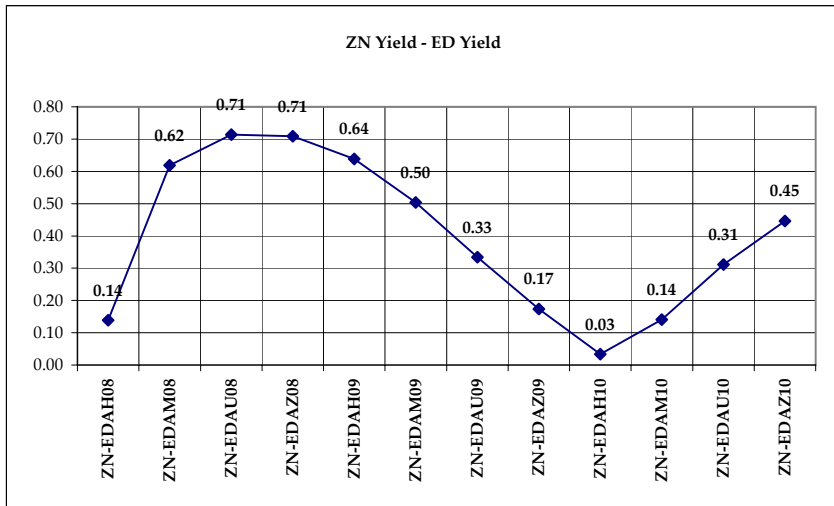
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

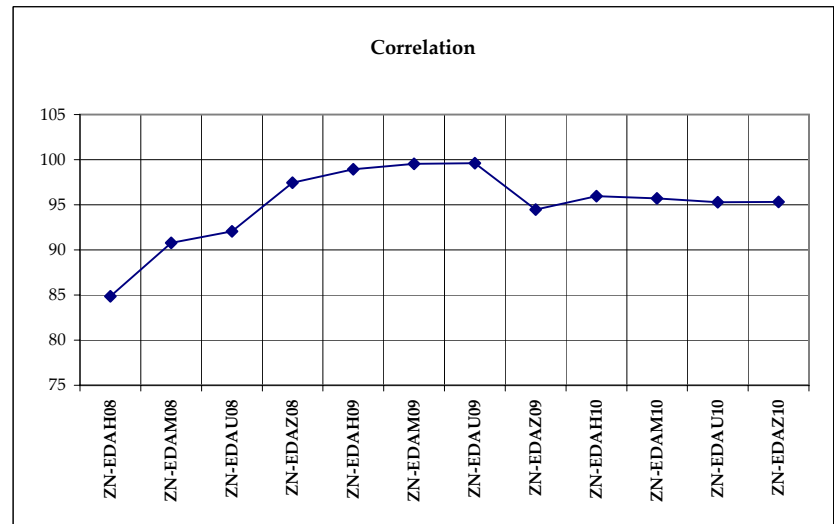
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	20.30	0.14	ZN-EDAH08	84.87
EDAM08	19.82	0.62	ZN-EDAM08	90.77
EDAU08	19.73	0.71	ZN-EDAU08	92.04
EDAZ08	19.73	0.71	ZN-EDAZ08	97.43
EDAH09	19.80	0.64	ZN-EDAH09	98.93
EDAM09	19.94	0.50	ZN-EDAM09	99.55
EDAU09	20.11	0.33	ZN-EDAU09	99.61
EDAZ09	20.27	0.17	ZN-EDAZ09	94.46
EDAH10	20.41	0.03	ZN-EDAH10	95.96
EDAM10	20.58	0.14	ZN-EDAM10	95.72
EDAU10	20.75	0.31	ZN-EDAU10	95.29
EDAZ10	20.89	0.45	ZN-EDAZ10	95.32

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	0.145	5.88	5.73	ZN-EDAH08
EDAM08	0.394	5.88	5.48	ZN-EDAM08
EDAU08	0.643	5.88	5.23	ZN-EDAU08
EDAZ08	0.893	5.88	4.98	ZN-EDAZ08
EDAH09	1.142	5.88	4.73	ZN-EDAH09
EDAM09	1.391	5.88	4.48	ZN-EDAM09
EDAU09	1.640	5.88	4.24	ZN-EDAU09
EDAZ09	1.890	5.88	3.99	ZN-EDAZ09
EDAH10	2.139	5.88	3.74	ZN-EDAH10
EDAM10	2.388	5.88	3.49	ZN-EDAM10
EDAU10	2.638	5.88	3.24	ZN-EDAU10
EDAZ10	2.887	5.88	2.99	ZN-EDAZ10

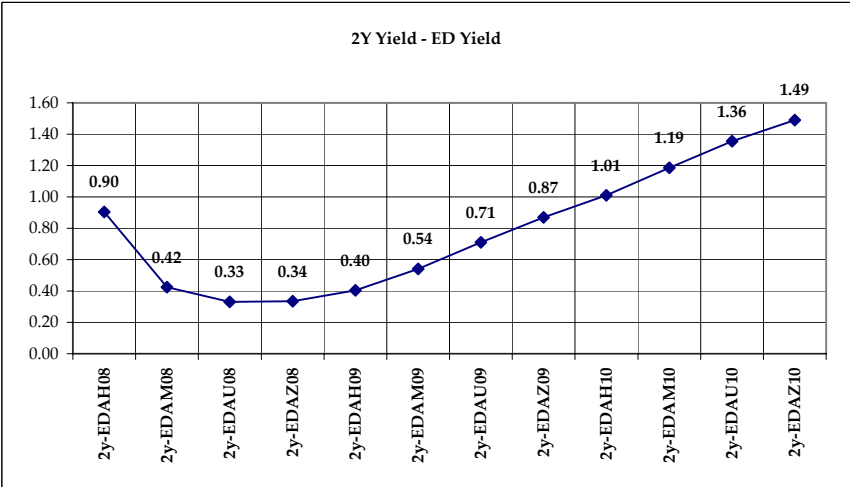
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	5.17	0.90	2y-EDAH08	-94.814
EDAM08	4.69	0.42	2y-EDAM08	-98.002
EDAU08	4.59	0.33	2y-EDAU08	-97.654
EDAZ08	4.60	0.34	2y-EDAZ08	-98.002
EDAH09	4.67	0.40	2y-EDAH09	-98.105
EDAM09	4.80	0.54	2y-EDAM09	-96.490
EDAU09	4.97	0.71	2y-EDAU09	-95.279
EDAZ09	5.13	0.87	2y-EDAZ09	-95.451
EDAH10	5.27	1.01	2y-EDAH10	-95.590
EDAM10	5.45	1.19	2y-EDAM10	-95.556
EDAU10	5.62	1.36	2y-EDAU10	-95.327
EDAZ10	5.75	1.49	2y-EDAZ10	-95.538

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.

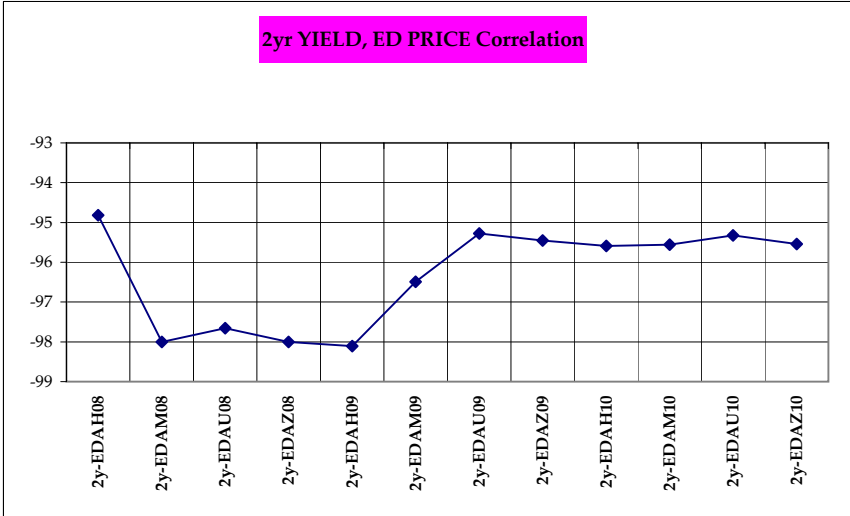


GE Duration as

	Fraction of year	2Y Duration	Spread Duration	
EDAH08	0.145	1.87	1.72	2y-EDAH08
EDAM08	0.394	1.87	1.47	2y-EDAM08
EDAU08	0.643	1.87	1.22	2y-EDAU08
EDAZ08	0.893	1.87	0.97	2y-EDAZ08
EDAH09	1.142	1.87	0.72	2y-EDAH09
EDAM09	1.391	1.87	0.47	2y-EDAM09
EDAU09	1.640	1.87	0.22	2y-EDAU09
EDAZ09	1.890	1.87	(0.02)	2y-EDAZ09
EDAH10	2.139	1.87	(0.27)	2y-EDAH10
EDAM10	2.388	1.87	(0.52)	2y-EDAM10
EDAU10	2.638	1.87	(0.77)	2y-EDAU10
EDAZ10	2.887	1.87	(1.02)	2y-EDAZ10

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

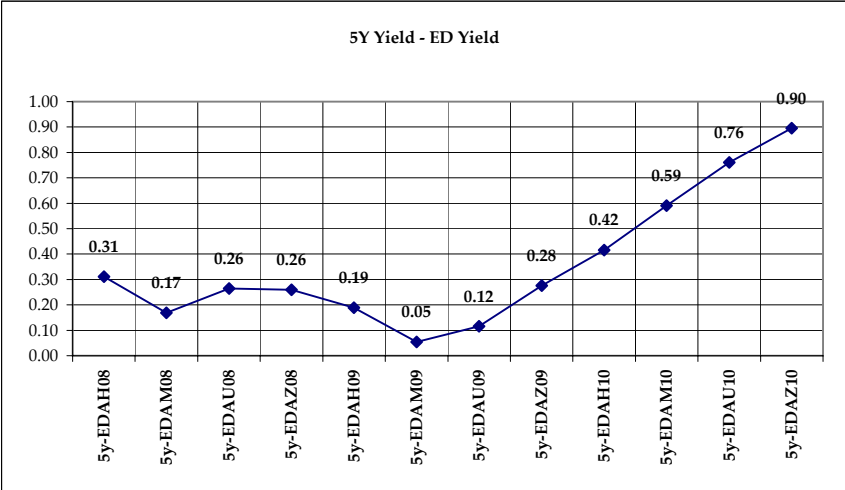
2yr YIELD, ED PRICE Correlation



TERM TED: 5y vs Eurodollar Contracts

5y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	7.32	0.31	5y-EDAH08	-90.888
EDAM08	6.84	0.17	5y-EDAM08	-95.394
EDAU08	6.74	0.26	5y-EDAU08	-95.285
EDAZ08	6.75	0.26	5y-EDAZ08	-95.394
EDAH09	6.82	0.19	5y-EDAH09	-98.126
EDAM09	6.95	0.05	5y-EDAM09	-97.280
EDAU09	7.12	0.12	5y-EDAU09	-96.698
EDAZ09	7.28	0.28	5y-EDAZ09	-94.237
EDAH10	7.42	0.42	5y-EDAH10	-94.155
EDAM10	7.60	0.59	5y-EDAM10	-94.076
EDAU10	7.77	0.76	5y-EDAU10	-93.858
EDAZ10	7.90	0.90	5y-EDAZ10	-94.011

Price = Outright Decimal Price - Euro Contract Price  
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 \*Correlation = ED Correlation to Treasury Future over 10 days  
 These are measuring YIELD correlations.

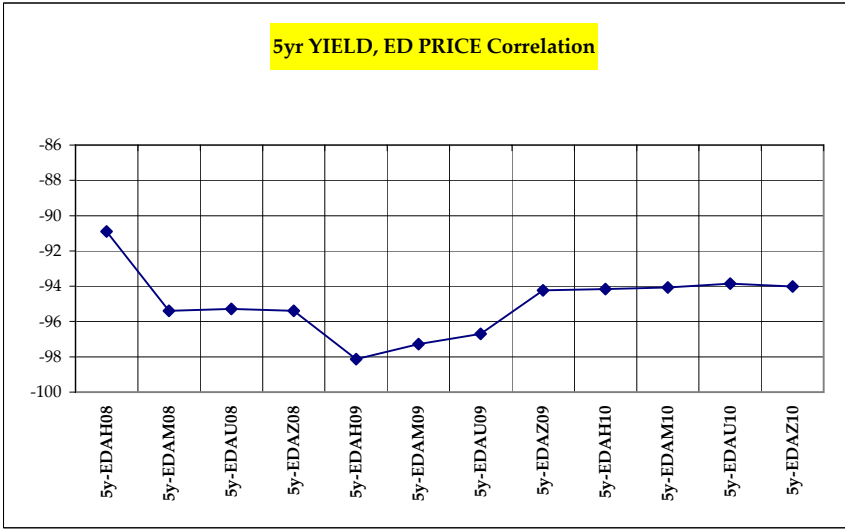


GE Duration as

	Fraction of year	5Y Duration	Spread Duration	
EDAH08	0.145	4.44	4.29	5y-EDAH08
EDAM08	0.394	4.44	4.04	5y-EDAM08
EDAU08	0.643	4.44	3.79	5y-EDAU08
EDAZ08	0.893	4.44	3.54	5y-EDAZ08
EDAH09	1.142	4.44	3.30	5y-EDAH09
EDAM09	1.391	4.44	3.05	5y-EDAM09
EDAU09	1.640	4.44	2.80	5y-EDAU09
EDAZ09	1.890	4.44	2.55	5y-EDAZ09
EDAH10	2.139	4.44	2.30	5y-EDAH10
EDAM10	2.388	4.44	2.05	5y-EDAM10
EDAU10	2.638	4.44	1.80	5y-EDAU10
EDAZ10	2.887	4.44	1.55	5y-EDAZ10

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

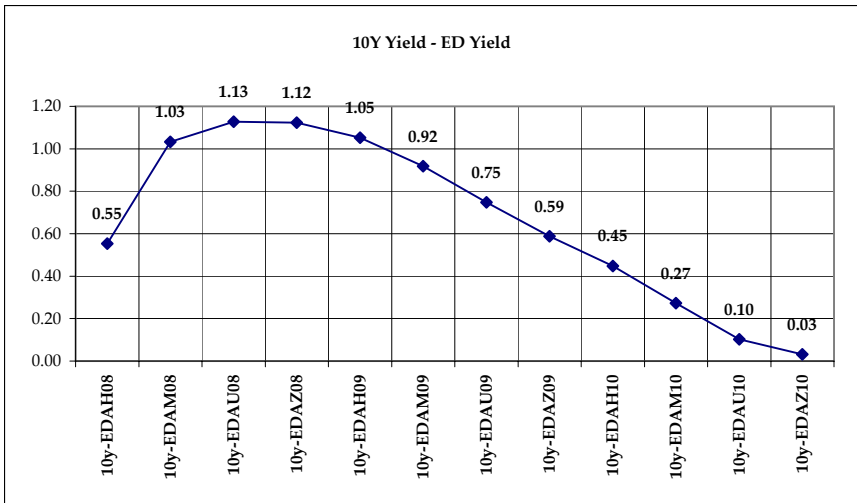
5yr YIELD, ED PRICE Correlation



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

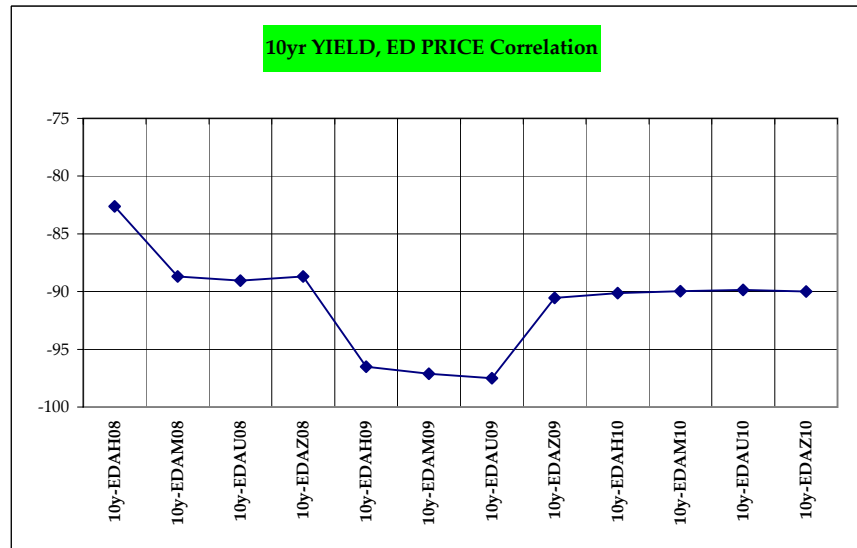
	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	7.32	0.55	10y-EDAH08	-82.619
EDAM08	6.84	1.03	10y-EDAM08	-88.696
EDAU08	6.74	1.13	10y-EDAU08	-89.059
EDAZ08	6.75	1.12	10y-EDAZ08	-88.696
EDAH09	6.82	1.05	10y-EDAH09	-96.497
EDAM09	6.95	0.92	10y-EDAM09	-97.115
EDAU09	7.12	0.75	10y-EDAU09	-97.496
EDAZ09	7.28	0.59	10y-EDAZ09	-90.549
EDAH10	7.42	0.45	10y-EDAH10	-90.121
EDAM10	7.60	0.27	10y-EDAM10	-89.978
EDAU10	7.77	0.10	10y-EDAU10	-89.867
EDAZ10	7.90	0.03	10y-EDAZ10	-89.988

Price = Outright Decimal Price - Euro Contract Price  
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 These are measuring YIELD correlations.



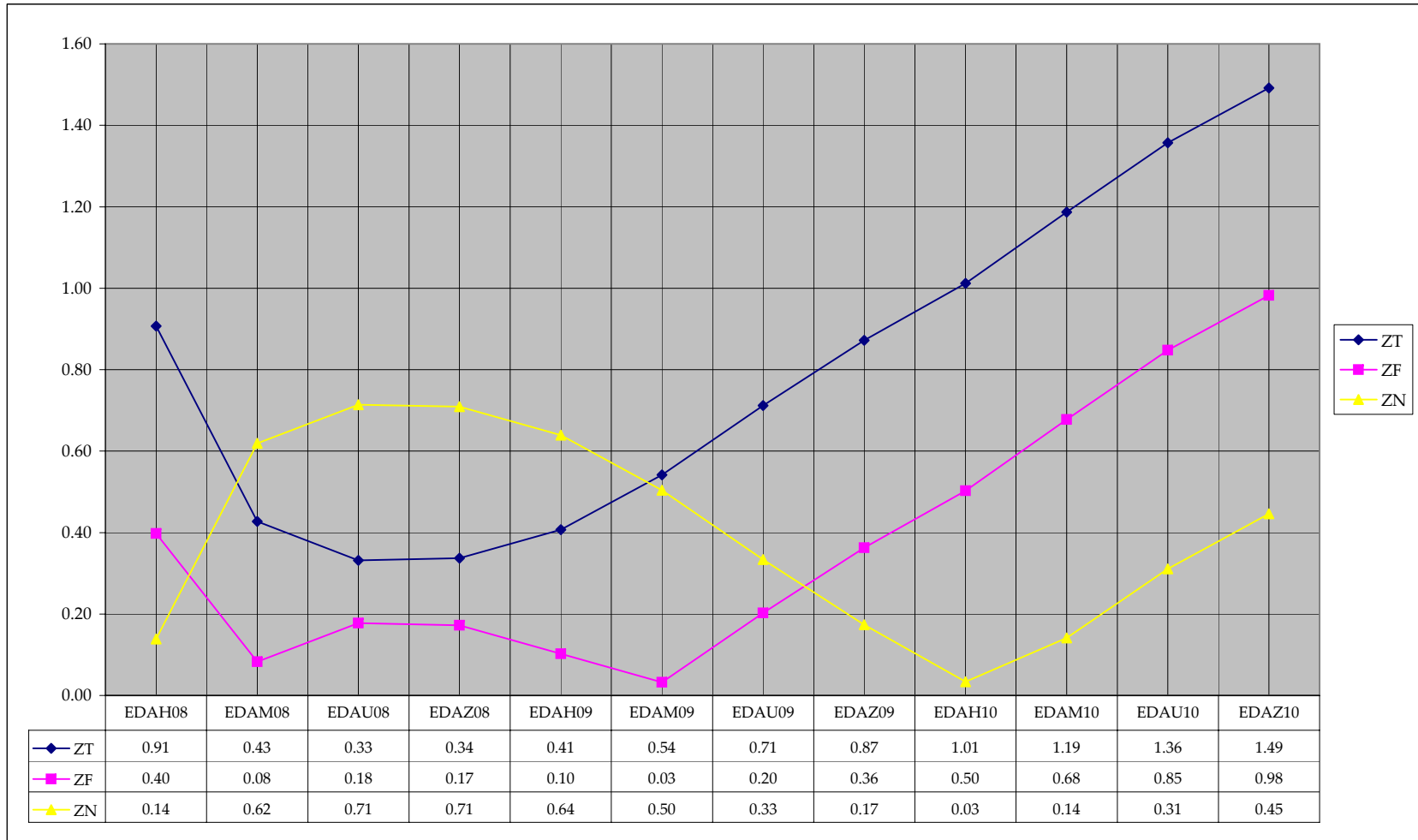
	GE Duration as Fraction of year	10Y Duration	Spread Duration	
EDAH08	0.145	7.97	7.83	10y-EDAH08
EDAM08	0.394	7.97	7.58	10y-EDAM08
EDAU08	0.643	7.97	7.33	10y-EDAU08
EDAZ08	0.893	7.97	7.08	10y-EDAZ08
EDAH09	1.142	7.97	6.83	10y-EDAH09
EDAM09	1.391	7.97	6.58	10y-EDAM09
EDAU09	1.640	7.97	6.33	10y-EDAU09
EDAZ09	1.890	7.97	6.08	10y-EDAZ09
EDAH10	2.139	7.97	5.83	10y-EDAH10
EDAM10	2.388	7.97	5.58	10y-EDAM10
EDAU10	2.638	7.97	5.33	10y-EDAU10
EDAZ10	2.887	7.97	5.09	10y-EDAZ10

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



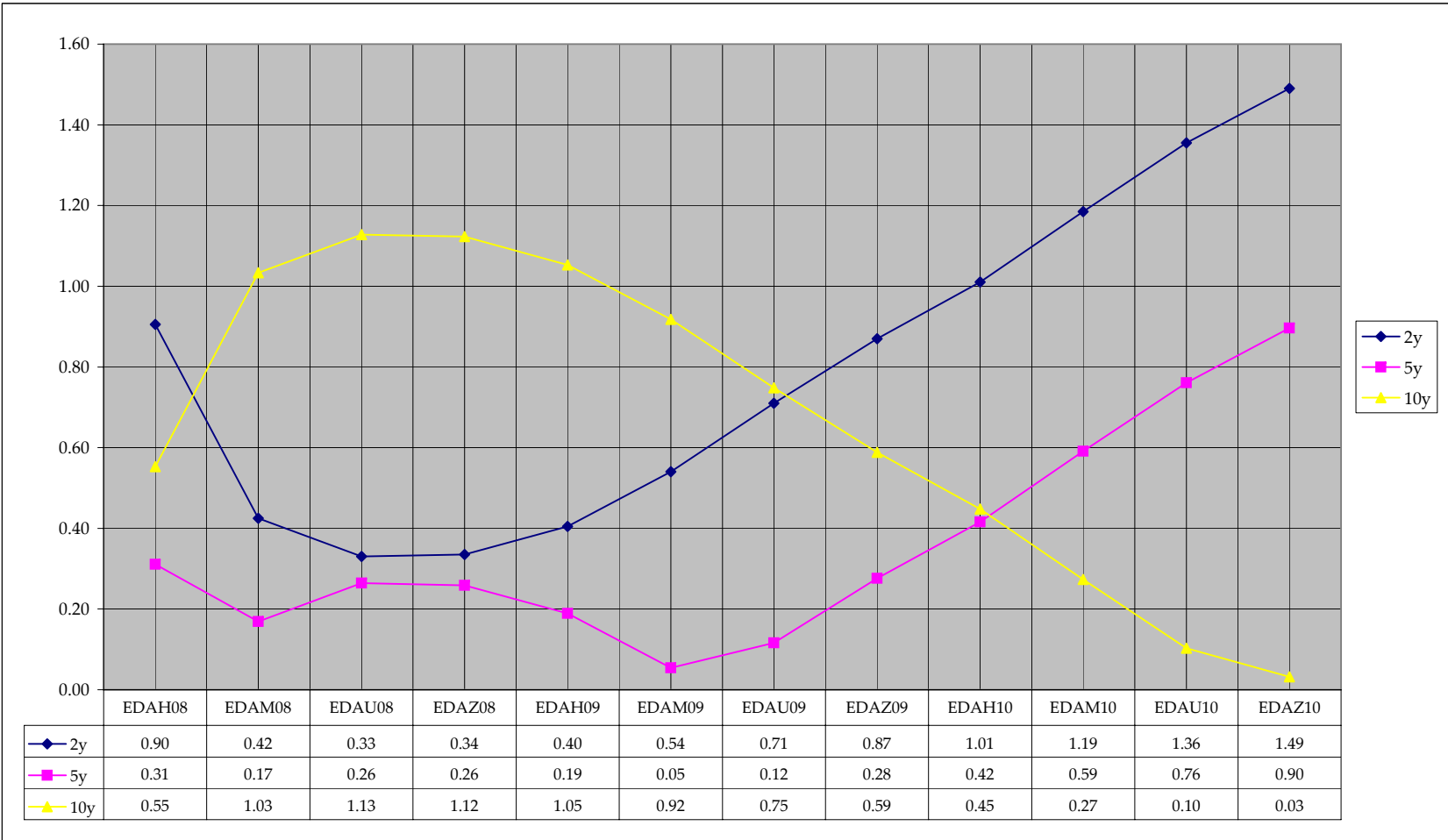
**Dirty TED Curve**

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.

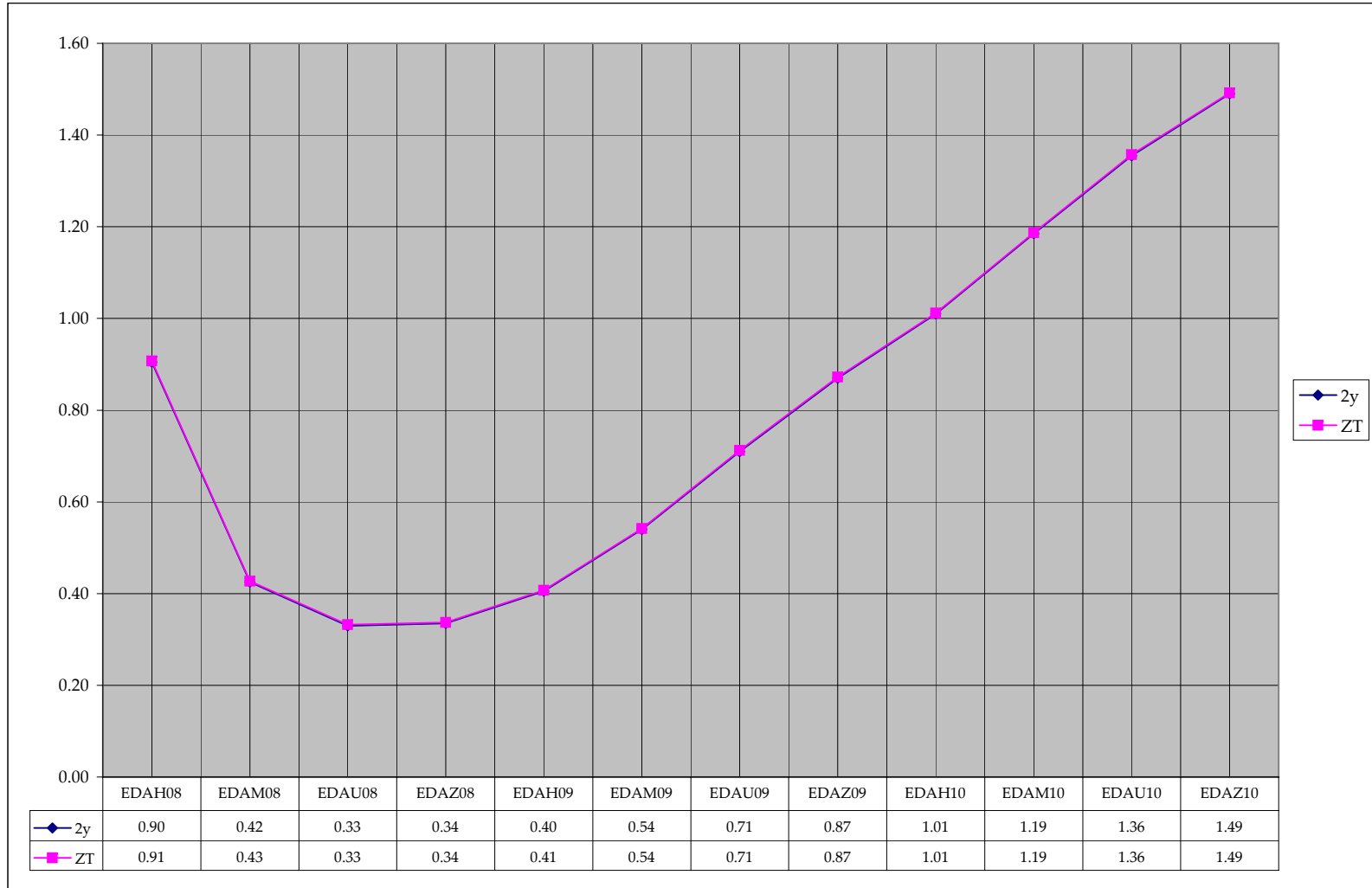


TED Curve

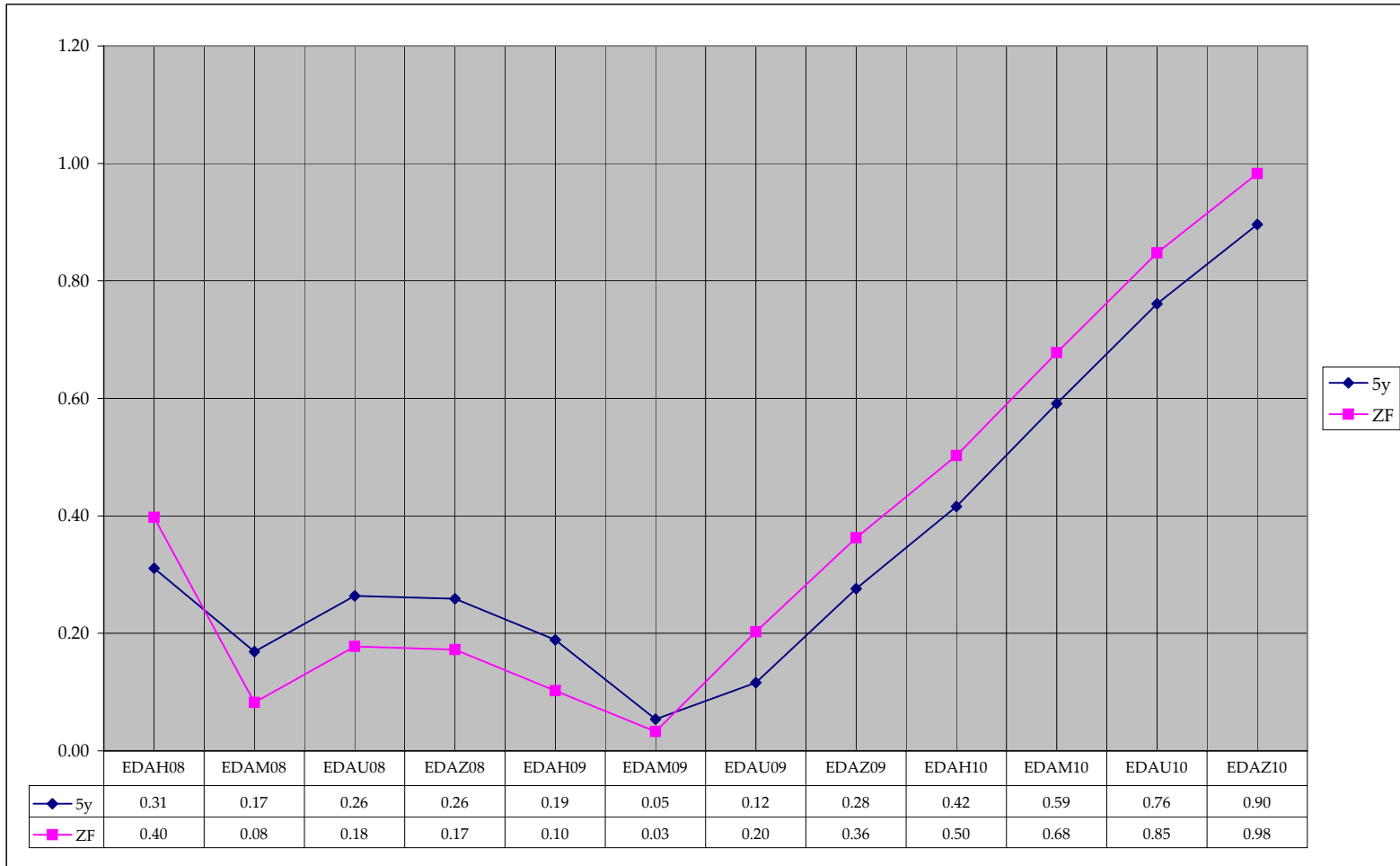
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



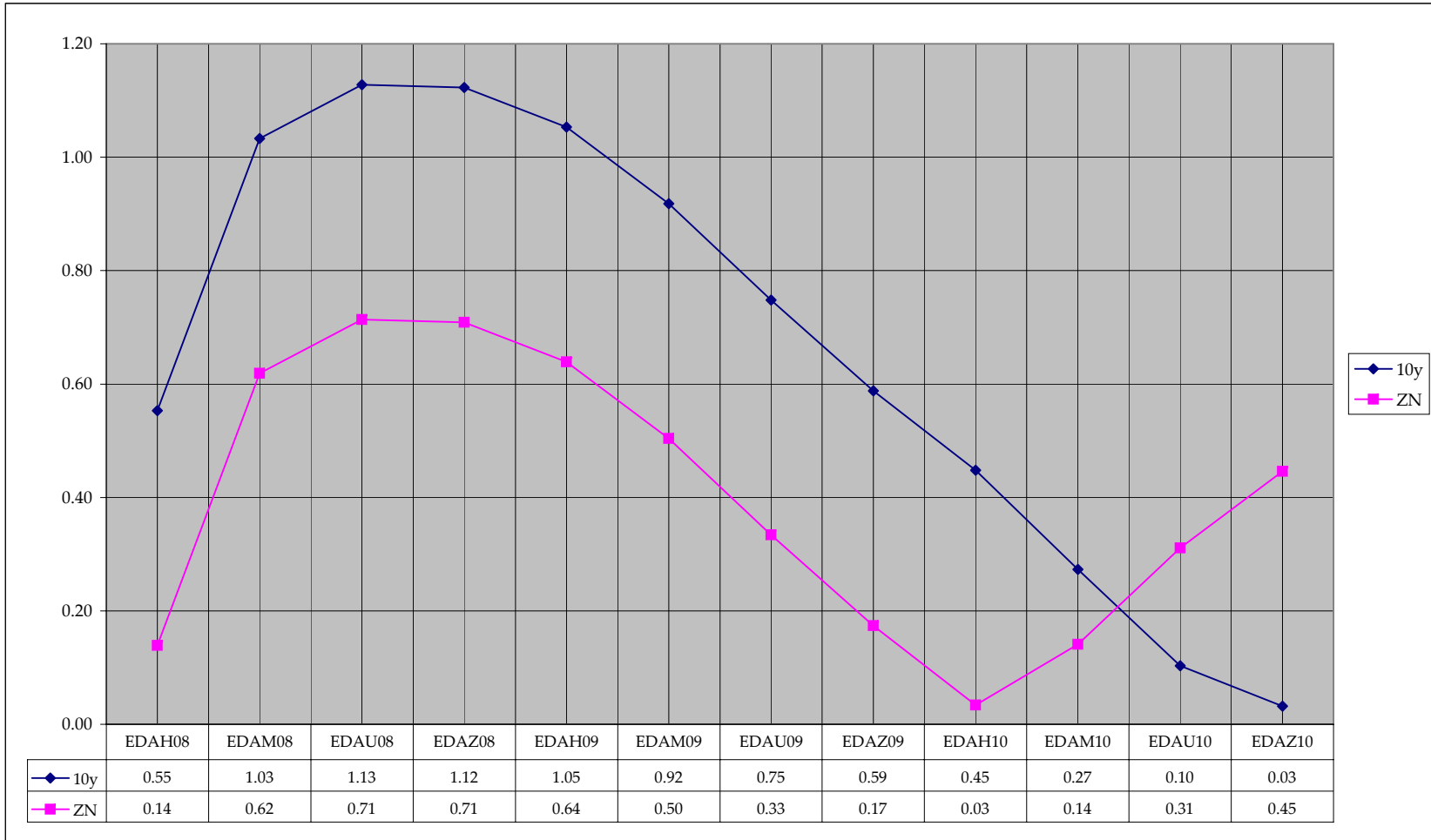
2y Basis TED Curve



## 5y Basis TED Curve



10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	2.637	-8.125	9741.625
Q.ED.Red	2.773	-12.000	9728.375
Q.ED.Green	3.420	-11.375	9665.500
Q.ED.Blue	4.007	-10.000	9608.625
Q.ED.Gold		0.000	9571.125

