

## 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	107.0781	107.025	1.856	1.78	
ZF	113.8438	113.270	2.511	3.89	
ZN	117.5000	117.160	3.106	5.84	
2y	100.406	100.1300	1.911	1.93	
5y	101.109	101.0350	2.633	4.61	
10y	99.188	99.0600	3.594	8.24	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAH08	97.140	2.860	39	0.106	MAR	} White Pack	
EDAM08	97.600	2.400	130	0.355	JUN		
EDAU08	97.730	2.270	221	0.605	SEP		
EDAZ08	97.685	2.315	312	0.854	DEC	} Red Pack	
EDAH09	97.555	2.445	403	1.103	MAR		
EDAM09	97.350	2.650	494	1.353	JUN		
EDAU09	97.145	2.855	585	1.602	SEP		
EDAZ09	96.955	3.045	676	1.851	DEC	} Green Pack	
EDAH10	96.780	3.220	767	2.101	MAR		
EDAM10	96.595	3.405	858	2.350	JUN		
EDAU10	96.435	3.565	949	2.599	SEP		
EDAZ10	96.270	3.730	1040	2.849	DEC	} Blue Pack	
EDAH11	96.140	3.860	1131	3.098	MAR		
EDAM11	96.000	4.000	1222	3.347	JUN		
EDAU11	95.835	4.165	1320	3.616	SEP		
EDAZ11	95.705	4.295	1411	3.865	DEC	} Gold Pack	
EDAH12	95.605	4.395	1502	4.114	MAR		
EDAM12	95.490	4.510	1593	4.364	JUN		
EDAU12	95.370	4.630	1684	4.613	SEP		
EDAU12	95.370	4.630	1684	4.613	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	2.511	4.625	9753.875	} Pack Prices
Q.ED.Red	2.806	5.125	9725.125	
Q.ED.Green	3.559	4.125	9652.000	
Q.ED.Blue		2.000	9591.750	
Q.ED.Gold		0.000	9541.375	

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

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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)

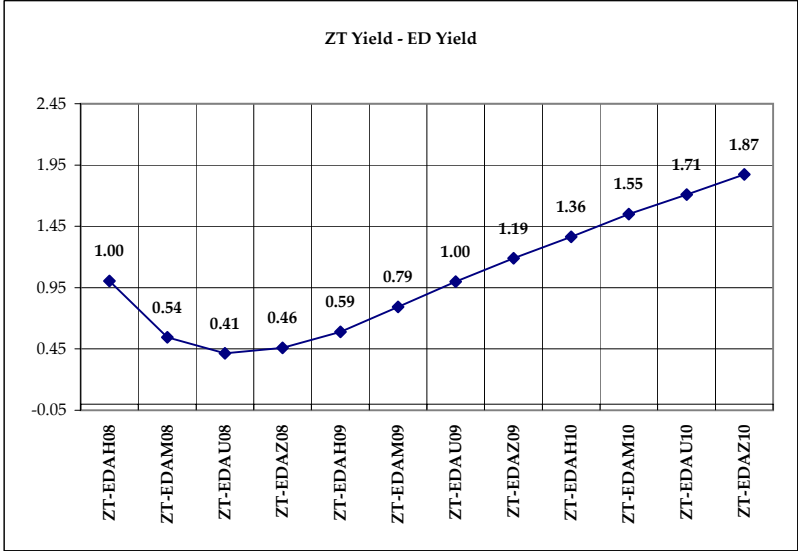
### Eurodollar Color Codes for Individual Year Strips:

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

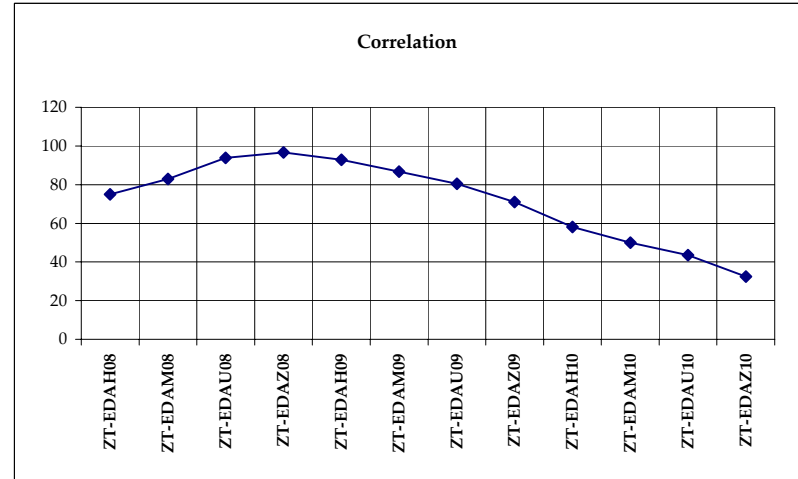
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	9.938	1.00	ZT-EDAH08	74.908
EDAM08	9.478	0.54	ZT-EDAM08	82.947
EDAU08	9.348	0.41	ZT-EDAU08	93.792
EDAZ08	9.393	0.46	ZT-EDAZ08	96.726
EDAH09	9.523	0.59	ZT-EDAH09	92.850
EDAM09	9.728	0.79	ZT-EDAM09	86.721
EDAU09	9.933	1.00	ZT-EDAU09	80.489
EDAZ09	10.123	1.19	ZT-EDAZ09	71.060
EDAH10	10.298	1.36	ZT-EDAH10	58.059
EDAM10	10.483	1.55	ZT-EDAM10	49.982
EDAU10	10.643	1.71	ZT-EDAU10	43.490
EDAZ10	10.808	1.87	ZT-EDAZ10	32.400

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	0.106	1.78	1.68	ZT-EDAH08
EDAM08	0.355	1.78	1.43	ZT-EDAM08
EDAU08	0.605	1.78	1.18	ZT-EDAU08
EDAZ08	0.854	1.78	0.93	ZT-EDAZ08
EDAH09	1.103	1.78	0.68	ZT-EDAH09
EDAM09	1.353	1.78	0.43	ZT-EDAM09
EDAU09	1.602	1.78	0.18	ZT-EDAU09
EDAZ09	1.851	1.78	(0.07)	ZT-EDAZ09
EDAH10	2.101	1.78	(0.32)	ZT-EDAH10
EDAM10	2.350	1.78	(0.57)	ZT-EDAM10
EDAU10	2.599	1.78	(0.82)	ZT-EDAU10
EDAZ10	2.849	1.78	(1.07)	ZT-EDAZ10

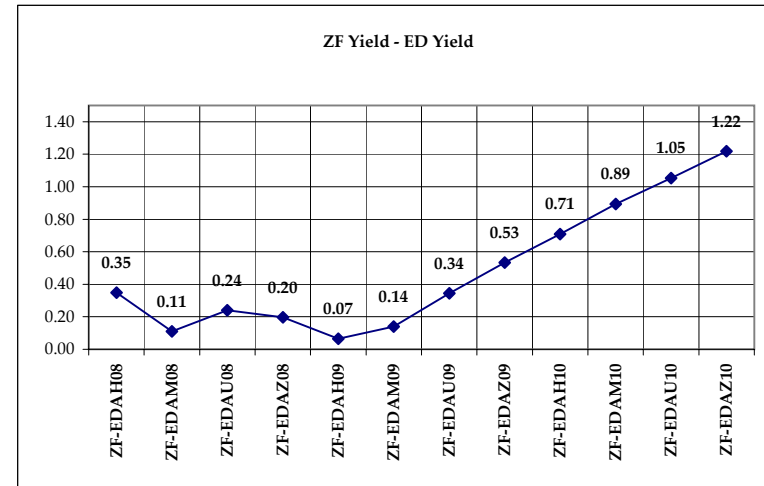
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	16.70	0.35	ZF-EDAH08	64.101
EDAM08	16.24	0.11	ZF-EDAM08	78.952
EDAU08	16.11	0.24	ZF-EDAU08	91.236
EDAZ08	16.16	0.20	ZF-EDAZ08	96.923
EDAH09	16.29	0.07	ZF-EDAH09	97.021
EDAM09	16.49	0.14	ZF-EDAM09	94.196
EDAU09	16.70	0.34	ZF-EDAU09	90.487
EDAZ09	16.89	0.53	ZF-EDAZ09	84.761
EDAH10	17.06	0.71	ZF-EDAH10	75.700
EDAM10	17.25	0.89	ZF-EDAM10	69.507
EDAU10	17.41	1.05	ZF-EDAU10	64.350
EDAZ10	17.57	1.22	ZF-EDAZ10	55.081

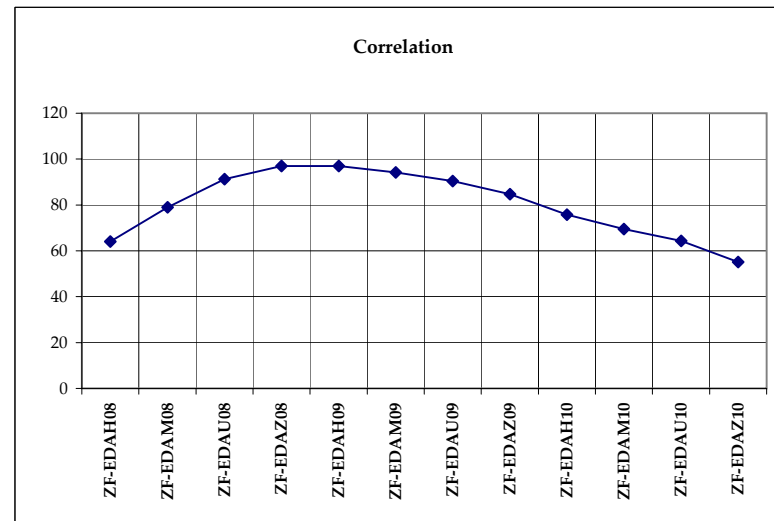
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	GE Duration as Fraction of year	ZF Duration	Spread Duration	
EDAH08	0.106	3.89	3.78	ZF-EDAH08
EDAM08	0.355	3.89	3.53	ZF-EDAM08
EDAU08	0.605	3.89	3.28	ZF-EDAU08
EDAZ08	0.854	3.89	3.03	ZF-EDAZ08
EDAH09	1.103	3.89	2.78	ZF-EDAH09
EDAM09	1.353	3.89	2.53	ZF-EDAM09
EDAU09	1.602	3.89	2.28	ZF-EDAU09
EDAZ09	1.851	3.89	2.03	ZF-EDAZ09
EDAH10	2.101	3.89	1.78	ZF-EDAH10
EDAM10	2.350	3.89	1.54	ZF-EDAM10
EDAU10	2.599	3.89	1.29	ZF-EDAU10
EDAZ10	2.849	3.89	1.04	ZF-EDAZ10

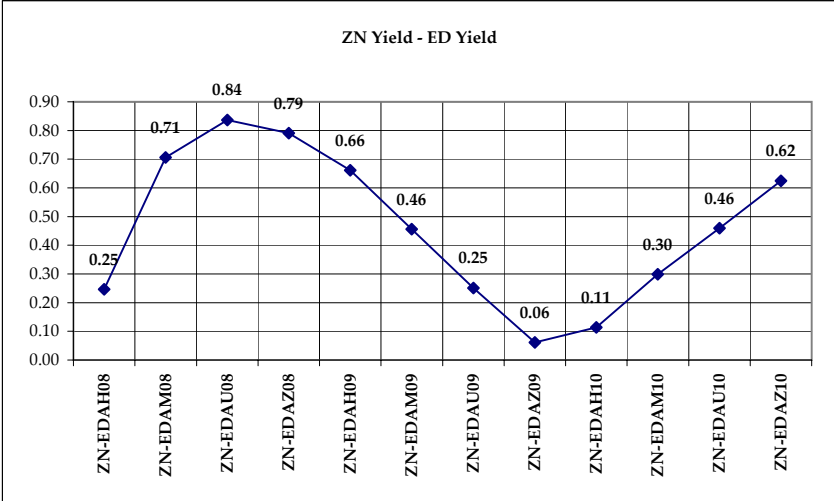
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

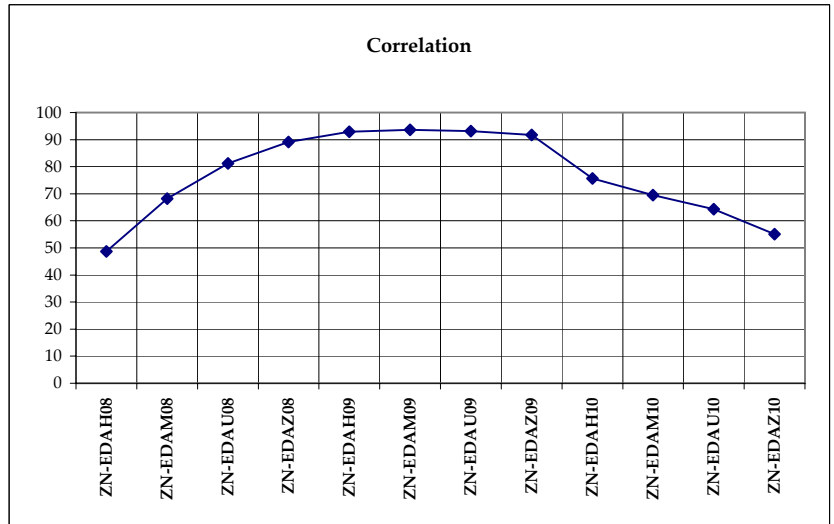
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	20.36	0.25	ZN-EDAH08	48.71
EDAM08	19.90	0.71	ZN-EDAM08	68.25
EDAU08	19.77	0.84	ZN-EDAU08	81.19
EDAZ08	19.82	0.79	ZN-EDAZ08	89.09
EDAH09	19.95	0.66	ZN-EDAH09	92.94
EDAM09	20.15	0.46	ZN-EDAM09	93.64
EDAU09	20.36	0.25	ZN-EDAU09	93.14
EDAZ09	20.55	0.06	ZN-EDAZ09	91.72
EDAH10	20.72	0.11	ZN-EDAH10	75.70
EDAM10	20.91	0.30	ZN-EDAM10	69.51
EDAU10	21.07	0.46	ZN-EDAU10	64.35
EDAZ10	21.23	0.62	ZN-EDAZ10	55.08

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	0.106	5.84	5.73	ZN-EDAH08
EDAM08	0.355	5.84	5.48	ZN-EDAM08
EDAU08	0.605	5.84	5.23	ZN-EDAU08
EDAZ08	0.854	5.84	4.99	ZN-EDAZ08
EDAH09	1.103	5.84	4.74	ZN-EDAH09
EDAM09	1.353	5.84	4.49	ZN-EDAM09
EDAU09	1.602	5.84	4.24	ZN-EDAU09
EDAZ09	1.851	5.84	3.99	ZN-EDAZ09
EDAH10	2.101	5.84	3.74	ZN-EDAH10
EDAM10	2.350	5.84	3.49	ZN-EDAM10
EDAU10	2.599	5.84	3.24	ZN-EDAU10
EDAZ10	2.849	5.84	2.99	ZN-EDAZ10

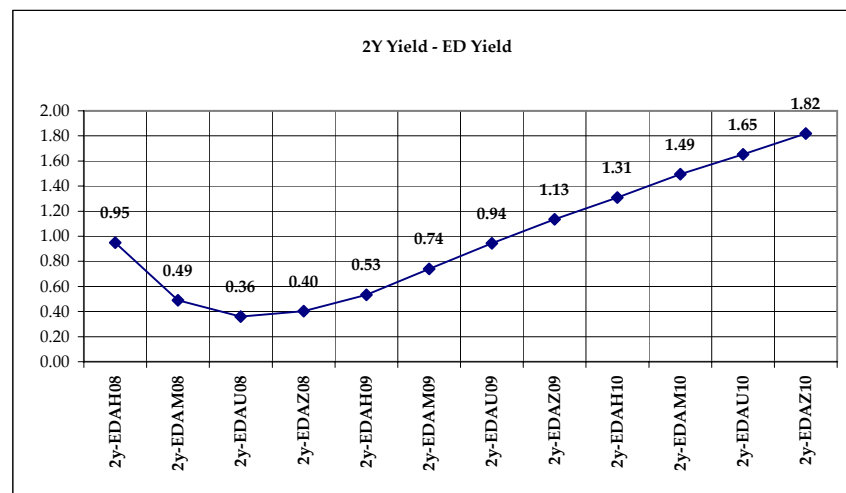
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.27	0.95	2y-EDAH08	-79.381
EDAM08	2.81	0.49	2y-EDAM08	-87.091
EDAU08	2.68	0.36	2y-EDAU08	-95.088
EDAZ08	2.72	0.40	2y-EDAZ08	-87.091
EDAH09	2.85	0.53	2y-EDAH09	-89.689
EDAM09	3.06	0.74	2y-EDAM09	-82.486
EDAU09	3.26	0.94	2y-EDAU09	-75.738
EDAZ09	3.45	1.13	2y-EDAZ09	-66.110
EDAH10	3.63	1.31	2y-EDAH10	-52.971
EDAM10	3.81	1.49	2y-EDAM10	-45.074
EDAU10	3.97	1.65	2y-EDAU10	-39.137
EDAZ10	4.14	1.82	2y-EDAZ10	-28.670

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.

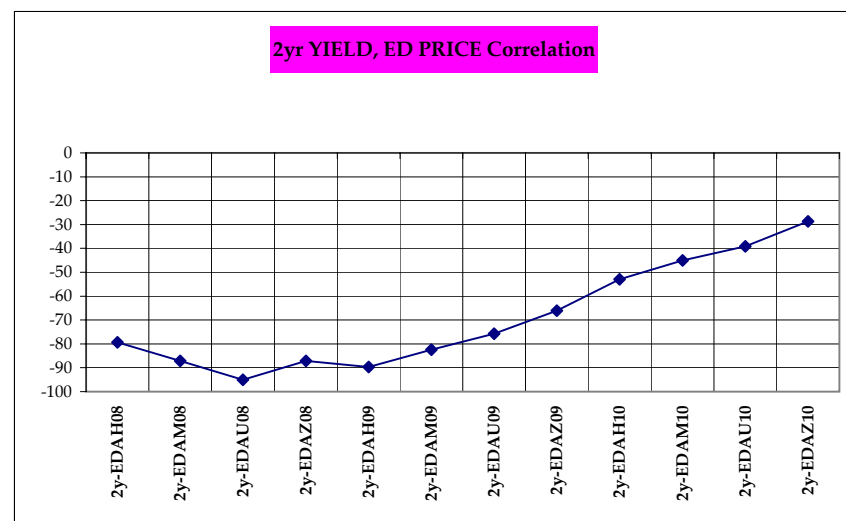


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAH08	0.106	1.93	2y-EDAH08
EDAM08	0.355	1.93	2y-EDAM08
EDAU08	0.605	1.93	2y-EDAU08
EDAZ08	0.854	1.93	2y-EDAZ08
EDAH09	1.103	1.93	2y-EDAH09
EDAM09	1.353	1.93	2y-EDAM09
EDAU09	1.602	1.93	2y-EDAU09
EDAZ09	1.851	1.93	2y-EDAZ09
EDAH10	2.101	1.93	2y-EDAH10
EDAM10	2.350	1.93	2y-EDAM10
EDAU10	2.599	1.93	2y-EDAU10
EDAZ10	2.849	1.93	2y-EDAZ10

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

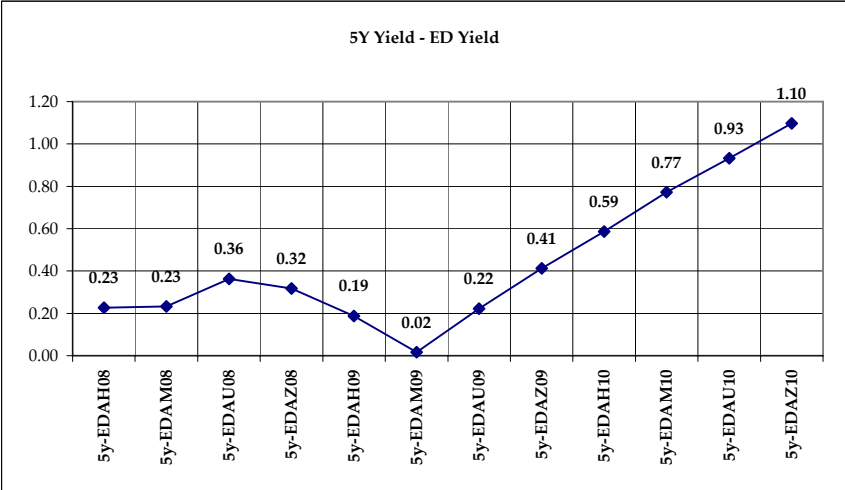
2yr YIELD, ED PRICE Correlation



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

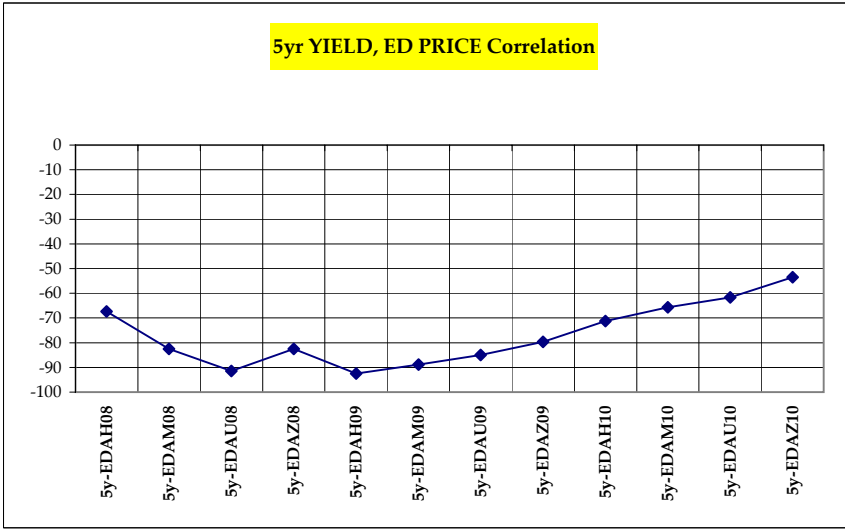
	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.97	0.23	5y-EDAH08	-67.351
EDAM08	3.51	0.23	5y-EDAM08	-82.528
EDAU08	3.38	0.36	5y-EDAU08	-91.422
EDAZ08	3.42	0.32	5y-EDAZ08	-82.528
EDAH09	3.55	0.19	5y-EDAH09	-92.529
EDAM09	3.76	0.02	5y-EDAM09	-88.905
EDAU09	3.96	0.22	5y-EDAU09	-84.996
EDAZ09	4.15	0.41	5y-EDAZ09	-79.674
EDAH10	4.33	0.59	5y-EDAH10	-71.189
EDAM10	4.51	0.77	5y-EDAM10	-65.688
EDAU10	4.67	0.93	5y-EDAU10	-61.642
EDAZ10	4.84	1.10	5y-EDAZ10	-53.492

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	0.106	4.61	4.51	5y-EDAH08
EDAM08	0.355	4.61	4.26	5y-EDAM08
EDAU08	0.605	4.61	4.01	5y-EDAU08
EDAZ08	0.854	4.61	3.76	5y-EDAZ08
EDAH09	1.103	4.61	3.51	5y-EDAH09
EDAM09	1.353	4.61	3.26	5y-EDAM09
EDAU09	1.602	4.61	3.01	5y-EDAU09
EDAZ09	1.851	4.61	2.76	5y-EDAZ09
EDAH10	2.101	4.61	2.51	5y-EDAH10
EDAM10	2.350	4.61	2.26	5y-EDAM10
EDAU10	2.599	4.61	2.01	5y-EDAU10
EDAZ10	2.849	4.61	1.76	5y-EDAZ10

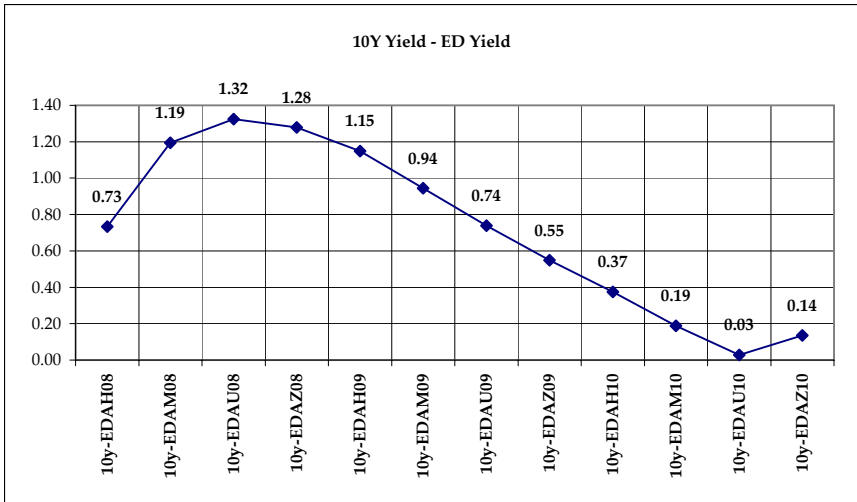
The farther away from 0 the spread duration is the riskier the trade.



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

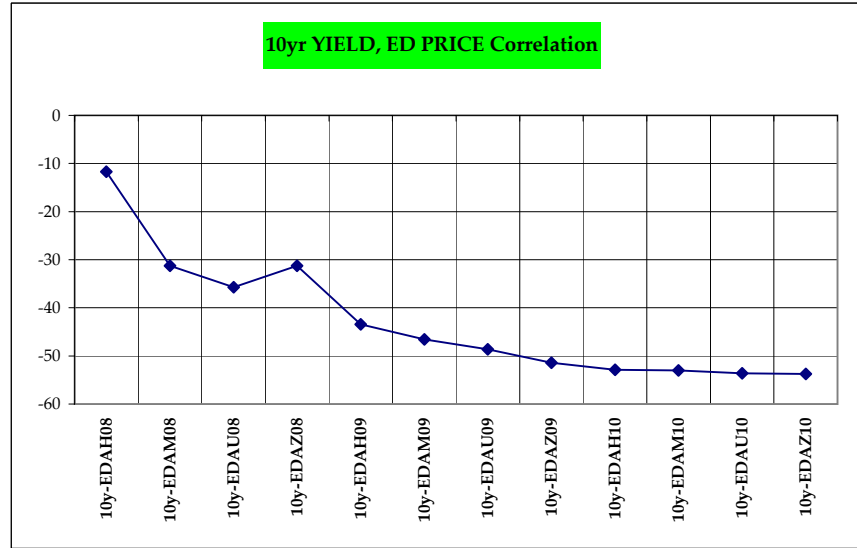
	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.97	0.73	10y-EDAH08	-11.705
EDAM08	3.51	1.19	10y-EDAM08	-31.244
EDAU08	3.38	1.32	10y-EDAU08	-35.709
EDAZ08	3.42	1.28	10y-EDAZ08	-31.244
EDAH09	3.55	1.15	10y-EDAH09	-43.464
EDAM09	3.76	0.94	10y-EDAM09	-46.583
EDAU09	3.96	0.74	10y-EDAU09	-48.636
EDAZ09	4.15	0.55	10y-EDAZ09	-51.424
EDAH10	4.33	0.37	10y-EDAH10	-52.871
EDAM10	4.51	0.19	10y-EDAM10	-53.031
EDAU10	4.67	0.03	10y-EDAU10	-53.583
EDAZ10	4.84	0.14	10y-EDAZ10	-53.736

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	0.106	8.24	8.13	10y-EDAH08	
EDAM08	0.355	8.24	7.88	10y-EDAM08	
EDAU08	0.605	8.24	7.63	10y-EDAU08	
EDAZ08	0.854	8.24	7.38	10y-EDAZ08	
EDAH09	1.103	8.24	7.14	10y-EDAH09	
EDAM09	1.353	8.24	6.89	10y-EDAM09	
EDAU09	1.602	8.24	6.64	10y-EDAU09	
EDAZ09	1.851	8.24	6.39	10y-EDAZ09	
EDAH10	2.101	8.24	6.14	10y-EDAH10	
EDAM10	2.350	8.24	5.89	10y-EDAM10	
EDAU10	2.599	8.24	5.64	10y-EDAU10	
EDAZ10	2.849	8.24	5.39	10y-EDAZ10	

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

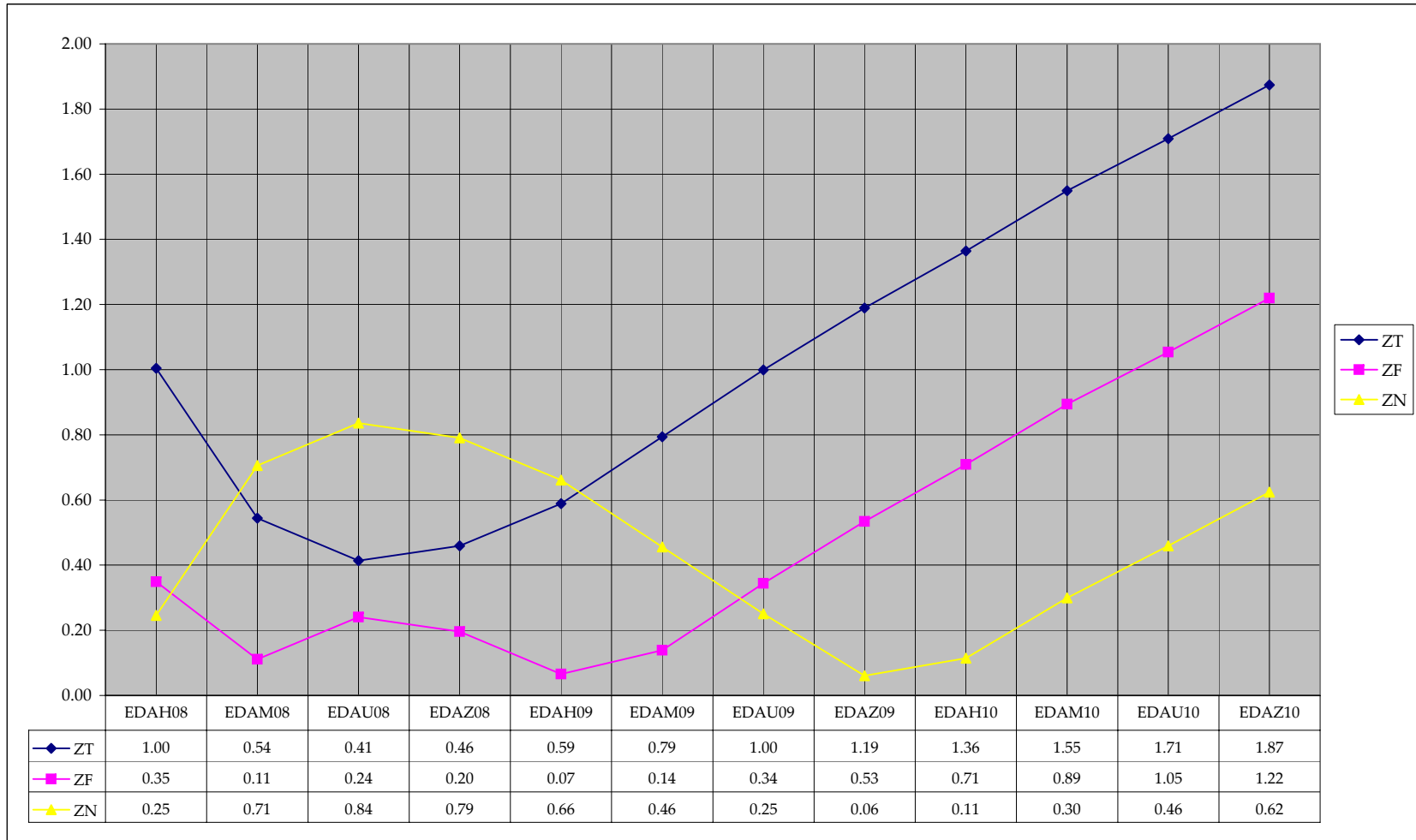


**Dirty TED Curve**

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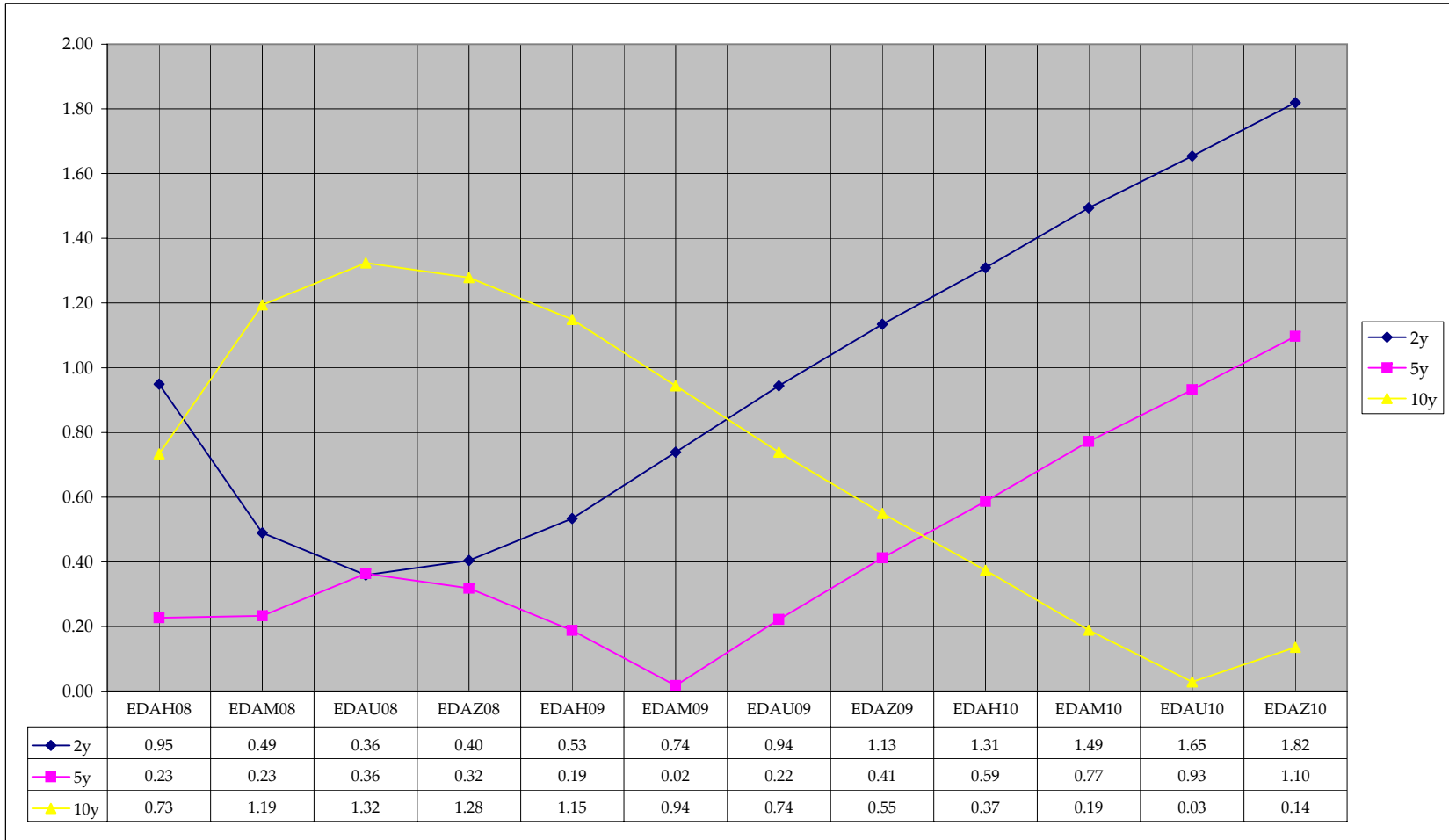
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Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis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

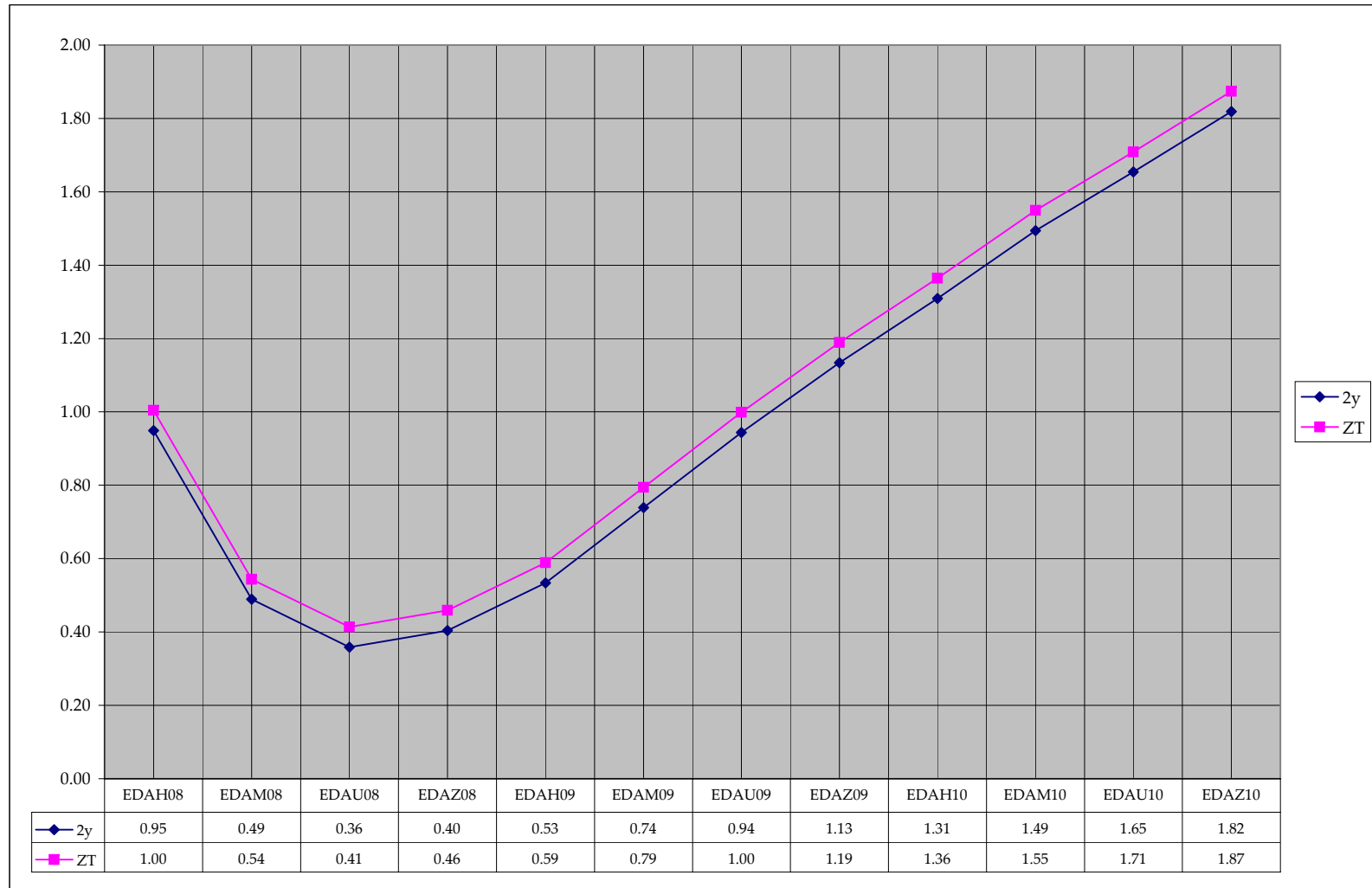


TED Curve

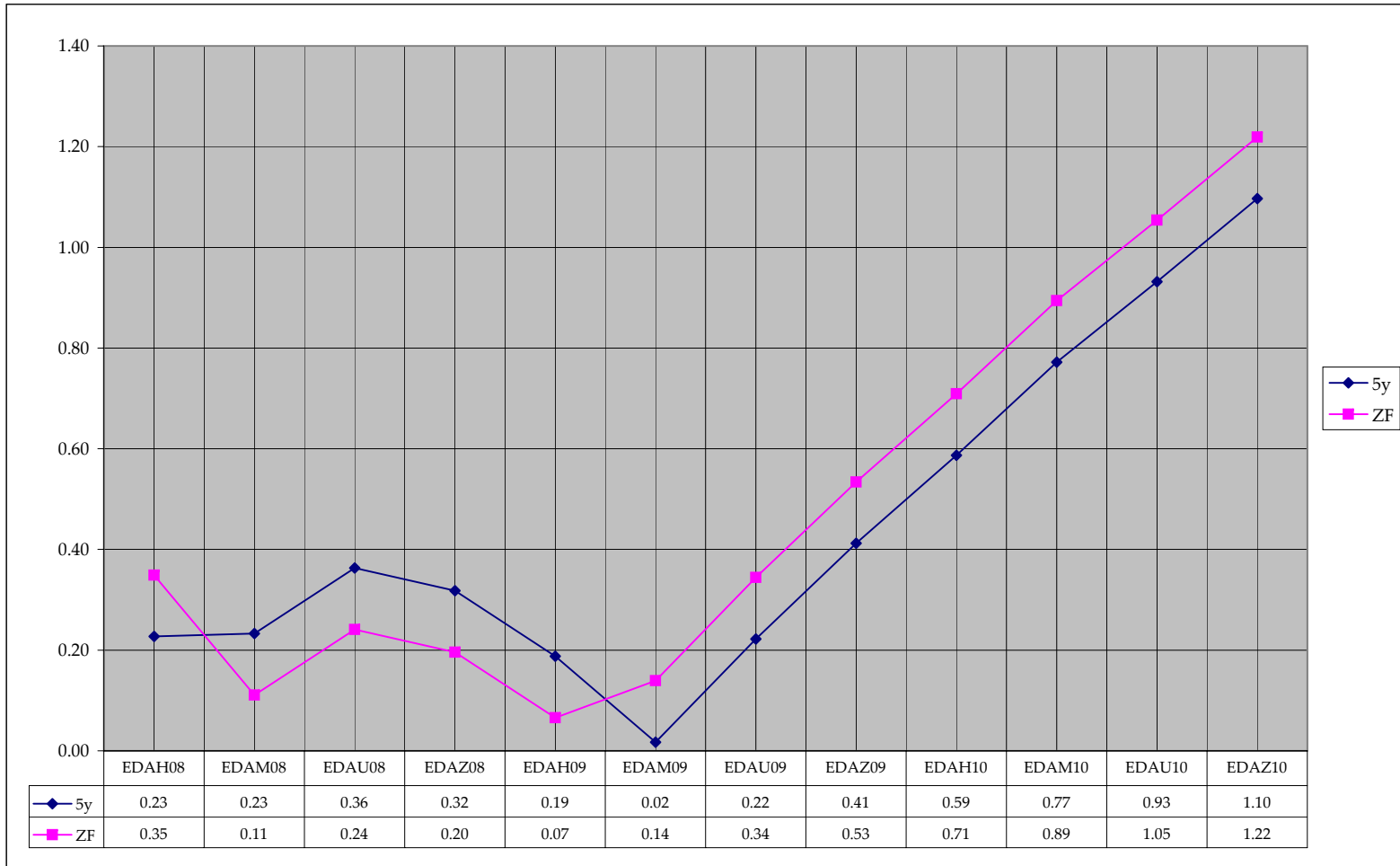
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



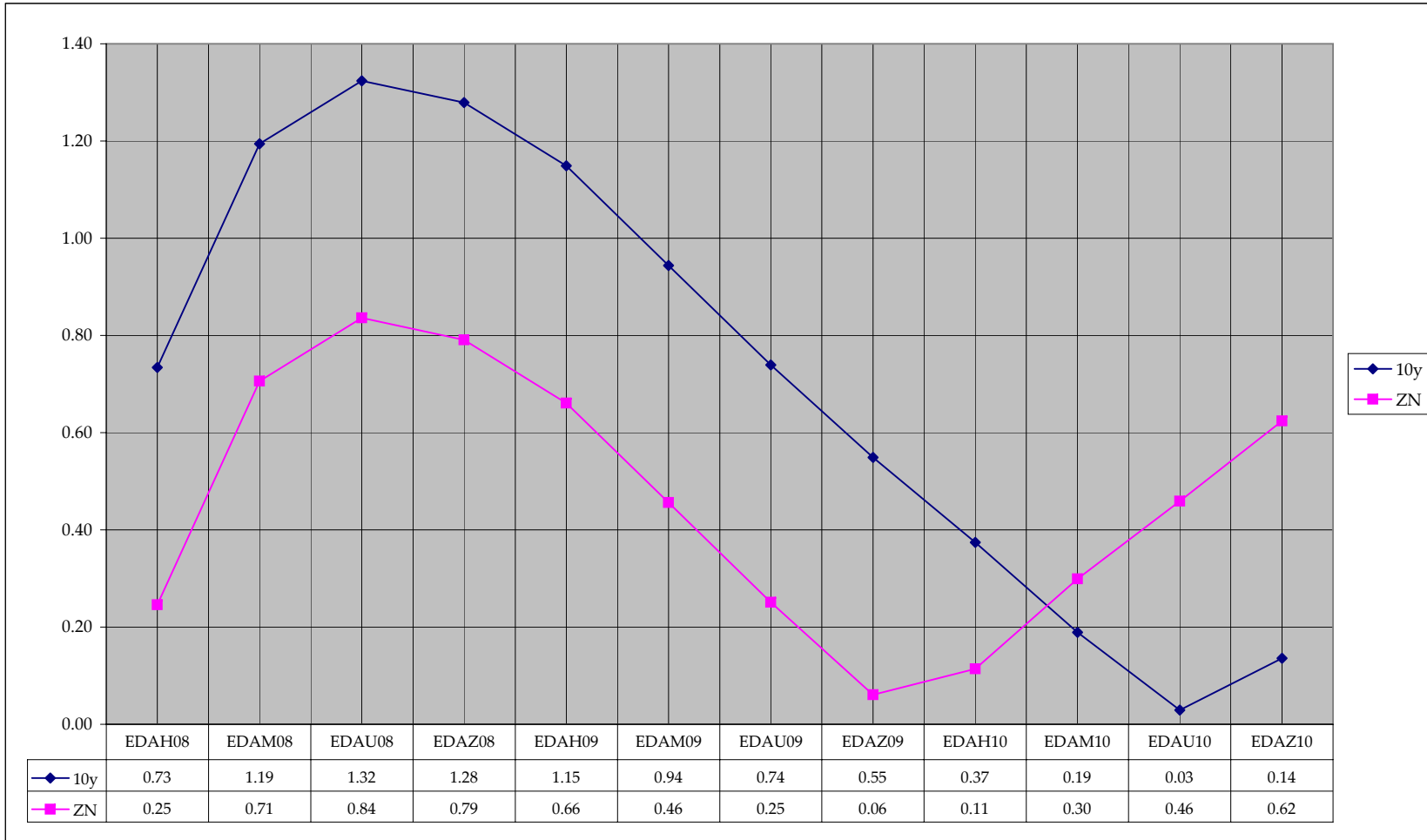
2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	2.511	4.625	9753.875
Q.ED.Red	2.806	5.125	9725.125
Q.ED.Green	3.559	4.125	9652.000
Q.ED.Blue	2.000		9591.750
Q.ED.Gold		0.000	9541.375

