

## 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	103.4531	103.145	3.999	1.90
ZF	107.1406	107.045	4.152	3.98
ZN	109.6719	109.215	4.315	5.90
2y	99.975	99.3120	4.012	1.85
5y	99.719	99.2300	4.188	4.42
10y	101.891	101.2850	4.511	7.82

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ07	95.280	4.720	89	0.243	DEC	White Pack
EDAH08	95.595	4.405	180	0.492	MAR	
EDAM08	95.705	4.295	271	0.742	JUN	
EDAU08	95.715	4.285	362	0.991	SEP	Red Pack
EDAZ08	95.660	4.340	453	1.240	DEC	
EDAH09	95.575	4.425	544	1.490	MAR	
EDAM09	95.480	4.520	635	1.739	JUN	Green Pack
EDAU09	95.395	4.605	726	1.988	SEP	
EDAZ09	95.320	4.680	817	2.238	DEC	
EDAH10	95.250	4.750	908	2.487	MAR	Blue Pack
EDAM10	95.190	4.810	999	2.736	JUN	
EDAU10	95.145	4.855	1090	2.986	SEP	
EDAZ10	95.075	4.925	1181	3.235	DEC	Gold Pack
EDAH11	95.040	4.960	1272	3.484	MAR	
EDAM11	94.980	5.020	1363	3.734	JUN	
EDAU11	94.960	5.040	1461	4.002	SEP	
EDAZ11	94.815	5.185	1552	4.251	DEC	
EDAH12	94.745	5.255	1643	4.501	MAR	
EDAM12	94.805	5.195	1734	4.750	JUN	
EDAU12	94.760	5.240	1825	4.999	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	4.538	-1.250	9557.375	Pack Prices
Q.ED.Red	4.586	-4.375	9552.750	
Q.ED.Green	4.898	-2.500	9522.625	
Q.ED.Blue		0.000	9500.375	
Q.ED.Gold		0.000	9477.500	
Q.ED.Purple		0.000	9477.500	

Red pack is a 2yr proxy  
 Gold pack is a 10 yr proxy  
 Red pack/Gold pack is a 2/10 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)

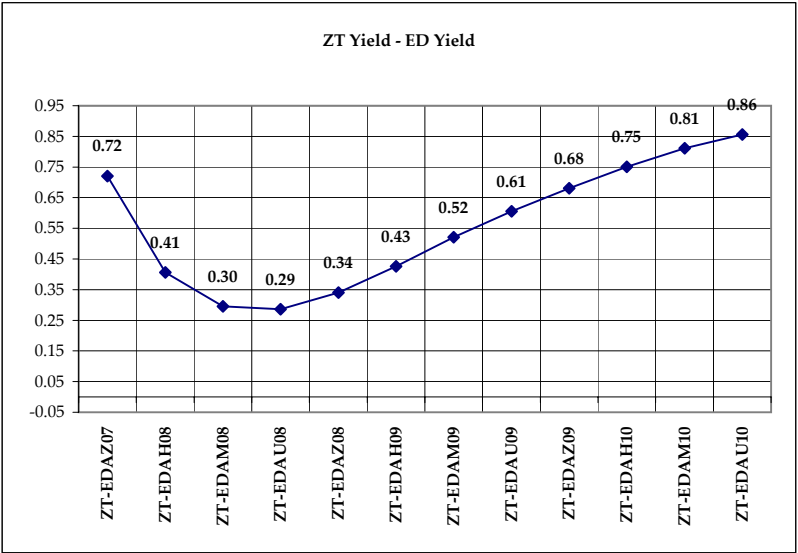
### Eurodollar Color Codes for Individual Year Strips:

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

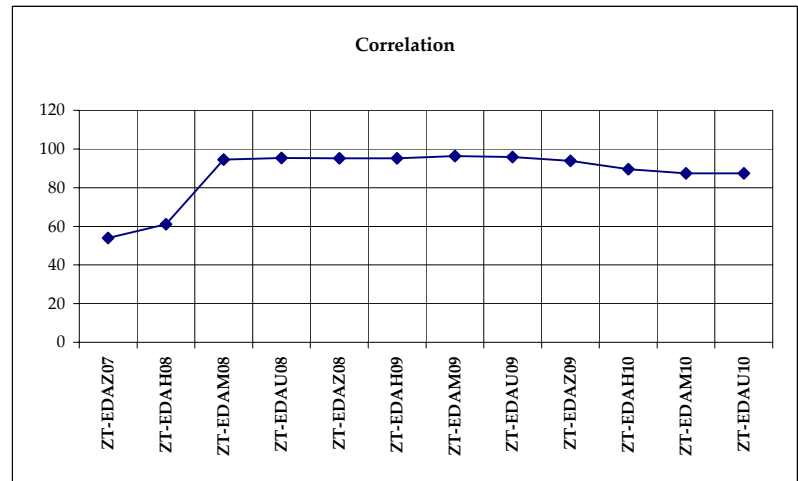
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	8.173	0.72	ZT-EDAZ07	53.951
EDAH08	7.858	0.41	ZT-EDAH08	61.116
EDAM08	7.748	0.30	ZT-EDAM08	94.522
EDAU08	7.738	0.29	ZT-EDAU08	95.317
EDAZ08	7.793	0.34	ZT-EDAZ08	95.170
EDAH09	7.878	0.43	ZT-EDAH09	95.254
EDAM09	7.973	0.52	ZT-EDAM09	96.269
EDAU09	8.058	0.61	ZT-EDAU09	95.761
EDAZ09	8.133	0.68	ZT-EDAZ09	93.871
EDAH10	8.203	0.75	ZT-EDAH10	89.616
EDAM10	8.263	0.81	ZT-EDAM10	87.314
EDAU10	8.308	0.86	ZT-EDAU10	87.313

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		
EDAZ07	0.243	1.90	1.66	ZT-EDAZ07
EDAH08	0.492	1.90	1.41	ZT-EDAH08
EDAM08	0.742	1.90	1.16	ZT-EDAM08
EDAU08	0.991	1.90	0.91	ZT-EDAU08
EDAZ08	1.240	1.90	0.66	ZT-EDAZ08
EDAH09	1.490	1.90	0.41	ZT-EDAH09
EDAM09	1.739	1.90	0.16	ZT-EDAM09
EDAU09	1.988	1.90	(0.09)	ZT-EDAU09
EDAZ09	2.238	1.90	(0.34)	ZT-EDAZ09
EDAH10	2.487	1.90	(0.59)	ZT-EDAH10
EDAM10	2.736	1.90	(0.84)	ZT-EDAM10
EDAU10	2.986	1.90	(1.09)	ZT-EDAU10

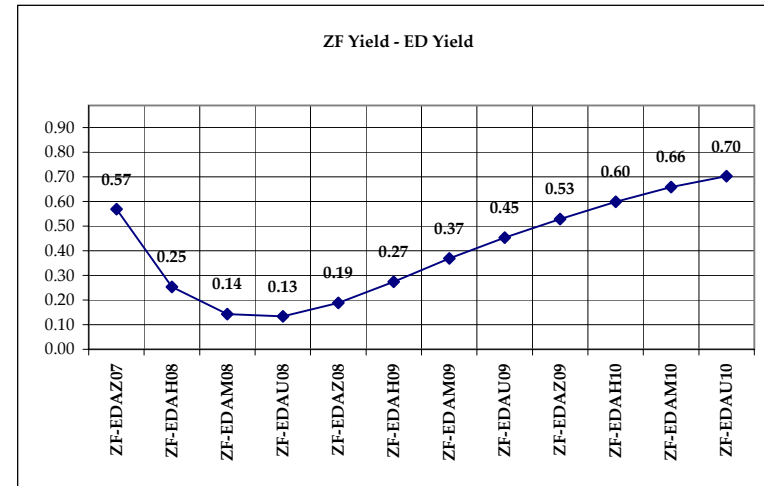
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

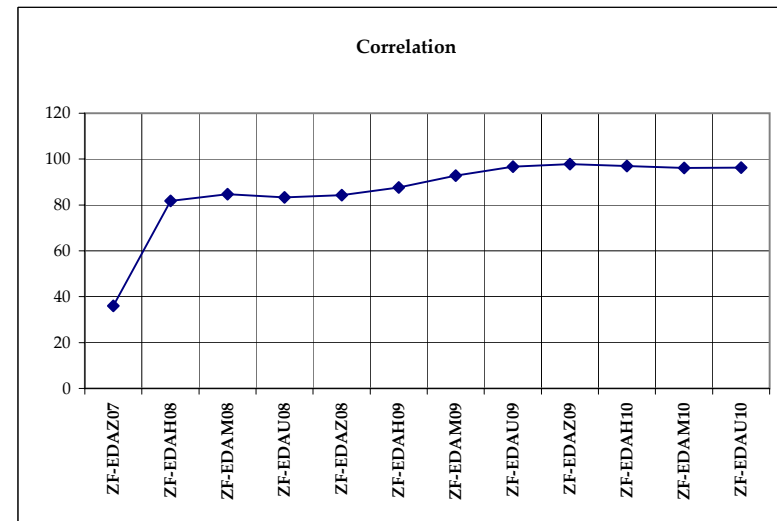
	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	11.86	0.57	ZF-EDAZ07	35.984
EDAH08	11.55	0.25	ZF-EDAH08	81.827
EDAM08	11.44	0.14	ZF-EDAM08	84.754
EDAU08	11.43	0.13	ZF-EDAU08	83.343
EDAZ08	11.48	0.19	ZF-EDAZ08	84.333
EDAH09	11.57	0.27	ZF-EDAH09	87.659
EDAM09	11.66	0.37	ZF-EDAM09	92.792
EDAU09	11.75	0.45	ZF-EDAU09	96.764
EDAZ09	11.82	0.53	ZF-EDAZ09	97.760
EDAH10	11.89	0.60	ZF-EDAH10	97.042
EDAM10	11.95	0.66	ZF-EDAM10	96.116
EDAU10	12.00	0.70	ZF-EDAU10	96.303

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	
EDAZ07	0.243	3.98	3.74	ZF-EDAZ07
EDAH08	0.492	3.98	3.49	ZF-EDAH08
EDAM08	0.742	3.98	3.24	ZF-EDAM08
EDAU08	0.991	3.98	2.99	ZF-EDAU08
EDAZ08	1.240	3.98	2.74	ZF-EDAZ08
EDAH09	1.490	3.98	2.49	ZF-EDAH09
EDAM09	1.739	3.98	2.24	ZF-EDAM09
EDAU09	1.988	3.98	1.99	ZF-EDAU09
EDAZ09	2.238	3.98	1.74	ZF-EDAZ09
EDAH10	2.487	3.98	1.49	ZF-EDAH10
EDAM10	2.736	3.98	1.24	ZF-EDAM10
EDAU10	2.986	3.98	1.00	ZF-EDAU10

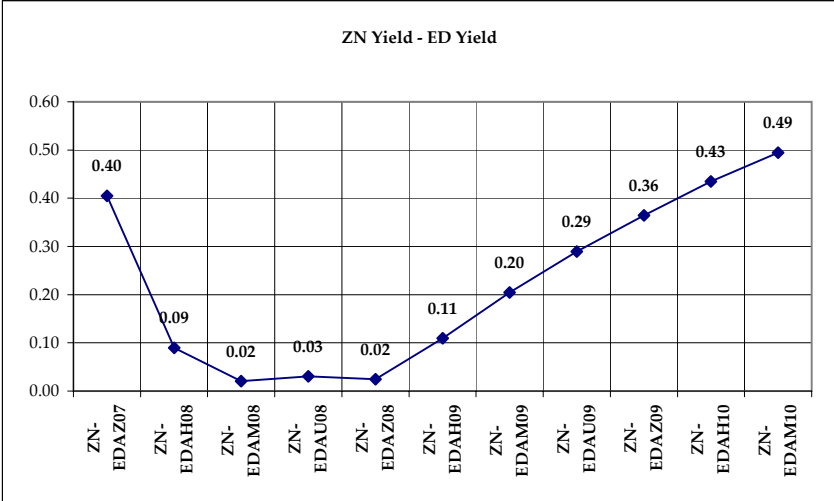
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

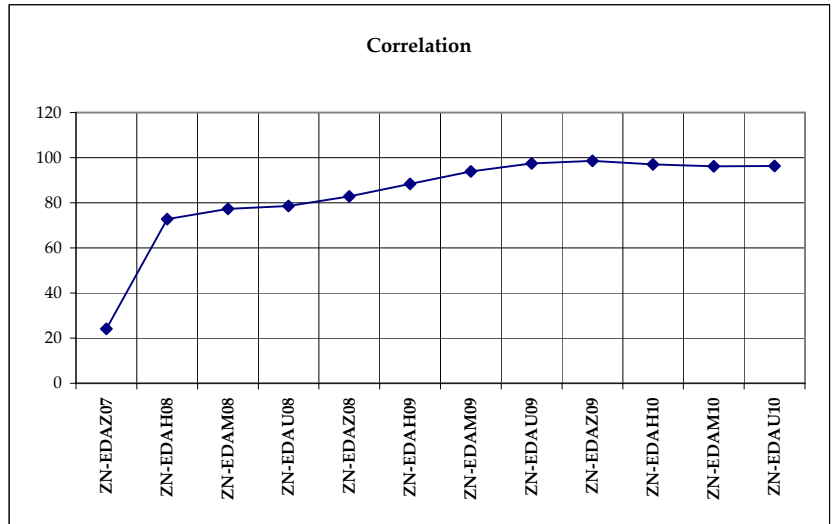
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	14.39	0.40	ZN-EDAZ07	24.11
EDAH08	14.08	0.09	ZN-EDAH08	72.79
EDAM08	13.97	0.02	ZN-EDAM08	77.37
EDAU08	13.96	0.03	ZN-EDAU08	78.59
EDAZ08	14.01	0.02	ZN-EDAZ08	82.80
EDAH09	14.10	0.11	ZN-EDAH09	88.34
EDAM09	14.19	0.20	ZN-EDAM09	93.97
EDAU09	14.28	0.29	ZN-EDAU09	97.51
EDAZ09	14.35	0.36	ZN-EDAZ09	98.52
EDAH10	14.42	0.43	ZN-EDAH10	97.04
EDAM10	14.48	0.49	ZN-EDAM10	96.12
EDAU10	14.53	0.54	ZN-EDAU10	96.30

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	
EDAZ07	0.243	5.90	5.66	ZN-EDAZ07
EDAH08	0.492	5.90	5.41	ZN-EDAH08
EDAM08	0.742	5.90	5.16	ZN-EDAM08
EDAU08	0.991	5.90	4.91	ZN-EDAU08
EDAZ08	1.240	5.90	4.66	ZN-EDAZ08
EDAH09	1.490	5.90	4.41	ZN-EDAH09
EDAM09	1.739	5.90	4.16	ZN-EDAM09
EDAU09	1.988	5.90	3.91	ZN-EDAU09
EDAZ09	2.238	5.90	3.66	ZN-EDAZ09
EDAH10	2.487	5.90	3.41	ZN-EDAH10
EDAM10	2.736	5.90	3.16	ZN-EDAM10
EDAU10	2.986	5.90	2.91	ZN-EDAU10

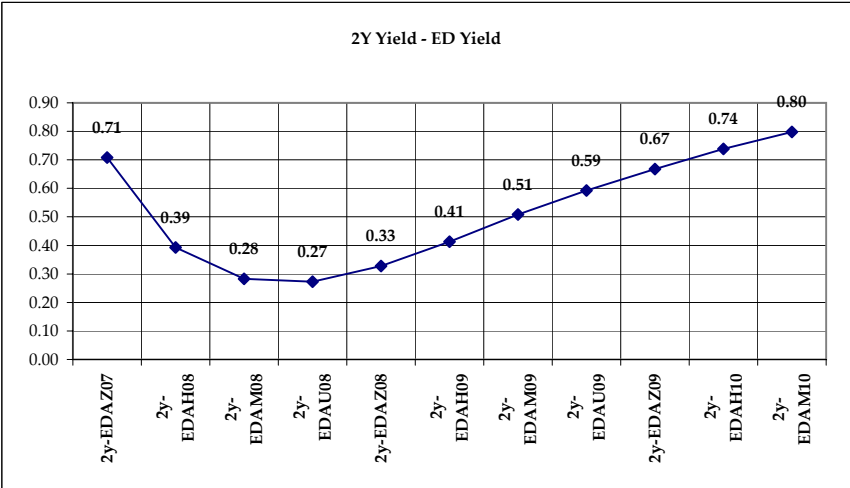
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.69	0.71	2y-EDAZ07	-41.605
EDAH08	4.38	0.39	2y-EDAH08	-84.558
EDAM08	4.27	0.28	2y-EDAM08	-89.764
EDAU08	4.26	0.27	2y-EDAU08	-90.120
EDAZ08	4.32	0.33	2y-EDAZ08	-89.764
EDAH09	4.40	0.41	2y-EDAH09	-94.016
EDAM09	4.49	0.51	2y-EDAM09	-96.704
EDAU09	4.58	0.59	2y-EDAU09	-97.931
EDAZ09	4.65	0.67	2y-EDAZ09	-96.968
EDAH10	4.72	0.74	2y-EDAH10	-94.280
EDAM10	4.79	0.80	2y-EDAM10	-92.664
EDAU10	4.83	0.84	2y-EDAU10	-92.447

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.

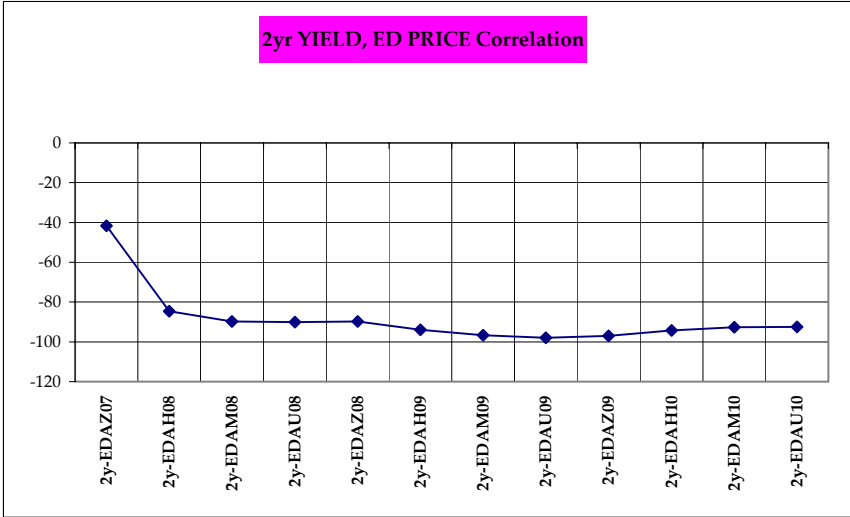


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAZ07	0.243	1.85	2y-EDAZ07
EDAH08	0.492	1.85	2y-EDAH08
EDAM08	0.742	1.85	2y-EDAM08
EDAU08	0.991	1.85	2y-EDAU08
EDAZ08	1.240	1.85	2y-EDAZ08
EDAH09	1.490	1.85	2y-EDAH09
EDAM09	1.739	1.85	2y-EDAM09
EDAU09	1.988	1.85	2y-EDAU09
EDAZ09	2.238	1.85	2y-EDAZ09
EDAH10	2.487	1.85	2y-EDAH10
EDAM10	2.736	1.85	2y-EDAM10
EDAU10	2.986	1.85	2y-EDAU10

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

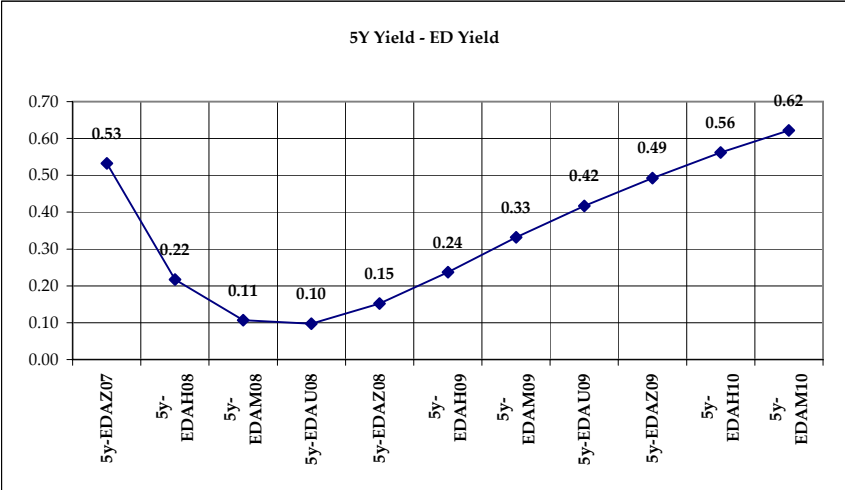
2yr YIELD, ED PRICE Correlation



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

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.44	0.53	5y-EDAZ07	-28.577
EDAH08	4.12	0.22	5y-EDAH08	-77.518
EDAM08	4.01	0.11	5y-EDAM08	-81.046
EDAU08	4.00	0.10	5y-EDAU08	-80.463
EDAZ08	4.06	0.15	5y-EDAZ08	-81.046
EDAH09	4.14	0.24	5y-EDAH09	-88.162
EDAM09	4.24	0.33	5y-EDAM09	-93.762
EDAU09	4.32	0.42	5y-EDAU09	-97.779
EDAZ09	4.40	0.49	5y-EDAZ09	-98.728
EDAH10	4.47	0.56	5y-EDAH10	-98.506
EDAM10	4.53	0.62	5y-EDAM10	-97.943
EDAU10	4.57	0.67	5y-EDAU10	-97.780

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.

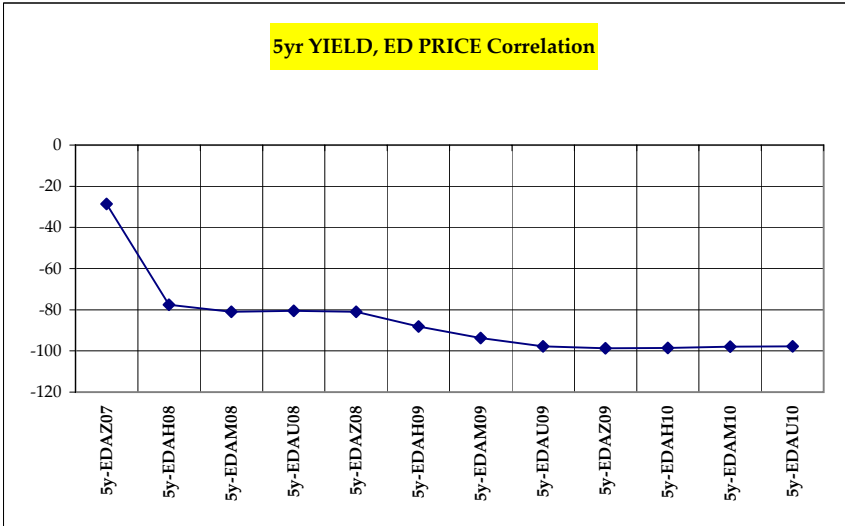


**GE Duration as**

	Fraction of year	5Y Duration	Spread Duration	
EDAZ07	0.243	4.42	4.18	5y-EDAZ07
EDAH08	0.492	4.42	3.93	5y-EDAH08
EDAM08	0.742	4.42	3.68	5y-EDAM08
EDAU08	0.991	4.42	3.43	5y-EDAU08
EDAZ08	1.240	4.42	3.18	5y-EDAZ08
EDAH09	1.490	4.42	2.93	5y-EDAH09
EDAM09	1.739	4.42	2.68	5y-EDAM09
EDAU09	1.988	4.42	2.43	5y-EDAU09
EDAZ09	2.238	4.42	2.18	5y-EDAZ09
EDAH10	2.487	4.42	1.93	5y-EDAH10
EDAM10	2.736	4.42	1.68	5y-EDAM10
EDAU10	2.986	4.42	1.44	5y-EDAU10

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

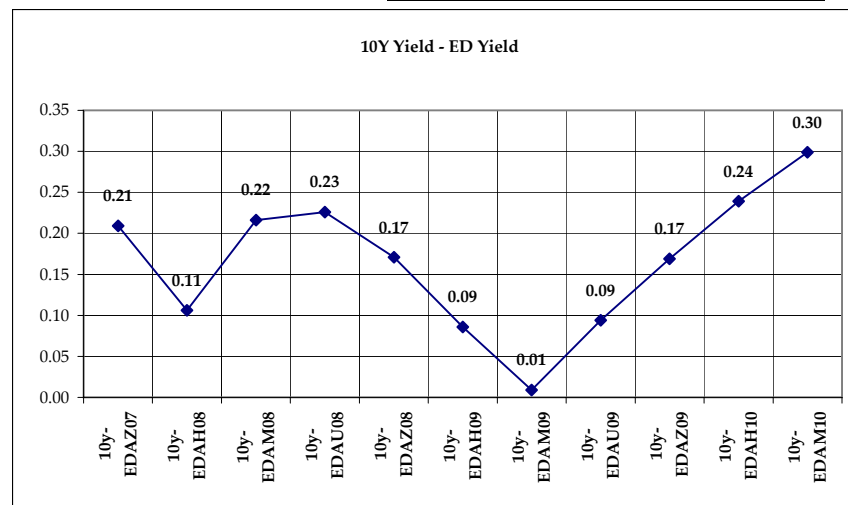
**5yr YIELD, ED PRICE Correlation**



TERM TED: 10y vs Eurodollar Contracts

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.44	0.21	10y-EDAZ07	-4.872
EDAH08	4.12	0.11	10y-EDAH08	-57.097
EDAM08	4.01	0.22	10y-EDAM08	-63.006
EDAU08	4.00	0.23	10y-EDAU08	-66.781
EDAZ08	4.06	0.17	10y-EDAZ08	-63.006
EDAH09	4.14	0.09	10y-EDAH09	-83.631
EDAM09	4.24	0.01	10y-EDAM09	-90.260
EDAU09	4.32	0.09	10y-EDAU09	-93.950
EDAZ09	4.40	0.17	10y-EDAZ09	-95.037
EDAH10	4.47	0.24	10y-EDAH10	-96.510
EDAM10	4.53	0.30	10y-EDAM10	-96.365
EDAU10	4.57	0.34	10y-EDAU10	-95.516

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.

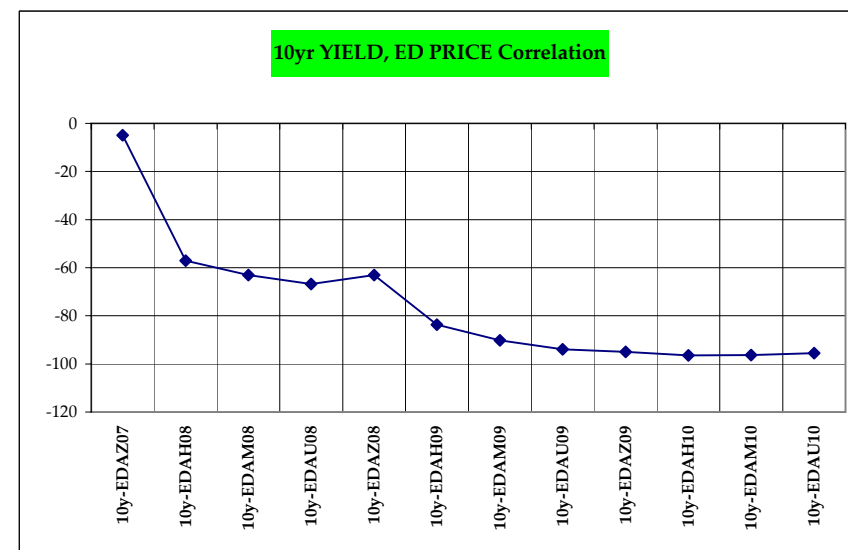


GE Duration as

	Fraction of year	10Y Duration	Spread Duration	
EDAZ07	0.243	7.82	7.58	10y-EDAZ07
EDAH08	0.492	7.82	7.33	10y-EDAH08
EDAM08	0.742	7.82	7.08	10y-EDAM08
EDAU08	0.991	7.82	6.83	10y-EDAU08
EDAZ08	1.240	7.82	6.58	10y-EDAZ08
EDAH09	1.490	7.82	6.33	10y-EDAH09
EDAM09	1.739	7.82	6.08	10y-EDAM09
EDAU09	1.988	7.82	5.83	10y-EDAU09
EDAZ09	2.238	7.82	5.58	10y-EDAZ09
EDAH10	2.487	7.82	5.34	10y-EDAH10
EDAM10	2.736	7.82	5.09	10y-EDAM10
EDAU10	2.986	7.82	4.84	10y-EDAU10

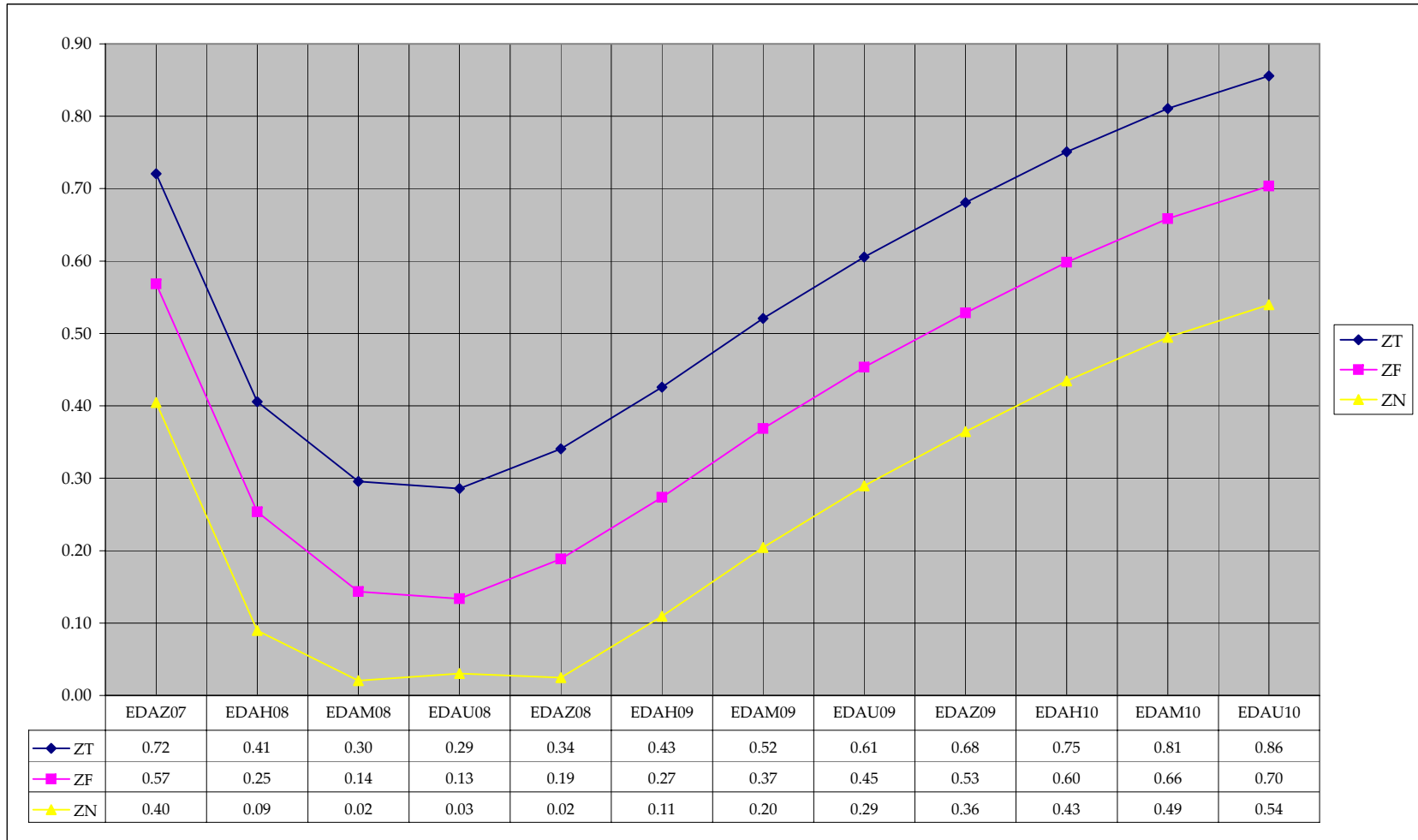
The farther away from 0 the spread duration is the riskier the trade.

10yr YIELD, ED PRICE Correlation



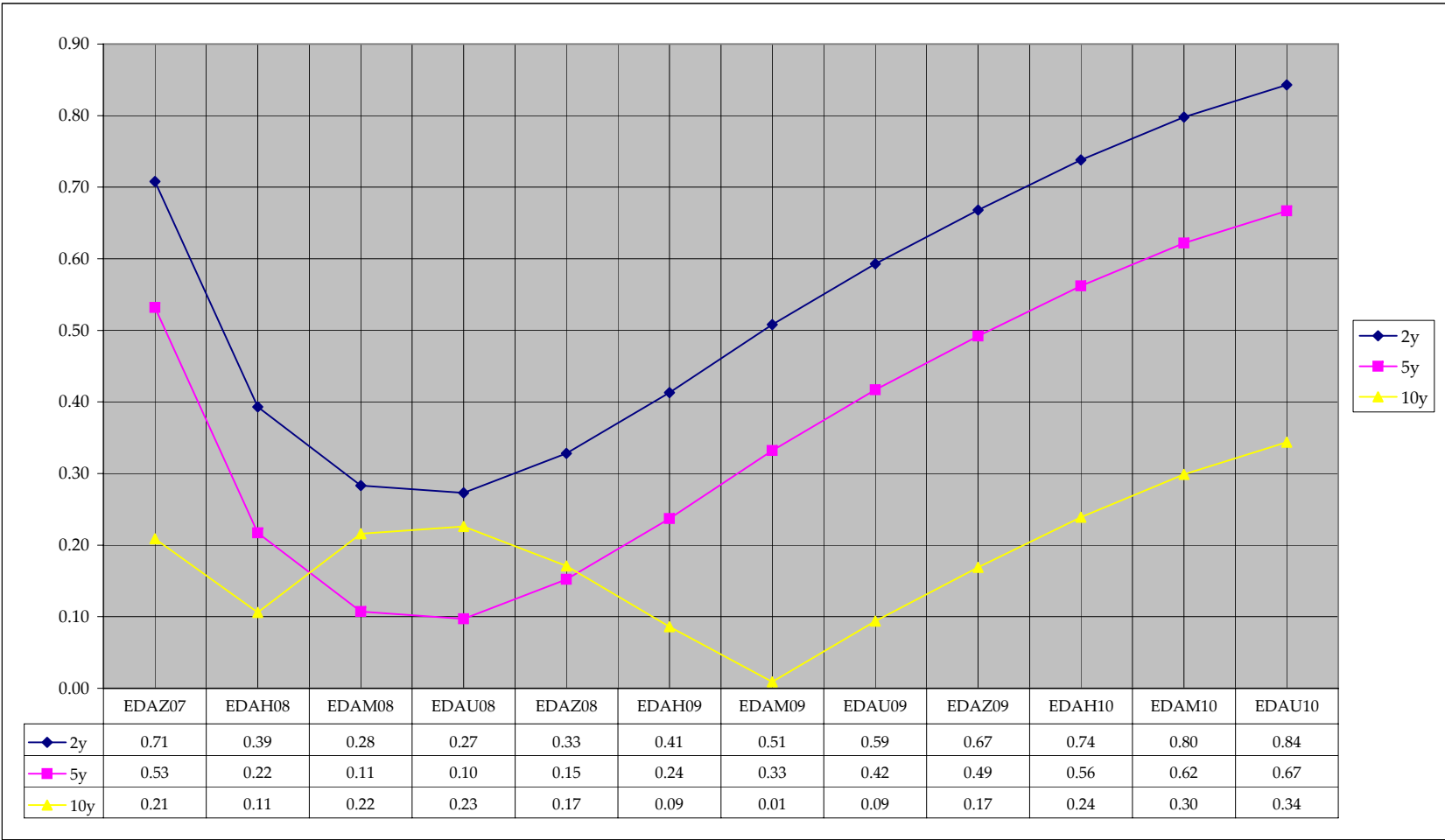
**Dirty TED Curve**

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.

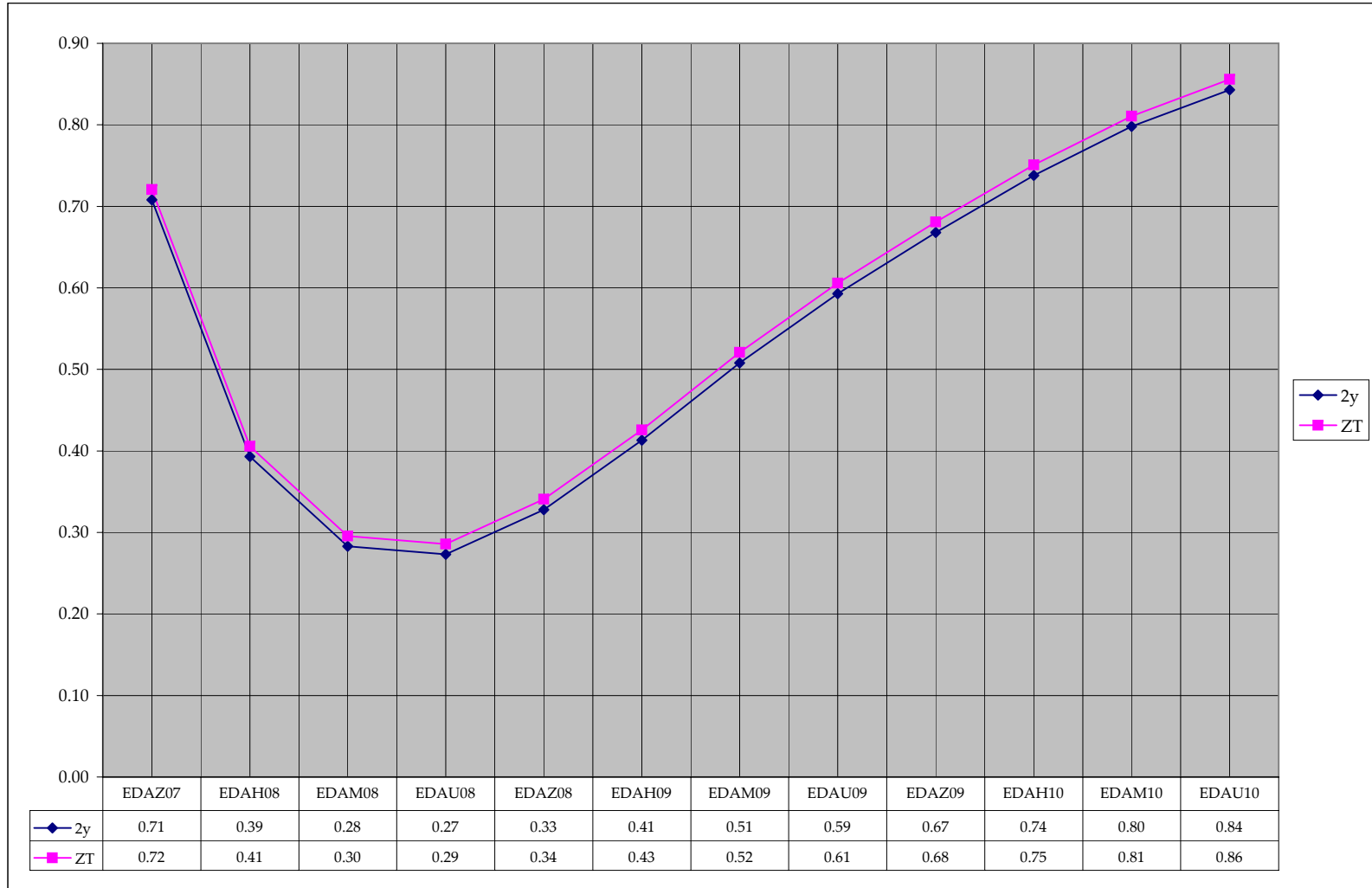


TED Curve

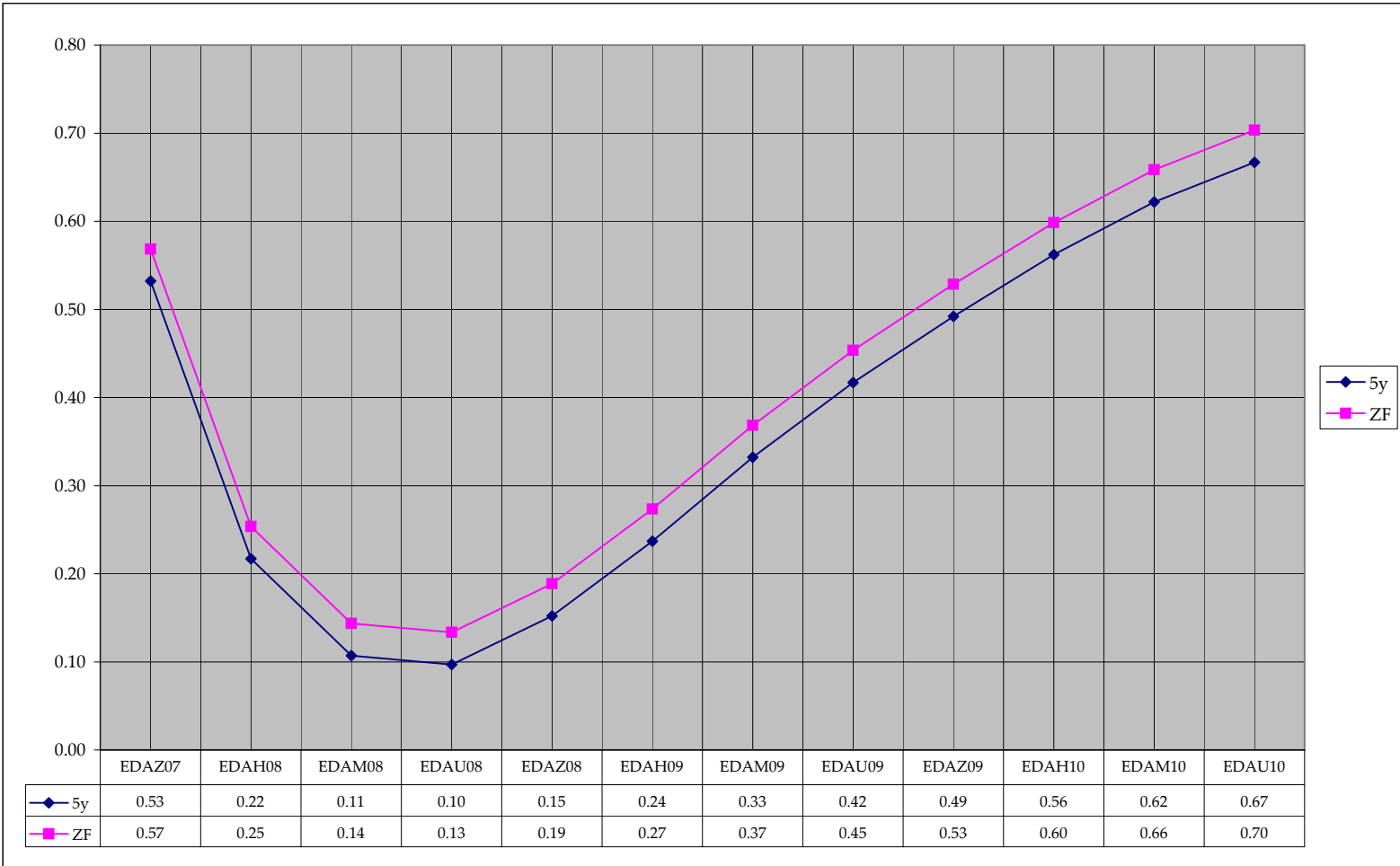
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



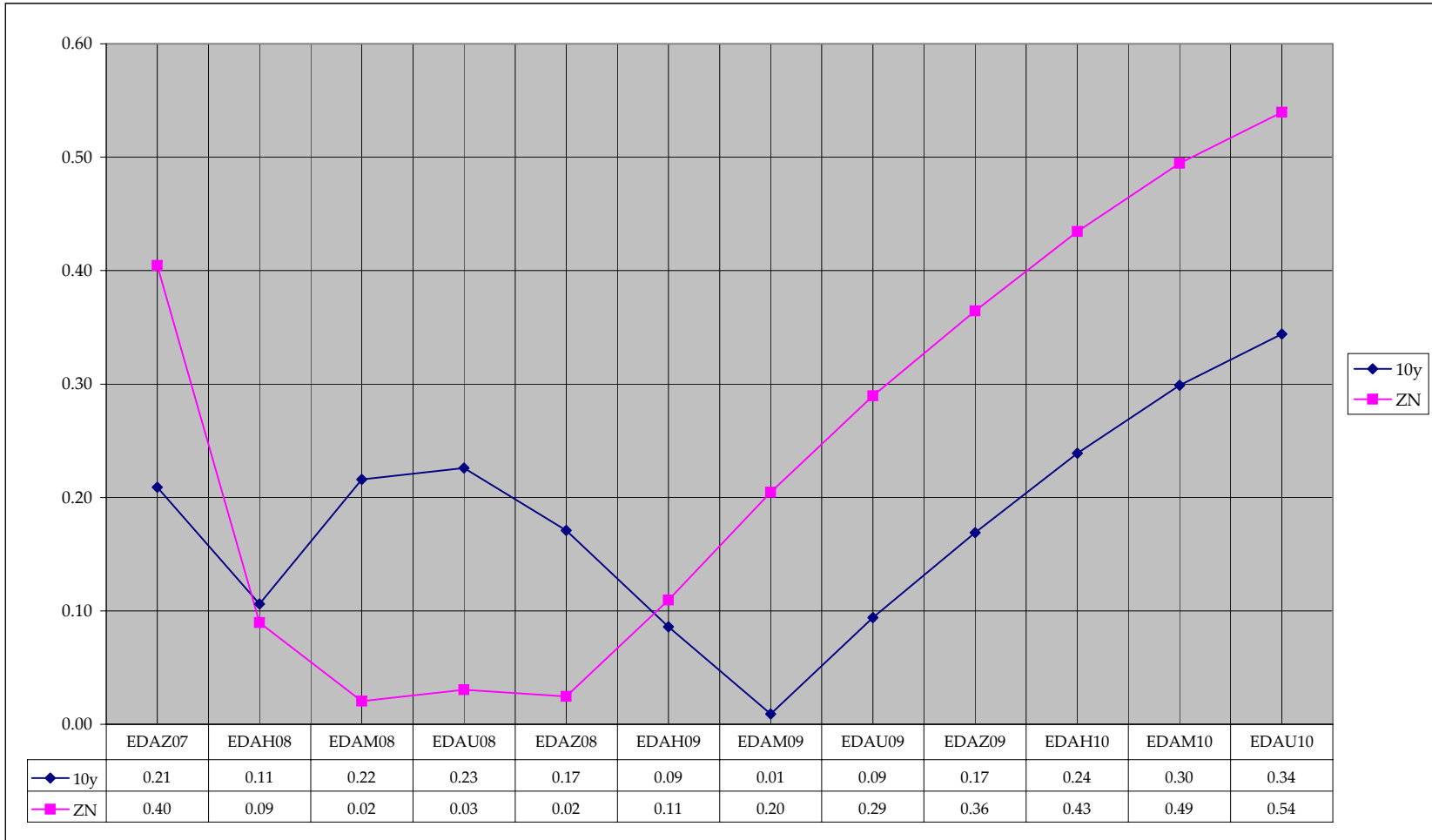
2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	4.538	-1.250	9557.375
Q.ED.Red	4.586	-4.375	9552.750
Q.ED.Green	4.898	-2.500	9522.625
Q.ED.Blue		0.000	9500.375
Q.ED.Gold		0.000	9477.500
Q.ED.Purple		0.000	9477.500

