

## 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	103.4750	103.152	3.965	1.88	
ZF	106.8281	106.265	4.216	3.96	
ZN	109.0156	109.005	4.412	5.87	
2y	100.038	100.0120	3.972	1.83	
5y	99.397	99.1270	4.261	4.40	
10y	101.000	101.0000	4.620	7.79	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAZ07	95.185	4.815	81	0.221	DEC	White Pack	
EDAH08	95.520	4.480	172	0.471	MAR		
EDAM08	95.635	4.365	263	0.720	JUN		
EDAU08	95.680	4.320	354	0.969	SEP	Red Pack	
EDAZ08	95.660	4.340	445	1.218	DEC		
EDAH09	95.580	4.420	536	1.468	MAR		
EDAM09	95.470	4.530	627	1.717	JUN	Green Pack	
EDAU09	95.365	4.635	718	1.966	SEP		
EDAZ09	95.265	4.735	809	2.216	DEC		
EDAH10	95.185	4.815	900	2.465	MAR	Blue Pack	
EDAM10	95.070	4.930	991	2.714	JUN		
EDAU10	94.985	5.015	1082	2.964	SEP		
EDAZ10	94.890	5.110	1173	3.213	DEC	Gold Pack	
EDAH11	94.875	5.125	1264	3.462	MAR		
EDAM11	94.750	5.250	1355	3.712	JUN		
EDAU11	94.700	5.300	1453	3.980	SEP		
EDAZ11	94.665	5.335	1544	4.229	DEC		
EDAH12	94.615	5.385	1635	4.479	MAR		
EDAM12	94.550	5.450	1726	4.728	JUN		
EDAU12	94.505	5.495	1817	4.977	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	4.609	0.375	9550.500	Pack Prices
Q.ED.Red	4.595	0.250	9551.875	
Q.ED.Green	5.002	-0.750	9512.625	
Q.ED.Blue	-3.750	-3.750	9480.375	
Q.ED.Gold	0.000	0.000	9460.125	

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)

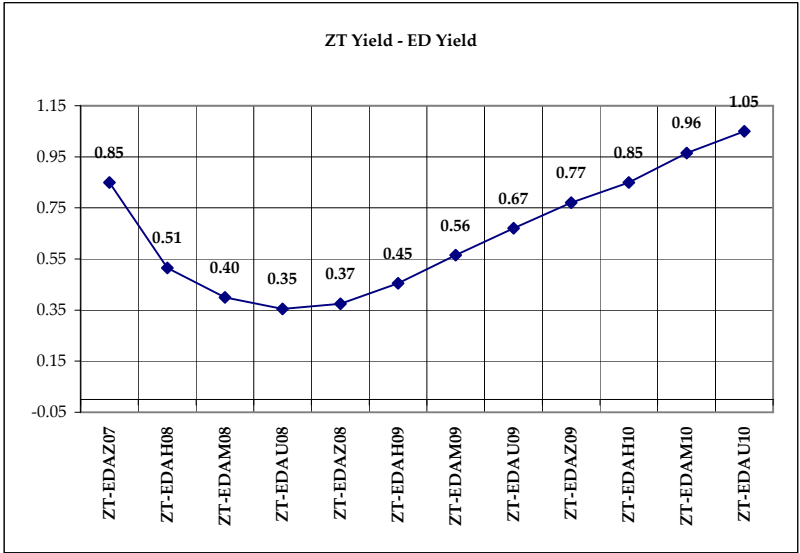
### Eurodollar Color Codes for Individual Year Strips:

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

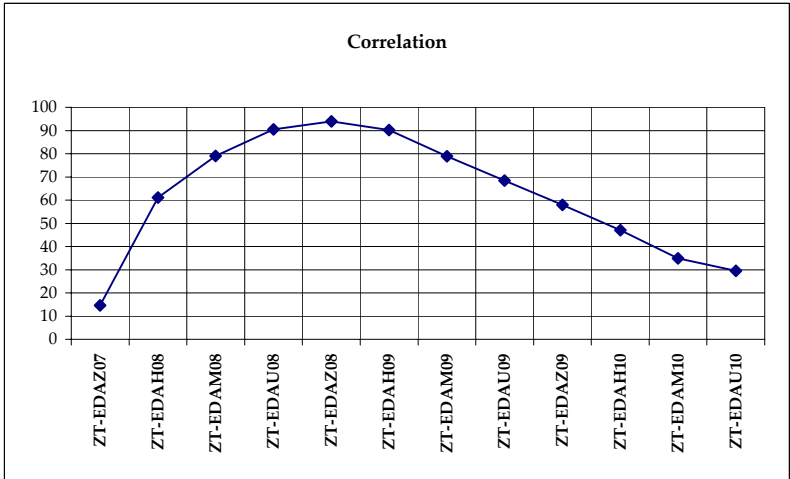
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	8.290	0.85	ZT-EDAZ07	14.587
EDAH08	7.955	0.51	ZT-EDAH08	61.116
EDAM08	7.840	0.40	ZT-EDAM08	79.094
EDAU08	7.795	0.35	ZT-EDAU08	90.498
EDAZ08	7.815	0.37	ZT-EDAZ08	93.922
EDAH09	7.895	0.45	ZT-EDAH09	90.149
EDAM09	8.005	0.56	ZT-EDAM09	78.851
EDAU09	8.110	0.67	ZT-EDAU09	68.414
EDAZ09	8.210	0.77	ZT-EDAZ09	57.960
EDAH10	8.290	0.85	ZT-EDAH10	46.987
EDAM10	8.405	0.96	ZT-EDAM10	34.950
EDAU10	8.490	1.05	ZT-EDAU10	29.475

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	0.221	1.88	1.66	ZT-EDAZ07
EDAH08	0.471	1.88	1.41	ZT-EDAH08
EDAM08	0.720	1.88	1.16	ZT-EDAM08
EDAU08	0.969	1.88	0.91	ZT-EDAU08
EDAZ08	1.218	1.88	0.66	ZT-EDAZ08
EDAH09	1.468	1.88	0.41	ZT-EDAH09
EDAM09	1.717	1.88	0.16	ZT-EDAM09
EDAU09	1.966	1.88	(0.09)	ZT-EDAU09
EDAZ09	2.216	1.88	(0.34)	ZT-EDAZ09
EDAH10	2.465	1.88	(0.59)	ZT-EDAH10
EDAM10	2.714	1.88	(0.84)	ZT-EDAM10
EDAU10	2.964	1.88	(1.09)	ZT-EDAU10

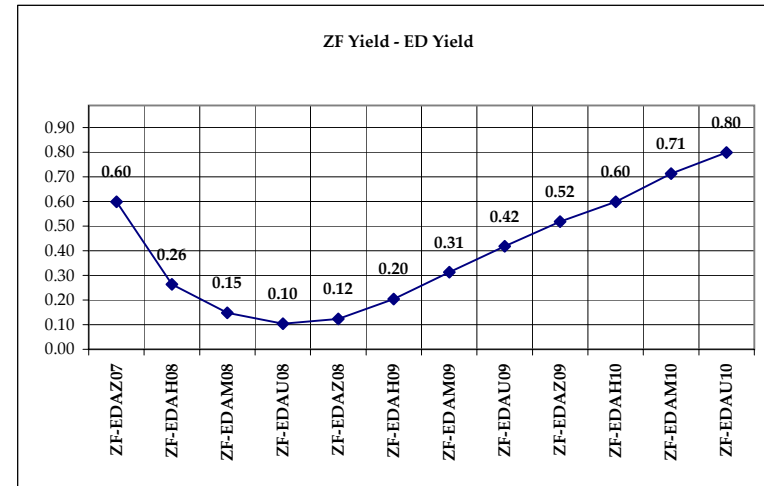
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	11.64	0.60	ZF-EDAZ07	2.762
EDAH08	11.31	0.26	ZF-EDAH08	34.317
EDAM08	11.19	0.15	ZF-EDAM08	61.668
EDAU08	11.15	0.10	ZF-EDAU08	68.582
EDAZ08	11.17	0.12	ZF-EDAZ08	74.349
EDAH09	11.25	0.20	ZF-EDAH09	84.111
EDAM09	11.36	0.31	ZF-EDAM09	92.767
EDAU09	11.46	0.42	ZF-EDAU09	96.289
EDAZ09	11.56	0.52	ZF-EDAZ09	97.279
EDAH10	11.64	0.60	ZF-EDAH10	96.885
EDAM10	11.76	0.71	ZF-EDAM10	94.965
EDAU10	11.84	0.80	ZF-EDAU10	93.549

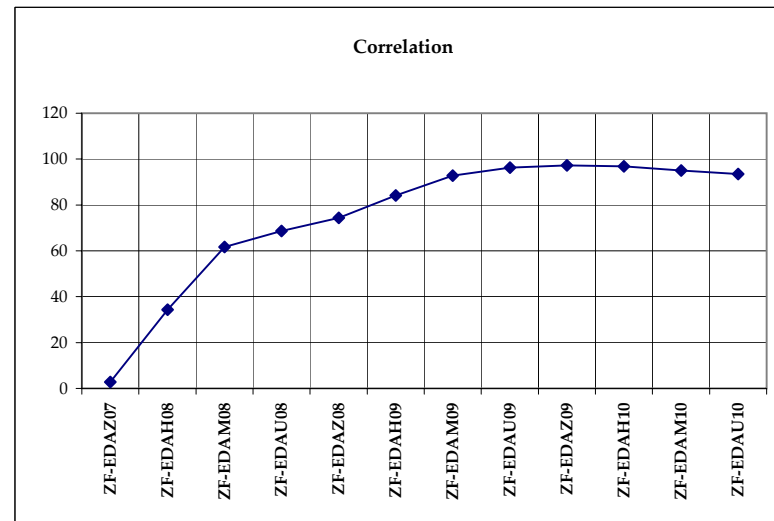
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	Fraction of year	ZF Duration	Spread Duration	
EDAZ07	0.221	3.96	3.74	ZF-EDAZ07
EDAH08	0.471	3.96	3.49	ZF-EDAH08
EDAM08	0.720	3.96	3.24	ZF-EDAM08
EDAU08	0.969	3.96	2.99	ZF-EDAU08
EDAZ08	1.218	3.96	2.74	ZF-EDAZ08
EDAH09	1.468	3.96	2.49	ZF-EDAH09
EDAM09	1.717	3.96	2.24	ZF-EDAM09
EDAU09	1.966	3.96	1.99	ZF-EDAU09
EDAZ09	2.216	3.96	1.74	ZF-EDAZ09
EDAH10	2.465	3.96	1.49	ZF-EDAH10
EDAM10	2.714	3.96	1.24	ZF-EDAM10
EDAU10	2.964	3.96	0.99	ZF-EDAU10

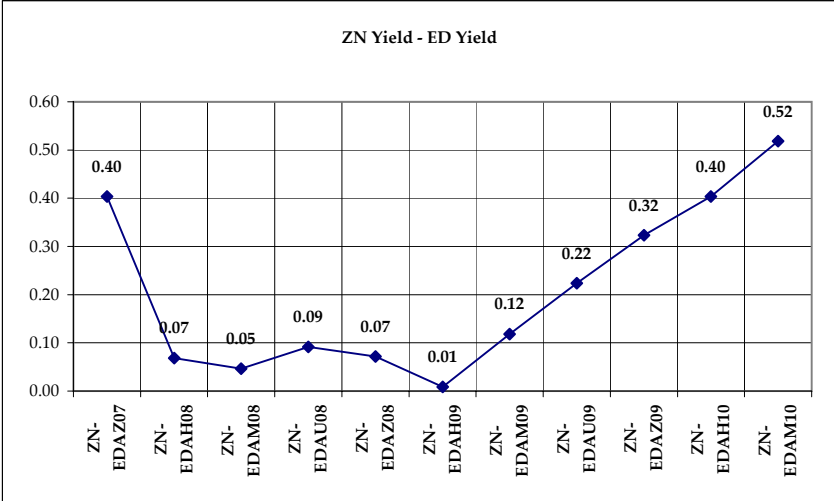
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

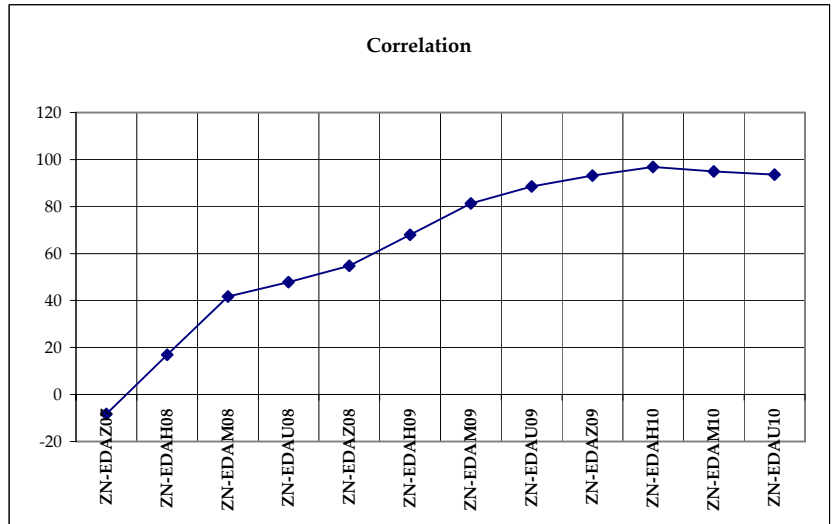
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	13.83	0.40	ZN-EDAZ07	-8.35
EDAH08	13.50	0.07	ZN-EDAH08	16.85
EDAM08	13.38	0.05	ZN-EDAM08	41.69
EDAU08	13.34	0.09	ZN-EDAU08	47.85
EDAZ08	13.36	0.07	ZN-EDAZ08	54.71
EDAH09	13.44	0.01	ZN-EDAH09	67.92
EDAM09	13.55	0.12	ZN-EDAM09	81.37
EDAU09	13.65	0.22	ZN-EDAU09	88.60
EDAZ09	13.75	0.32	ZN-EDAZ09	93.23
EDAH10	13.83	0.40	ZN-EDAH10	96.88
EDAM10	13.95	0.52	ZN-EDAM10	94.96
EDAU10	14.03	0.60	ZN-EDAU10	93.55

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	0.221	5.87	5.65	ZN-EDAZ07
EDAH08	0.471	5.87	5.40	ZN-EDAH08
EDAM08	0.720	5.87	5.15	ZN-EDAM08
EDAU08	0.969	5.87	4.90	ZN-EDAU08
EDAZ08	1.218	5.87	4.65	ZN-EDAZ08
EDAH09	1.468	5.87	4.41	ZN-EDAH09
EDAM09	1.717	5.87	4.16	ZN-EDAM09
EDAU09	1.966	5.87	3.91	ZN-EDAU09
EDAZ09	2.216	5.87	3.66	ZN-EDAZ09
EDAH10	2.465	5.87	3.41	ZN-EDAH10
EDAM10	2.714	5.87	3.16	ZN-EDAM10
EDAU10	2.964	5.87	2.91	ZN-EDAU10

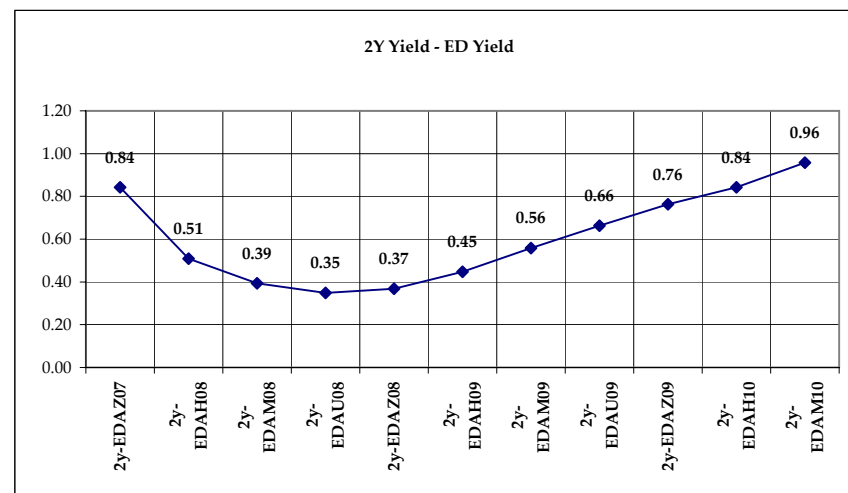
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.85	0.84	2y-EDAZ07	-10.934
EDAH08	4.52	0.51	2y-EDAH08	-47.657
EDAM08	4.40	0.39	2y-EDAM08	-77.036
EDAU08	4.36	0.35	2y-EDAU08	-89.957
EDAZ08	4.38	0.37	2y-EDAZ08	-77.036
EDAH09	4.46	0.45	2y-EDAH09	-86.505
EDAM09	4.57	0.56	2y-EDAM09	-72.415
EDAU09	4.67	0.66	2y-EDAU09	-60.649
EDAZ09	4.77	0.76	2y-EDAZ09	-49.612
EDAH10	4.85	0.84	2y-EDAH10	-38.351
EDAM10	4.97	0.96	2y-EDAM10	-25.451
EDAU10	5.05	1.04	2y-EDAU10	-20.013

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.

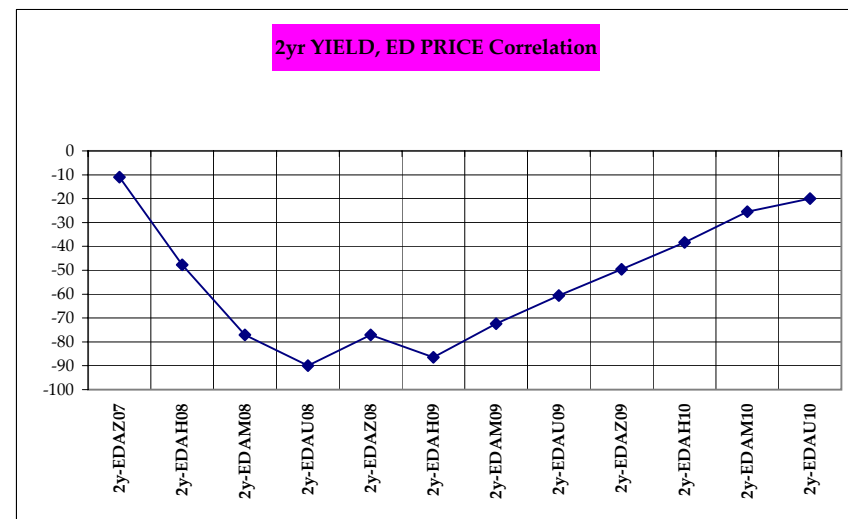


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAZ07	0.221	1.83	2y-EDAZ07
EDAH08	0.471	1.83	2y-EDAH08
EDAM08	0.720	1.83	2y-EDAM08
EDAU08	0.969	1.83	2y-EDAU08
EDAZ08	1.218	1.83	2y-EDAZ08
EDAH09	1.468	1.83	2y-EDAH09
EDAM09	1.717	1.83	2y-EDAM09
EDAU09	1.966	1.83	2y-EDAU09
EDAZ09	2.216	1.83	2y-EDAZ09
EDAH10	2.465	1.83	2y-EDAH10
EDAM10	2.714	1.83	2y-EDAM10
EDAU10	2.964	1.83	2y-EDAU10

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

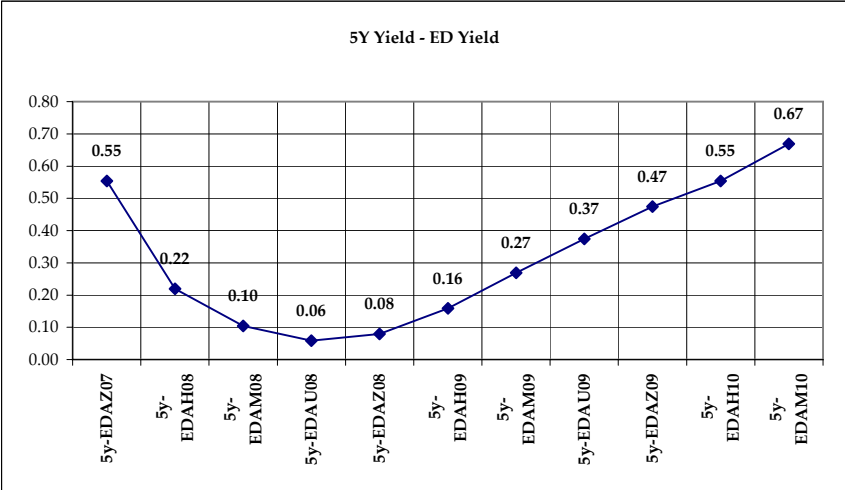
2yr YIELD, ED PRICE Correlation



TERM TED: 5y vs Eurodollar Contracts

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.21	0.55	5y-EDAZ07	5.364
EDAH08	3.88	0.22	5y-EDAH08	-26.413
EDAM08	3.76	0.10	5y-EDAM08	-56.507
EDAU08	3.72	0.06	5y-EDAU08	-65.214
EDAZ08	3.74	0.08	5y-EDAZ08	-56.507
EDAH09	3.82	0.16	5y-EDAH09	-81.767
EDAM09	3.93	0.27	5y-EDAM09	-89.928
EDAU09	4.03	0.37	5y-EDAU09	-93.527
EDAZ09	4.13	0.47	5y-EDAZ09	-94.934
EDAH10	4.21	0.55	5y-EDAH10	-95.118
EDAM10	4.33	0.67	5y-EDAM10	-93.463
EDAU10	4.41	0.75	5y-EDAU10	-92.159

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.

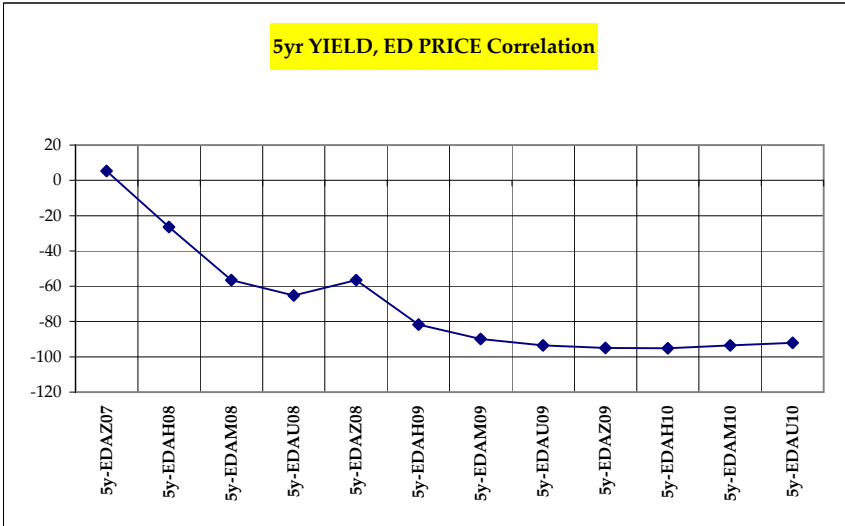


GE Duration as

	Fraction of year	5Y Duration	Spread Duration	
EDAZ07	0.221	4.40	4.18	5y-EDAZ07
EDAH08	0.471	4.40	3.93	5y-EDAH08
EDAM08	0.720	4.40	3.68	5y-EDAM08
EDAU08	0.969	4.40	3.43	5y-EDAU08
EDAZ08	1.218	4.40	3.18	5y-EDAZ08
EDAH09	1.468	4.40	2.93	5y-EDAH09
EDAM09	1.717	4.40	2.68	5y-EDAM09
EDAU09	1.966	4.40	2.43	5y-EDAU09
EDAZ09	2.216	4.40	2.18	5y-EDAZ09
EDAH10	2.465	4.40	1.93	5y-EDAH10
EDAM10	2.714	4.40	1.68	5y-EDAM10
EDAU10	2.964	4.40	1.43	5y-EDAU10

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

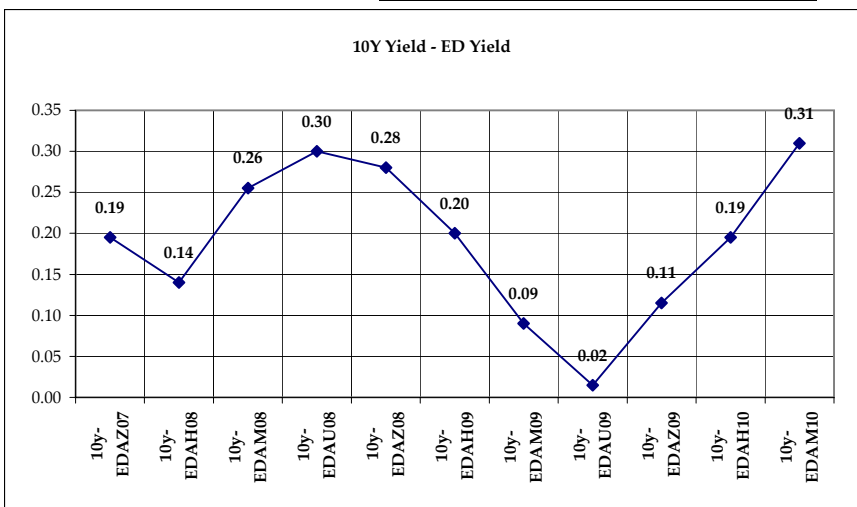
5yr YIELD, ED PRICE Correlation



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

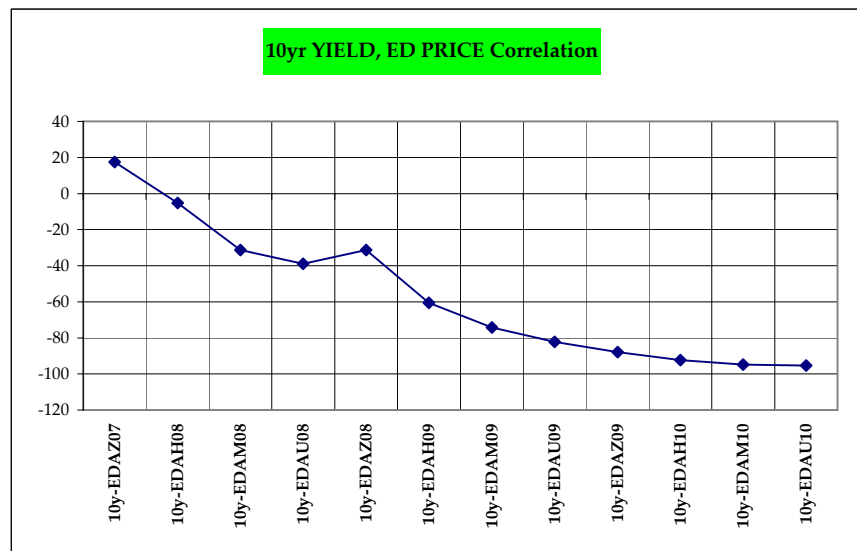
	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ07	4.21	0.19	10y-EDAZ07	17.490
EDAH08	3.88	0.14	10y-EDAH08	-5.171
EDAM08	3.76	0.26	10y-EDAM08	-31.321
EDAU08	3.72	0.30	10y-EDAU08	-38.893
EDAZ08	3.74	0.28	10y-EDAZ08	-31.321
EDAH09	3.82	0.20	10y-EDAH09	-60.493
EDAM09	3.93	0.09	10y-EDAM09	-74.304
EDAU09	4.03	0.02	10y-EDAU09	-82.195
EDAZ09	4.13	0.11	10y-EDAZ09	-87.904
EDAH10	4.21	0.19	10y-EDAH10	-92.315
EDAM10	4.33	0.31	10y-EDAM10	-94.743
EDAU10	4.41	0.40	10y-EDAU10	-95.291

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	0.221	7.79	7.57	10y-EDAZ07
EDAH08	0.471	7.79	7.32	10y-EDAH08
EDAM08	0.720	7.79	7.07	10y-EDAM08
EDAU08	0.969	7.79	6.82	10y-EDAU08
EDAZ08	1.218	7.79	6.57	10y-EDAZ08
EDAH09	1.468	7.79	6.32	10y-EDAH09
EDAM09	1.717	7.79	6.07	10y-EDAM09
EDAU09	1.966	7.79	5.82	10y-EDAU09
EDAZ09	2.216	7.79	5.57	10y-EDAZ09
EDAH10	2.465	7.79	5.32	10y-EDAH10
EDAM10	2.714	7.79	5.07	10y-EDAM10
EDAU10	2.964	7.79	4.82	10y-EDAU10

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

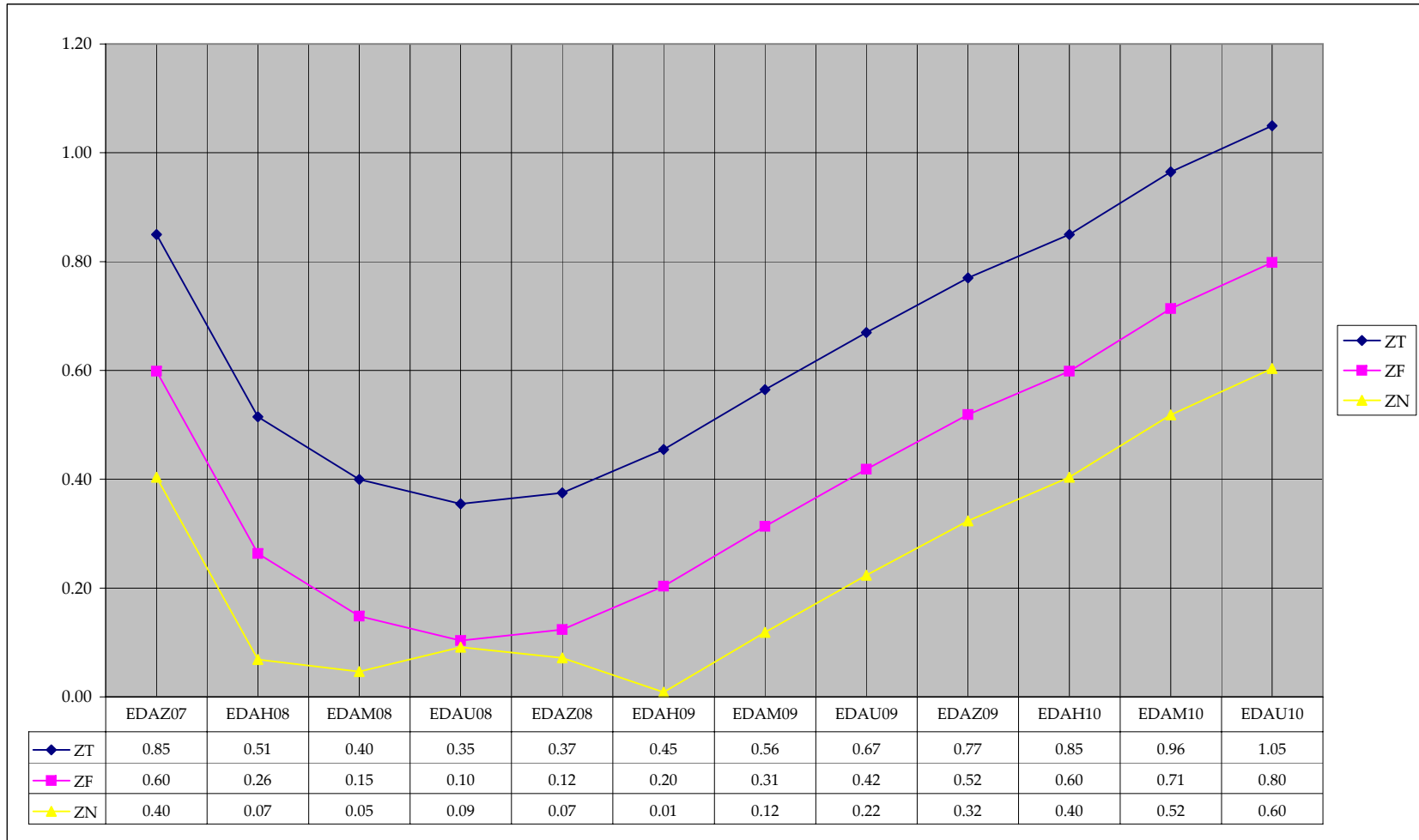


### Dirty TED Curve

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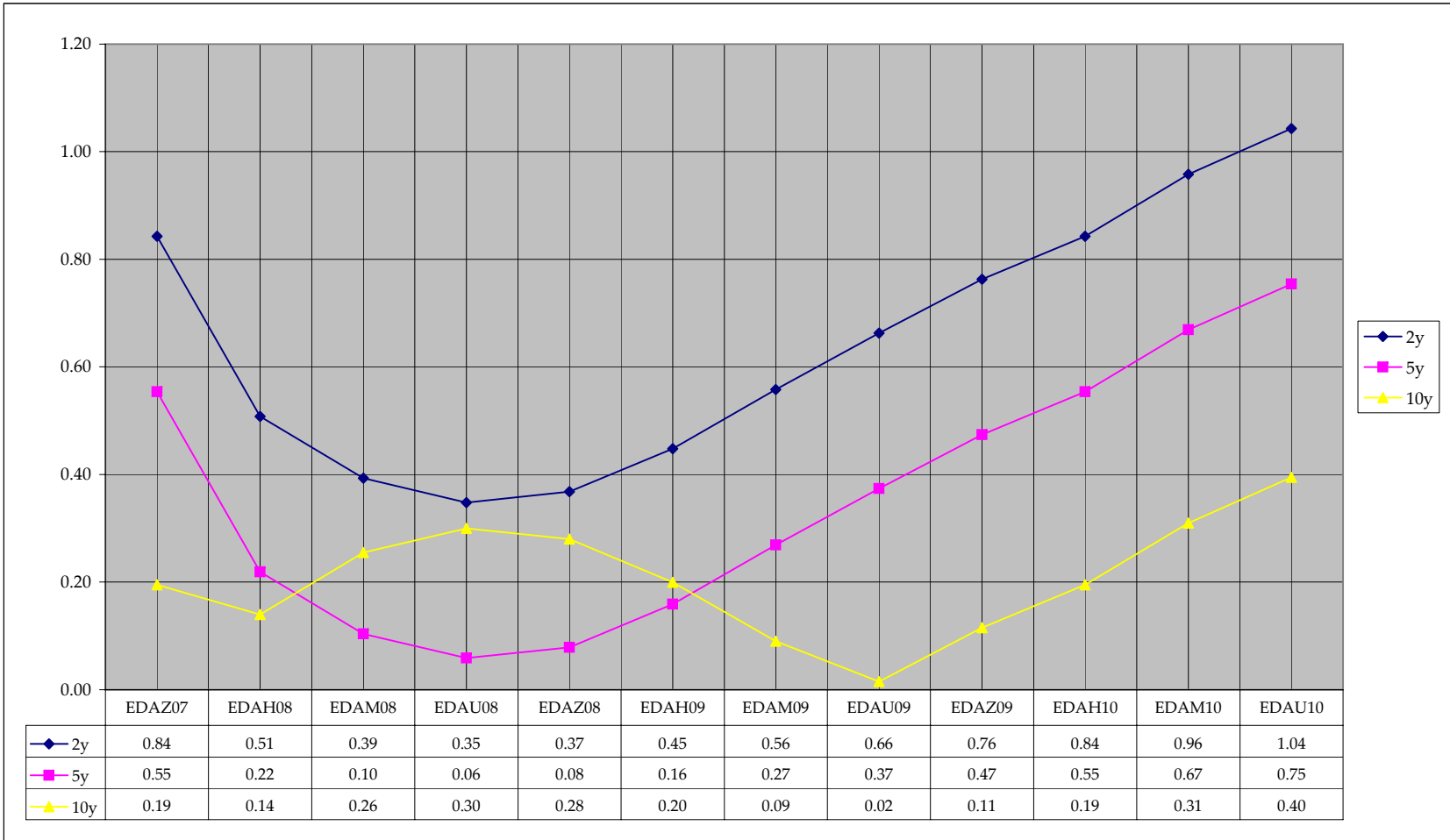
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Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis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

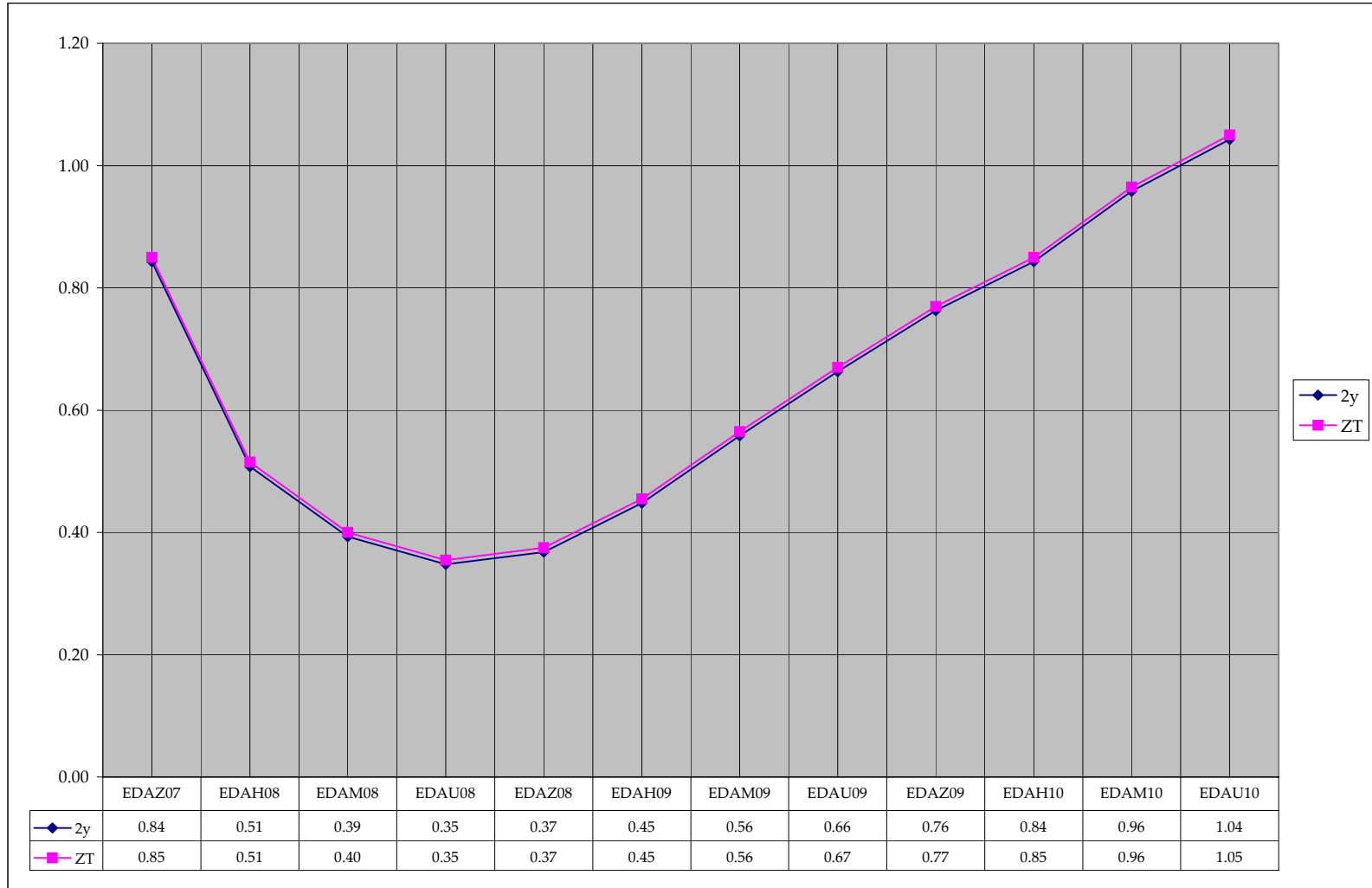


TED Curve

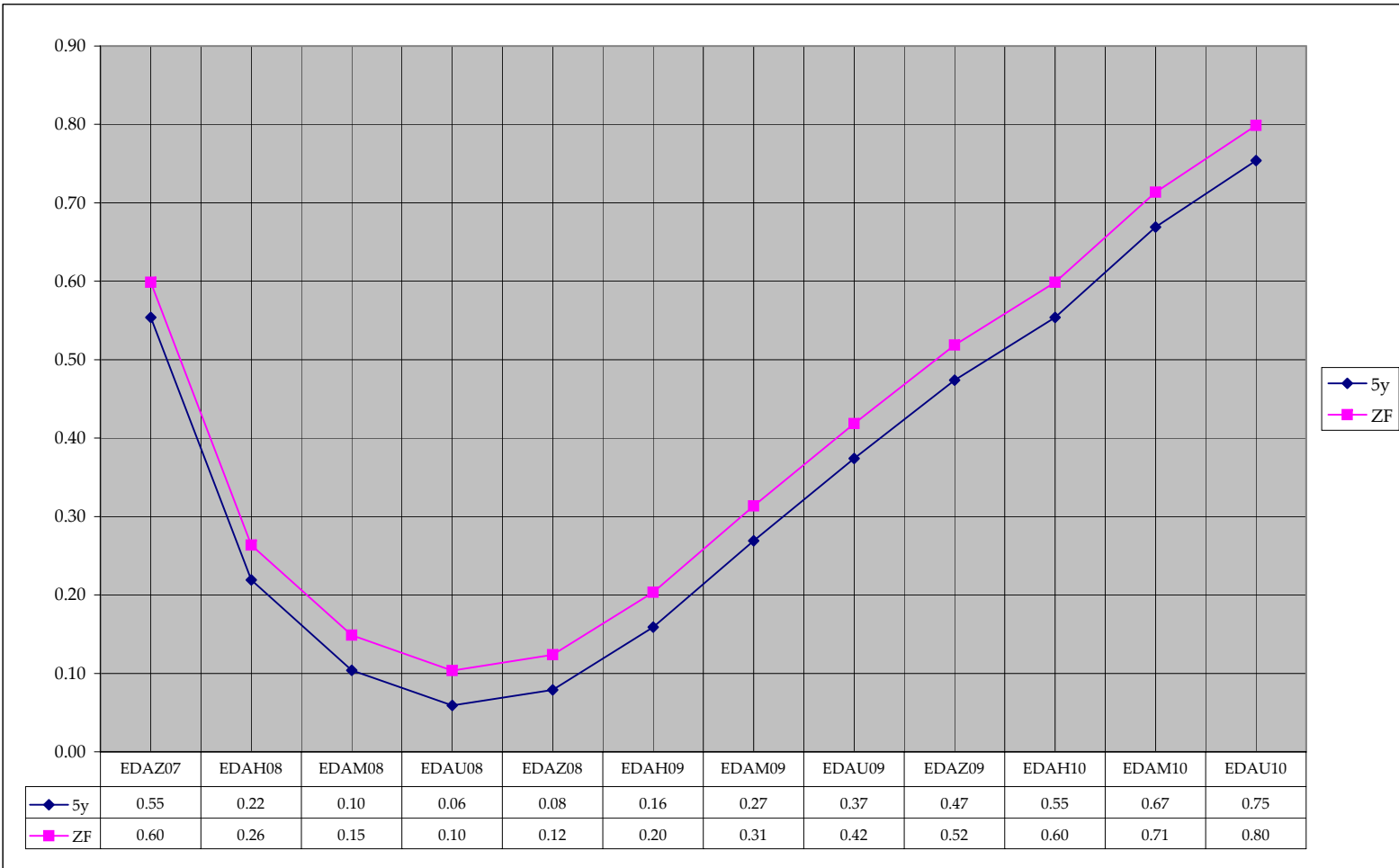
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



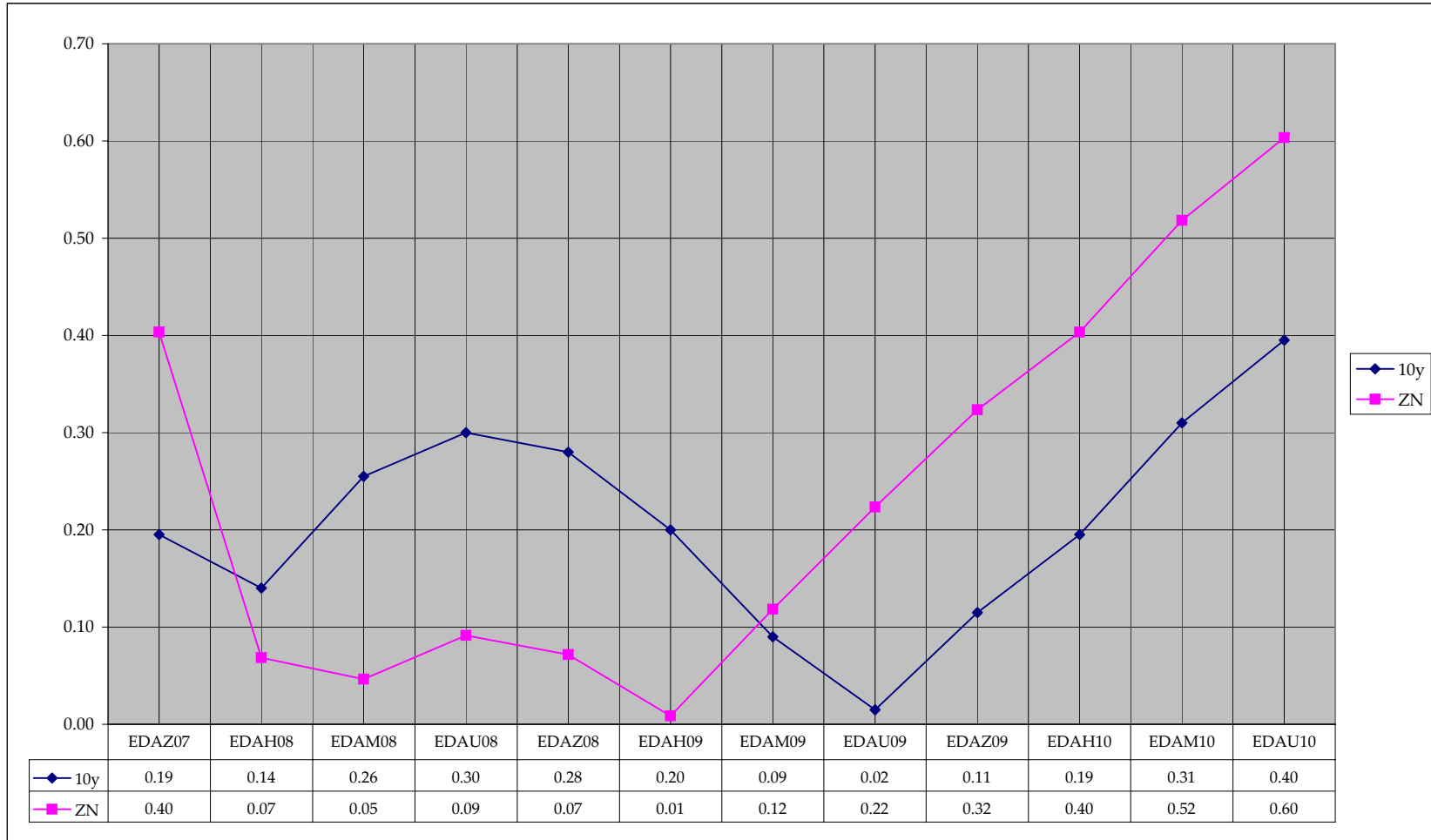
2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



### Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	4.609	0.375	9550.500
Q.ED.Red	4.595	0.250	9551.875
Q.ED.Green	5.002	-0.750	9512.625
Q.ED.Blue		-3.750	9480.375
Q.ED.Gold		0.000	9460.125

