

## 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	102.5938	102.190	4.433	1.79	
ZF	105.8438	105.270	4.484	3.85	
ZN	107.9063	107.290	4.583	5.68	
2y	100.366	100.1170	4.430	1.87	
5y	100.569	100.1820	4.493	4.40	
10y	98.484	98.1550	4.694	7.73	

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU07	94.805	5.195	42	0.114	SEP	White Pack
EDAZ07	95.045	4.955	133	0.364	DEC	
EDAH08	95.210	4.790	224	0.613	MAR	
EDAM08	95.270	4.730	315	0.862	JUN	Red Pack
EDAU08	95.265	4.735	406	1.112	SEP	
EDAZ08	95.240	4.760	497	1.361	DEC	
EDAH09	95.190	4.810	588	1.610	MAR	Green Pack
EDAM09	95.130	4.870	679	1.860	JUN	
EDAU09	95.055	4.945	770	2.109	SEP	
EDAZ09	94.975	5.025	861	2.358	DEC	Blue Pack
EDAH10	94.920	5.080	952	2.608	MAR	
EDAM10	94.865	5.135	1043	2.857	JUN	
EDAU10	94.800	5.200	1134	3.106	SEP	Gold Pack
EDAZ10	94.740	5.260	1225	3.355	DEC	
EDAH11	#VALUE!	#VALUE!	1316	3.605	MAR	
EDAM11	94.650	5.350	1407	3.854	JUN	
EDAU11	#VALUE!	#VALUE!	1505	4.123	SEP	
EDAZ11	#VALUE!	#VALUE!	1596	4.372	DEC	
EDAH12	94.495	5.505	1687	4.621	MAR	
EDAM12	#VALUE!	#VALUE!	1778	4.871	JUN	

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	5.048	2.750	9508.250	Pack Prices
Q.ED.Red	4.919	2.000	9520.625	
Q.ED.Green	5.182	2.000	9495.375	
Q.ED.Blue		1.625	9471.625	
Q.ED.Gold		0.000	9451.625	
Q.ED.Purple		0.000	9451.625	

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

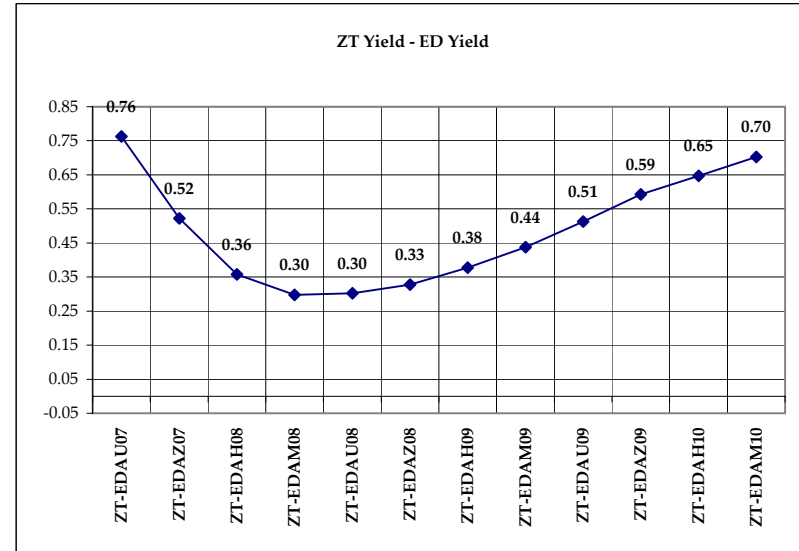
### Eurodollar Color Codes for Individual Year Strips:

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)
EDAU07	7.789	0.76	ZT-EDAU07	94.565
EDAZ07	7.549	0.52	ZT-EDAZ07	94.285
EDAH08	7.384	0.36	ZT-EDAH08	95.449
EDAM08	7.324	0.30	ZT-EDAM08	97.493
EDAU08	7.329	0.30	ZT-EDAU08	98.789
EDAZ08	7.354	0.33	ZT-EDAZ08	99.165
EDAH09	7.404	0.38	ZT-EDAH09	99.410
EDAM09	7.464	0.44	ZT-EDAM09	99.004
EDAU09	7.539	0.51	ZT-EDAU09	98.143
EDAZ09	7.619	0.59	ZT-EDAZ09	96.671
EDAH10	7.674	0.65	ZT-EDAH10	94.099
EDAM10	7.729	0.70	ZT-EDAM10	91.385

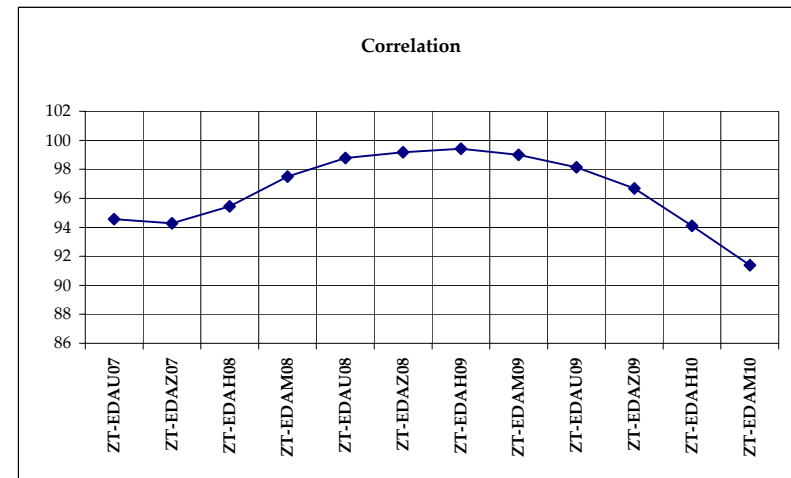
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	ZT Duration	Spread Duration	
EDAU07	0.114	1.79	ZT-EDAU07
EDAZ07	0.364	1.79	ZT-EDAZ07
EDAH08	0.613	1.79	ZT-EDAH08
EDAM08	0.862	1.79	ZT-EDAM08
EDAU08	1.112	1.79	ZT-EDAU08
EDAZ08	1.361	1.79	ZT-EDAZ08
EDAH09	1.610	1.79	ZT-EDAH09
EDAM09	1.860	1.79	ZT-EDAM09
EDAU09	2.109	1.79	ZT-EDAU09
EDAZ09	2.358	1.79	ZT-EDAZ09
EDAH10	2.608	1.79	ZT-EDAH10
EDAM10	2.857	1.79	ZT-EDAM10

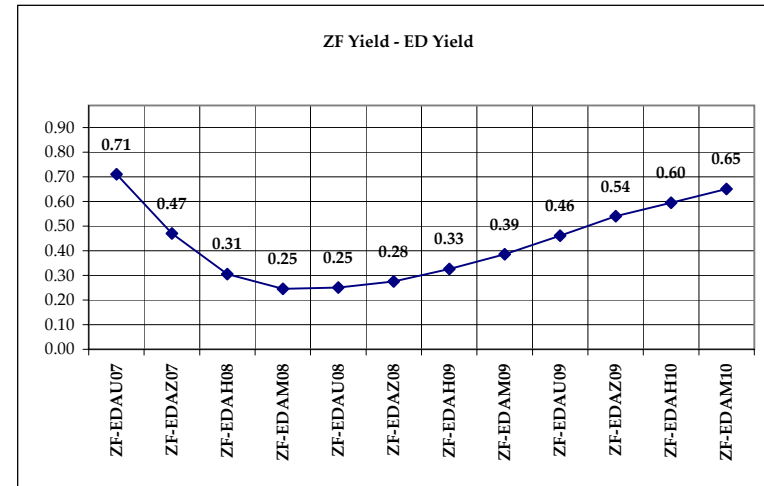
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	11.04	0.71	ZF-EDAU07	96.359
EDAZ07	10.80	0.47	ZF-EDAZ07	96.224
EDAH08	10.63	0.31	ZF-EDAH08	97.047
EDAM08	10.57	0.25	ZF-EDAM08	98.477
EDAU08	10.58	0.25	ZF-EDAU08	99.144
EDAZ08	10.60	0.28	ZF-EDAZ08	99.248
EDAH09	10.65	0.33	ZF-EDAH09	99.312
EDAM09	10.71	0.39	ZF-EDAM09	99.588
EDAU09	10.79	0.46	ZF-EDAU09	99.412
EDAZ09	10.87	0.54	ZF-EDAZ09	98.695
EDAH10	10.92	0.60	ZF-EDAH10	97.134
EDAM10	10.98	0.65	ZF-EDAM10	95.238

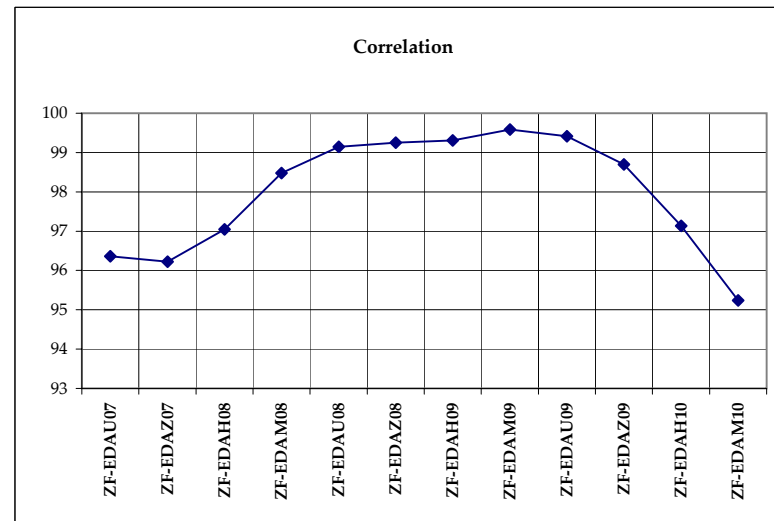
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	ZF Duration	Spread Duration	
EDAU07	0.114	3.74	ZF-EDAU07
EDAZ07	0.364	3.49	ZF-EDAZ07
EDAH08	0.613	3.24	ZF-EDAH08
EDAM08	0.862	2.99	ZF-EDAM08
EDAU08	1.112	2.74	ZF-EDAU08
EDAZ08	1.361	2.49	ZF-EDAZ08
EDAH09	1.610	2.24	ZF-EDAH09
EDAM09	1.860	1.99	ZF-EDAM09
EDAU09	2.109	1.74	ZF-EDAU09
EDAZ09	2.358	1.49	ZF-EDAZ09
EDAH10	2.608	1.24	ZF-EDAH10
EDAM10	2.857	0.99	ZF-EDAM10

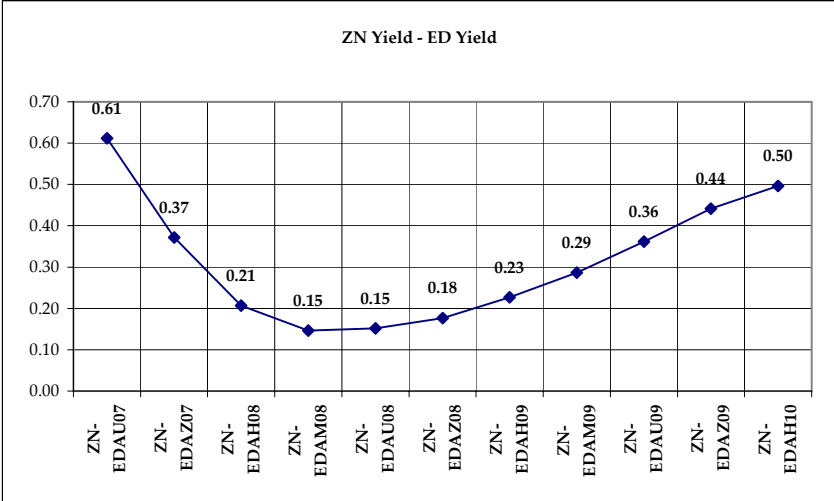
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

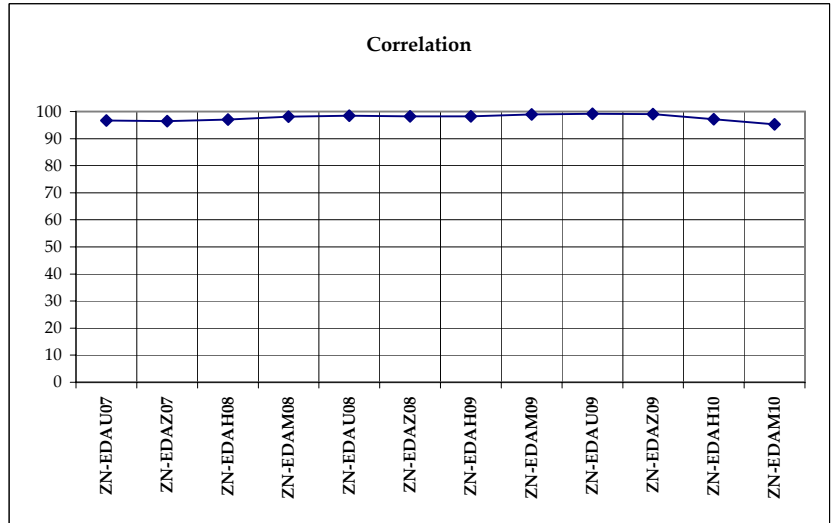
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	13.10	0.61	ZN-EDAU07	96.72
EDAZ07	12.86	0.37	ZN-EDAZ07	96.49
EDAH08	12.70	0.21	ZN-EDAH08	97.05
EDAM08	12.64	0.15	ZN-EDAM08	98.06
EDAU08	12.64	0.15	ZN-EDAU08	98.41
EDAZ08	12.67	0.18	ZN-EDAZ08	98.21
EDAH09	12.72	0.23	ZN-EDAH09	98.23
EDAM09	12.78	0.29	ZN-EDAM09	98.91
EDAU09	12.85	0.36	ZN-EDAU09	99.23
EDAZ09	12.93	0.44	ZN-EDAZ09	99.09
EDAH10	12.99	0.50	ZN-EDAH10	97.13
EDAM10	13.04	0.55	ZN-EDAM10	95.24

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	
EDAU07	0.114	5.68	5.57	ZN-EDAU07
EDAZ07	0.364	5.68	5.32	ZN-EDAZ07
EDAH08	0.613	5.68	5.07	ZN-EDAH08
EDAM08	0.862	5.68	4.82	ZN-EDAM08
EDAU08	1.112	5.68	4.57	ZN-EDAU08
EDAZ08	1.361	5.68	4.32	ZN-EDAZ08
EDAH09	1.610	5.68	4.07	ZN-EDAH09
EDAM09	1.860	5.68	3.82	ZN-EDAM09
EDAU09	2.109	5.68	3.57	ZN-EDAU09
EDAZ09	2.358	5.68	3.33	ZN-EDAZ09
EDAH10	2.608	5.68	3.08	ZN-EDAH10
EDAM10	2.857	5.68	2.83	ZN-EDAM10

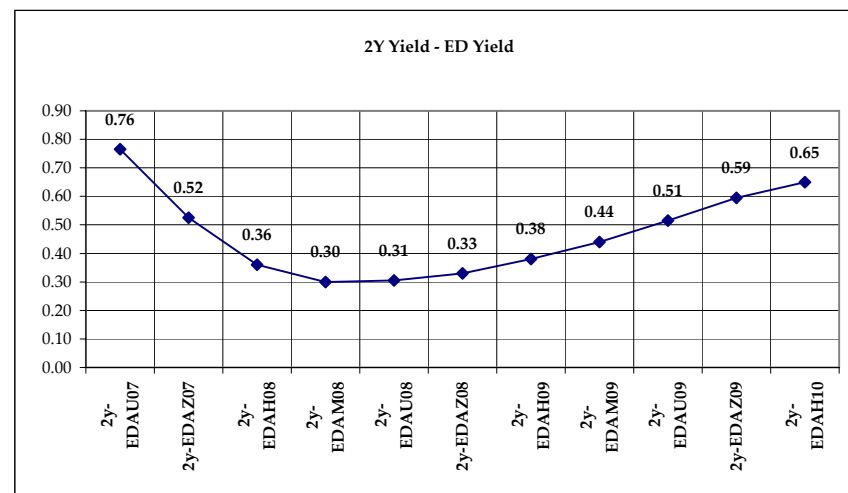
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.56	0.76	2y-EDAU07	-91.631
EDAZ07	5.32	0.52	2y-EDAZ07	-91.799
EDAH08	5.16	0.36	2y-EDAH08	-92.663
EDAM08	5.10	0.30	2y-EDAM08	-94.004
EDAU08	5.10	0.31	2y-EDAU08	-94.011
EDAZ08	5.13	0.33	2y-EDAZ08	-94.004
EDAH09	5.18	0.38	2y-EDAH09	-93.320
EDAM09	5.24	0.44	2y-EDAM09	-93.639
EDAU09	5.31	0.51	2y-EDAU09	-93.813
EDAZ09	5.39	0.59	2y-EDAZ09	-93.057
EDAH10	5.45	0.65	2y-EDAH10	-91.510
EDAM10	5.50	0.71	2y-EDAM10	-89.731

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.

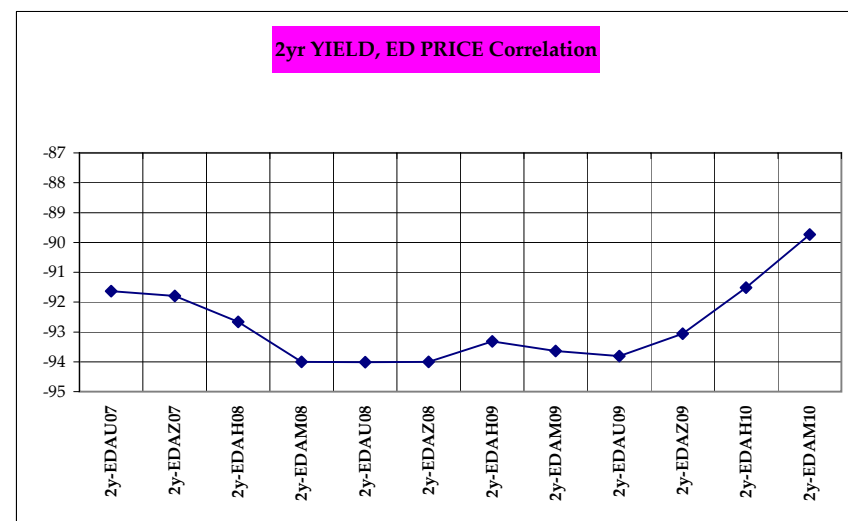


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAU07	0.114	1.87	2y-EDAU07
EDAZ07	0.364	1.87	2y-EDAZ07
EDAH08	0.613	1.87	2y-EDAH08
EDAM08	0.862	1.87	2y-EDAM08
EDAU08	1.112	1.87	2y-EDAU08
EDAZ08	1.361	1.87	2y-EDAZ08
EDAH09	1.610	1.87	2y-EDAH09
EDAM09	1.860	1.87	2y-EDAM09
EDAU09	2.109	1.87	2y-EDAU09
EDAZ09	2.358	1.87	2y-EDAZ09
EDAH10	2.608	1.87	2y-EDAH10
EDAM10	2.857	1.87	2y-EDAM10

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

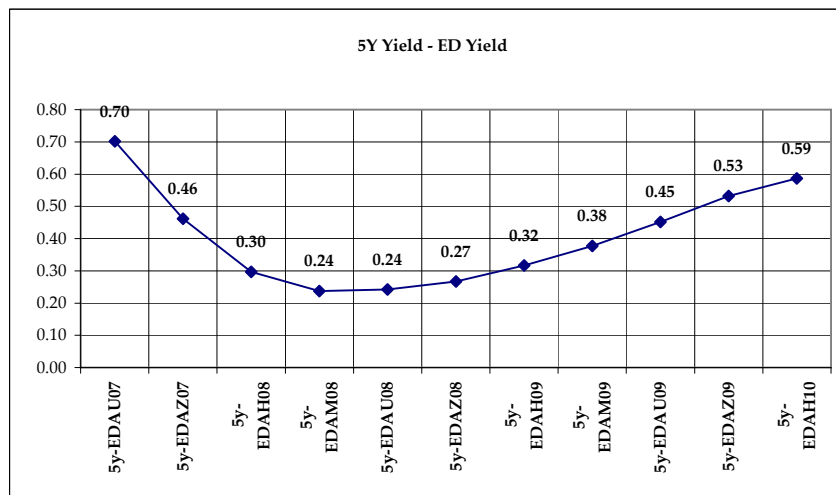
2yr YIELD, ED PRICE Correlation



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

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.76	0.70	5y-EDAU07	-92.429
EDAZ07	5.52	0.46	5y-EDAZ07	-93.843
EDAH08	5.36	0.30	5y-EDAH08	-94.700
EDAM08	5.30	0.24	5y-EDAM08	-95.867
EDAU08	5.30	0.24	5y-EDAU08	-95.860
EDAZ08	5.33	0.27	5y-EDAZ08	-95.867
EDAH09	5.38	0.32	5y-EDAH09	-95.127
EDAM09	5.44	0.38	5y-EDAM09	-95.490
EDAU09	5.51	0.45	5y-EDAU09	-95.679
EDAZ09	5.59	0.53	5y-EDAZ09	-94.919
EDAH10	5.65	0.59	5y-EDAH10	-93.371
EDAM10	5.70	0.64	5y-EDAM10	-91.575

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.

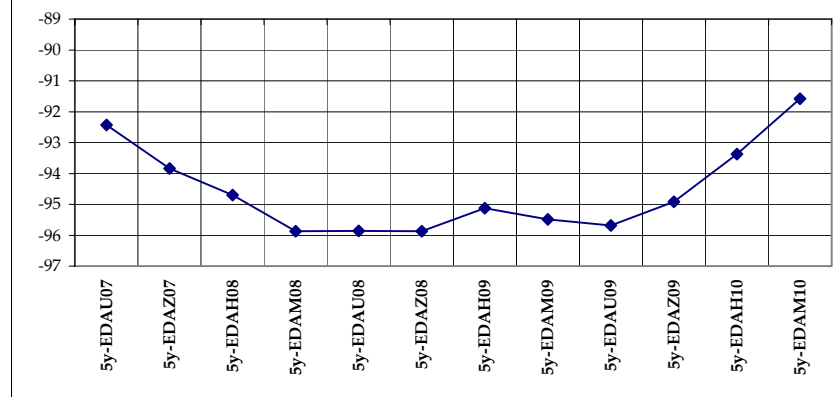


**GE Duration as Fraction of year**

	5Y Duration	Spread Duration	
EDAU07	0.114	4.40	4.29 5y-EDAU07
EDAZ07	0.364	4.40	4.04 5y-EDAZ07
EDAH08	0.613	4.40	3.79 5y-EDAH08
EDAM08	0.862	4.40	3.54 5y-EDAM08
EDAU08	1.112	4.40	3.29 5y-EDAU08
EDAZ08	1.361	4.40	3.04 5y-EDAZ08
EDAH09	1.610	4.40	2.79 5y-EDAH09
EDAM09	1.860	4.40	2.54 5y-EDAM09
EDAU09	2.109	4.40	2.30 5y-EDAU09
EDAZ09	2.358	4.40	2.05 5y-EDAZ09
EDAH10	2.608	4.40	1.80 5y-EDAH10
EDAM10	2.857	4.40	1.55 5y-EDAM10

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

**5yr YIELD, ED PRICE Correlation**



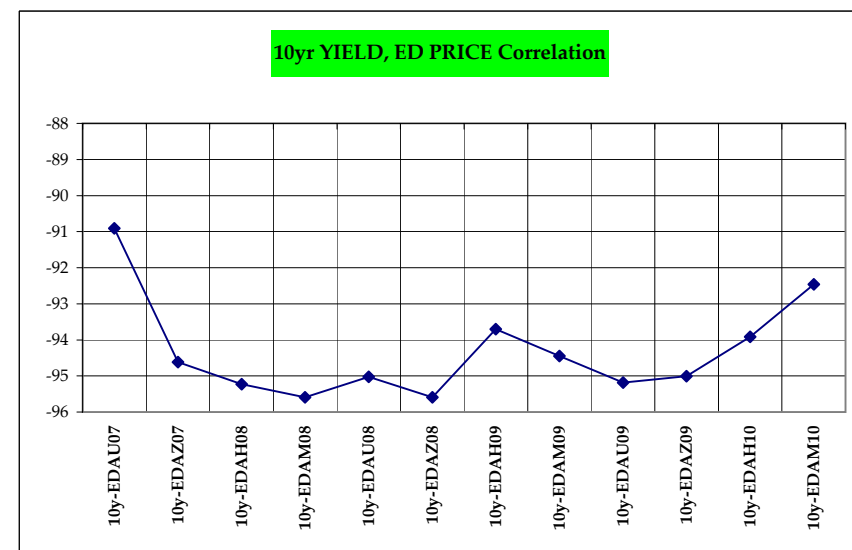
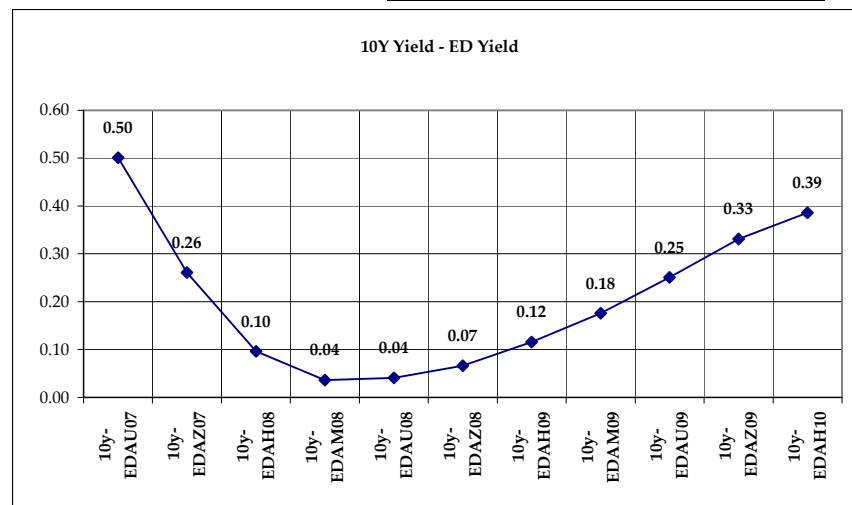
**TERM TED: 10y vs Eurodollar Contracts**

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.76	0.50	10y-EDAU07	-90.912
EDAZ07	5.52	0.26	10y-EDAZ07	-94.619
EDAH08	5.36	0.10	10y-EDAH08	-95.227
EDAM08	5.30	0.04	10y-EDAM08	-95.592
EDAU08	5.30	0.04	10y-EDAU08	-95.026
EDAZ08	5.33	0.07	10y-EDAZ08	-95.592
EDAH09	5.38	0.12	10y-EDAH09	-93.699
EDAM09	5.44	0.18	10y-EDAM09	-94.452
EDAU09	5.51	0.25	10y-EDAU09	-95.187
EDAZ09	5.59	0.33	10y-EDAZ09	-95.004
EDAH10	5.65	0.39	10y-EDAH10	-93.919
EDAM10	5.70	0.44	10y-EDAM10	-92.457

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	
EDAU07	0.114		7.73	7.62	10y-EDAU07
EDAZ07	0.364		7.73	7.37	10y-EDAZ07
EDAH08	0.613		7.73	7.12	10y-EDAH08
EDAM08	0.862		7.73	6.87	10y-EDAM08
EDAU08	1.112		7.73	6.62	10y-EDAU08
EDAZ08	1.361		7.73	6.37	10y-EDAZ08
EDAH09	1.610		7.73	6.12	10y-EDAH09
EDAM09	1.860		7.73	5.87	10y-EDAM09
EDAU09	2.109		7.73	5.63	10y-EDAU09
EDAZ09	2.358		7.73	5.38	10y-EDAZ09
EDAH10	2.608		7.73	5.13	10y-EDAH10
EDAM10	2.857		7.73	4.88	10y-EDAM10

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

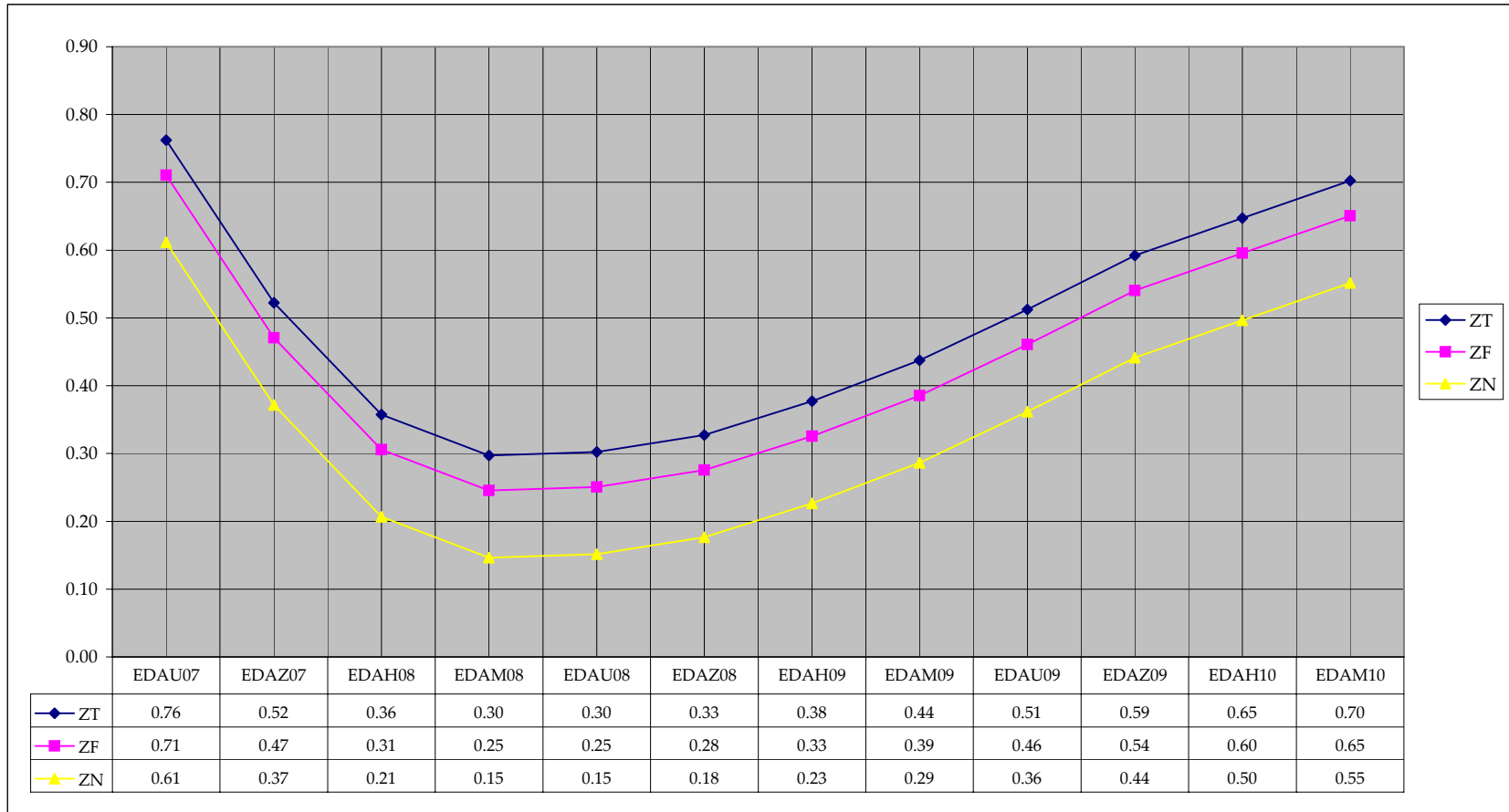


### Dirty TED Curve

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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.

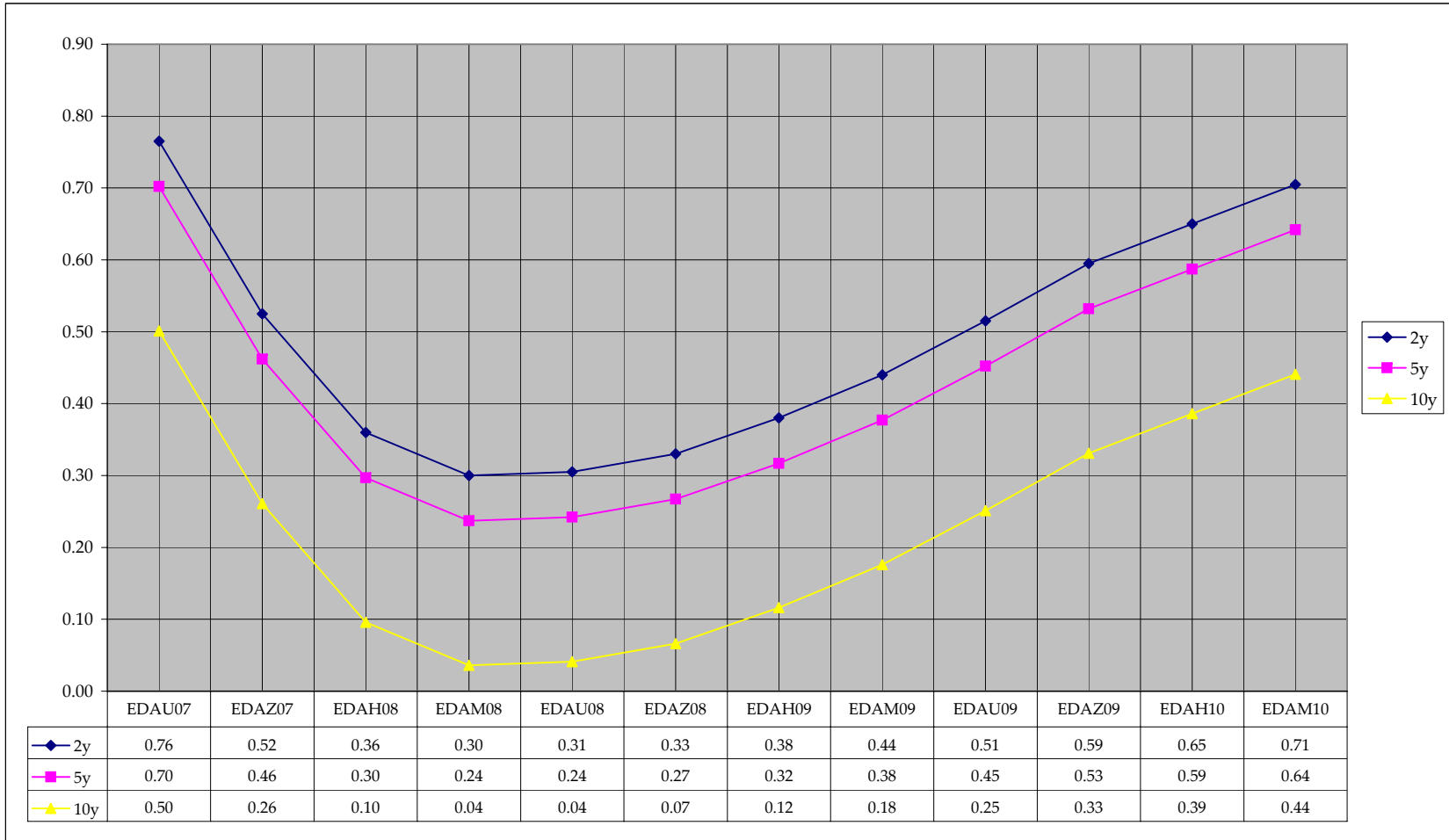


TED Curve

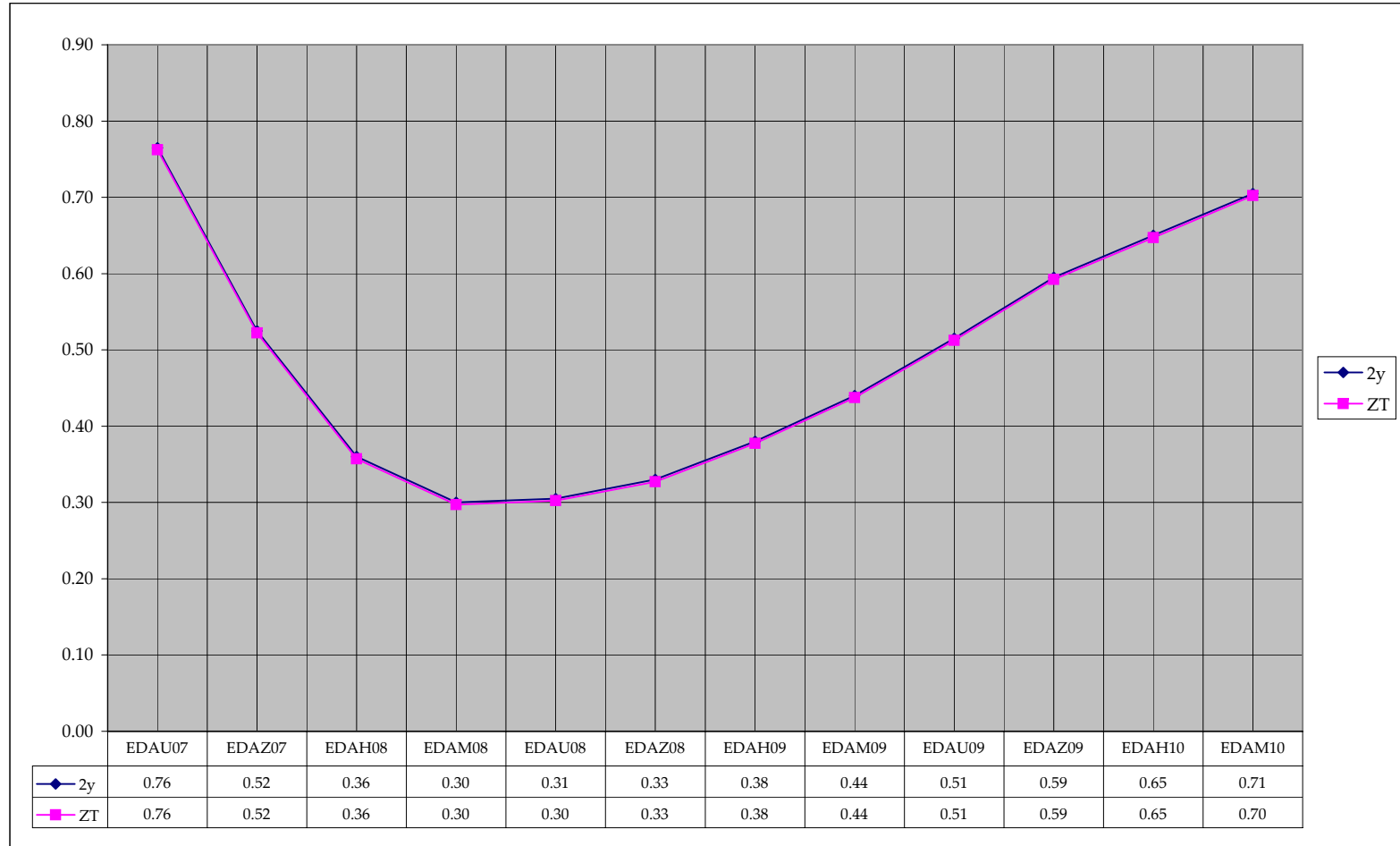
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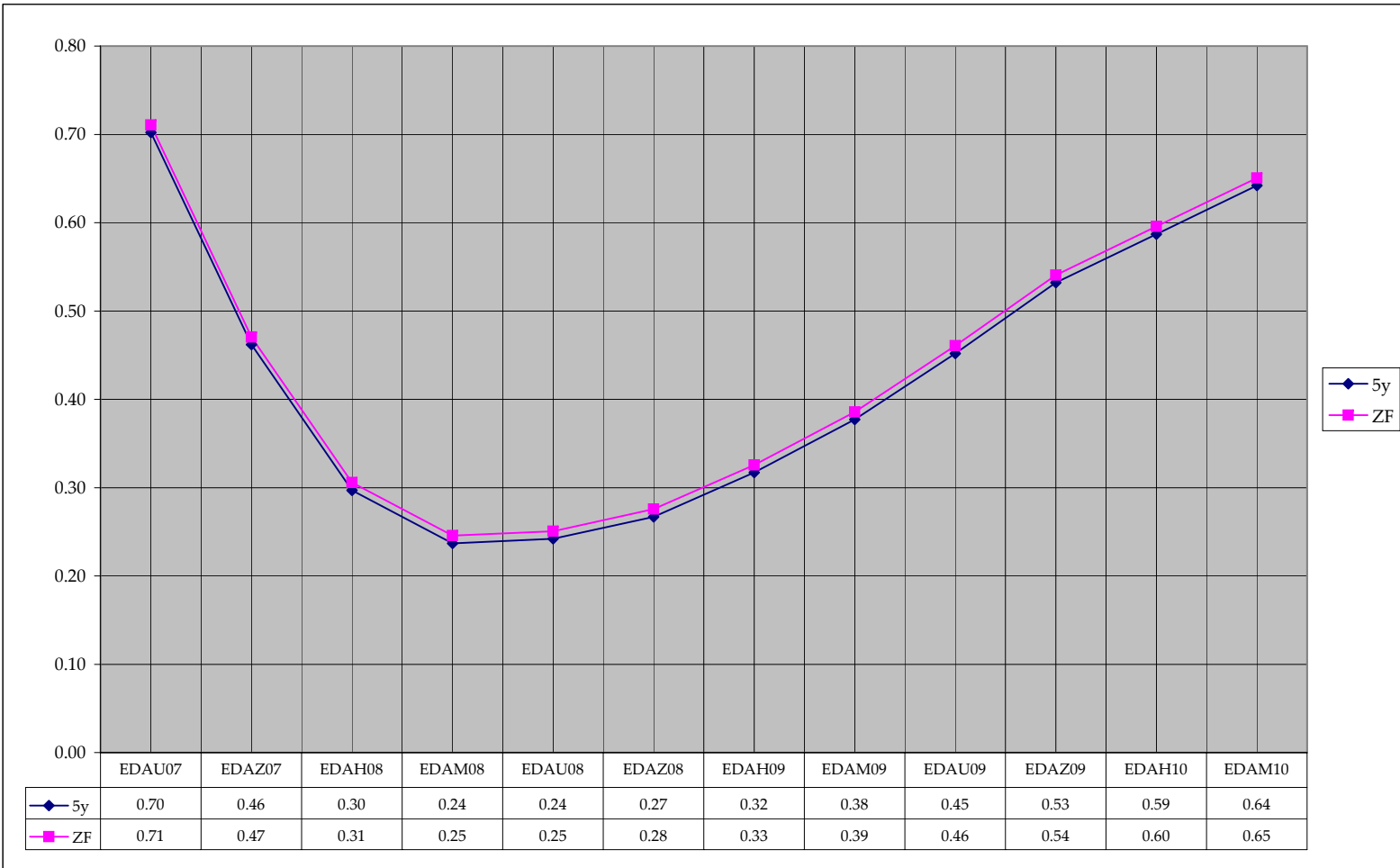
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



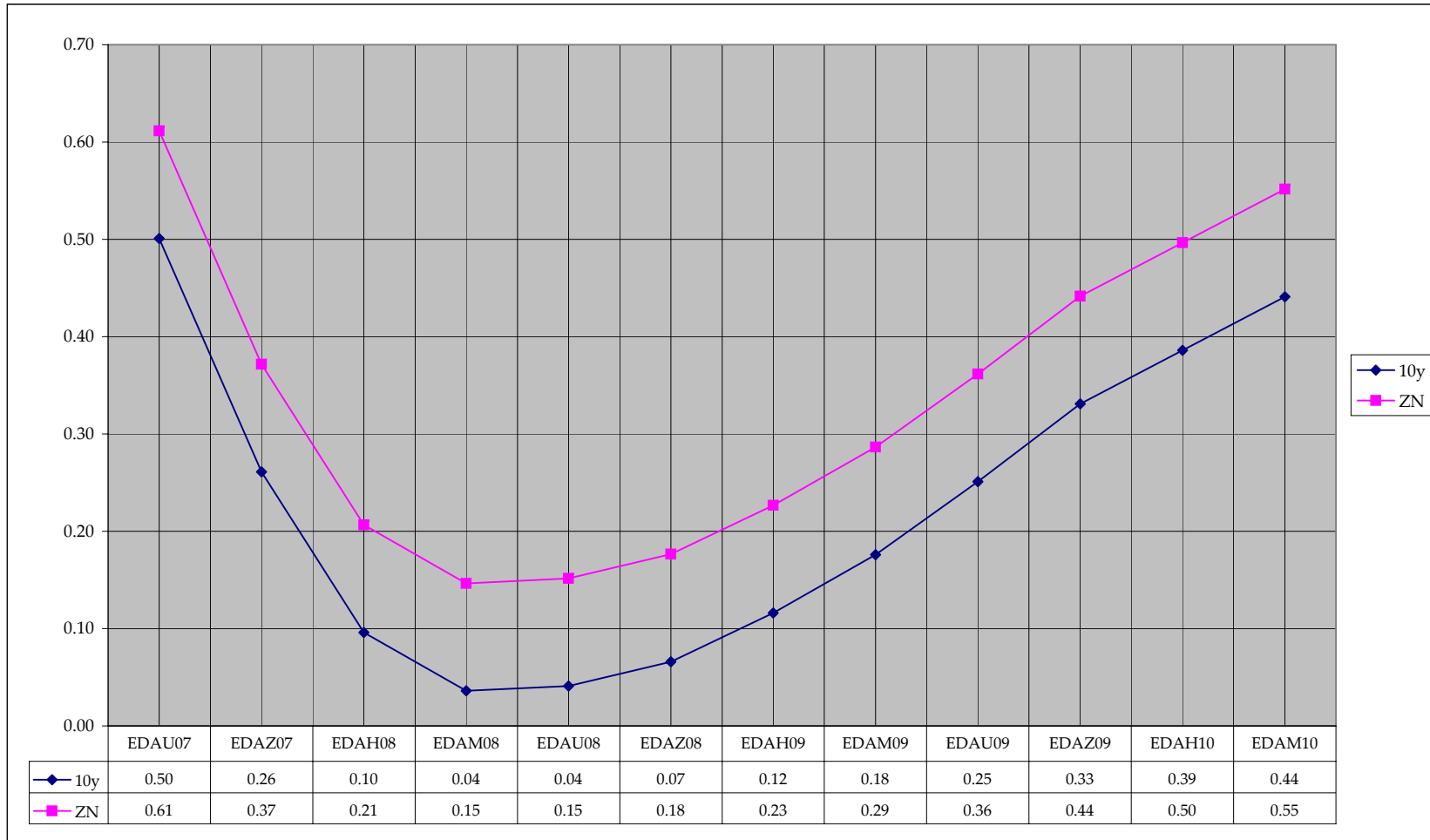
2y Basis TED Curve



5y Basis TED Curve



## 10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	5.048	2.750	9508.250
Q.ED.Red	4.919	2.000	9520.625
Q.ED.Green	5.182	2.000	9495.375
Q.ED.Blue	1.625	0.000	9471.625
Q.ED.Gold	0.000	0.000	9451.625
Q.ED.Purple	0.000	0.000	9451.625

