

## 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	107.0688	107.022	1.863	1.79	
ZF	113.7813	113.250	2.535	3.89	
ZN	117.4844	117.155	3.105	5.84	
2y	100.406	100.1300	1.912	1.93	
5y	101.100	101.0320	2.638	4.61	
10y	105.516	105.1650	3.576	7.93	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAH08	97.090	2.910	40	0.109	MAR	} White Pack	
EDAM08	97.585	2.415	131	0.358	JUN		
EDAU08	97.715	2.285	222	0.608	SEP		
EDAZ08	97.675	2.325	313	0.857	DEC		
EDAH09	97.545	2.455	404	1.106	MAR	} Red Pack	
EDAM09	97.350	2.650	495	1.356	JUN		
EDAU09	97.140	2.860	586	1.605	SEP		
EDAZ09	96.950	3.050	677	1.854	DEC		
EDAH10	96.775	3.225	768	2.103	MAR	} Green Pack	
EDAM10	96.595	3.405	859	2.353	JUN		
EDAU10	96.435	3.565	950	2.602	SEP		
EDAZ10	96.290	3.710	1041	2.851	DEC		
EDAH11	96.150	3.850	1132	3.101	MAR	} Blue Pack	
EDAM11	96.025	3.975	1223	3.350	JUN		
EDAU11	95.885	4.115	1321	3.619	SEP		
EDAZ11	95.730	4.270	1412	3.868	DEC		
EDAH12	95.640	4.360	1503	4.117	MAR	} Gold Pack	
EDAM12	95.560	4.440	1594	4.366	JUN		
EDAU12	95.425	4.575	1685	4.616	SEP		
EDAU12	95.425	4.575	1685	4.616	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	2.534	3.375	9751.625	} Pack Prices
Q.ED.Red	2.811	3.750	9724.625	
Q.ED.Green	3.556	3.500	9652.375	
Q.ED.Blue		0.000	9592.250	
Q.ED.Gold		0.000	9544.875	

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)

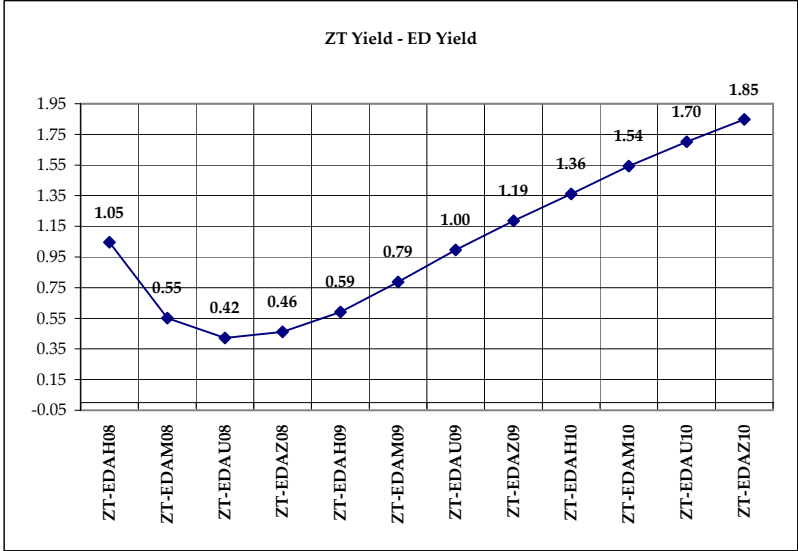
### Eurodollar Color Codes for Individual Year Strips:

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

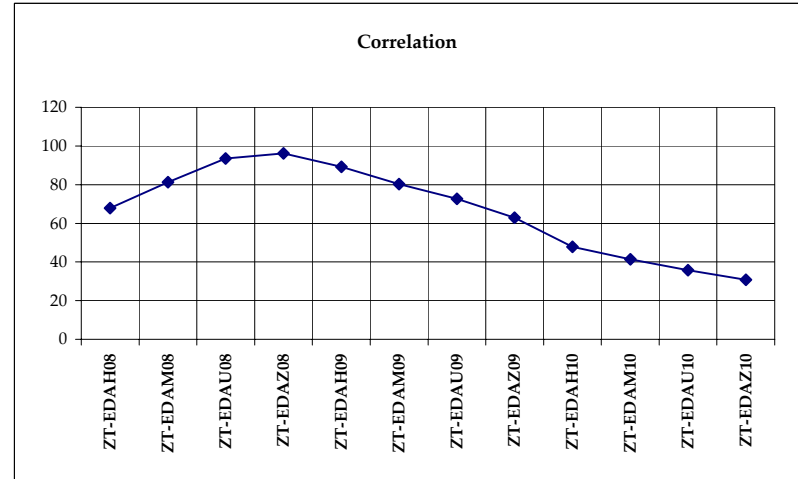
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	9.979	1.05	ZT-EDAH08	67.861
EDAM08	9.484	0.55	ZT-EDAM08	81.349
EDAU08	9.354	0.42	ZT-EDAU08	93.516
EDAZ08	9.394	0.46	ZT-EDAZ08	96.217
EDAH09	9.524	0.59	ZT-EDAH09	89.158
EDAM09	9.719	0.79	ZT-EDAM09	80.198
EDAU09	9.929	1.00	ZT-EDAU09	72.596
EDAZ09	10.119	1.19	ZT-EDAZ09	62.864
EDAH10	10.294	1.36	ZT-EDAH10	47.785
EDAM10	10.474	1.54	ZT-EDAM10	41.345
EDAU10	10.634	1.70	ZT-EDAU10	35.683
EDAZ10	10.779	1.85	ZT-EDAZ10	30.725

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	0.109	1.79	1.68	ZT-EDAH08
EDAM08	0.358	1.79	1.43	ZT-EDAM08
EDAU08	0.608	1.79	1.18	ZT-EDAU08
EDAZ08	0.857	1.79	0.93	ZT-EDAZ08
EDAH09	1.106	1.79	0.68	ZT-EDAH09
EDAM09	1.356	1.79	0.43	ZT-EDAM09
EDAU09	1.605	1.79	0.18	ZT-EDAU09
EDAZ09	1.854	1.79	(0.07)	ZT-EDAZ09
EDAH10	2.103	1.79	(0.32)	ZT-EDAH10
EDAM10	2.353	1.79	(0.57)	ZT-EDAM10
EDAU10	2.602	1.79	(0.82)	ZT-EDAU10
EDAZ10	2.851	1.79	(1.07)	ZT-EDAZ10

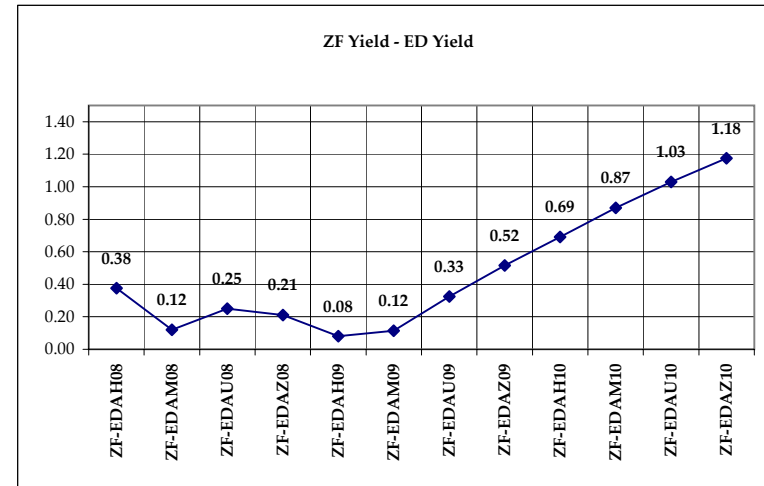
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	16.69	0.38	ZF-EDAH08	49.318
EDAM08	16.20	0.12	ZF-EDAM08	72.012
EDAU08	16.07	0.25	ZF-EDAU08	87.742
EDAZ08	16.11	0.21	ZF-EDAZ08	96.084
EDAH09	16.24	0.08	ZF-EDAH09	95.802
EDAM09	16.43	0.12	ZF-EDAM09	91.484
EDAU09	16.64	0.33	ZF-EDAU09	86.882
EDAZ09	16.83	0.52	ZF-EDAZ09	80.798
EDAH10	17.01	0.69	ZF-EDAH10	70.029
EDAM10	17.19	0.87	ZF-EDAM10	64.907
EDAU10	17.35	1.03	ZF-EDAU10	60.191
EDAZ10	17.49	1.18	ZF-EDAZ10	55.683

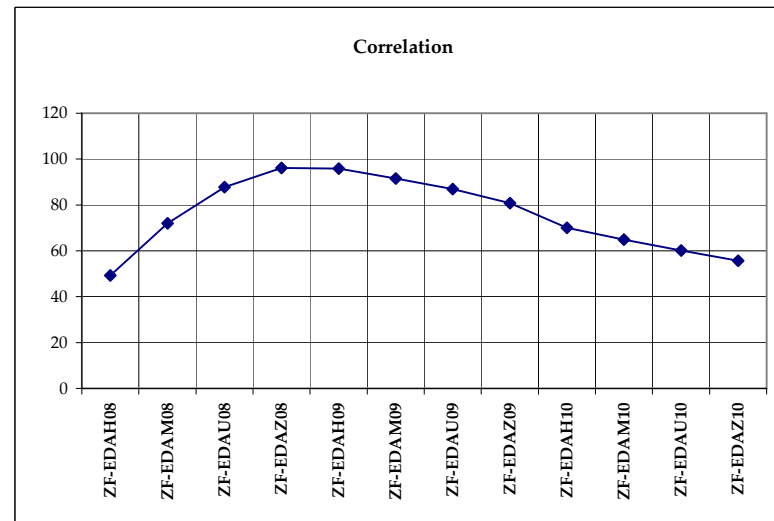
Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS(Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



GE Duration as Fraction of year

	GE Duration as Fraction of year	ZF Duration	Spread Duration	
EDAH08	0.109	3.89	3.78	ZF-EDAH08
EDAM08	0.358	3.89	3.53	ZF-EDAM08
EDAU08	0.608	3.89	3.28	ZF-EDAU08
EDAZ08	0.857	3.89	3.03	ZF-EDAZ08
EDAH09	1.106	3.89	2.78	ZF-EDAH09
EDAM09	1.356	3.89	2.53	ZF-EDAM09
EDAU09	1.605	3.89	2.28	ZF-EDAU09
EDAZ09	1.854	3.89	2.03	ZF-EDAZ09
EDAH10	2.103	3.89	1.78	ZF-EDAH10
EDAM10	2.353	3.89	1.53	ZF-EDAM10
EDAU10	2.602	3.89	1.29	ZF-EDAU10
EDAZ10	2.851	3.89	1.04	ZF-EDAZ10

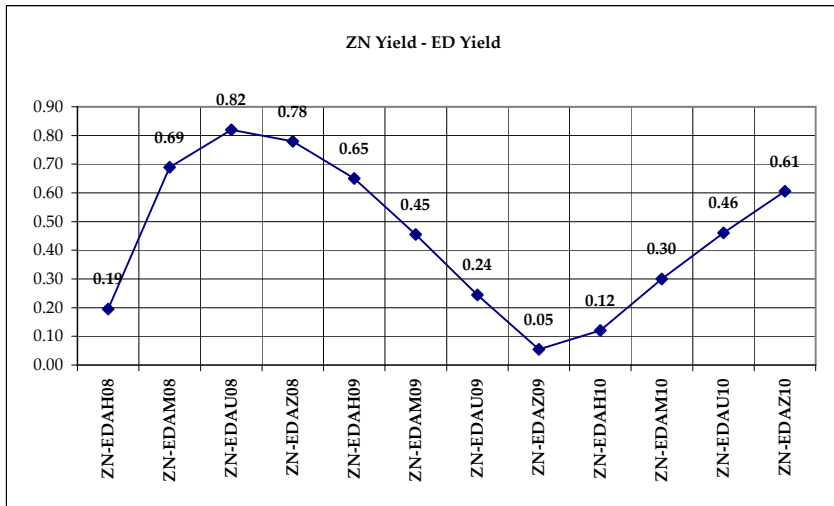
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

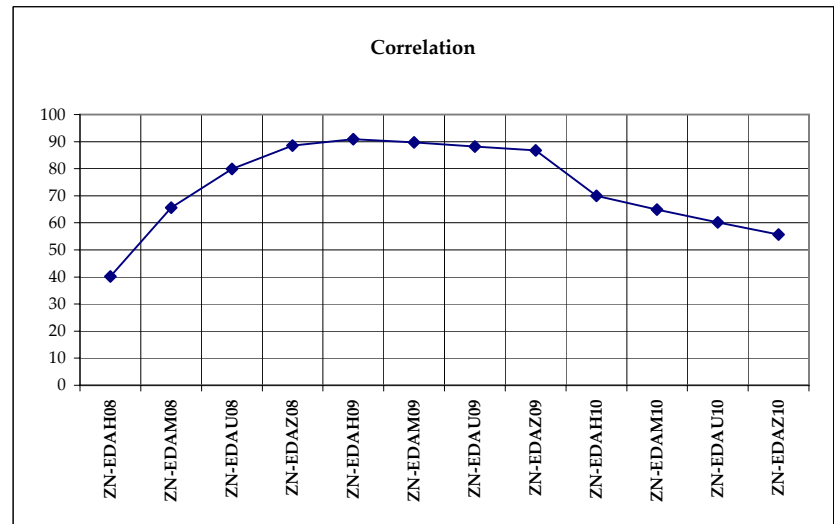
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	20.39	0.19	ZN-EDAH08	40.22
EDAM08	19.90	0.69	ZN-EDAM08	65.64
EDAU08	19.77	0.82	ZN-EDAU08	79.90
EDAZ08	19.81	0.78	ZN-EDAZ08	88.53
EDAH09	19.94	0.65	ZN-EDAH09	90.88
EDAM09	20.13	0.45	ZN-EDAM09	89.66
EDAU09	20.34	0.24	ZN-EDAU09	88.23
EDAZ09	20.53	0.05	ZN-EDAZ09	86.73
EDAH10	20.71	0.12	ZN-EDAH10	70.03
EDAM10	20.89	0.30	ZN-EDAM10	64.91
EDAU10	21.05	0.46	ZN-EDAU10	60.19
EDAZ10	21.19	0.61	ZN-EDAZ10	55.68

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	0.109	5.84	5.73	ZN-EDAH08
EDAM08	0.358	5.84	5.48	ZN-EDAM08
EDAU08	0.608	5.84	5.23	ZN-EDAU08
EDAZ08	0.857	5.84	4.99	ZN-EDAZ08
EDAH09	1.106	5.84	4.74	ZN-EDAH09
EDAM09	1.356	5.84	4.49	ZN-EDAM09
EDAU09	1.605	5.84	4.24	ZN-EDAU09
EDAZ09	1.854	5.84	3.99	ZN-EDAZ09
EDAH10	2.103	5.84	3.74	ZN-EDAH10
EDAM10	2.353	5.84	3.49	ZN-EDAM10
EDAU10	2.602	5.84	3.24	ZN-EDAU10
EDAZ10	2.851	5.84	2.99	ZN-EDAZ10

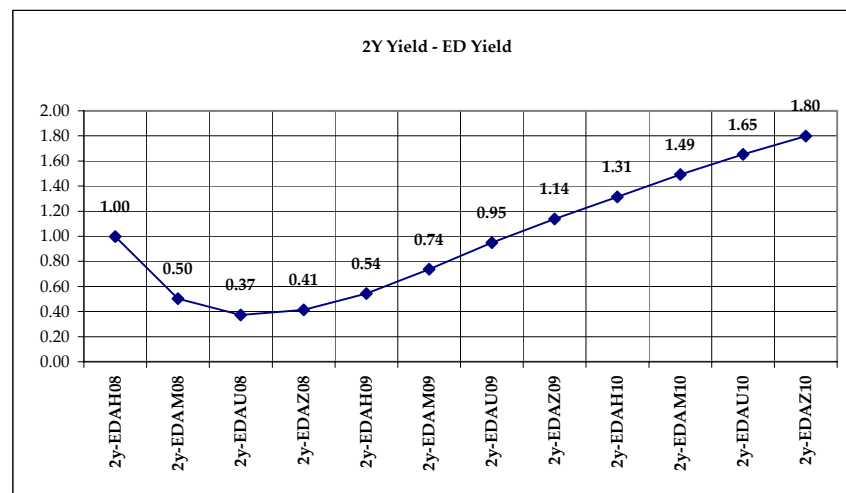
The farther away from 0 the spread duration is the riskier the trade.



**TERM TED: 2y vs Eurodollar Contracts**

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	3.32	1.00	2y-EDAH08	-79.793
EDAM08	2.82	0.50	2y-EDAM08	-88.910
EDAU08	2.69	0.37	2y-EDAU08	-95.105
EDAZ08	2.73	0.41	2y-EDAZ08	-88.910
EDAH09	2.86	0.54	2y-EDAH09	-80.043
EDAM09	3.06	0.74	2y-EDAM09	-68.992
EDAU09	3.27	0.95	2y-EDAU09	-61.079
EDAZ09	3.46	1.14	2y-EDAZ09	-52.025
EDAH10	3.63	1.31	2y-EDAH10	-37.043
EDAM10	3.81	1.49	2y-EDAM10	-31.608
EDAU10	3.97	1.65	2y-EDAU10	-27.097
EDAZ10	4.12	1.80	2y-EDAZ10	-23.292

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.

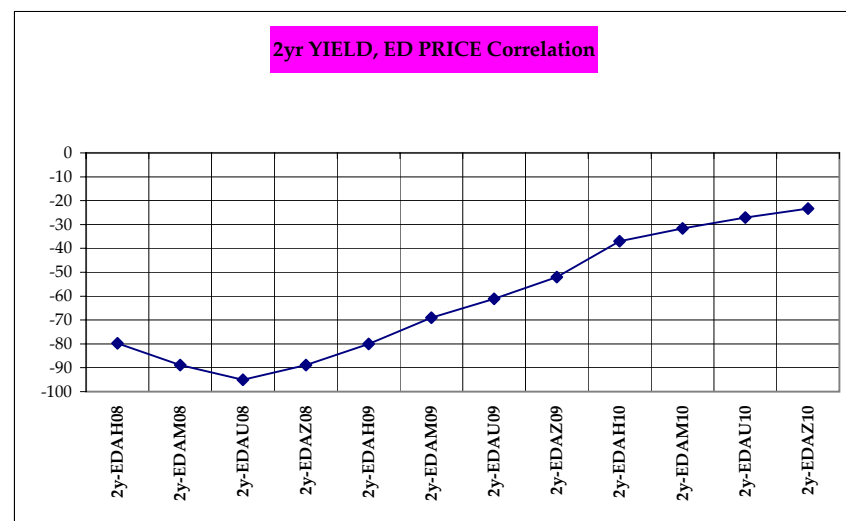


**GE Duration as Fraction of year**

	2Y Duration	Spread Duration	
EDAH08	0.109	1.93	2y-EDAH08
EDAM08	0.358	1.93	2y-EDAM08
EDAU08	0.608	1.93	2y-EDAU08
EDAZ08	0.857	1.93	2y-EDAZ08
EDAH09	1.106	1.93	2y-EDAH09
EDAM09	1.356	1.93	2y-EDAM09
EDAU09	1.605	1.93	2y-EDAU09
EDAZ09	1.854	1.93	2y-EDAZ09
EDAH10	2.103	1.93	2y-EDAH10
EDAM10	2.353	1.93	2y-EDAM10
EDAU10	2.602	1.93	2y-EDAU10
EDAZ10	2.851	1.93	2y-EDAZ10

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

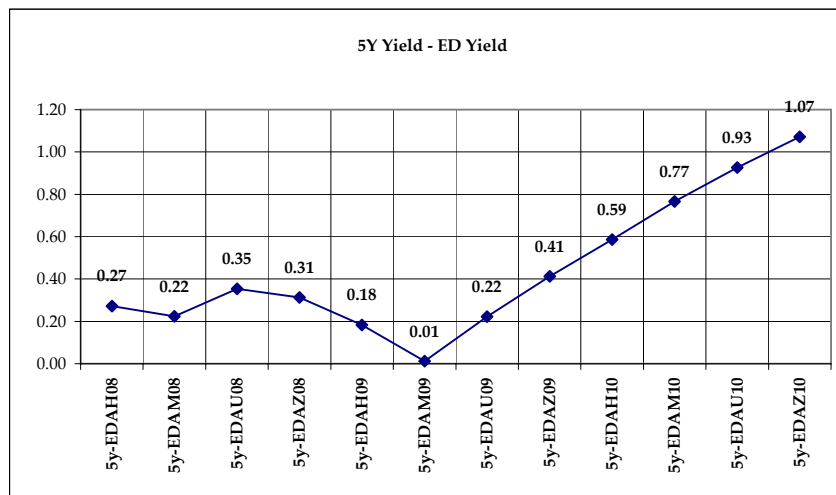
**2yr YIELD, ED PRICE Correlation**



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

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	4.01	0.27	5y-EDAH08	-69.939
EDAM08	3.51	0.22	5y-EDAM08	-84.898
EDAU08	3.38	0.35	5y-EDAU08	-90.962
EDAZ08	3.43	0.31	5y-EDAZ08	-84.898
EDAH09	3.55	0.18	5y-EDAH09	-81.238
EDAM09	3.75	0.01	5y-EDAM09	-73.517
EDAU09	3.96	0.22	5y-EDAU09	-68.402
EDAZ09	4.15	0.41	5y-EDAZ09	-63.578
EDAH10	4.32	0.59	5y-EDAH10	-52.980
EDAM10	4.51	0.77	5y-EDAM10	-49.701
EDAU10	4.66	0.93	5y-EDAU10	-46.894
EDAZ10	4.81	1.07	5y-EDAZ10	-44.430

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.

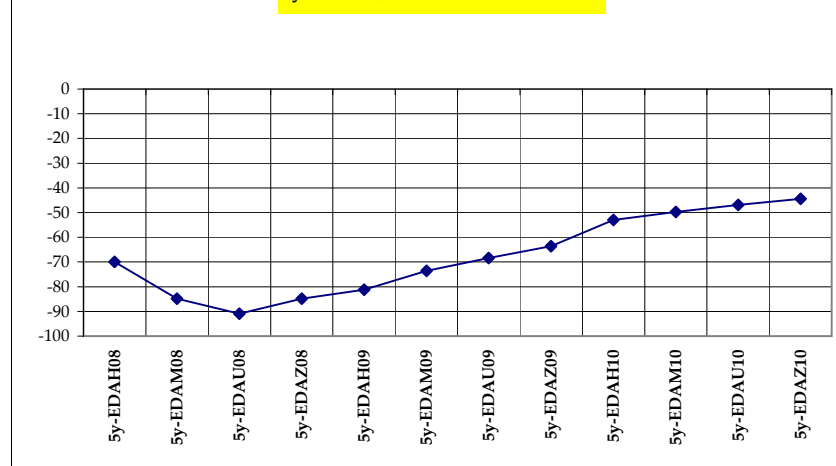


**GE Duration as**

	Fraction of year	5Y Duration	Spread Duration	
EDAH08	0.109	4.61	4.51	5y-EDAH08
EDAM08	0.358	4.61	4.26	5y-EDAM08
EDAU08	0.608	4.61	4.01	5y-EDAU08
EDAZ08	0.857	4.61	3.76	5y-EDAZ08
EDAH09	1.106	4.61	3.51	5y-EDAH09
EDAM09	1.356	4.61	3.26	5y-EDAM09
EDAU09	1.605	4.61	3.01	5y-EDAU09
EDAZ09	1.854	4.61	2.76	5y-EDAZ09
EDAH10	2.103	4.61	2.51	5y-EDAH10
EDAM10	2.353	4.61	2.26	5y-EDAM10
EDAU10	2.602	4.61	2.01	5y-EDAU10
EDAZ10	2.851	4.61	1.76	5y-EDAZ10

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

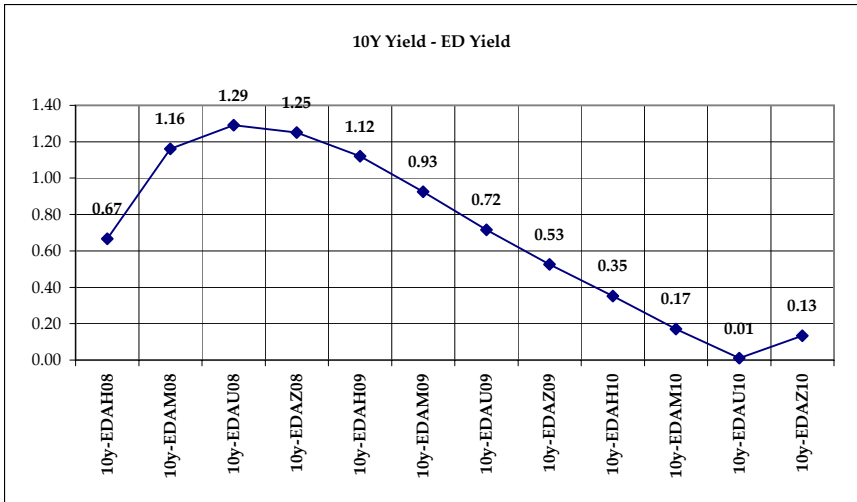
**5yr YIELD, ED PRICE Correlation**



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

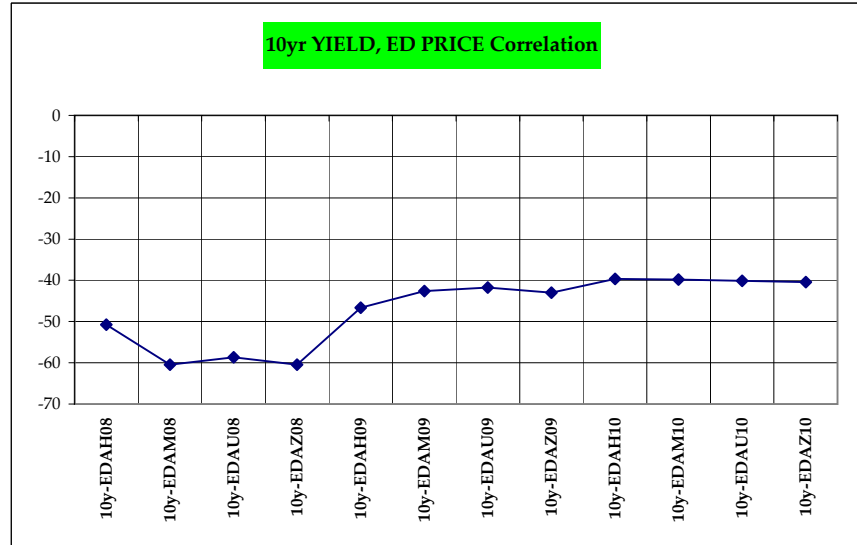
	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH08	4.01	0.67	10y-EDAH08	-50.783
EDAM08	3.51	1.16	10y-EDAM08	-60.421
EDAU08	3.38	1.29	10y-EDAU08	-58.705
EDAZ08	3.43	1.25	10y-EDAZ08	-60.421
EDAH09	3.55	1.12	10y-EDAH09	-46.648
EDAM09	3.75	0.93	10y-EDAM09	-42.609
EDAU09	3.96	0.72	10y-EDAU09	-41.729
EDAZ09	4.15	0.53	10y-EDAZ09	-43.005
EDAH10	4.32	0.35	10y-EDAH10	-39.665
EDAM10	4.51	0.17	10y-EDAM10	-39.839
EDAU10	4.66	0.01	10y-EDAU10	-40.134
EDAZ10	4.81	0.13	10y-EDAZ10	-40.430

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	0.109	7.93	7.82	10y-EDAH08
EDAM08	0.358	7.93	7.58	10y-EDAM08
EDAU08	0.608	7.93	7.33	10y-EDAU08
EDAZ08	0.857	7.93	7.08	10y-EDAZ08
EDAH09	1.106	7.93	6.83	10y-EDAH09
EDAM09	1.356	7.93	6.58	10y-EDAM09
EDAU09	1.605	7.93	6.33	10y-EDAU09
EDAZ09	1.854	7.93	6.08	10y-EDAZ09
EDAH10	2.103	7.93	5.83	10y-EDAH10
EDAM10	2.353	7.93	5.58	10y-EDAM10
EDAU10	2.602	7.93	5.33	10y-EDAU10
EDAZ10	2.851	7.93	5.08	10y-EDAZ10

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

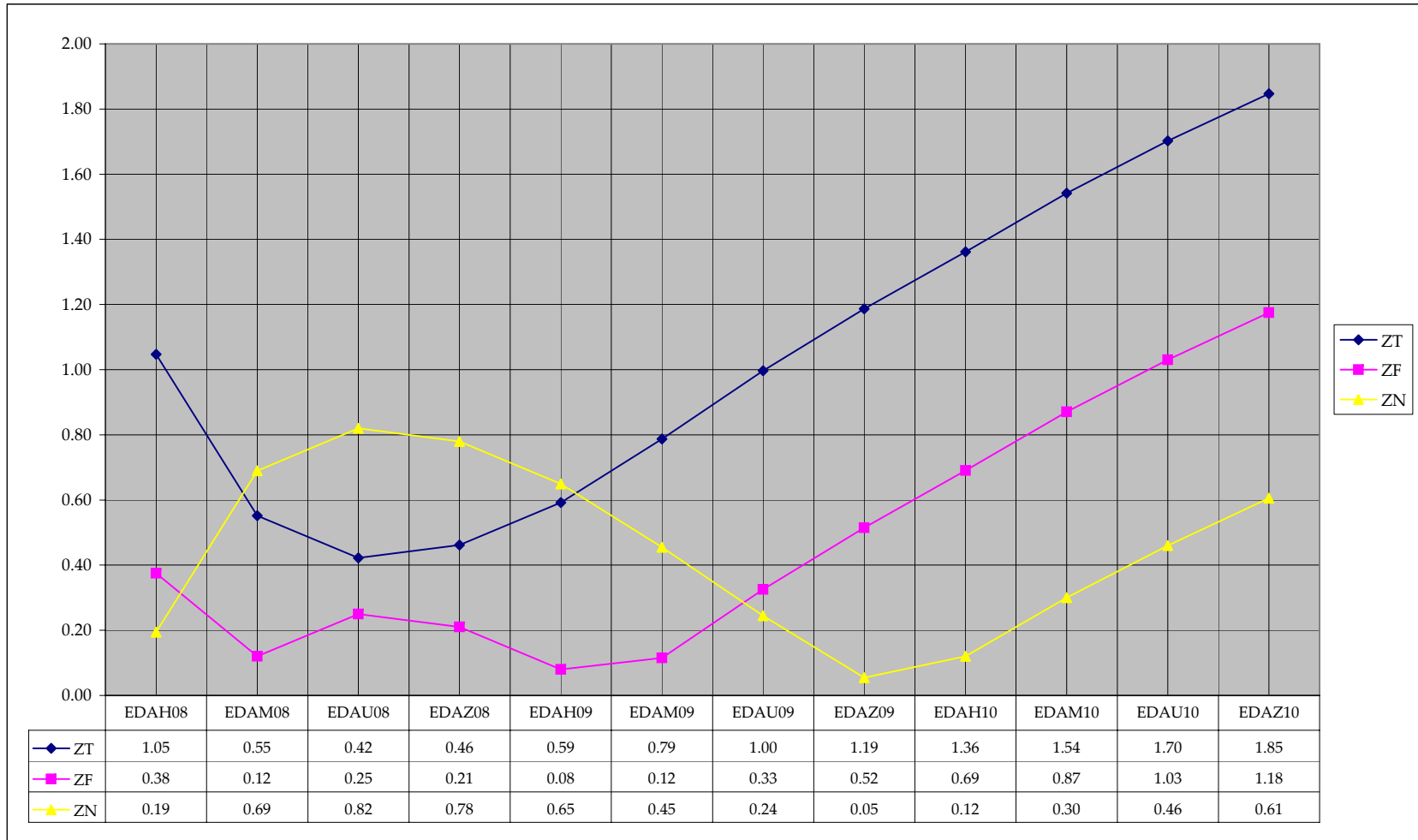


### Dirty TED Curve

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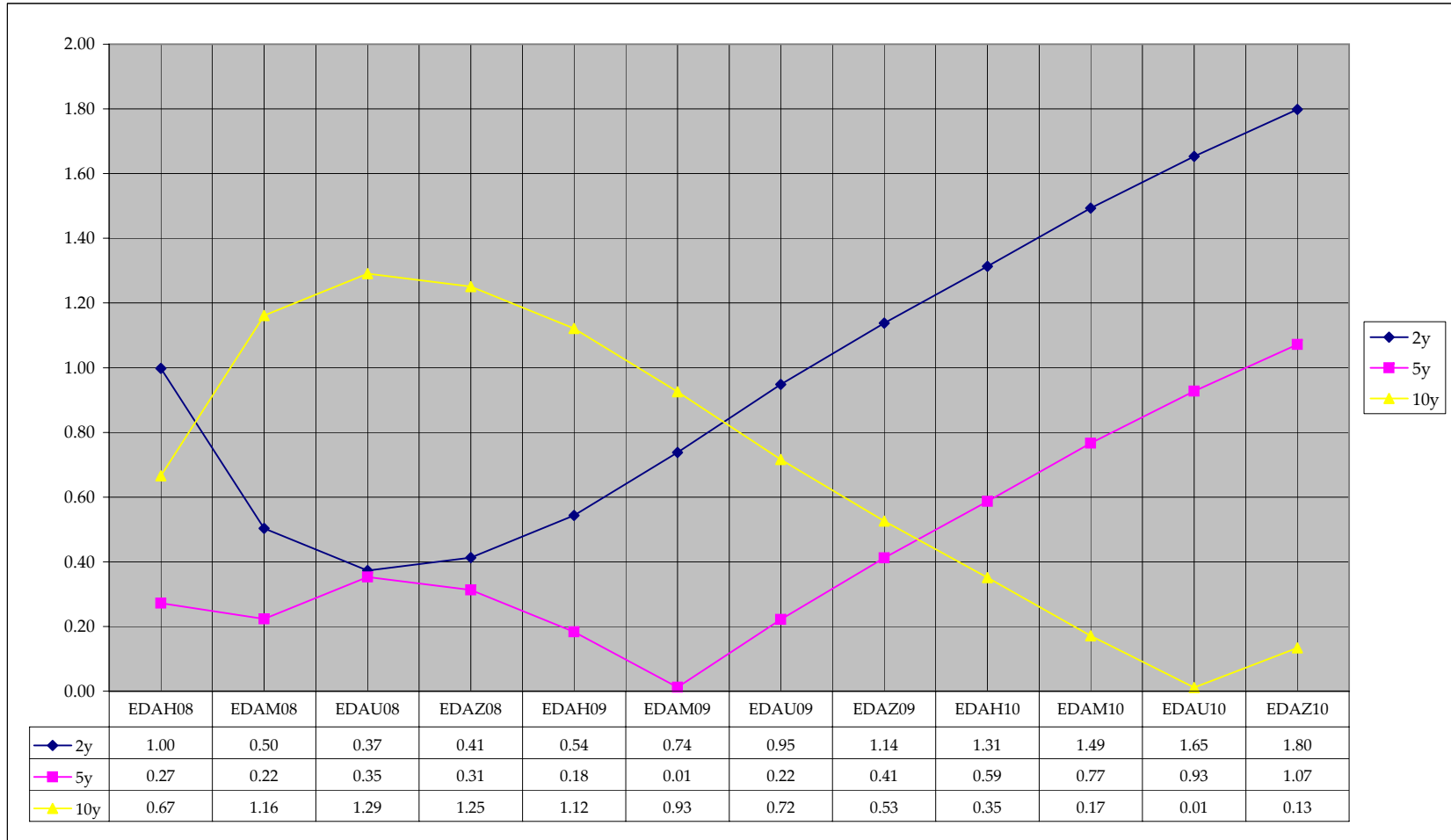
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Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis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

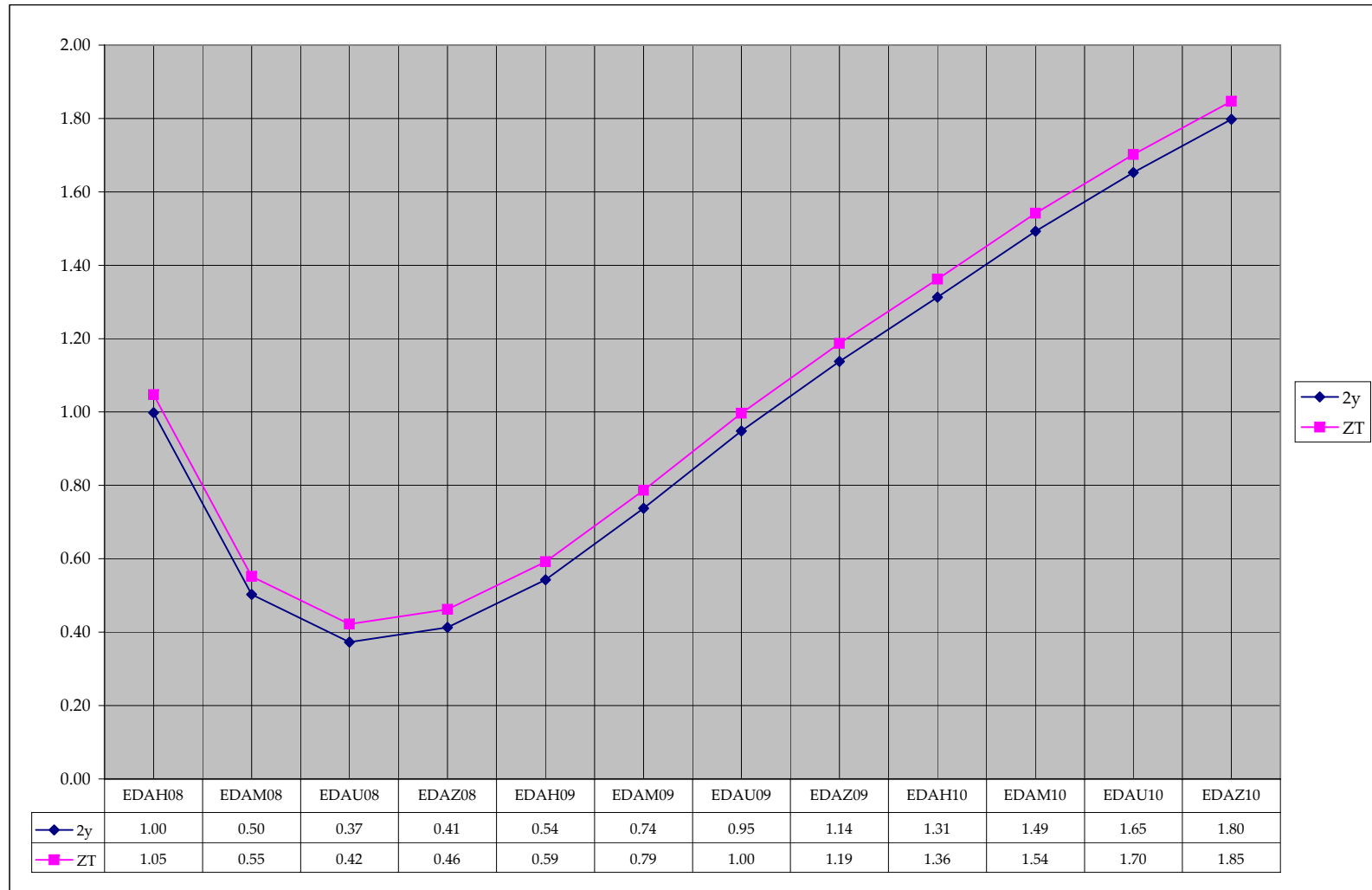


TED Curve

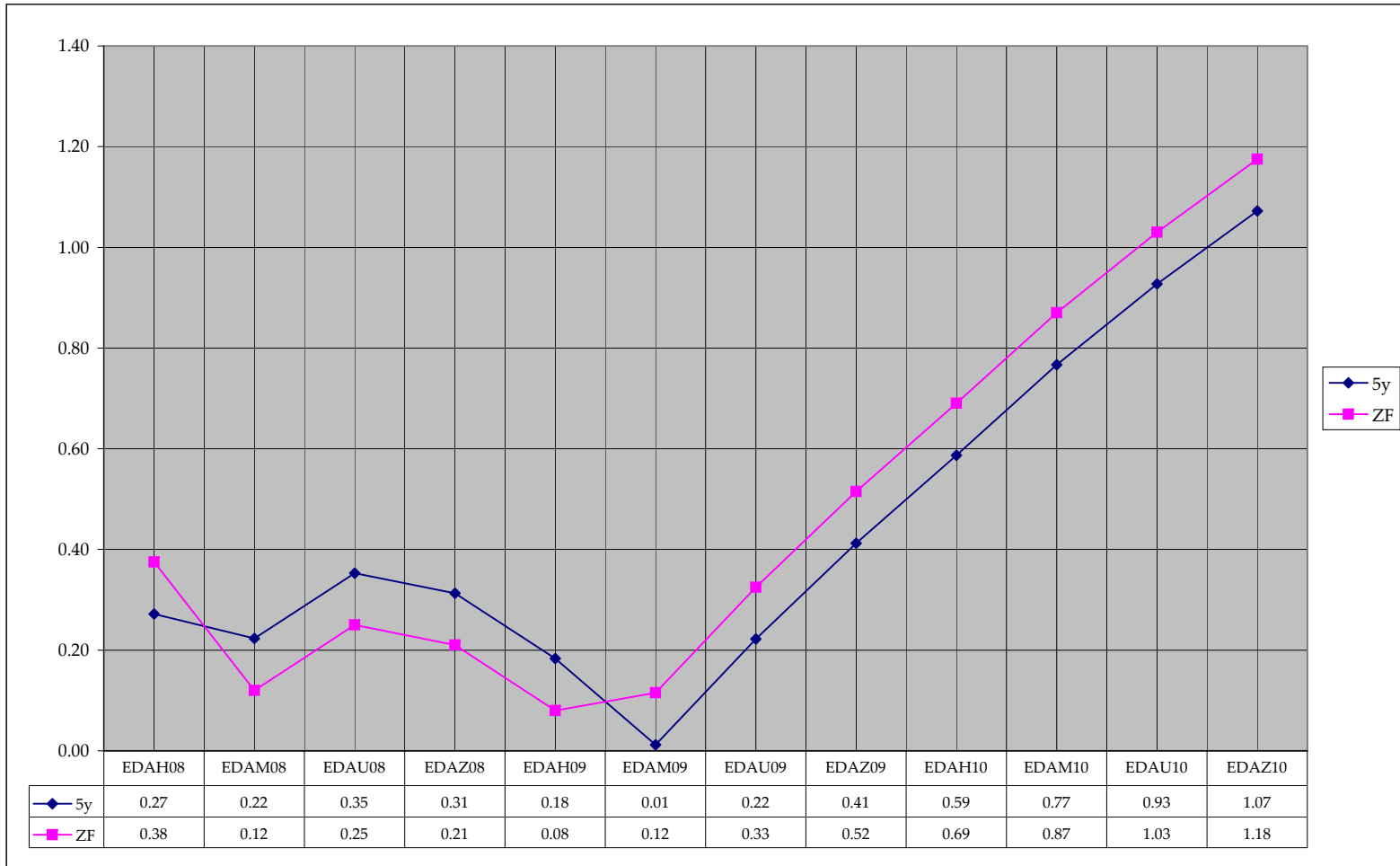
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



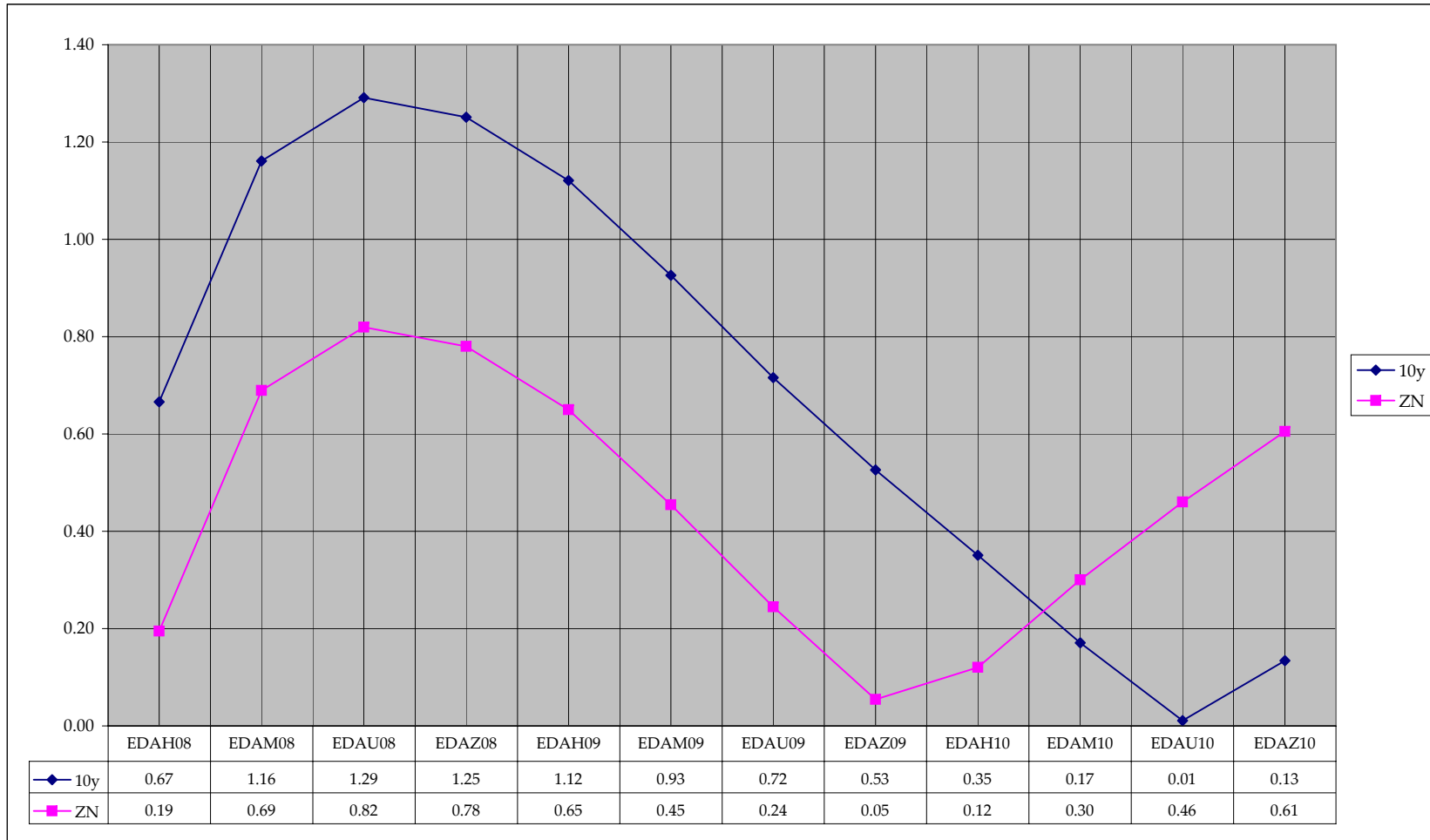
2y Basis TED Curve



## 5y Basis TED Curve



## 10y Basis TED Curve



# Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	2.534	3.375	9751.625
Q.ED.Red	2.811	3.750	9724.625
Q.ED.Green	3.556	3.500	9652.375
Q.ED.Blue	0.000	0.000	9592.250
Q.ED.Gold	0.000	0.000	9544.875

