

## The Morning Email: TERM TEDS & Dirty TEDS

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eCBOT fixed income futures have been rolled to DEC 07.

**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	103.2563	103.082	4.106	1.91	
ZF	107.0156	107.005	4.198	4.02	
ZN	109.3125	109.100	4.320	5.94	
2y	99.844	99.2700	4.083	1.89	
5y	99.609	99.1950	4.213	4.46	
10y	101.844	101.2700	4.517	7.86	

Eurodollars (ED)							
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month		
EDAU07	94.408	5.593	13	0.035	SEP	White Pack	
EDAZ07	95.080	4.920	104	0.284	DEC		
EDAH08	95.430	4.570	195	0.534	MAR		
EDAM08	95.530	4.470	286	0.783	JUN	Red Pack	
EDAU08	95.525	4.475	377	1.032	SEP		
EDAZ08	95.480	4.520	468	1.282	DEC		
EDAH09	95.415	4.585	559	1.531	MAR		
EDAM09	95.355	4.645	650	1.780	JUN	Green Pack	
EDAU09	95.305	4.695	741	2.029	SEP		
EDAZ09	95.245	4.755	832	2.279	DEC		
EDAH10	95.195	4.805	923	2.528	MAR		
EDAM10	95.155	4.845	1014	2.777	JUN	Blue Pack	
EDAU10	95.110	4.890	1105	3.027	SEP		
EDAZ10	95.040	4.960	1196	3.276	DEC		
EDAH11	95.000	5.000	1287	3.525	MAR	Gold Pack	
EDAM11	#VALUE!	#VALUE!	1378	3.775	JUN		
EDAU11	#VALUE!	#VALUE!	1476	4.043	SEP		
EDAZ11	#VALUE!	#VALUE!	1567	4.292	DEC		
EDAH12	#VALUE!	#VALUE!	1658	4.542	MAR		
EDAM12	#VALUE!	#VALUE!	1749	4.791	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	5.018	2.125	9511.188	Pack Prices
Q.ED.Red	4.673	7.500	9544.375	
Q.ED.Green	4.900	5.250	9522.500	
Q.ED.Blue		4.375	9500.875	
Q.ED.Gold		0.000	9475.625	
Q.ED.Purple		0.000	9475.625	

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)

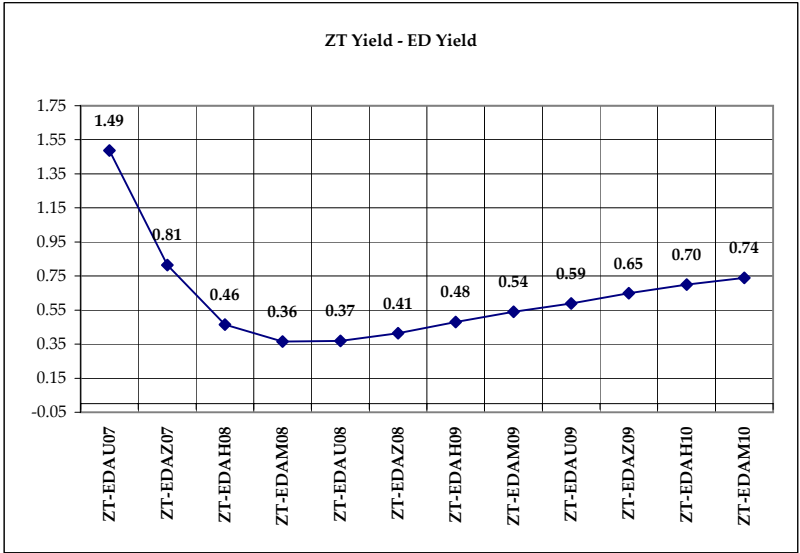
### Eurodollar Color Codes for Individual Year Strips:

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

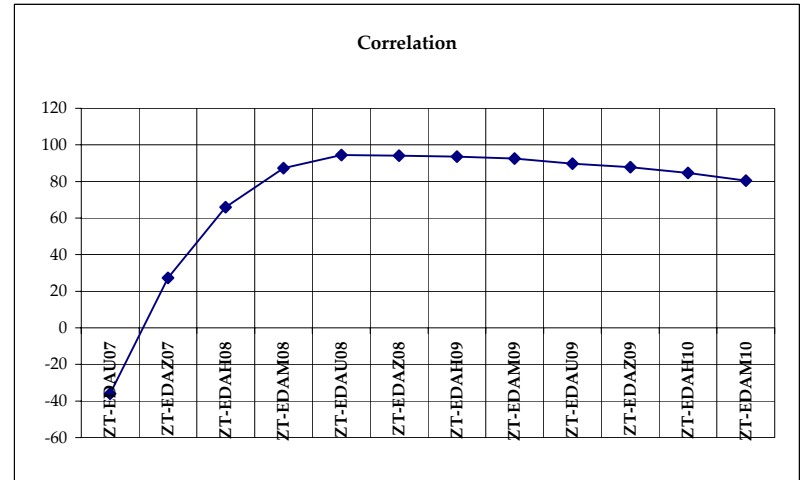
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	8.849	1.49	ZT-EDAU07	-35.969
EDAZ07	8.176	0.81	ZT-EDAZ07	27.264
EDAH08	7.826	0.46	ZT-EDAH08	65.968
EDAM08	7.726	0.36	ZT-EDAM08	87.366
EDAU08	7.731	0.37	ZT-EDAU08	94.410
EDAZ08	7.776	0.41	ZT-EDAZ08	94.153
EDAH09	7.841	0.48	ZT-EDAH09	93.514
EDAM09	7.901	0.54	ZT-EDAM09	92.620
EDAU09	7.951	0.59	ZT-EDAU09	89.822
EDAZ09	8.011	0.65	ZT-EDAZ09	87.828
EDAH10	8.061	0.70	ZT-EDAH10	84.607
EDAM10	8.101	0.74	ZT-EDAM10	80.396

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	0.035	1.91	1.87	ZT-EDAU07
EDAZ07	0.284	1.91	1.62	ZT-EDAZ07
EDAH08	0.534	1.91	1.37	ZT-EDAH08
EDAM08	0.783	1.91	1.12	ZT-EDAM08
EDAU08	1.032	1.91	0.87	ZT-EDAU08
EDAZ08	1.282	1.91	0.62	ZT-EDAZ08
EDAH09	1.531	1.91	0.37	ZT-EDAH09
EDAM09	1.780	1.91	0.13	ZT-EDAM09
EDAU09	2.029	1.91	(0.12)	ZT-EDAU09
EDAZ09	2.279	1.91	(0.37)	ZT-EDAZ09
EDAH10	2.528	1.91	(0.62)	ZT-EDAH10
EDAM10	2.777	1.91	(0.87)	ZT-EDAM10

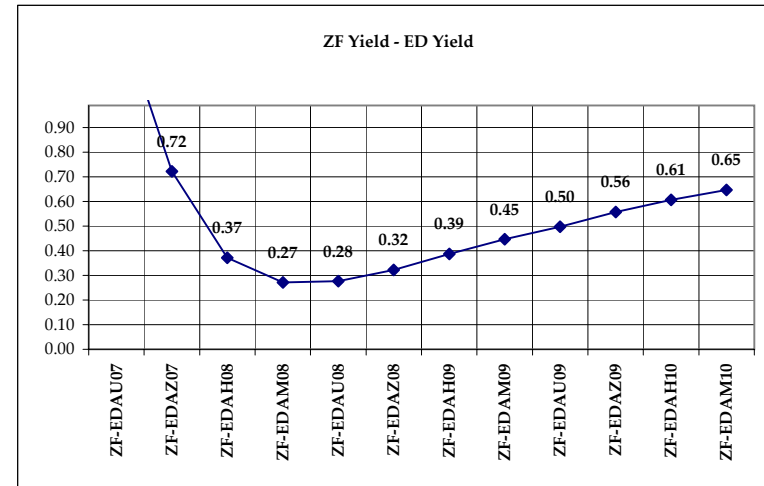
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZF vs Eurodollar Contracts

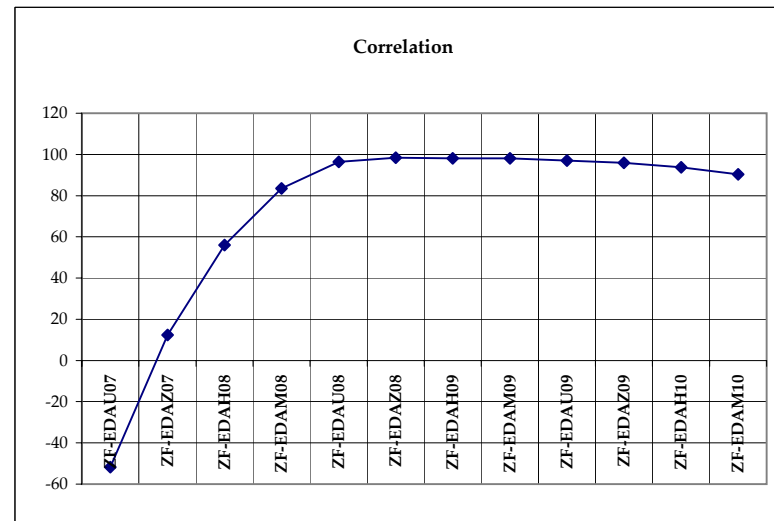
ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	12.61	1.39	ZF-EDAU07	-51.832
EDAZ07	11.94	0.72	ZF-EDAZ07	12.328
EDAH08	11.59	0.37	ZF-EDAH08	56.063
EDAM08	11.49	0.27	ZF-EDAM08	83.436
EDAU08	11.49	0.28	ZF-EDAU08	96.425
EDAZ08	11.54	0.32	ZF-EDAZ08	98.364
EDAH09	11.60	0.39	ZF-EDAH09	98.130
EDAM09	11.66	0.45	ZF-EDAM09	98.038
EDAU09	11.71	0.50	ZF-EDAU09	96.961
EDAZ09	11.77	0.56	ZF-EDAZ09	95.924
EDAH10	11.82	0.61	ZF-EDAH10	93.730
EDAM10	11.86	0.65	ZF-EDAM10	90.292

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



	GE Duration as Fraction of year	ZF Duration	Spread Duration	
EDAU07	0.035	4.02	3.98	ZF-EDAU07
EDAZ07	0.284	4.02	3.74	ZF-EDAZ07
EDAH08	0.534	4.02	3.49	ZF-EDAH08
EDAM08	0.783	4.02	3.24	ZF-EDAM08
EDAU08	1.032	4.02	2.99	ZF-EDAU08
EDAZ08	1.282	4.02	2.74	ZF-EDAZ08
EDAH09	1.531	4.02	2.49	ZF-EDAH09
EDAM09	1.780	4.02	2.24	ZF-EDAM09
EDAU09	2.029	4.02	1.99	ZF-EDAU09
EDAZ09	2.279	4.02	1.74	ZF-EDAZ09
EDAH10	2.528	4.02	1.49	ZF-EDAH10
EDAM10	2.777	4.02	1.24	ZF-EDAM10

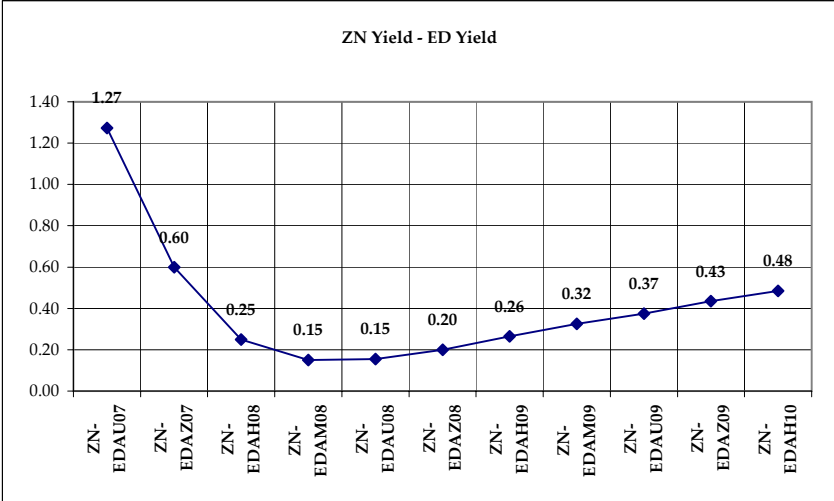
The farther away from 0 the spread duration is the riskier the trade.



Dirty TED: ZN vs Eurodollar Contracts

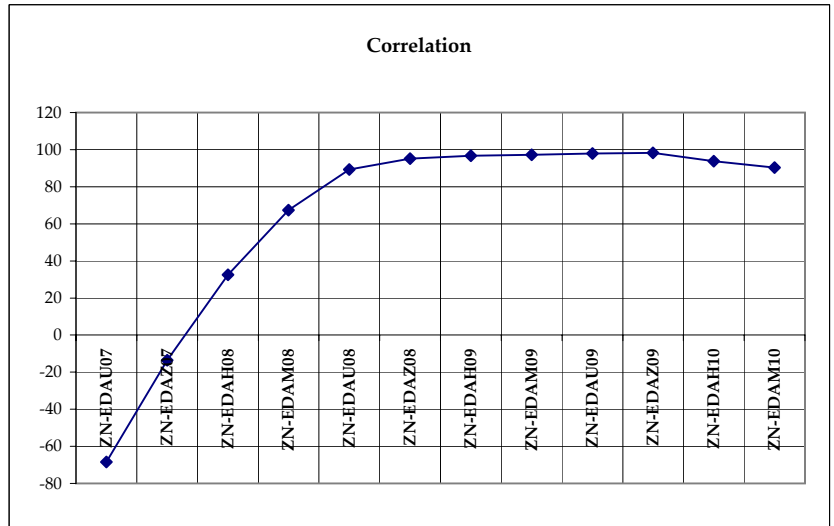
ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	14.91	1.27	ZN-EDAU07	-68.48
EDAZ07	14.23	0.60	ZN-EDAZ07	-13.48
EDAH08	13.88	0.25	ZN-EDAH08	32.53
EDAM08	13.78	0.15	ZN-EDAM08	67.34
EDAU08	13.79	0.15	ZN-EDAU08	89.33
EDAZ08	13.83	0.20	ZN-EDAZ08	95.24
EDAH09	13.90	0.26	ZN-EDAH09	96.65
EDAM09	13.96	0.32	ZN-EDAM09	97.25
EDAU09	14.01	0.37	ZN-EDAU09	97.90
EDAZ09	14.07	0.43	ZN-EDAZ09	98.23
EDAH10	14.12	0.48	ZN-EDAH10	93.73
EDAM10	14.16	0.52	ZN-EDAM10	90.29

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	0.035	5.94	5.90	ZN-EDAU07
EDAZ07	0.284	5.94	5.65	ZN-EDAZ07
EDAH08	0.534	5.94	5.41	ZN-EDAH08
EDAM08	0.783	5.94	5.16	ZN-EDAM08
EDAU08	1.032	5.94	4.91	ZN-EDAU08
EDAZ08	1.282	5.94	4.66	ZN-EDAZ08
EDAH09	1.531	5.94	4.41	ZN-EDAH09
EDAM09	1.780	5.94	4.16	ZN-EDAM09
EDAU09	2.029	5.94	3.91	ZN-EDAU09
EDAZ09	2.279	5.94	3.66	ZN-EDAZ09
EDAH10	2.528	5.94	3.41	ZN-EDAH10
EDAM10	2.777	5.94	3.16	ZN-EDAM10

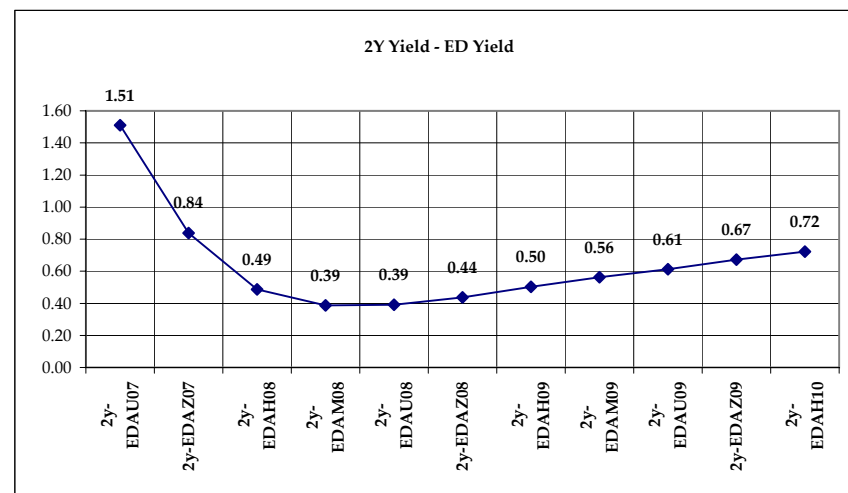
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.44	1.51	2y-EDAU07	8.044
EDAZ07	4.76	0.84	2y-EDAZ07	-53.997
EDAH08	4.41	0.49	2y-EDAH08	-84.115
EDAM08	4.31	0.39	2y-EDAM08	-92.433
EDAU08	4.32	0.39	2y-EDAU08	-88.301
EDAZ08	4.36	0.44	2y-EDAZ08	-92.433
EDAH09	4.43	0.50	2y-EDAH09	-81.599
EDAM09	4.49	0.56	2y-EDAM09	-80.742
EDAU09	4.54	0.61	2y-EDAU09	-76.765
EDAZ09	4.60	0.67	2y-EDAZ09	-72.758
EDAH10	4.65	0.72	2y-EDAH10	-67.764
EDAM10	4.69	0.76	2y-EDAM10	-61.708

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.

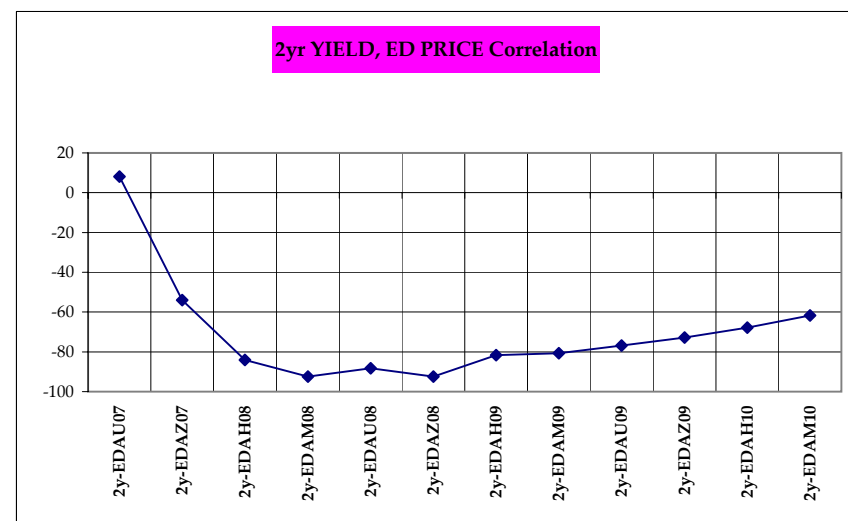


GE Duration as Fraction of year

	2Y Duration	Spread Duration	
EDAU07	0.035	1.89	2y-EDAU07
EDAZ07	0.284	1.89	2y-EDAZ07
EDAH08	0.534	1.89	2y-EDAH08
EDAM08	0.783	1.89	2y-EDAM08
EDAU08	1.032	1.89	2y-EDAU08
EDAZ08	1.282	1.89	2y-EDAZ08
EDAH09	1.531	1.89	2y-EDAH09
EDAM09	1.780	1.89	2y-EDAM09
EDAU09	2.029	1.89	2y-EDAU09
EDAZ09	2.279	1.89	2y-EDAZ09
EDAH10	2.528	1.89	2y-EDAH10
EDAM10	2.777	1.89	2y-EDAM10

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

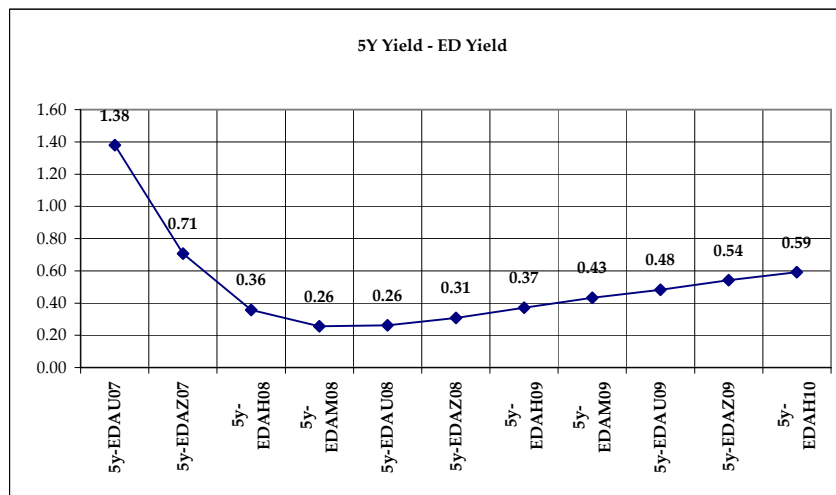
2yr YIELD, ED PRICE Correlation



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

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.20	1.38	5y-EDAU07	42.967
EDAZ07	4.53	0.71	5y-EDAZ07	-16.971
EDAH08	4.18	0.36	5y-EDAH08	-57.199
EDAM08	4.08	0.26	5y-EDAM08	-79.414
EDAU08	4.08	0.26	5y-EDAU08	-90.533
EDAZ08	4.13	0.31	5y-EDAZ08	-79.414
EDAH09	4.19	0.37	5y-EDAH09	-92.441
EDAM09	4.25	0.43	5y-EDAM09	-93.072
EDAU09	4.30	0.48	5y-EDAU09	-91.961
EDAZ09	4.36	0.54	5y-EDAZ09	-90.503
EDAH10	4.41	0.59	5y-EDAH10	-88.876
EDAM10	4.45	0.63	5y-EDAM10	-85.801

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.

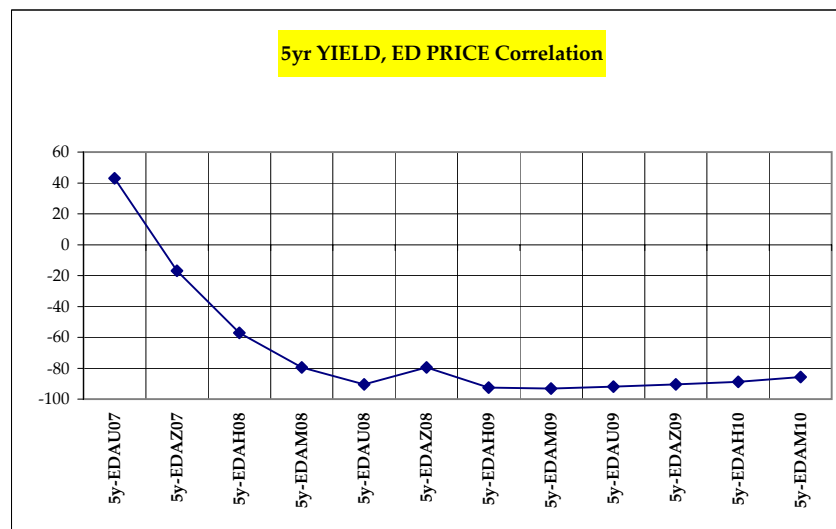


**GE Duration as**

	Fraction of year	5Y Duration	Spread Duration	
EDAU07	0.035	4.46	4.43	5y-EDAU07
EDAZ07	0.284	4.46	4.18	5y-EDAZ07
EDAH08	0.534	4.46	3.93	5y-EDAH08
EDAM08	0.783	4.46	3.68	5y-EDAM08
EDAU08	1.032	4.46	3.43	5y-EDAU08
EDAZ08	1.282	4.46	3.18	5y-EDAZ08
EDAH09	1.531	4.46	2.93	5y-EDAH09
EDAM09	1.780	4.46	2.68	5y-EDAM09
EDAU09	2.029	4.46	2.43	5y-EDAU09
EDAZ09	2.279	4.46	2.18	5y-EDAZ09
EDAH10	2.528	4.46	1.93	5y-EDAH10
EDAM10	2.777	4.46	1.68	5y-EDAM10

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

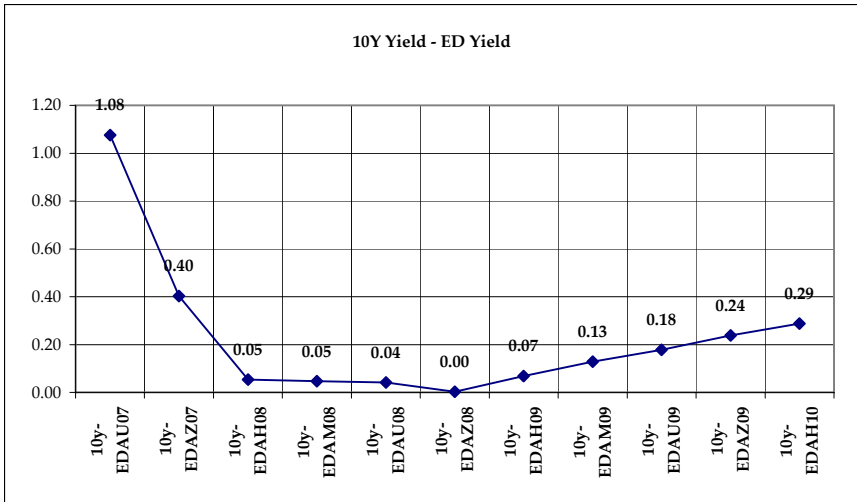
5yr YIELD, ED PRICE Correlation



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

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU07	5.20	1.08	10y-EDAU07	65.506
EDAZ07	4.53	0.40	10y-EDAZ07	22.932
EDAH08	4.18	0.05	10y-EDAH08	-17.601
EDAM08	4.08	0.05	10y-EDAM08	-48.858
EDAU08	4.08	0.04	10y-EDAU08	-73.653
EDAZ08	4.13	0.00	10y-EDAZ08	-48.858
EDAH09	4.19	0.07	10y-EDAH09	-85.502
EDAM09	4.25	0.13	10y-EDAM09	-87.382
EDAU09	4.30	0.18	10y-EDAU09	-88.658
EDAZ09	4.36	0.24	10y-EDAZ09	-89.768
EDAH10	4.41	0.29	10y-EDAH10	-92.158
EDAM10	4.45	0.33	10y-EDAM10	-92.641

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.

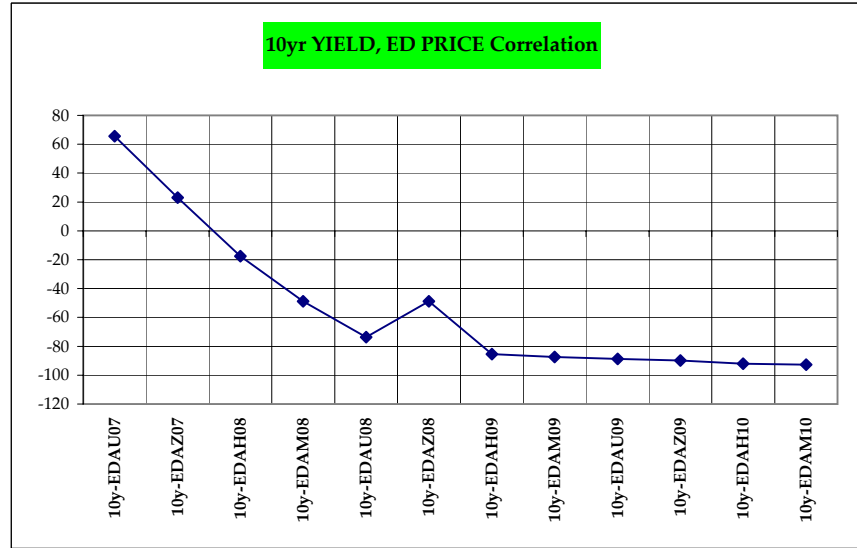


**GE Duration as**

	Fraction of year	10Y Duration	Spread Duration	
EDAU07	0.035	7.86	7.83	10y-EDAU07
EDAZ07	0.284	7.86	7.58	10y-EDAZ07
EDAH08	0.534	7.86	7.33	10y-EDAH08
EDAM08	0.783	7.86	7.08	10y-EDAM08
EDAU08	1.032	7.86	6.83	10y-EDAU08
EDAZ08	1.282	7.86	6.58	10y-EDAZ08
EDAH09	1.531	7.86	6.33	10y-EDAH09
EDAM09	1.780	7.86	6.08	10y-EDAM09
EDAU09	2.029	7.86	5.83	10y-EDAU09
EDAZ09	2.279	7.86	5.58	10y-EDAZ09
EDAH10	2.528	7.86	5.33	10y-EDAH10
EDAM10	2.777	7.86	5.08	10y-EDAM10

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

**10yr YIELD, ED PRICE Correlation**

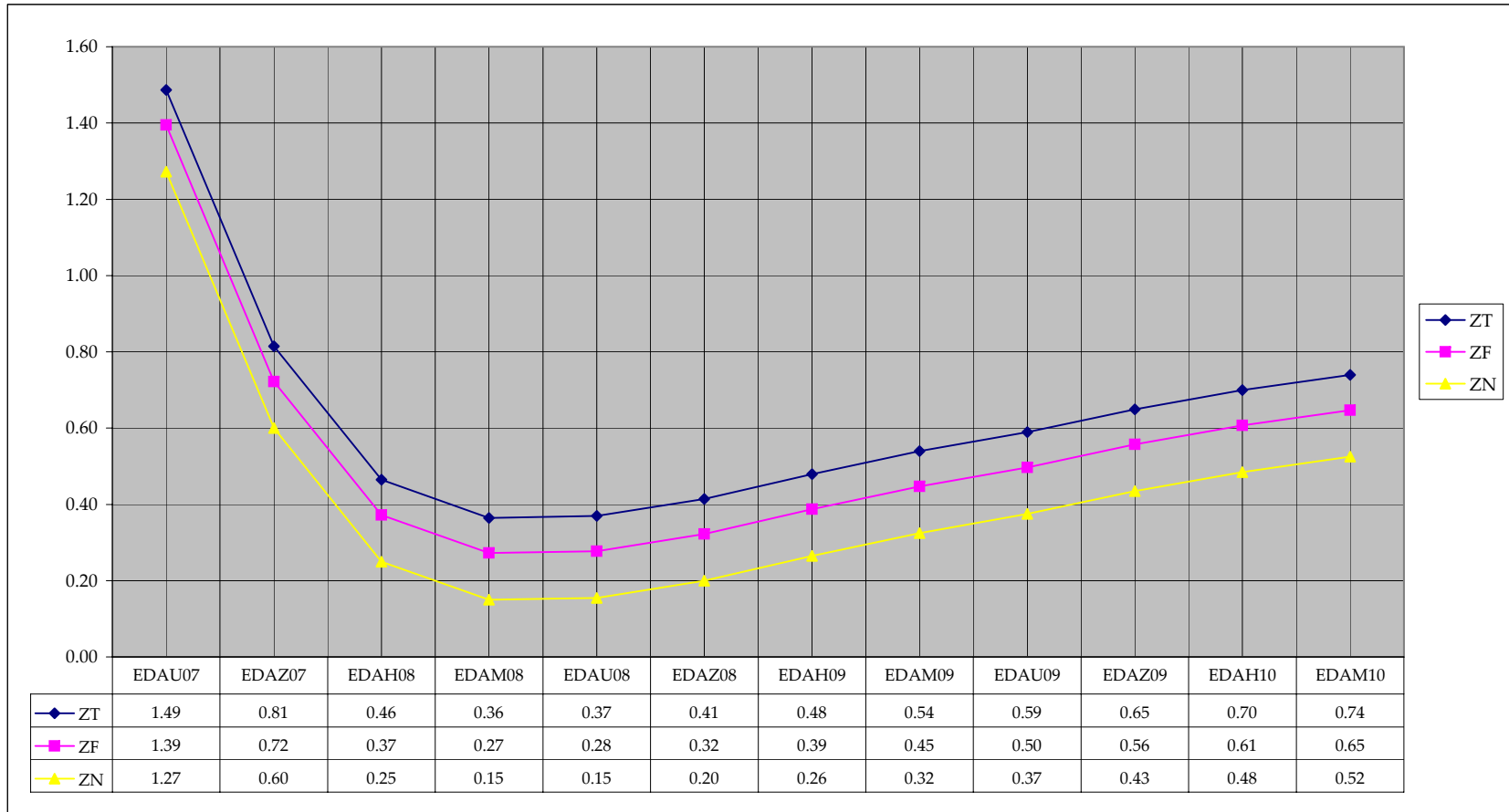


### Dirty TED Curve

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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.

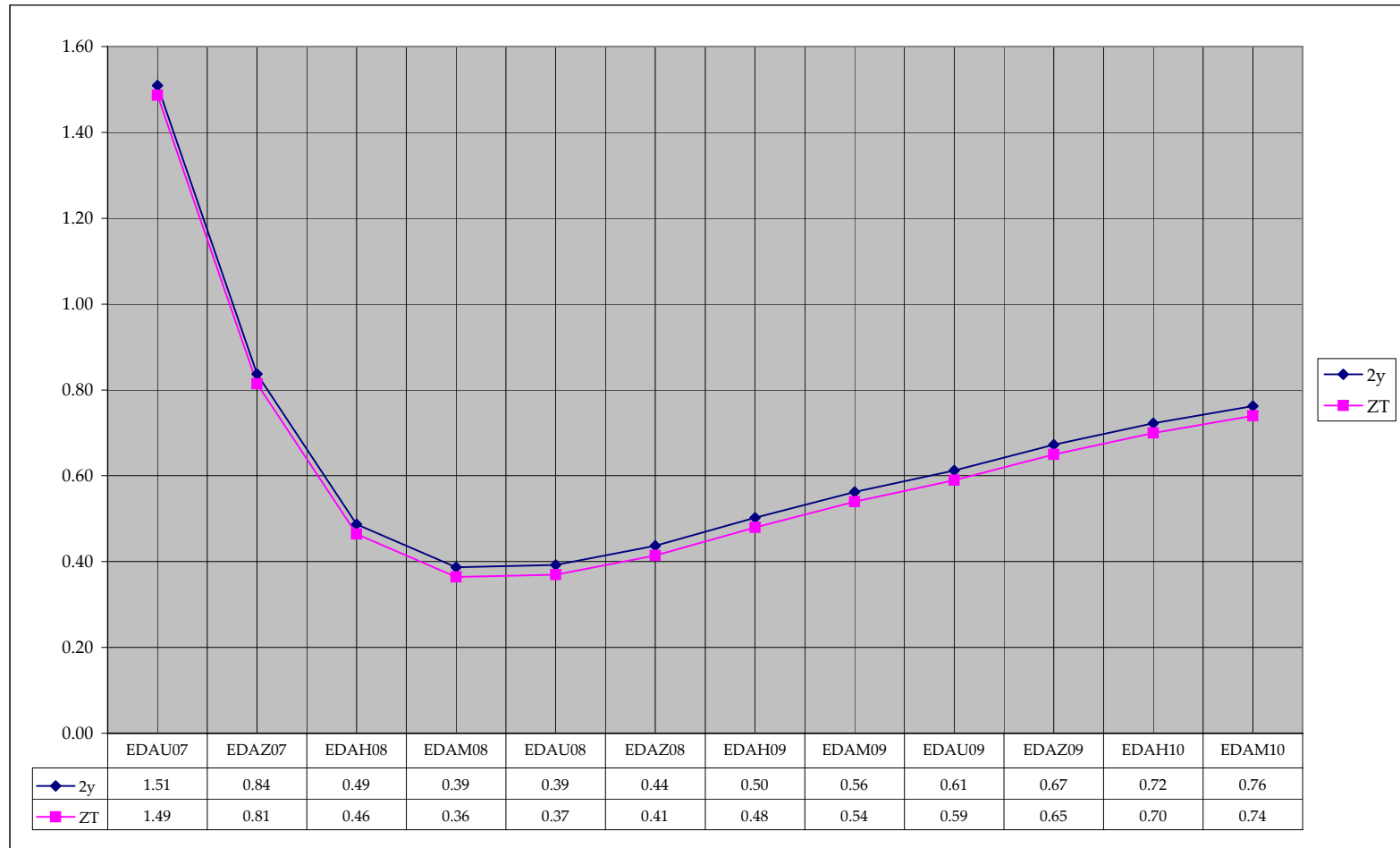


TED Curve

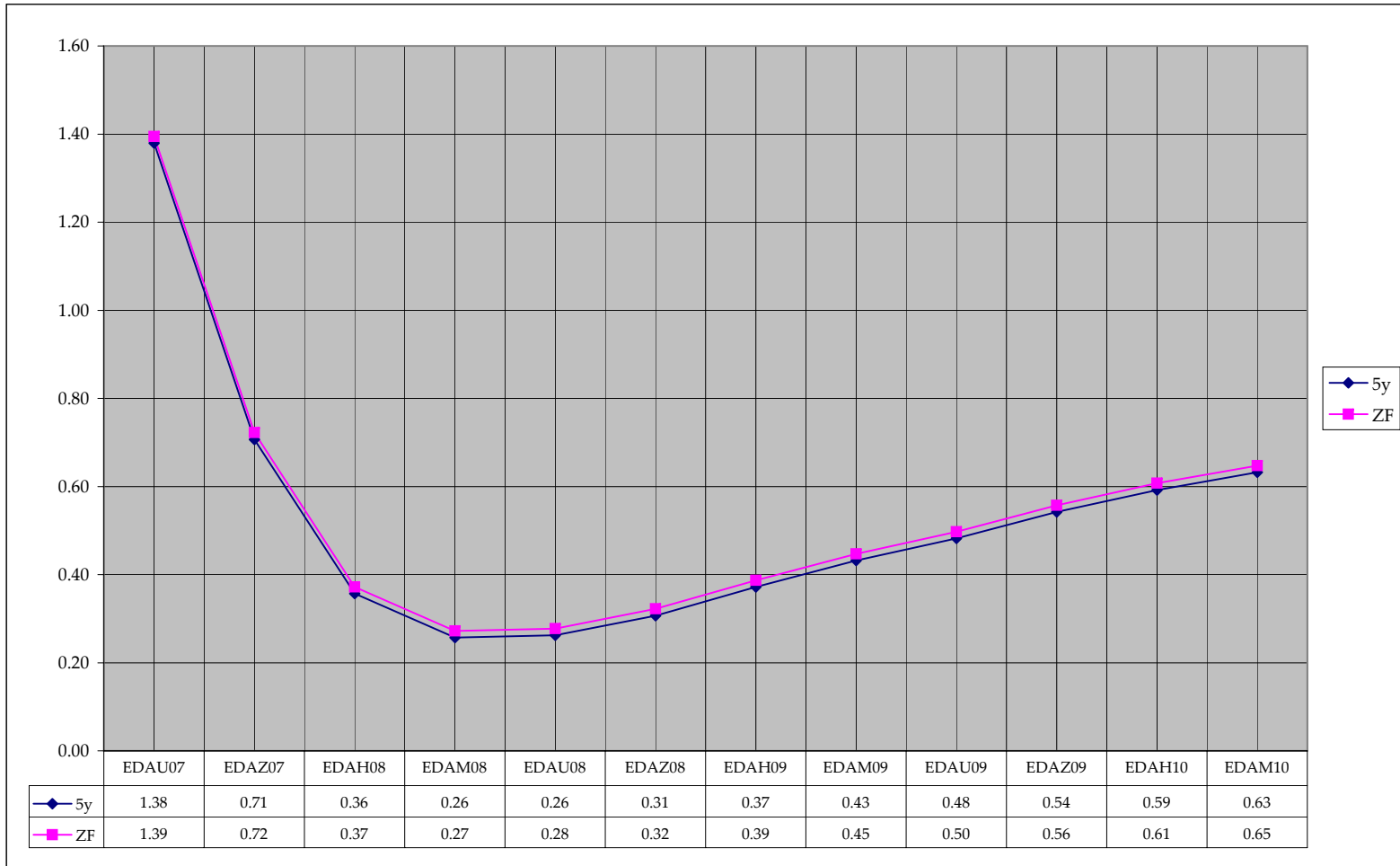
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



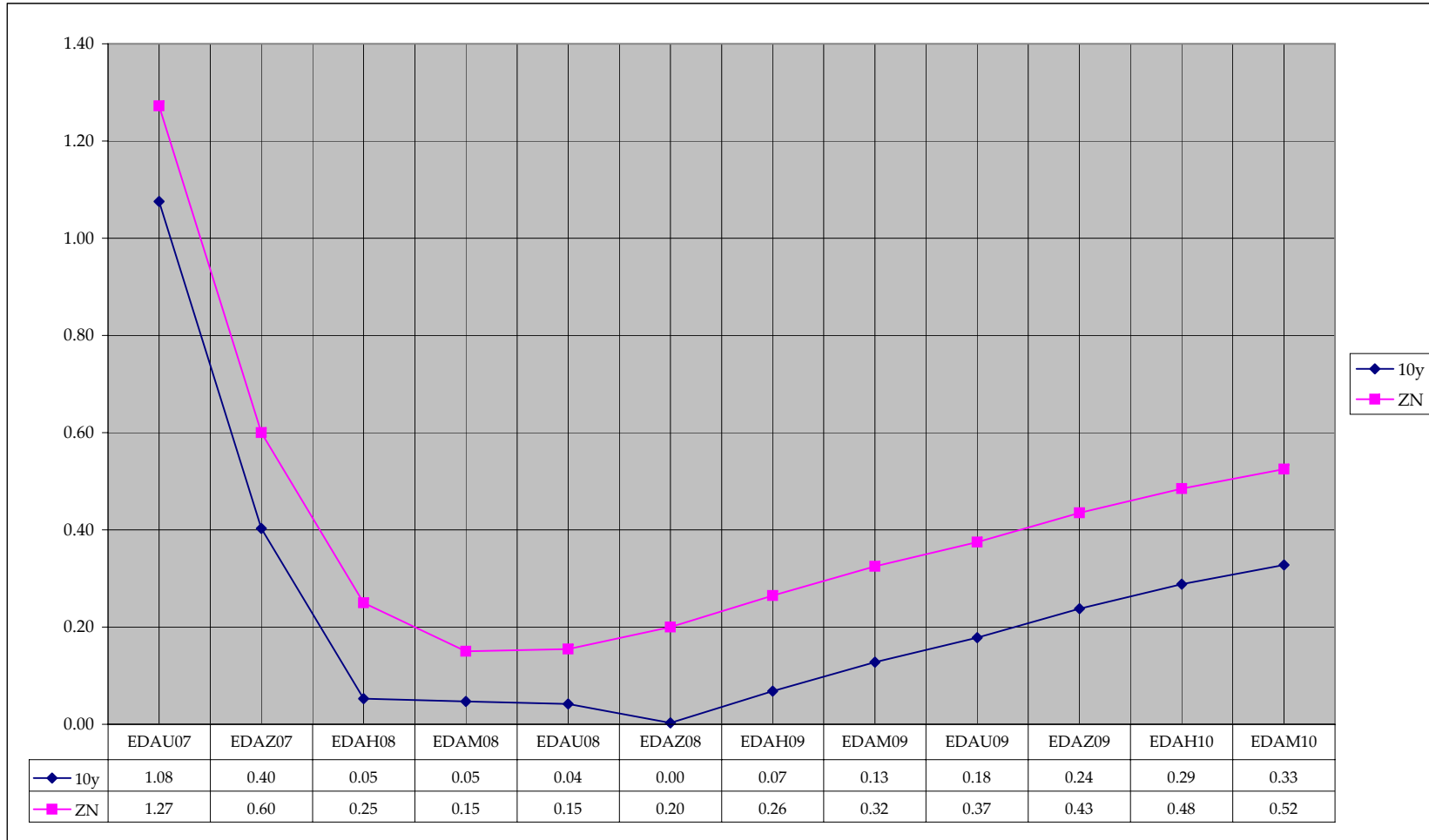
2y Basis TED Curve



5y Basis TED Curve



10y Basis TED Curve



### Packs

	last Yield	Net Last Yield	Last Price
Q.ED.White	5.018	2.125	9511.188
Q.ED.Red	4.673	7.500	9544.375
Q.ED.Green	4.900	5.250	9522.500
Q.ED.Blue	4.375	0.000	9500.875
Q.ED.Gold	0.000	0.000	9475.625
Q.ED.Purple	0.000	0.000	9475.625

