

## **The Morning Email: TERM TEDS & Dirty TEDS**

### **Table of Contents**

- Pg 1** Quotes
- Pg 2** Dirty TED: ZT vs Eurodollar Contracts
- Pg 3** Dirty TED: ZF vs Eurodollar Contracts
- Pg 4** Dirty TED: ZN vs Eurodollar Contracts
- Pg 5** TERM TED: 2y vs Eurodollar Contracts
- Pg 6** TERM TED: 5y vs Eurodollar Contracts
- Pg 7** TERM TED: 10y vs Eurodollar Contracts
- Pg 8** Dirty TED Curve
- Pg 9** TED Curve
- Pg 10** 2y Basis TED Curve
- Pg 11** 5y Basis TED Curve
- Pg 12** 10y Basis TED Curve
- Pg 13** Packs

Want something added? Let me know: [jgoulding@ghco.com](mailto:jgoulding@ghco.com)

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Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	108.8438	108.2700	0.775	1.924
ZF	118.4906	118.1570	1.515	1.515
ZN	123.6875	123.2200	2.308	5.970
2y	100.0469	100.0150	0.855	1.976
5y	100.0781	100.0250	1.735	4.765
10y	100.1563	100.0500	2.732	8.570

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAM09	98.8800	1.120	76	0.2076	JUN	
EDAU09	98.8850	1.115	167	0.4569	SEP	White Pack
EDAZ09	98.7400	1.260	258	0.7062	DEC	
EDAH10	98.6850	1.315	349	0.9555	MAR	
EDAM10	98.5350	1.465	440	1.2048	JUN	
EDAU10	98.3750	1.625	531	1.4541	SEP	Red Pack
EDAZ10	98.1650	1.835	622	1.7035	DEC	
EDAH11	98.0050	1.995	713	1.9528	MAR	
EDAM11	97.7950	2.205	804	2.2021	JUN	
EDAU11	97.5950	2.405	902	2.4706	SEP	Green Pack
EDAZ11	97.3850	2.615	993	2.7199	DEC	
EDAH12	97.2400	2.760	1,084	2.9692	MAR	
EDAM12	97.0900	2.910	1,175	3.2185	JUN	
EDAU12	96.9600	3.040	1,266	3.4678	SEP	Blue Pack
EDAZ12	96.8400	3.160	1,357	3.7172	DEC	
EDAH13	96.8150	3.185	1,448	3.9665	MAR	
EDAM13	96.7400	3.260	1,539	4.2158	JUN	
EDAU13	96.6250	3.375	1,630	4.4651	SEP	Gold Pack
EDAZ13	96.5350	3.465	1,721	4.7144	DEC	
EDAH14	96.4800	3.520	1,812	4.9637	MAR	

	Last Yield	Net Yield	Last Price	
White Pack	1.223	0.750	9879.75	
Red Pack	1.762	-0.750	9827.00	Pack Prices
Green Pack	2.547	-2.750	9750.38	
Blue Pack		-3.250	9693.00	
Gold Pack		-3.000	9659.50	

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

**Notes**

\* Futures use CTD for Last Yield

IF : '#VALUE!', then, no quote being provided by exchange.

If color of cell is orange, it's simply a 'note' for me.

**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.

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#### **Correlations (Important)**

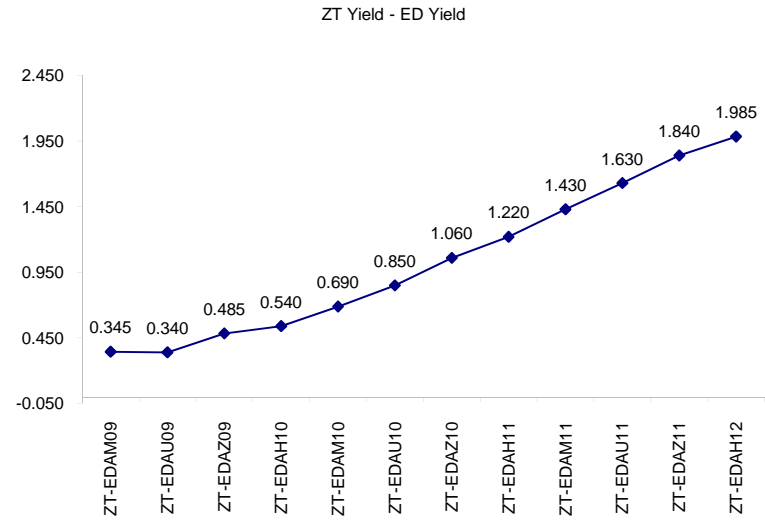
Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based on yield than price.

	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	9.96	0.345	ZT-EDAM09	92
EDAU09	9.96	0.340	ZT-EDAU09	88
EDAZ09	10.10	0.485	ZT-EDAZ09	86
EDAH10	10.16	0.540	ZT-EDAH10	85
EDAM10	10.31	0.690	ZT-EDAM10	86
EDAU10	10.47	0.850	ZT-EDAU10	84
EDAZ10	10.68	1.060	ZT-EDAZ10	83
EDAH11	10.84	1.220	ZT-EDAH11	79
EDAM11	11.05	1.430	ZT-EDAM11	75
EDAU11	11.25	1.630	ZT-EDAU11	74
EDAZ11	11.46	1.840	ZT-EDAZ11	77
EDAH12	11.60	1.985	ZT-EDAH12	80

Price = Outright Decimal Price - Euro Contract Price

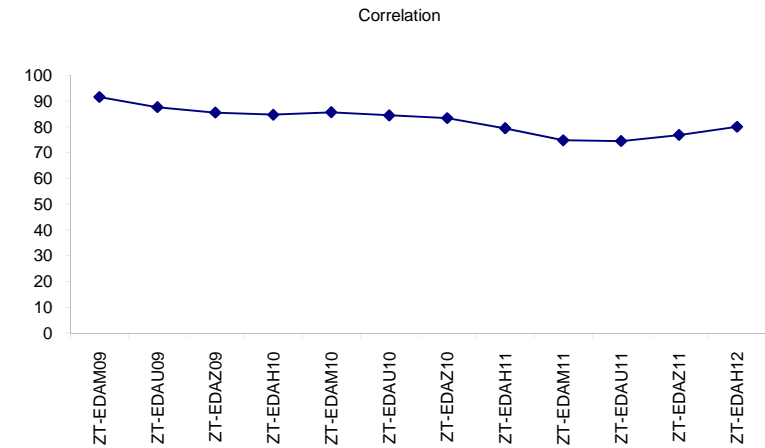
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



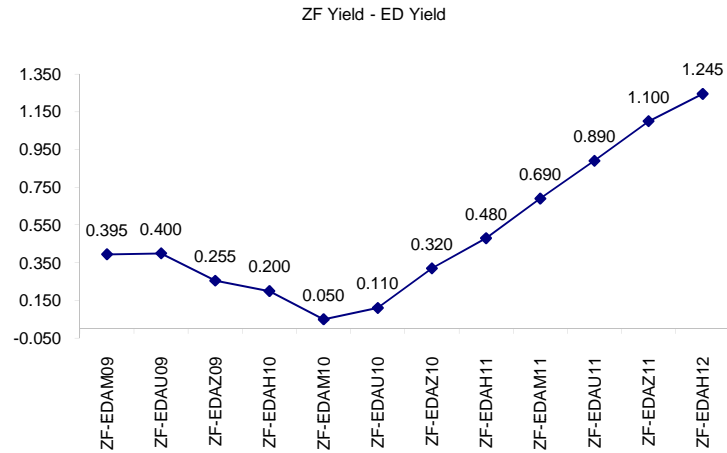
	ED Duration as Fraction of year			ZT Duration	Spread Duration	
EDAM09	0.2076	1.9242	1.7166	ZT-EDAM09		
EDAU09	0.4569	1.9242	1.4673	ZT-EDAU09		
EDAZ09	0.7062	1.9242	1.2180	ZT-EDAZ09		
EDAH10	0.9555	1.9242	0.9687	ZT-EDAH10		
EDAM10	1.2048	1.9242	0.7194	ZT-EDAM10		
EDAU10	1.4541	1.9242	0.4700	ZT-EDAU10		
EDAZ10	1.7035	1.9242	0.2207	ZT-EDAZ10		
EDAH11	1.9528	1.9242	-0.0286	ZT-EDAH11		
EDAM11	2.2021	1.9242	-0.2779	ZT-EDAM11		
EDAU11	2.4706	1.9242	-0.5464	ZT-EDAU11		
EDAZ11	2.7199	1.9242	-0.7957	ZT-EDAZ11		
EDAH12	2.9692	1.9242	-1.0450	ZT-EDAH12		

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



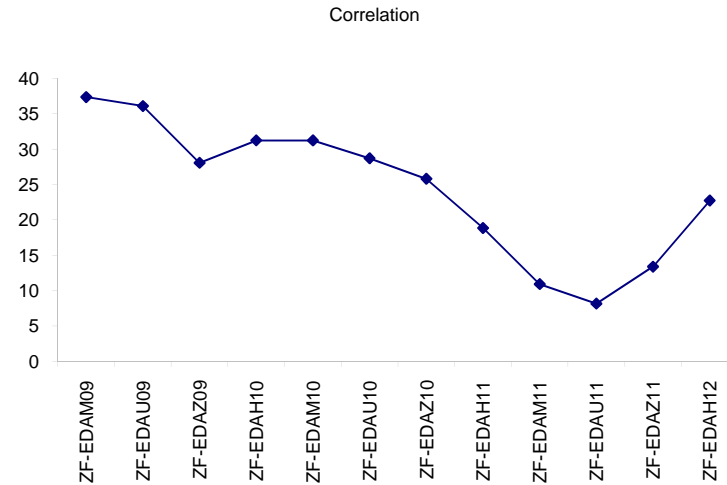
	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	19.61	0.395	ZF-EDAM09	37
EDAU09	19.61	0.400	ZF-EDAU09	36
EDAZ09	19.75	0.255	ZF-EDAZ09	28
EDAH10	19.81	0.200	ZF-EDAH10	31
EDAM10	19.96	0.050	ZF-EDAM10	31
EDAU10	20.12	0.110	ZF-EDAU10	29
EDAZ10	20.33	0.320	ZF-EDAZ10	26
EDAH11	20.49	0.480	ZF-EDAH11	19
EDAM11	20.70	0.690	ZF-EDAM11	11
EDAU11	20.90	0.890	ZF-EDAU11	8
EDAZ11	21.11	1.100	ZF-EDAZ11	13
EDAH12	21.25	1.245	ZF-EDAH12	23

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



	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAM09	0.2076	1.5148	1.3072	1.3072	ZF-EDAM09
EDAU09	0.4569	1.5148	1.0579	1.0579	ZF-EDAU09
EDAZ09	0.7062	1.5148	0.8086	0.8086	ZF-EDAZ09
EDAH10	0.9555	1.5148	0.5593	0.5593	ZF-EDAH10
EDAM10	1.2048	1.5148	0.3099	0.3099	ZF-EDAM10
EDAU10	1.4541	1.5148	0.0606	0.0606	ZF-EDAU10
EDAZ10	1.7035	1.5148	-0.1887	-0.1887	ZF-EDAZ10
EDAH11	1.9528	1.5148	-0.4380	-0.4380	ZF-EDAH11
EDAM11	2.2021	1.5148	-0.6873	-0.6873	ZF-EDAM11
EDAU11	2.4706	1.5148	-0.9558	-0.9558	ZF-EDAU11
EDAZ11	2.7199	1.5148	-1.2051	-1.2051	ZF-EDAZ11
EDAH12	2.9692	1.5148	-1.4544	-1.4544	ZF-EDAH12

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

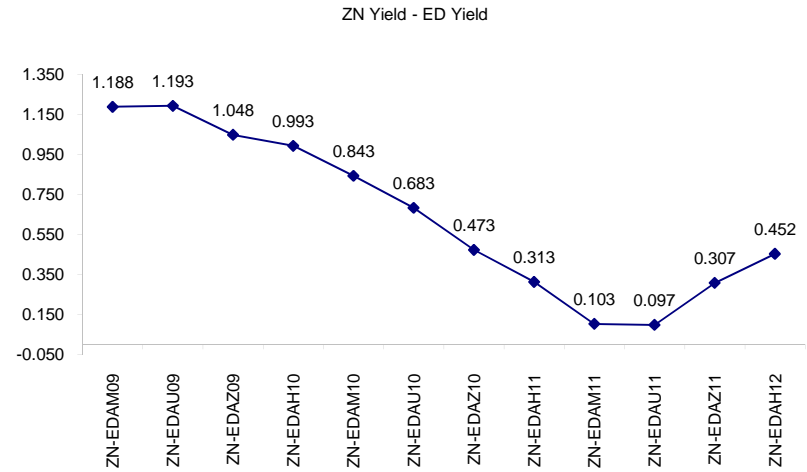


	ZN			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAM09	24.81	1.188	ZN-EDAM09	-4
EDAU09	24.80	1.193	ZN-EDAU09	-9
EDAZ09	24.95	1.048	ZN-EDAZ09	-18
EDAH10	25.00	0.993	ZN-EDAH10	-15
EDAM10	25.15	0.843	ZN-EDAM10	-15
EDAU10	25.31	0.683	ZN-EDAU10	-17
EDAZ10	25.52	0.473	ZN-EDAZ10	-20
EDAH11	25.68	0.313	ZN-EDAH11	-26
EDAM11	25.89	0.103	ZN-EDAM11	-33
EDAU11	26.09	0.097	ZN-EDAU11	-35
EDAZ11	26.30	0.307	ZN-EDAZ11	-28
EDAH12	26.45	0.452	ZN-EDAH12	-17

Price = Outright Decimal Price - Euro Contract Price

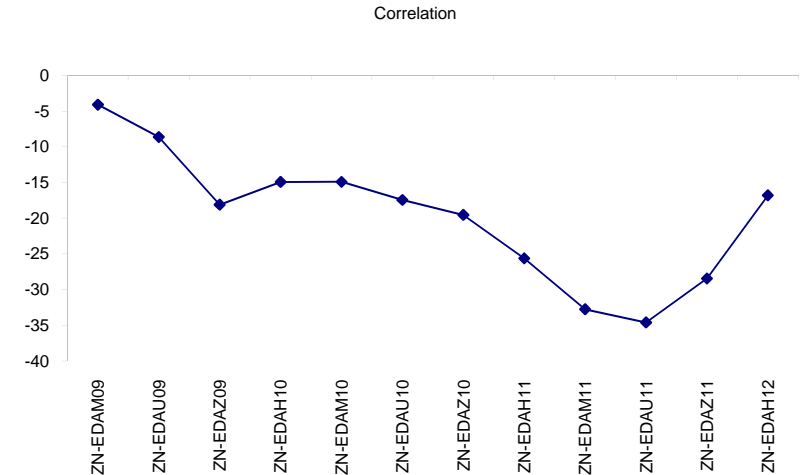
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as			ZN Duration	Spread Duration
	Fraction of year	ZN Duration	Spread Duration		
EDAM09	0.2076	5.9697	5.7621	ZN-EDAM09	
EDAU09	0.4569	5.9697	5.5128	ZN-EDAU09	
EDAZ09	0.7062	5.9697	5.2635	ZN-EDAZ09	
EDAH10	0.9555	5.9697	5.0142	ZN-EDAH10	
EDAM10	1.2048	5.9697	4.7649	ZN-EDAM10	
EDAU10	1.4541	5.9697	4.5156	ZN-EDAU10	
EDAZ10	1.7035	5.9697	4.2662	ZN-EDAZ10	
EDAH11	1.9528	5.9697	4.0169	ZN-EDAH11	
EDAM11	2.2021	5.9697	3.7676	ZN-EDAM11	
EDAU11	2.4706	5.9697	3.4991	ZN-EDAU11	
EDAZ11	2.7199	5.9697	3.2498	ZN-EDAZ11	
EDAH12	2.9692	5.9697	3.0005	ZN-EDAH12	

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



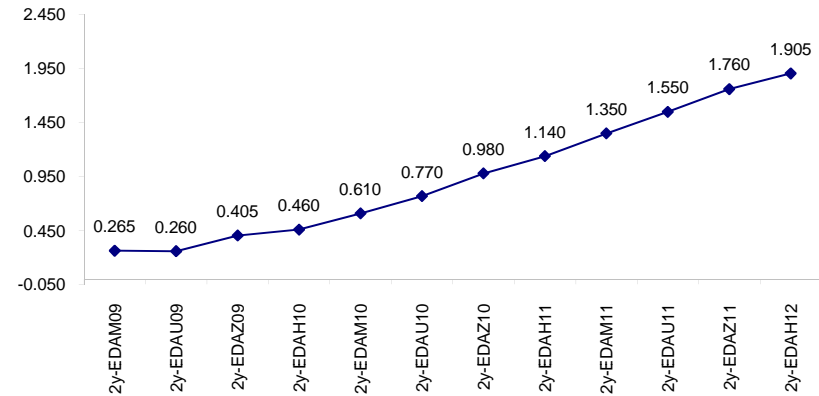
	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.17	0.265	2y-EDAM09	-62
EDAU09	1.16	0.260	2y-EDAU09	-54
EDAZ09	1.31	0.405	2y-EDAZ09	-46
EDAH10	1.36	0.460	2y-EDAH10	-48
EDAM10	1.51	0.610	2y-EDAM10	-49
EDAU10	1.67	0.770	2y-EDAU10	-47
EDAZ10	1.88	0.980	2y-EDAZ10	-46
EDAH11	2.04	1.140	2y-EDAH11	-40
EDAM11	2.25	1.350	2y-EDAM11	-33
EDAU11	2.45	1.550	2y-EDAU11	-32
EDAZ11	2.66	1.760	2y-EDAZ11	-37
EDAH12	2.81	1.905	2y-EDAH12	-46

Price = Outright Decimal Price - Euro Contract Price

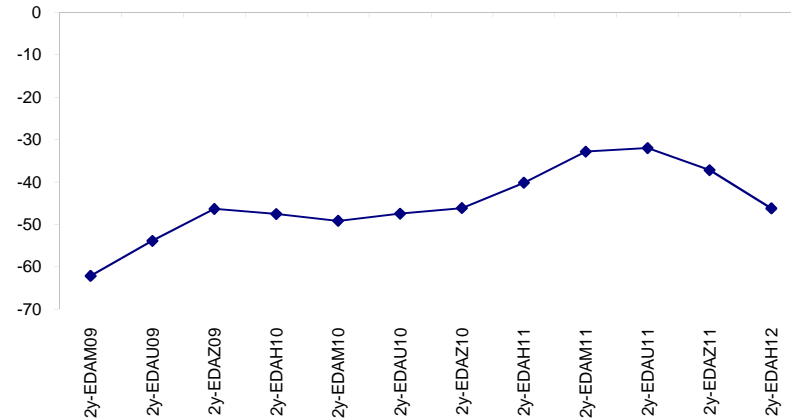
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days.

ZT Yield - ED Yield



Correlation

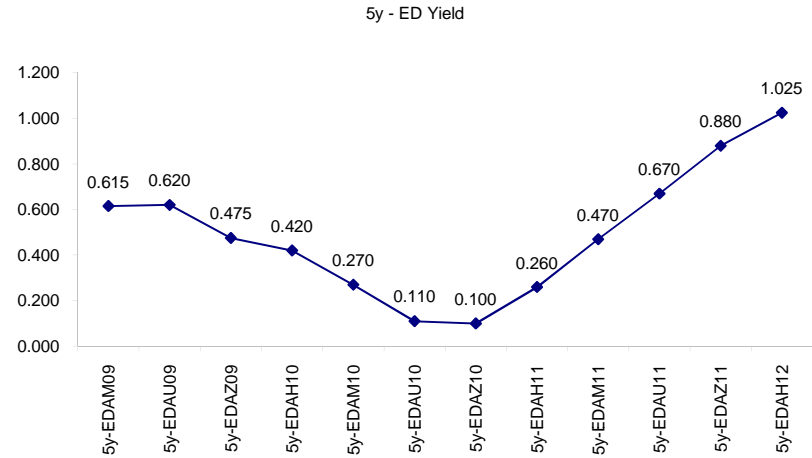


	ED Duration as		Spread Duration	
	Fraction of year	2Y Duration		
EDAM09	0.2076	1.9758	1.7682	2y-EDAM09
EDAU09	0.4569	1.9758	1.5189	2y-EDAU09
EDAZ09	0.7062	1.9758	1.2696	2y-EDAZ09
EDAH10	0.9555	1.9758	1.0203	2y-EDAH10
EDAM10	1.2048	1.9758	0.7710	2y-EDAM10
EDAU10	1.4541	1.9758	0.5217	2y-EDAU10
EDAZ10	1.7035	1.9758	0.2723	2y-EDAZ10
EDAH11	1.9528	1.9758	0.0230	2y-EDAH11
EDAM11	2.2021	1.9758	-0.2263	2y-EDAM11
EDAU11	2.4706	1.9758	-0.4948	2y-EDAU11
EDAZ11	2.7199	1.9758	-0.7441	2y-EDAZ11
EDAH12	2.9692	1.9758	-0.9934	2y-EDAH12

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

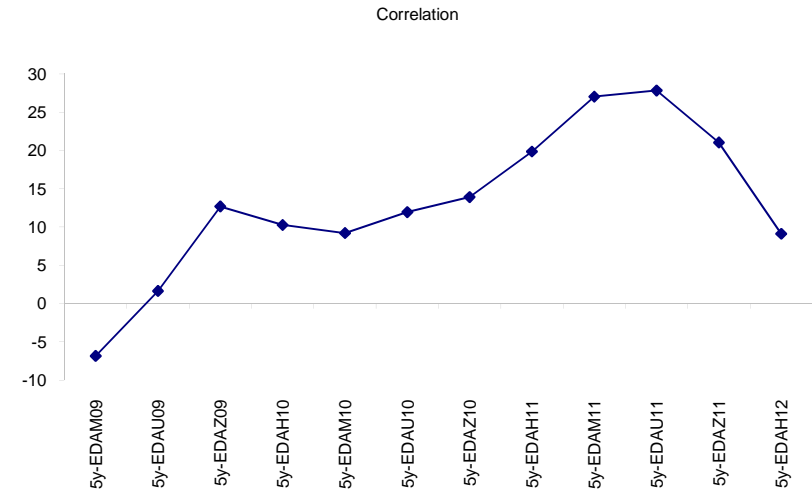
5y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.20	0.615	5y-EDAM09	-7
EDAU09	1.19	0.620	5y-EDAU09	2
EDAZ09	1.34	0.475	5y-EDAZ09	13
EDAH10	1.39	0.420	5y-EDAH10	10
EDAM10	1.54	0.270	5y-EDAM10	9
EDAU10	1.70	0.110	5y-EDAU10	12
EDAZ10	1.91	0.100	5y-EDAZ10	14
EDAH11	2.07	0.260	5y-EDAH11	20
EDAM11	2.28	0.470	5y-EDAM11	27
EDAU11	2.48	0.670	5y-EDAU11	28
EDAZ11	2.69	0.880	5y-EDAZ11	21
EDAH12	2.84	1.025	5y-EDAH12	9

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



ED Duration as Fraction of year				5Y Duration	Spread Duration	
EDAM09	0.2076	4.7653	4.5577	5y-EDAM09		
EDAU09	0.4569	4.7653	4.3084	5y-EDAU09		
EDAZ09	0.7062	4.7653	4.0591	5y-EDAZ09		
EDAH10	0.9555	4.7653	3.8098	5y-EDAH10		
EDAM10	1.2048	4.7653	3.5605	5y-EDAM10		
EDAU10	1.4541	4.7653	3.3111	5y-EDAU10		
EDAZ10	1.7035	4.7653	3.0618	5y-EDAZ10		
EDAH11	1.9528	4.7653	2.8125	5y-EDAH11		
EDAM11	2.2021	4.7653	2.5632	5y-EDAM11		
EDAU11	2.4706	4.7653	2.2947	5y-EDAU11		
EDAZ11	2.7199	4.7653	2.0454	5y-EDAZ11		
EDAH12	2.9692	4.7653	1.7961	5y-EDAH12		

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



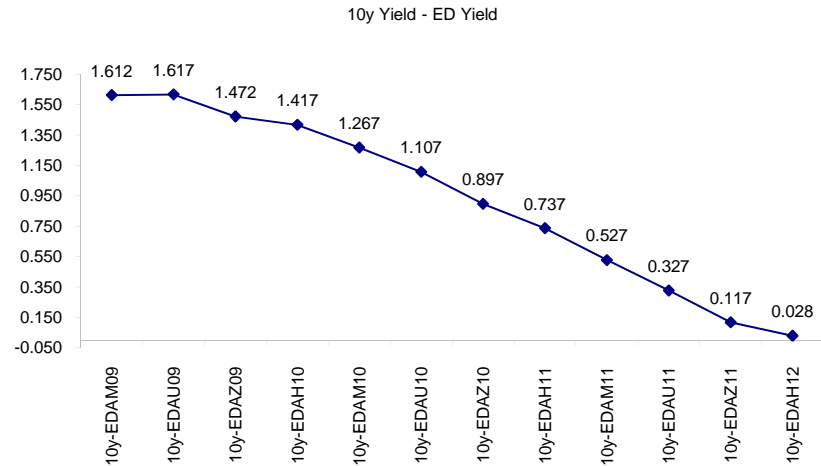


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.20	1.612	10y-EDAM09	-5
EDAU09	1.19	1.617	10y-EDAU09	2
EDAZ09	1.34	1.472	10y-EDAZ09	13
EDAH10	1.39	1.417	10y-EDAH10	11
EDAM10	1.54	1.267	10y-EDAM10	10
EDAU10	1.70	1.107	10y-EDAU10	13
EDAZ10	1.91	0.897	10y-EDAZ10	15
EDAH11	2.07	0.737	10y-EDAH11	22
EDAM11	2.28	0.527	10y-EDAM11	29
EDAU11	2.48	0.327	10y-EDAU11	31
EDAZ11	2.69	0.117	10y-EDAZ11	25
EDAH12	2.84	0.028	10y-EDAH12	13

Price = Outright Decimal Price - Euro Contract Price

Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as Fraction of year		10Y Duration	Spread Duration	
EDAM09	0.2076	8.5703	8.3628	10y-EDAM09	
EDAU09	0.4569	8.5703	8.1135	10y-EDAU09	
EDAZ09	0.7062	8.5703	7.8642	10y-EDAZ09	
EDAH10	0.9555	8.5703	7.6148	10y-EDAH10	
EDAM10	1.2048	8.5703	7.3655	10y-EDAM10	
EDAU10	1.4541	8.5703	7.1162	10y-EDAU10	
EDAZ10	1.7035	8.5703	6.8669	10y-EDAZ10	
EDAH11	1.9528	8.5703	6.6176	10y-EDAH11	
EDAM11	2.2021	8.5703	6.3683	10y-EDAM11	
EDAU11	2.4706	8.5703	6.0998	10y-EDAU11	
EDAZ11	2.7199	8.5703	5.8505	10y-EDAZ11	
EDAH12	2.9692	8.5703	5.6011	10y-EDAH12	

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

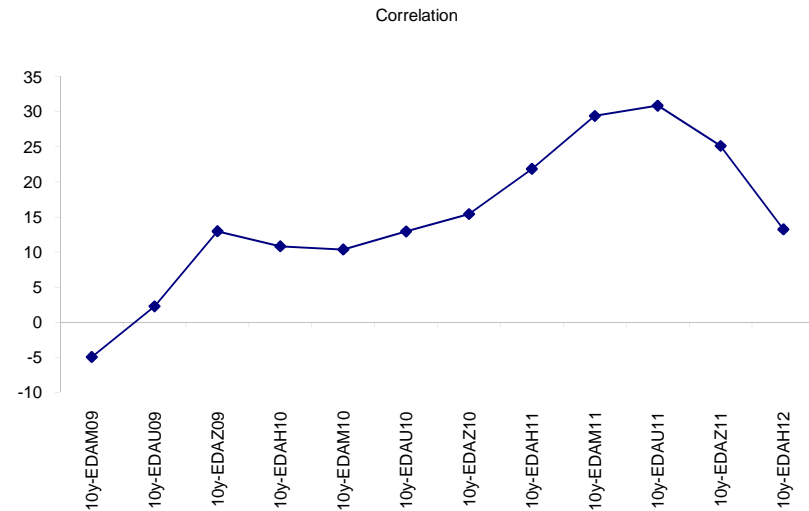


Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.

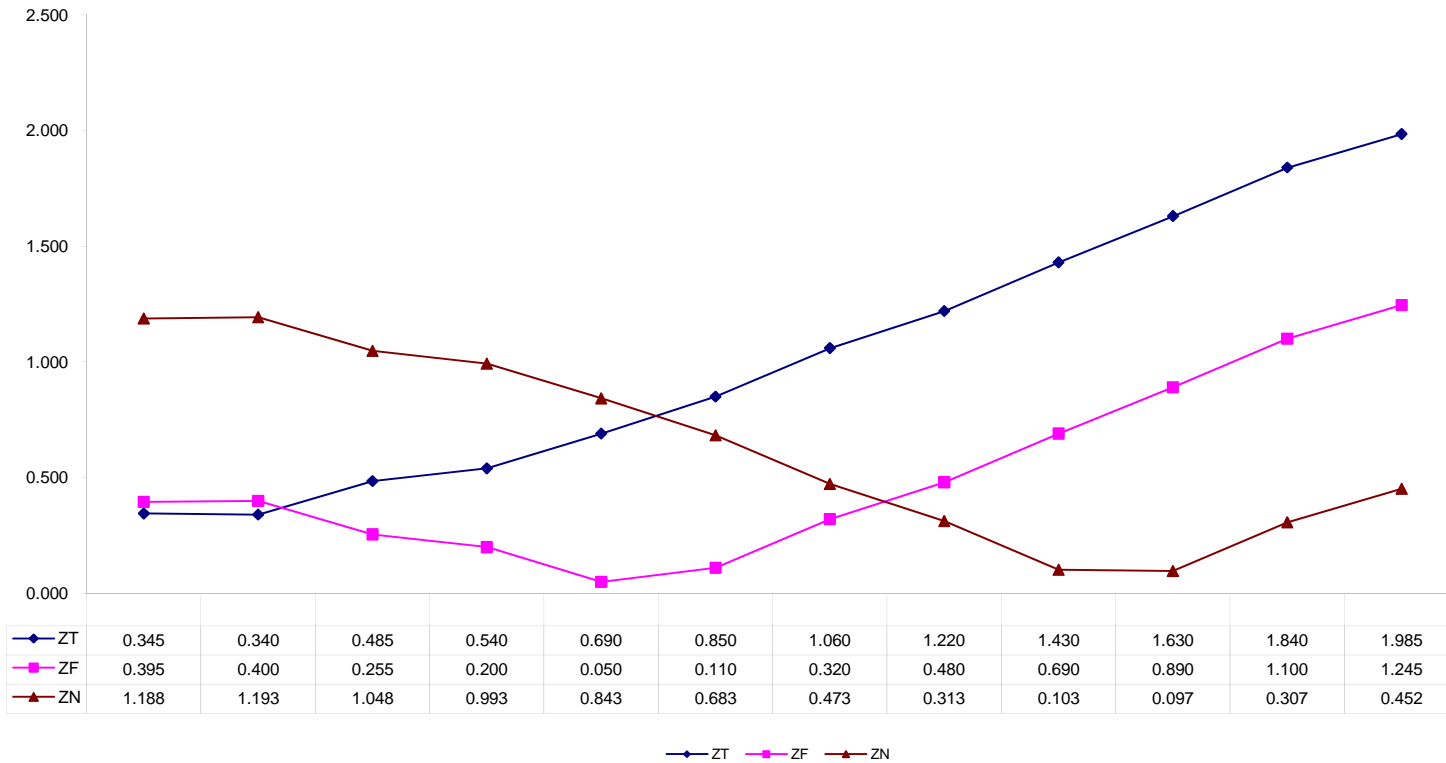
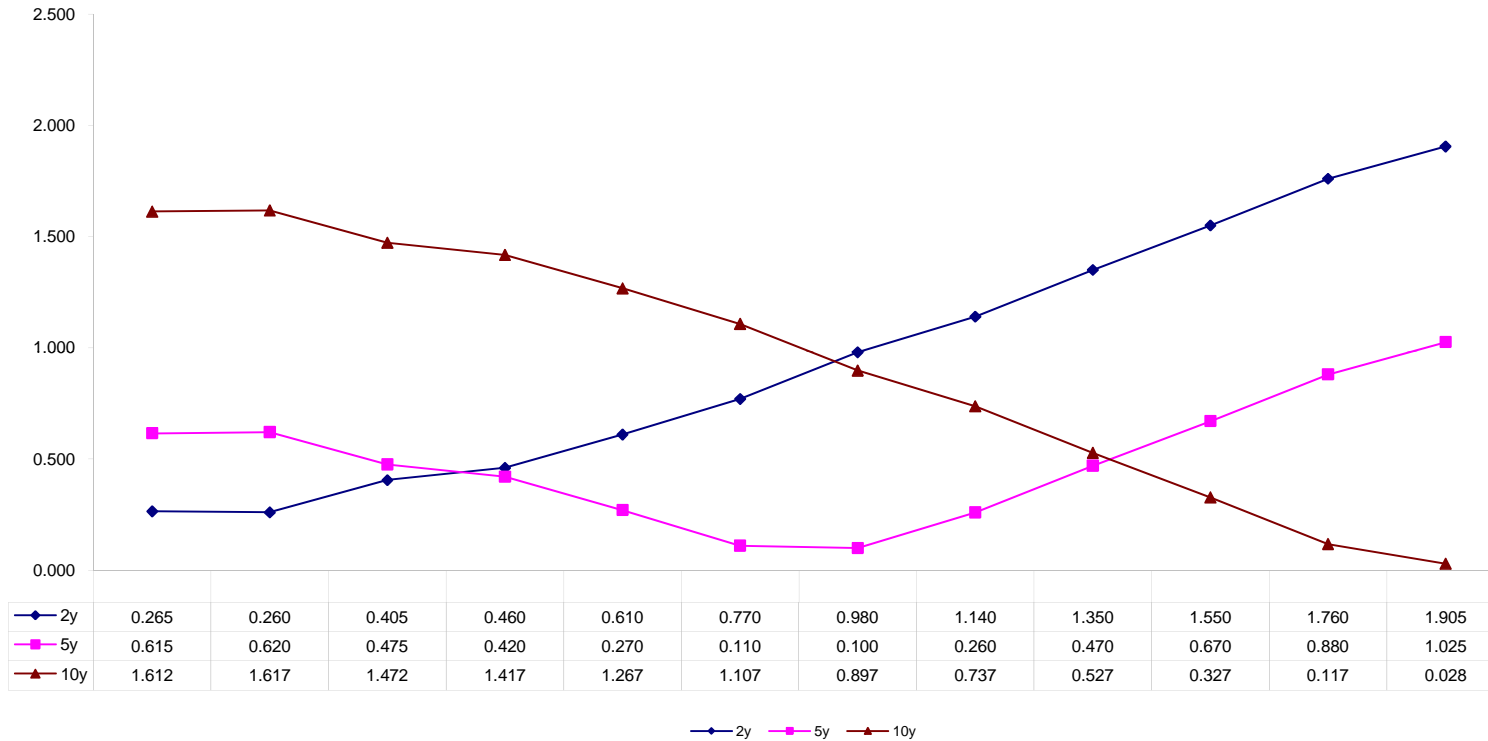
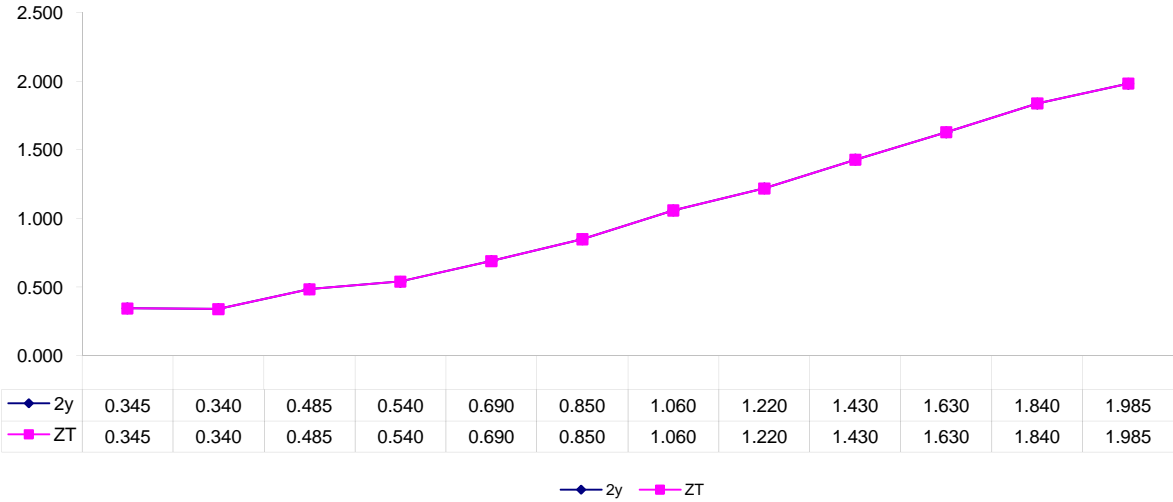
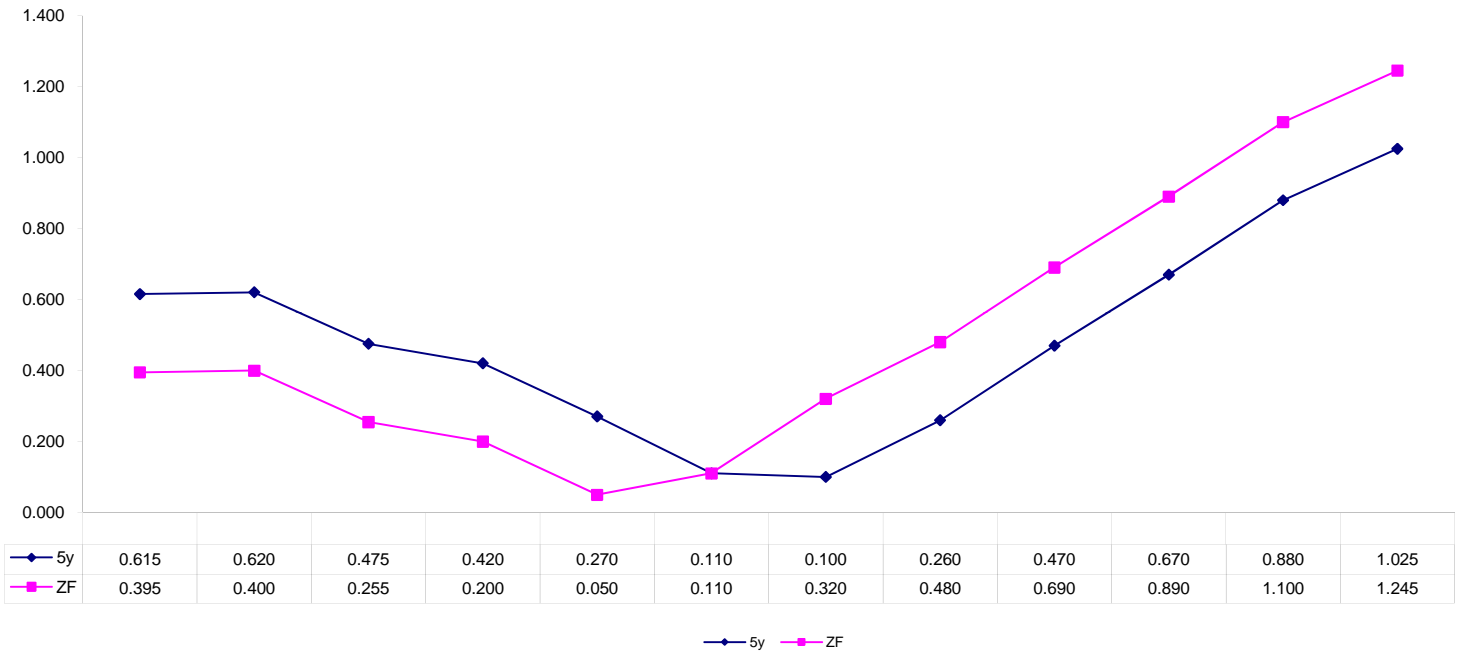


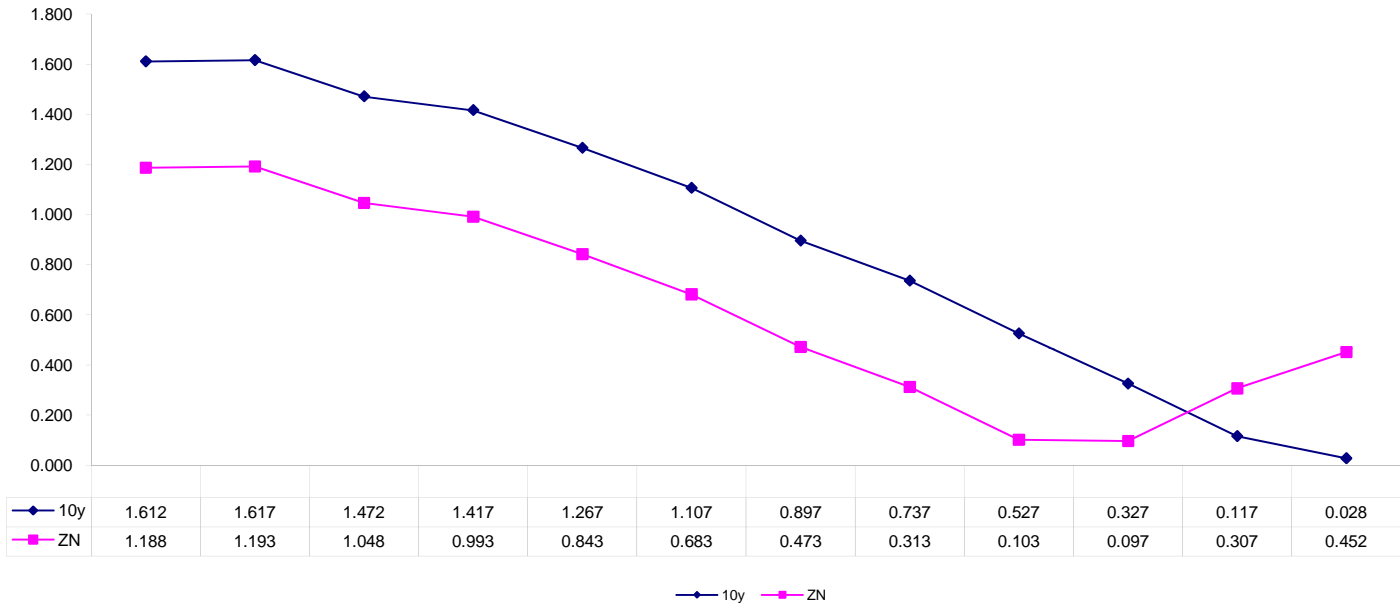
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



2y Basis TED Curve







	Last Yield	Net Last Yield	Last Price
White Pack	1.223	0.750	9879.7500
Red Pack	1.762	-0.750	9827.0000
Green Pack	2.547	-2.750	9750.3750
Blue Pack		-3.250	9693.0000
Gold Pack		-3.000	9659.5000

