

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

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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.

Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	106.7188	106.230	2.030	1.94
ZF	112.2406	112.077	2.894	4.14
ZN	115.4219	115.135	3.539	6.27
2y	100.616	100.1970	2.048	1.90
5y	100.688	100.2200	2.974	4.54
10y	101.797	101.2550	3.778	8.10

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	96.735	3.265	83	0.227	DEC	
EDAH09	97.025	2.975	174	0.476	MAR	White Pack
EDAM09	96.985	3.015	265	0.725	JUN	
EDAU09	96.920	3.080	356	0.975	SEP	
EDAZ09	96.620	3.380	447	1.224	DEC	
EDAH10	96.435	3.565	538	1.473	MAR	Red Pack
EDAM10	96.180	3.820	629	1.723	JUN	
EDAU10	95.920	4.080	720	1.972	SEP	
EDAZ10	95.685	4.315	811	2.221	DEC	
EDAH11	95.595	4.405	902	2.471	MAR	Green Pack
EDAM11	95.505	4.495	993	2.720	JUN	
EDAU11	95.435	4.565	1091	2.988	SEP	
EDAZ11	95.400	4.600	1182	3.238	DEC	
EDAH12	95.410	4.590	1273	3.487	MAR	Blue Pack
EDAM12	95.335	4.665	1364	3.736	JUN	
EDAU12	95.305	4.695	1455	3.986	SEP	
EDAZ12	95.210	4.790	1546	4.235	DEC	
EDAH13	95.155	4.845	1637	4.484	MAR	Gold Pack
EDAM13	95.135	4.865	1728	4.734	JUN	
EDZU13	95.230	4.770	1910	5.232	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	3.151	0.375	9691.625	
Red Pack	3.798	5.375	9628.875	Pack Prices
Green Pack	4.557	5.125	9555.500	
Blue Pack		2.625	9536.000	
Gold Pack		0.000	9517.125	

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.

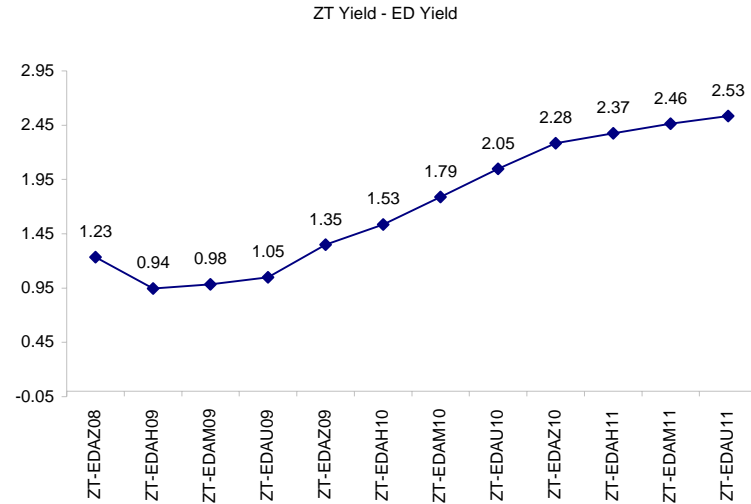
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

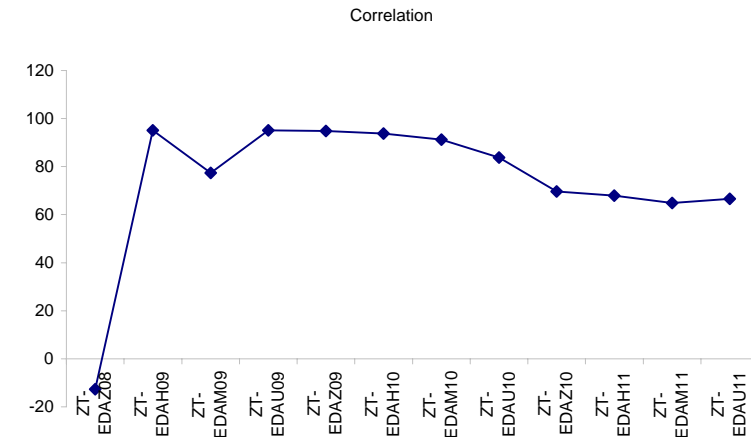
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	9.984	1.23	ZT-EDAZ08	-12.637
EDAH09	9.694	0.94	ZT-EDAH09	95.069
EDAM09	9.734	0.98	ZT-EDAM09	77.317
EDAU09	9.799	1.05	ZT-EDAU09	95.069
EDAZ09	10.099	1.35	ZT-EDAZ09	94.787
EDAH10	10.284	1.53	ZT-EDAH10	93.780
EDAM10	10.539	1.79	ZT-EDAM10	91.182
EDAU10	10.799	2.05	ZT-EDAU10	83.739
EDAZ10	11.034	2.28	ZT-EDAZ10	69.636
EDAH11	11.124	2.37	ZT-EDAH11	67.983
EDAM11	11.214	2.46	ZT-EDAM11	64.908
EDAU11	11.284	2.53	ZT-EDAU11	66.587

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	
EDAZ08	0.227	1.94	1.71
EDAH09	0.476	1.94	1.46
EDAM09	0.725	1.94	1.21
EDAU09	0.975	1.94	0.96
EDAZ09	1.224	1.94	0.71
EDAH10	1.473	1.94	0.47
EDAM10	1.723	1.94	0.22
EDAU10	1.972	1.94	(0.03)
EDAZ10	2.221	1.94	(0.28)
EDAH11	2.471	1.94	(0.53)
EDAM11	2.720	1.94	(0.78)
EDAU11	2.988	1.94	(1.05)

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

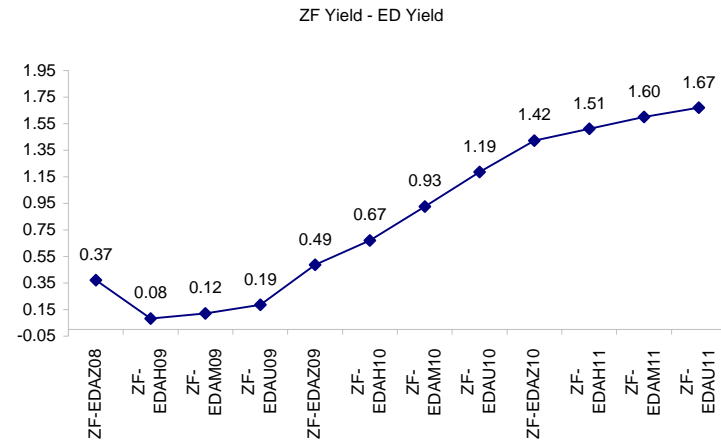


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	15.506	0.37	ZF-EDAZ08	12.665
EDAH09	15.216	0.08	ZF-EDAH09	64.187
EDAM09	15.256	0.12	ZF-EDAM09	89.154
EDAU09	15.321	0.19	ZF-EDAU09	97.720
EDAZ09	15.621	0.49	ZF-EDAZ09	99.084
EDAH10	15.806	0.67	ZF-EDAH10	99.222
EDAM10	16.061	0.93	ZF-EDAM10	99.553
EDAU10	16.321	1.19	ZF-EDAU10	98.389
EDAZ10	16.556	1.42	ZF-EDAZ10	91.812
EDAH11	16.646	1.51	ZF-EDAH11	90.933
EDAM11	16.736	1.60	ZF-EDAM11	89.015
EDAU11	16.806	1.67	ZF-EDAU11	90.012

Price = Outright Decimal Price - Euro Contract Price

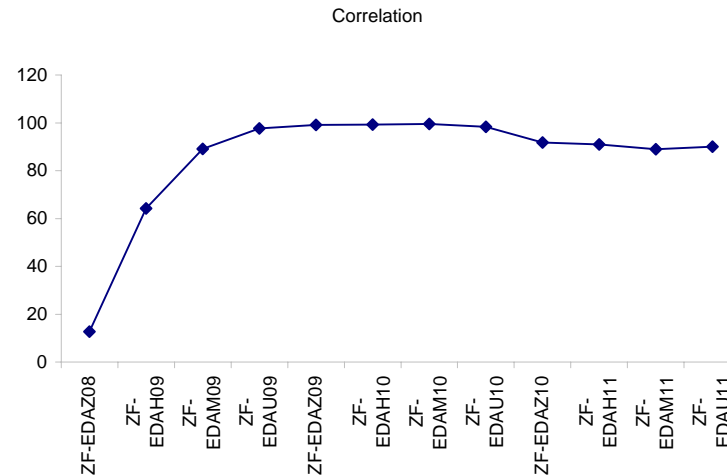
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year			
	ZF Duration	Spread Duration	
EDAZ08	0.227	4.14	ZF-EDAZ08
EDAH09	0.476	4.14	ZF-EDAH09
EDAM09	0.725	4.14	ZF-EDAM09
EDAU09	0.975	4.14	ZF-EDAU09
EDAZ09	1.224	4.14	ZF-EDAZ09
EDAH10	1.473	4.14	ZF-EDAH10
EDAM10	1.723	4.14	ZF-EDAM10
EDAU10	1.972	4.14	ZF-EDAU10
EDAZ10	2.221	4.14	ZF-EDAZ10
EDAH11	2.471	4.14	ZF-EDAH11
EDAM11	2.720	4.14	ZF-EDAM11
EDAU11	2.988	4.14	ZF-EDAU11

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

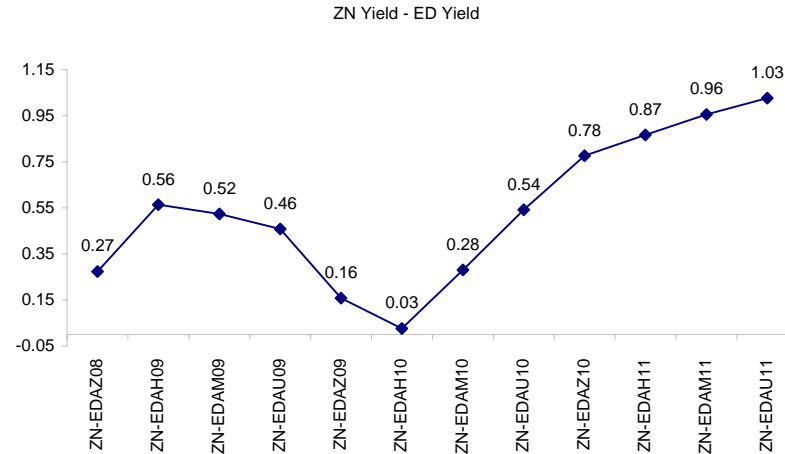


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	18.687	0.27	ZN-EDAZ08	16.867
EDAH09	18.397	0.56	ZN-EDAH09	66.441
EDAM09	18.437	0.52	ZN-EDAM09	89.651
EDAU09	18.502	0.46	ZN-EDAU09	95.978
EDAZ09	18.802	0.16	ZN-EDAZ09	97.492
EDAH10	18.987	0.03	ZN-EDAH10	97.934
EDAM10	19.242	0.28	ZN-EDAM10	99.553
EDAU10	19.502	0.54	ZN-EDAU10	98.389
EDAZ10	19.737	0.78	ZN-EDAZ10	91.812
EDAH11	19.827	0.87	ZN-EDAH11	90.933
EDAM11	19.917	0.96	ZN-EDAM11	89.015
EDAU11	19.987	1.03	ZN-EDAU11	90.012

Price = Outright Decimal Price - Euro Contract Price

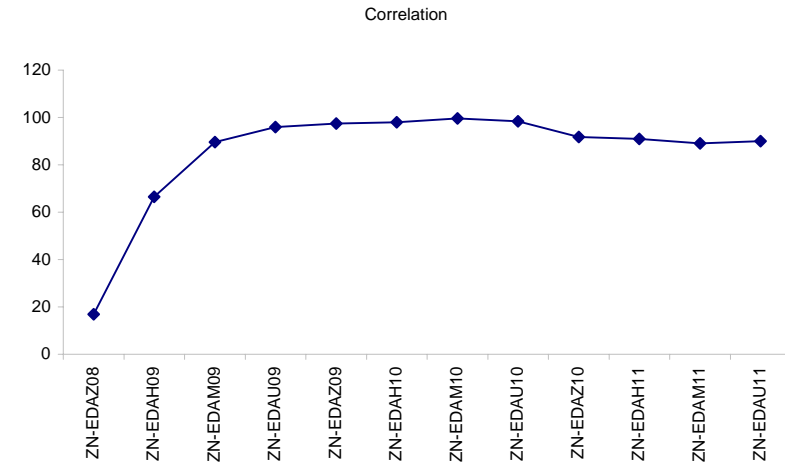
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.227	6.27	6.05	ZN-EDAZ08		
EDAH09	0.476	6.27	5.80	ZN-EDAH09		
EDAM09	0.725	6.27	5.55	ZN-EDAM09		
EDAU09	0.975	6.27	5.30	ZN-EDAU09		
EDAZ09	1.224	6.27	5.05	ZN-EDAZ09		
EDAH10	1.473	6.27	4.80	ZN-EDAH10		
EDAM10	1.723	6.27	4.55	ZN-EDAM10		
EDAU10	1.972	6.27	4.30	ZN-EDAU10		
EDAZ10	2.221	6.27	4.05	ZN-EDAZ10		
EDAH11	2.471	6.27	3.80	ZN-EDAH11		
EDAM11	2.720	6.27	3.55	ZN-EDAM11		
EDAU11	2.988	6.27	3.28	ZN-EDAU11		

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

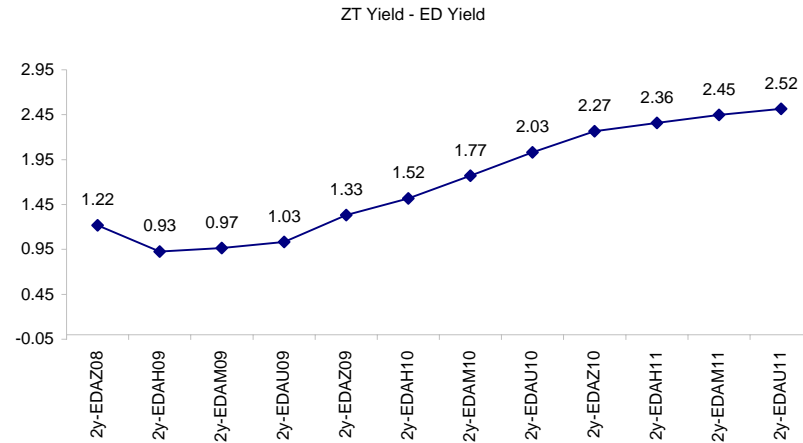


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.881	1.22	2y-EDAZ08	6.917
EDAH09	3.591	0.93	2y-EDAH09	-51.634
EDAM09	3.631	0.97	2y-EDAM09	-80.545
EDAU09	3.696	1.03	2y-EDAU09	-95.568
EDAZ09	3.996	1.33	2y-EDAZ09	-93.919
EDAH10	4.181	1.52	2y-EDAH10	-91.986
EDAM10	4.436	1.77	2y-EDAM10	-89.148
EDAU10	4.696	2.03	2y-EDAU10	-82.227
EDAZ10	4.931	2.27	2y-EDAZ10	-69.695
EDAH11	5.021	2.36	2y-EDAH11	-67.588
EDAM11	5.111	2.45	2y-EDAM11	-65.342
EDAU11	5.181	2.52	2y-EDAU11	-67.235

Price = Outright Decimal Price - Euro Contract Price

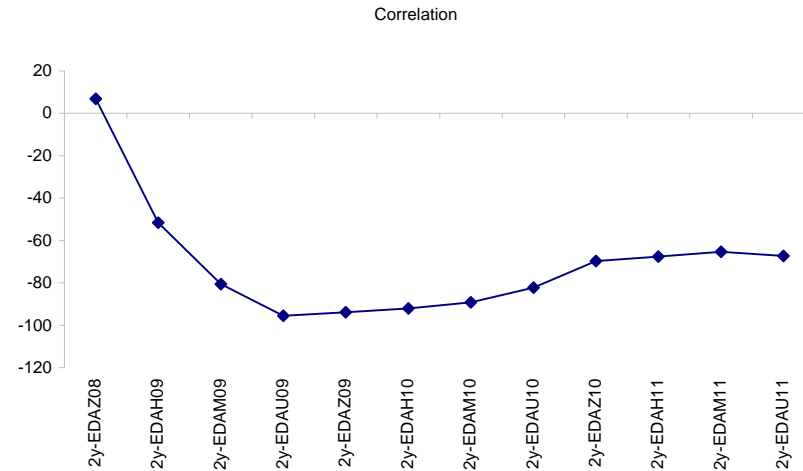
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.227	1.90	1.67	2y-EDAZ08	
EDAH09	0.476	1.90	1.43	2y-EDAH09	
EDAM09	0.725	1.90	1.18	2y-EDAM09	
EDAU09	0.975	1.90	0.93	2y-EDAU09	
EDAZ09	1.224	1.90	0.68	2y-EDAZ09	
EDAH10	1.473	1.90	0.43	2y-EDAH10	
EDAM10	1.723	1.90	0.18	2y-EDAM10	
EDAU10	1.972	1.90	(0.07)	2y-EDAU10	
EDAZ10	2.221	1.90	(0.32)	2y-EDAZ10	
EDAH11	2.471	1.90	(0.57)	2y-EDAH11	
EDAM11	2.720	1.90	(0.82)	2y-EDAM11	
EDAU11	2.988	1.90	(1.09)	2y-EDAU11	

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

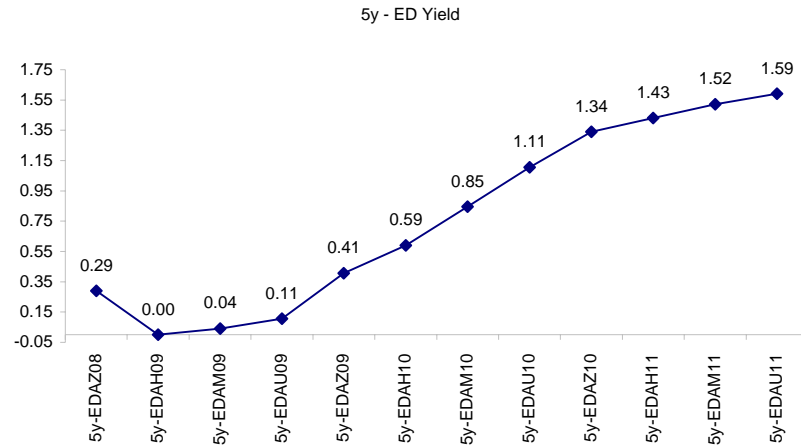


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.953	0.29	5y-EDAZ08	-24.888
EDAH09	3.662	0.00	5y-EDAH09	-74.780
EDAM09	3.703	0.04	5y-EDAM09	-94.524
EDAU09	3.768	0.11	5y-EDAU09	-97.581
EDAZ09	4.068	0.41	5y-EDAZ09	-96.443
EDAH10	4.253	0.59	5y-EDAH10	-94.714
EDAM10	4.507	0.85	5y-EDAM10	-94.526
EDAU10	4.768	1.11	5y-EDAU10	-93.959
EDAZ10	5.003	1.34	5y-EDAZ10	-89.758
EDAH11	5.093	1.43	5y-EDAH11	-88.259
EDAM11	5.183	1.52	5y-EDAM11	-87.509
EDAU11	5.253	1.59	5y-EDAU11	-88.566

Price = Outright Decimal Price - Euro Contract Price

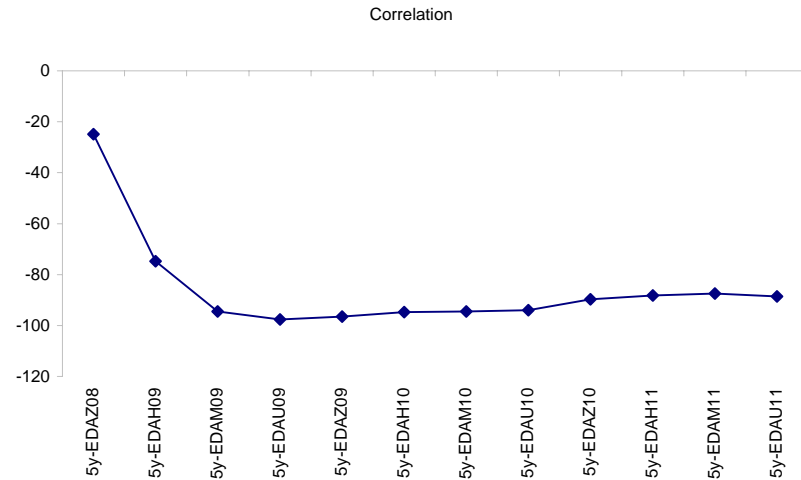
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.227	4.54	4.31	5y-EDAZ08
EDAH09	0.476	4.54	4.06	5y-EDAH09
EDAM09	0.725	4.54	3.81	5y-EDAM09
EDAU09	0.975	4.54	3.56	5y-EDAU09
EDAZ09	1.224	4.54	3.31	5y-EDAZ09
EDAH10	1.473	4.54	3.06	5y-EDAH10
EDAM10	1.723	4.54	2.81	5y-EDAM10
EDAU10	1.972	4.54	2.56	5y-EDAU10
EDAZ10	2.221	4.54	2.31	5y-EDAZ10
EDAH11	2.471	4.54	2.06	5y-EDAH11
EDAM11	2.720	4.54	1.82	5y-EDAM11
EDAU11	2.988	4.54	1.55	5y-EDAU11

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

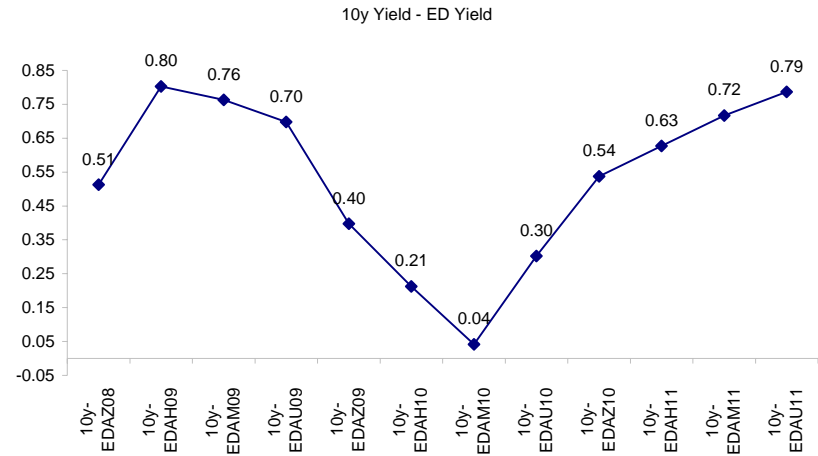


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	3.953	0.51	10y-EDAZ08	-45.824
EDAH09	3.662	0.80	10y-EDAH09	-85.370
EDAM09	3.703	0.76	10y-EDAM09	-96.588
EDAU09	3.768	0.70	10y-EDAU09	-90.730
EDAZ09	4.068	0.40	10y-EDAZ09	-89.584
EDAH10	4.253	0.21	10y-EDAH10	-87.711
EDAM10	4.507	0.04	10y-EDAM10	-89.107
EDAU10	4.768	0.30	10y-EDAU10	-92.682
EDAZ10	5.003	0.54	10y-EDAZ10	-94.492
EDAH11	5.093	0.63	10y-EDAH11	-93.361
EDAM11	5.183	0.72	10y-EDAM11	-93.866
EDAU11	5.253	0.79	10y-EDAU11	-94.247

Price = Outright Decimal Price - Euro Contract Price

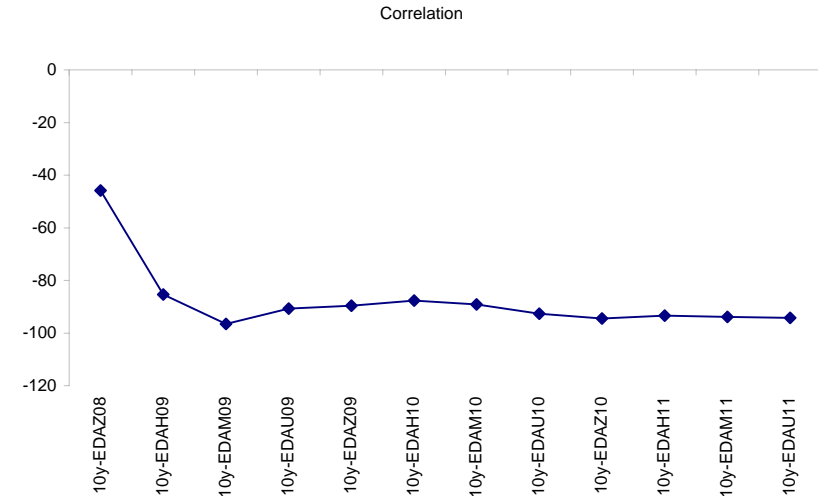
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.227	8.10	7.87	10y-EDAZ08
EDAH09	0.476	8.10	7.62	10y-EDAH09
EDAM09	0.725	8.10	7.37	10y-EDAM09
EDAU09	0.975	8.10	7.12	10y-EDAU09
EDAZ09	1.224	8.10	6.87	10y-EDAZ09
EDAH10	1.473	8.10	6.62	10y-EDAH10
EDAM10	1.723	8.10	6.37	10y-EDAM10
EDAU10	1.972	8.10	6.12	10y-EDAU10
EDAZ10	2.221	8.10	5.87	10y-EDAZ10
EDAH11	2.471	8.10	5.63	10y-EDAH11
EDAM11	2.720	8.10	5.38	10y-EDAM11
EDAU11	2.988	8.10	5.11	10y-EDAU11

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



**Dirty TED Curve**

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.

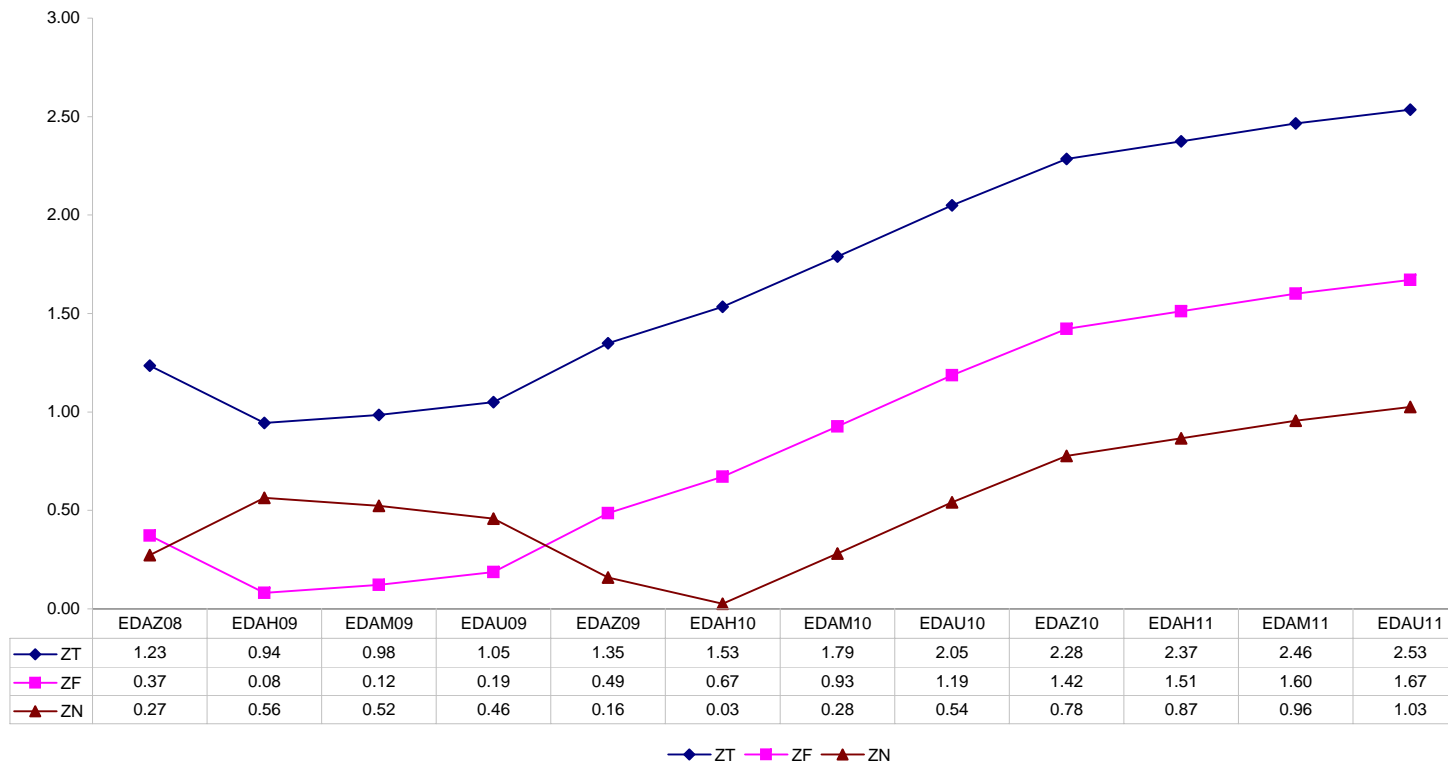
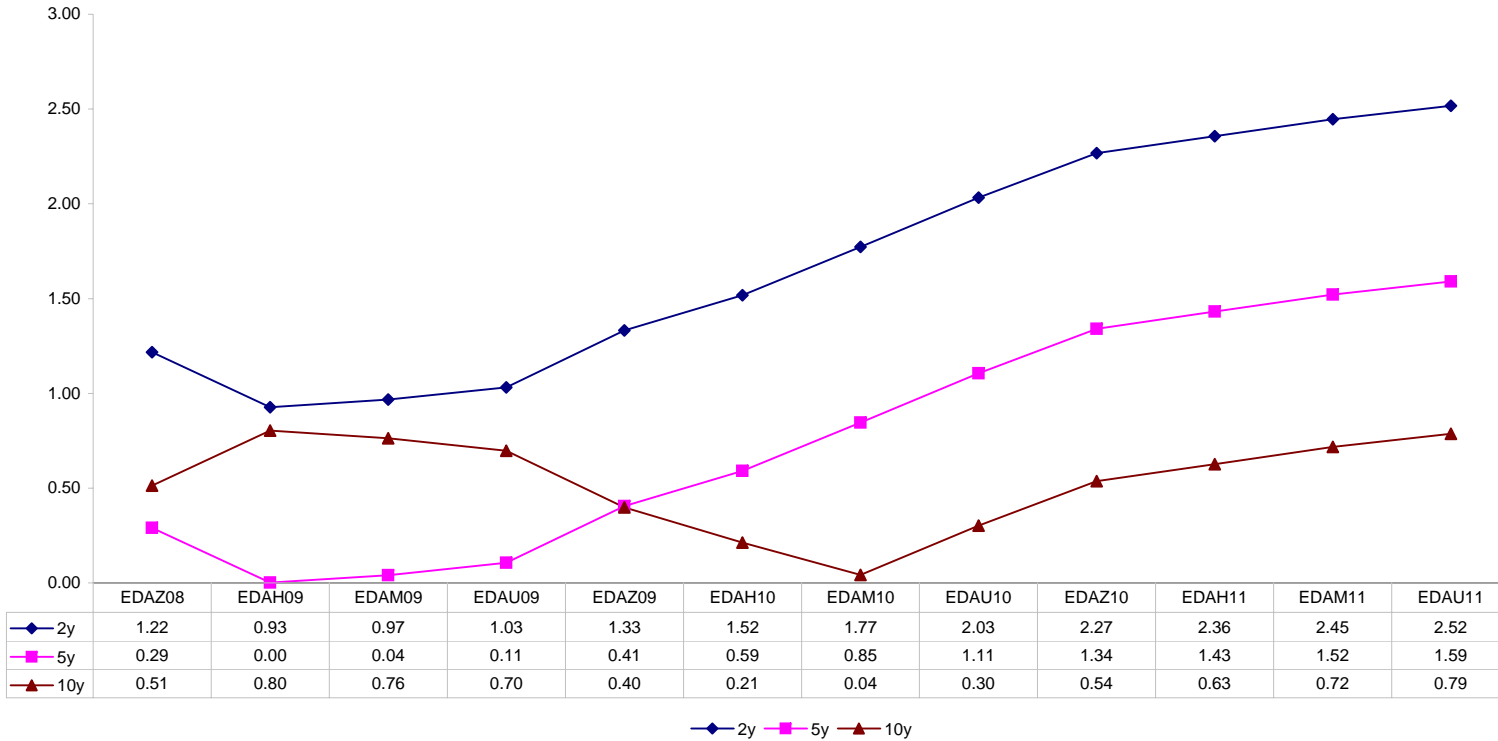
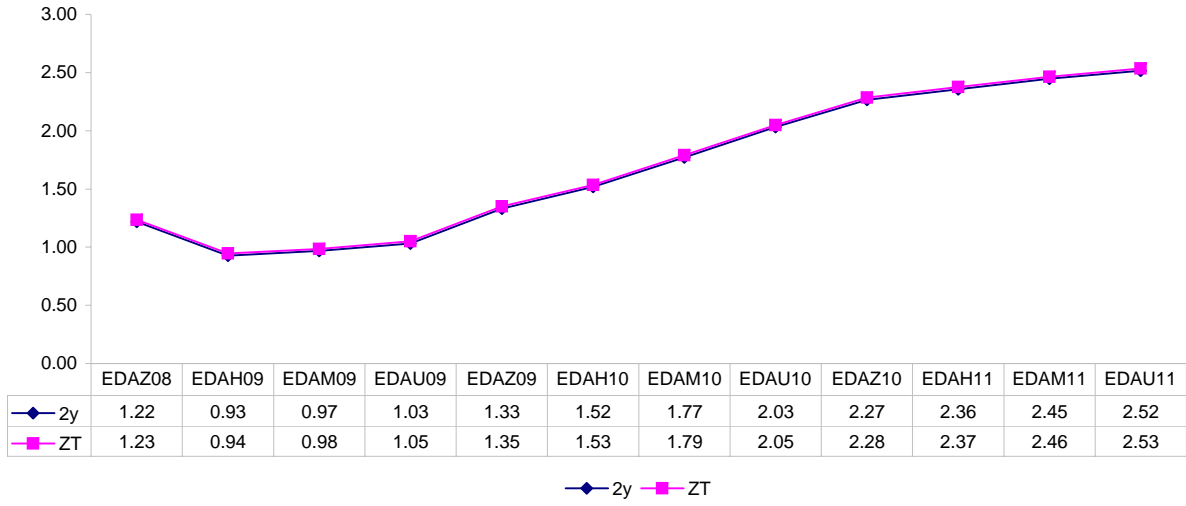


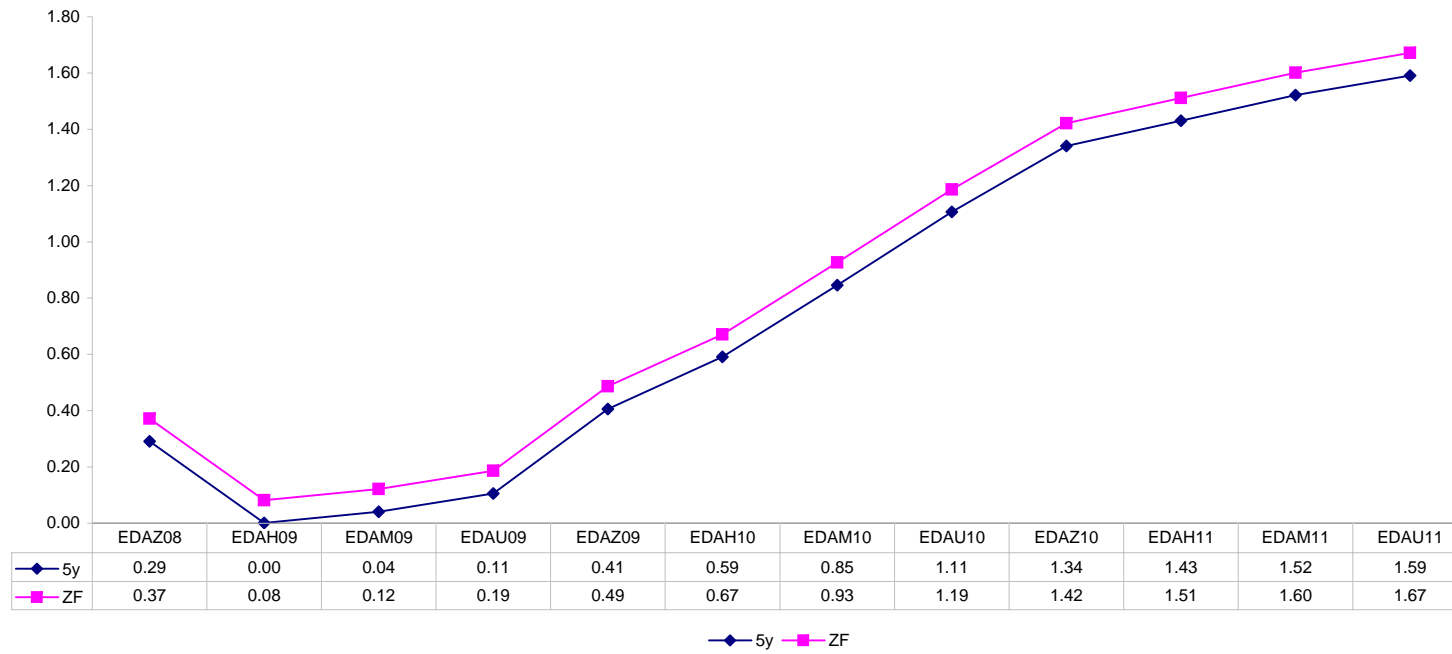
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



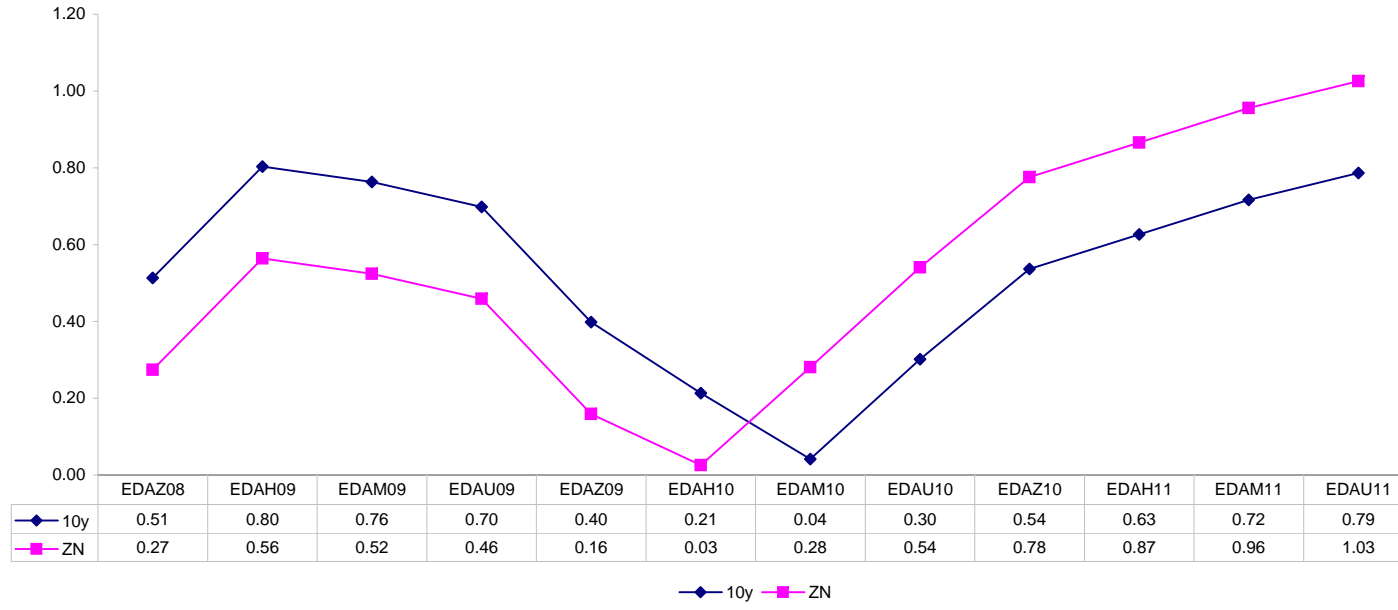
2y Basis TED Curve



5y Basis TED Curve

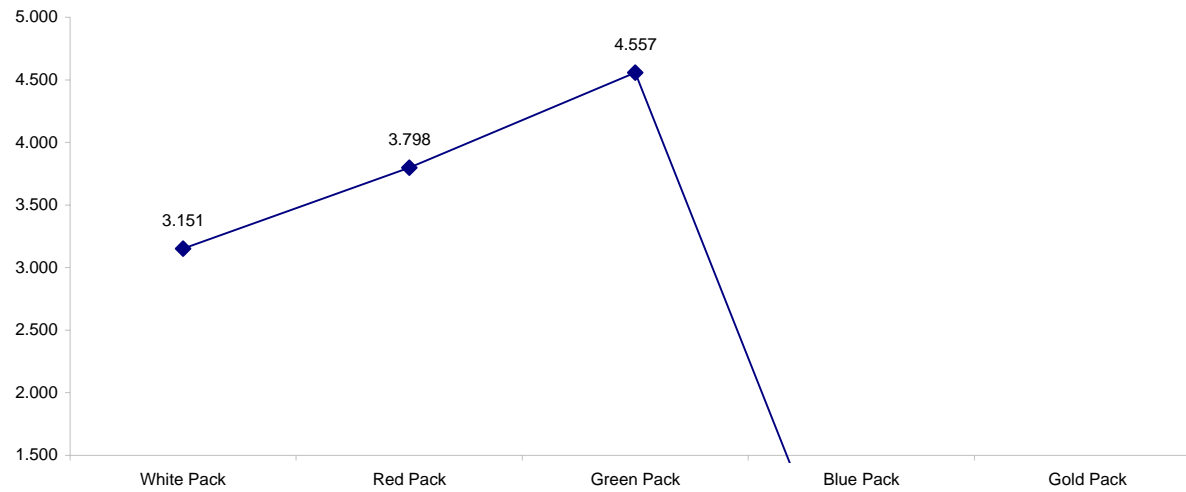


10y Basis TED Curve



### Packs

	Last Yield	Net Last Yield	Last Price
White Pack	3.151	0.375	9691.625
Red Pack	3.798	5.375	9628.875
Green Pack	4.557	5.125	9555.500
Blue Pack		2.625	9536.000
Gold Pack		0.000	9517.125



### 2y, 5y, 10y Basis Curves vs ED

