

## **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	107.8656	107.277	0.730	1.91
ZF	117.0375	117.012	1.544	1.54
ZN	124.9063	124.290	2.550	6.44
2y	100.428	100.1370	1.026	1.95
5y	100.797	100.2550	1.830	4.72
10y	108.219	108.0700	2.784	8.32

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.838	2.162	7	0.019	DEC	
EDAH09	98.000	2.000	98	0.268	MAR	White Pack
EDAM09	98.000	2.000	189	0.517	JUN	
EDAU09	97.930	2.070	280	0.766	SEP	
EDAZ09	97.790	2.210	371	1.016	DEC	
EDAH10	97.740	2.260	462	1.265	MAR	Red Pack
EDAM10	97.610	2.390	553	1.514	JUN	
EDAU10	97.465	2.535	644	1.764	SEP	
EDAZ10	97.260	2.740	735	2.013	DEC	
EDAH11	97.130	2.870	826	2.262	MAR	Green Pack
EDAM11	96.955	3.045	917	2.512	JUN	
EDAU11	96.815	3.185	1015	2.780	SEP	
EDAZ11	96.690	3.310	1106	3.029	DEC	
EDAH12	96.745	3.255	1197	3.279	MAR	Blue Pack
EDAM12	96.675	3.325	1288	3.528	JUN	
EDAU12	96.670	3.330	1379	3.777	SEP	
EDAZ12	#VALUE!	#VALUE!	1470	4.027	DEC	
EDAH13	#VALUE!	#VALUE!	1561	4.276	MAR	Gold Pack
EDAM13	#VALUE!	#VALUE!	1652	4.525	JUN	
EDZU13	#VALUE!	#VALUE!	1834	5.024	DEC	

	Last Yield	Net Yield	Last Price	
White Pack	2.098	-4.250	9794.188	Pack Prices
Red Pack	2.395	-12.750	9765.125	
Green Pack	3.024	-19.875	9704.000	
Blue Pack	3.379	-18.750	9669.500	
Gold Pack		0.000	9675.125	

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.

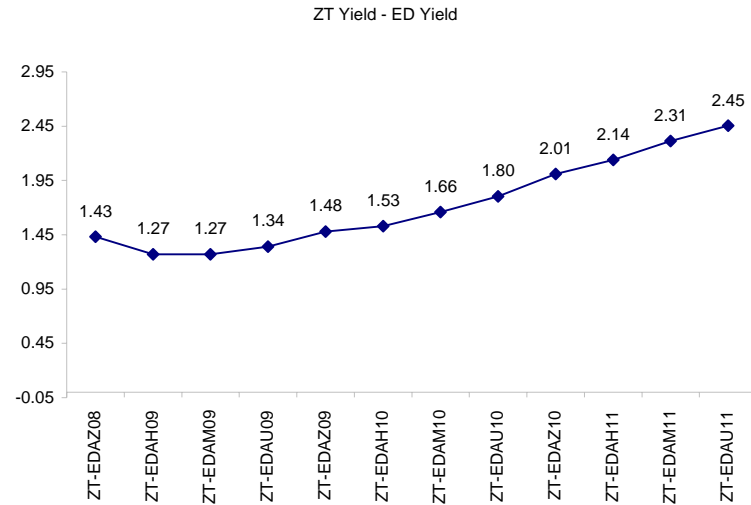
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **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.

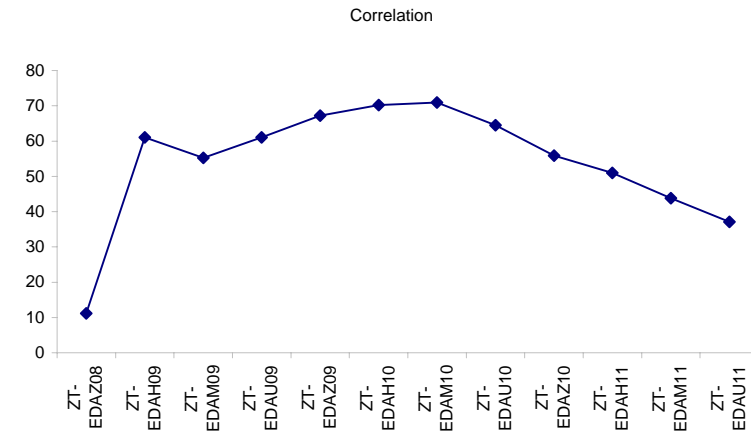
ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.028	1.43	ZT-EDAZ08	11.167
EDAH09	9.866	1.27	ZT-EDAH09	61.048
EDAM09	9.866	1.27	ZT-EDAM09	55.238
EDAU09	9.936	1.34	ZT-EDAU09	61.048
EDAZ09	10.076	1.48	ZT-EDAZ09	67.233
EDAH10	10.126	1.53	ZT-EDAH10	70.162
EDAM10	10.256	1.66	ZT-EDAM10	70.917
EDAU10	10.401	1.80	ZT-EDAU10	64.465
EDAZ10	10.606	2.01	ZT-EDAZ10	55.853
EDAH11	10.736	2.14	ZT-EDAH11	50.975
EDAM11	10.911	2.31	ZT-EDAM11	43.840
EDAU11	11.051	2.45	ZT-EDAU11	37.130

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	0.019	1.91	1.89	ZT-EDAZ08		
EDAH09	0.268	1.91	1.64	ZT-EDAH09		
EDAM09	0.517	1.91	1.39	ZT-EDAM09		
EDAU09	0.766	1.91	1.14	ZT-EDAU09		
EDAZ09	1.016	1.91	0.89	ZT-EDAZ09		
EDAH10	1.265	1.91	0.64	ZT-EDAH10		
EDAM10	1.514	1.91	0.40	ZT-EDAM10		
EDAU10	1.764	1.91	0.15	ZT-EDAU10		
EDAZ10	2.013	1.91	(0.10)	ZT-EDAZ10		
EDAH11	2.262	1.91	(0.35)	ZT-EDAH11		
EDAM11	2.512	1.91	(0.60)	ZT-EDAM11		
EDAU11	2.780	1.91	(0.87)	ZT-EDAU11		

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

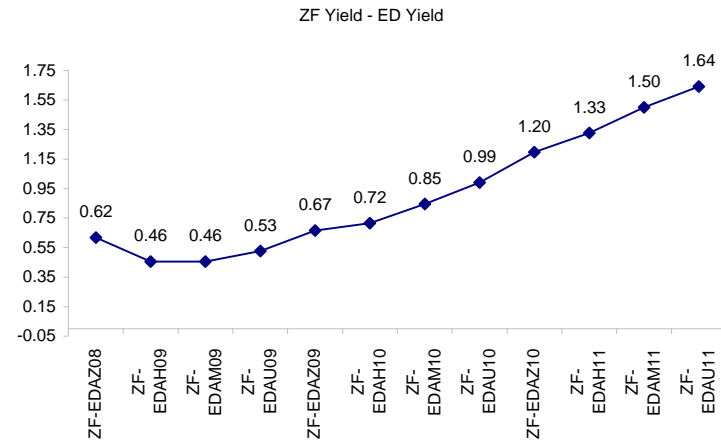


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.200	0.62	ZF-EDAZ08	-16.090
EDAH09	19.038	0.46	ZF-EDAH09	46.385
EDAM09	19.038	0.46	ZF-EDAM09	66.809
EDAU09	19.108	0.53	ZF-EDAU09	72.742
EDAZ09	19.248	0.67	ZF-EDAZ09	72.487
EDAH10	19.298	0.72	ZF-EDAH10	69.992
EDAM10	19.428	0.85	ZF-EDAM10	71.246
EDAU10	19.573	0.99	ZF-EDAU10	80.324
EDAZ10	19.778	1.20	ZF-EDAZ10	89.827
EDAH11	19.908	1.33	ZF-EDAH11	91.896
EDAM11	20.083	1.50	ZF-EDAM11	92.632
EDAU11	20.223	1.64	ZF-EDAU11	95.081

Price = Outright Decimal Price - Euro Contract Price

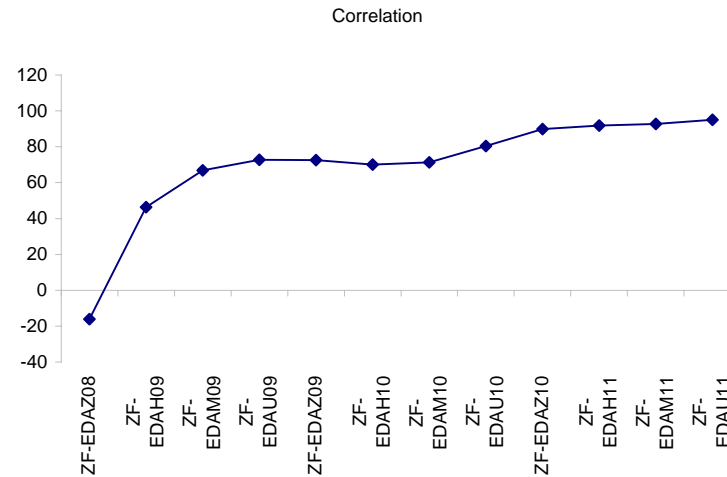
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAZ08	0.019	1.54	1.53	ZF-EDAZ08		
EDAH09	0.268	1.54	1.28	ZF-EDAH09		
EDAM09	0.517	1.54	1.03	ZF-EDAM09		
EDAU09	0.766	1.54	0.78	ZF-EDAU09		
EDAZ09	1.016	1.54	0.53	ZF-EDAZ09		
EDAH10	1.265	1.54	0.28	ZF-EDAH10		
EDAM10	1.514	1.54	0.03	ZF-EDAM10		
EDAU10	1.764	1.54	(0.22)	ZF-EDAU10		
EDAZ10	2.013	1.54	(0.47)	ZF-EDAZ10		
EDAH11	2.262	1.54	(0.72)	ZF-EDAH11		
EDAM11	2.512	1.54	(0.97)	ZF-EDAM11		
EDAU11	2.780	1.54	(1.24)	ZF-EDAU11		

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

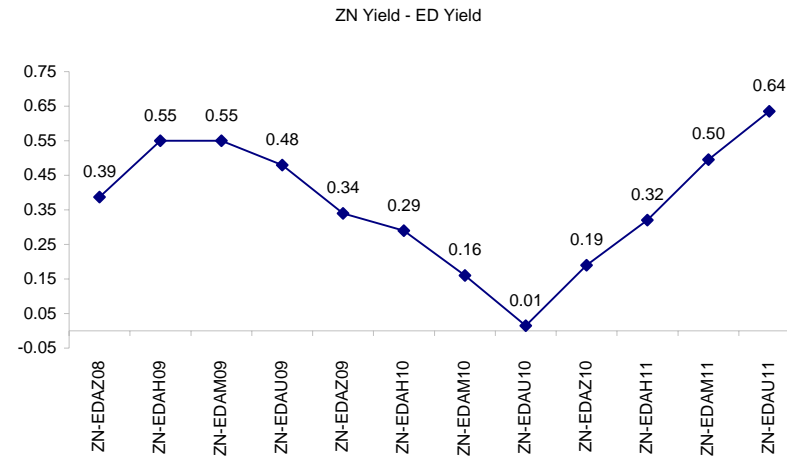


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	27.069	0.39	ZN-EDAZ08	-27.758
EDAH09	26.906	0.55	ZN-EDAH09	33.462
EDAM09	26.906	0.55	ZN-EDAM09	55.271
EDAU09	26.976	0.48	ZN-EDAU09	62.525
EDAZ09	27.116	0.34	ZN-EDAZ09	62.975
EDAH10	27.166	0.29	ZN-EDAH10	61.094
EDAM10	27.296	0.16	ZN-EDAM10	71.246
EDAU10	27.441	0.01	ZN-EDAU10	80.324
EDAZ10	27.646	0.19	ZN-EDAZ10	89.827
EDAH11	27.776	0.32	ZN-EDAH11	91.896
EDAM11	27.951	0.50	ZN-EDAM11	92.632
EDAU11	28.091	0.64	ZN-EDAU11	95.081

Price = Outright Decimal Price - Euro Contract Price

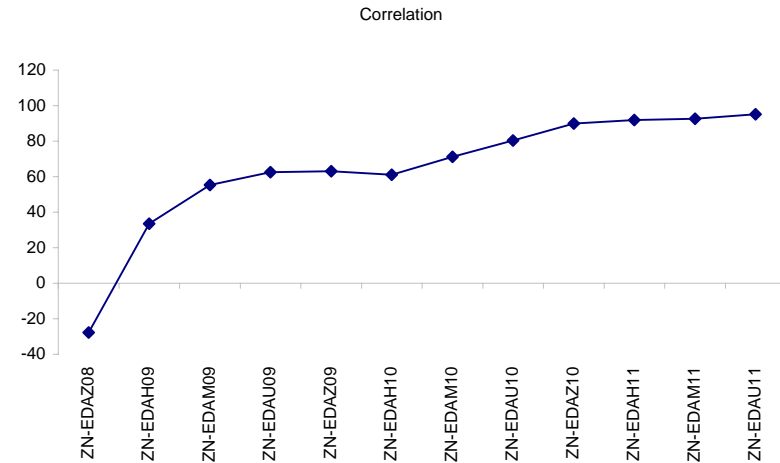
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAZ08	0.019	6.44	6.42	ZN-EDAZ08		
EDAH09	0.268	6.44	6.17	ZN-EDAH09		
EDAM09	0.517	6.44	5.92	ZN-EDAM09		
EDAU09	0.766	6.44	5.67	ZN-EDAU09		
EDAZ09	1.016	6.44	5.42	ZN-EDAZ09		
EDAH10	1.265	6.44	5.17	ZN-EDAH10		
EDAM10	1.514	6.44	4.92	ZN-EDAM10		
EDAU10	1.764	6.44	4.67	ZN-EDAU10		
EDAZ10	2.013	6.44	4.42	ZN-EDAZ10		
EDAH11	2.262	6.44	4.17	ZN-EDAH11		
EDAM11	2.512	6.44	3.92	ZN-EDAM11		
EDAU11	2.780	6.44	3.66	ZN-EDAU11		

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

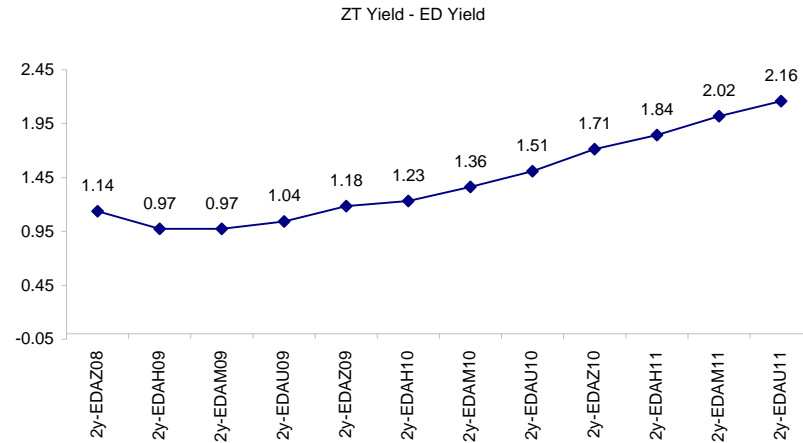


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.591	1.14	2y-EDAZ08	42.251
EDAH09	2.428	0.97	2y-EDAH09	-52.997
EDAM09	2.428	0.97	2y-EDAM09	-71.784
EDAU09	2.498	1.04	2y-EDAU09	-78.573
EDAZ09	2.638	1.18	2y-EDAZ09	-80.512
EDAH10	2.688	1.23	2y-EDAH10	-80.695
EDAM10	2.818	1.36	2y-EDAM10	-82.154
EDAU10	2.963	1.51	2y-EDAU10	-87.338
EDAZ10	3.168	1.71	2y-EDAZ10	-91.479
EDAH11	3.298	1.84	2y-EDAH11	-92.153
EDAM11	3.473	2.02	2y-EDAM11	-92.166
EDAU11	3.613	2.16	2y-EDAU11	-92.495

Price = Outright Decimal Price - Euro Contract Price

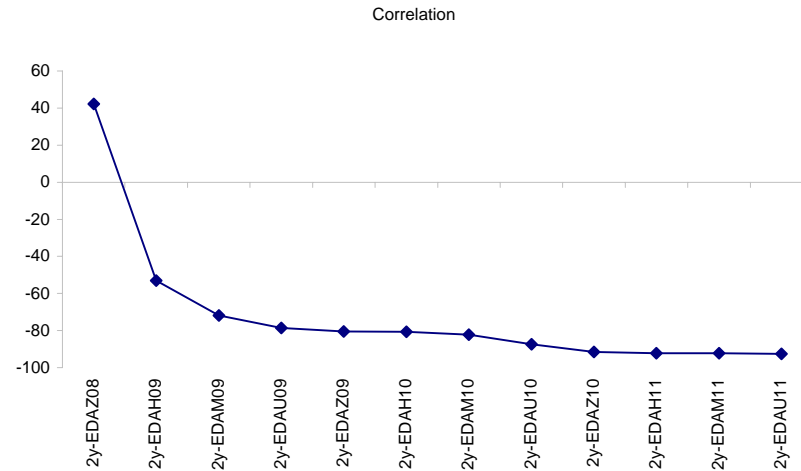
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAZ08	0.019	1.95	1.93	2y-EDAZ08	
EDAH09	0.268	1.95	1.68	2y-EDAH09	
EDAM09	0.517	1.95	1.43	2y-EDAM09	
EDAU09	0.766	1.95	1.18	2y-EDAU09	
EDAZ09	1.016	1.95	0.93	2y-EDAZ09	
EDAH10	1.265	1.95	0.68	2y-EDAH10	
EDAM10	1.514	1.95	0.43	2y-EDAM10	
EDAU10	1.764	1.95	0.18	2y-EDAU10	
EDAZ10	2.013	1.95	(0.07)	2y-EDAZ10	
EDAH11	2.262	1.95	(0.32)	2y-EDAH11	
EDAM11	2.512	1.95	(0.56)	2y-EDAM11	
EDAU11	2.780	1.95	(0.83)	2y-EDAU11	

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

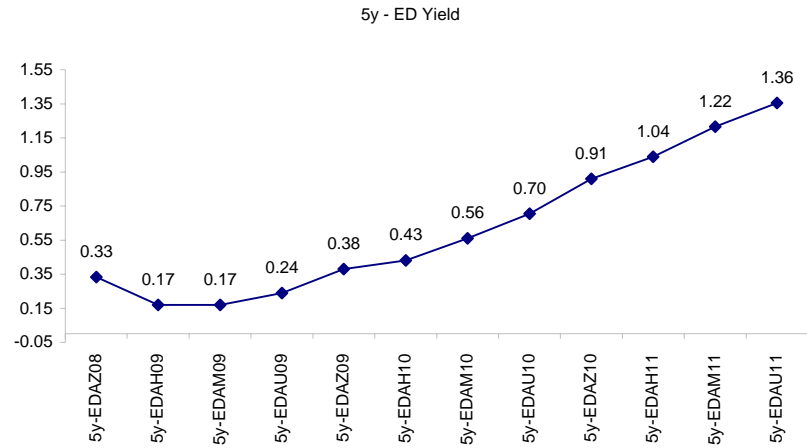


	5y			Correlation*
	Spread Price	Spread Yield	Spread Name	(percent)
EDAZ08	2.959	0.33	5y-EDAZ08	35.190
EDAH09	2.797	0.17	5y-EDAH09	-57.165
EDAM09	2.797	0.17	5y-EDAM09	-76.137
EDAU09	2.867	0.24	5y-EDAU09	-80.805
EDAZ09	3.007	0.38	5y-EDAZ09	-80.963
EDAH10	3.057	0.43	5y-EDAH10	-79.859
EDAM10	3.187	0.56	5y-EDAM10	-80.524
EDAU10	3.332	0.70	5y-EDAU10	-86.303
EDAZ10	3.537	0.91	5y-EDAZ10	-91.838
EDAH11	3.667	1.04	5y-EDAH11	-93.087
EDAM11	3.842	1.22	5y-EDAM11	-93.650
EDAU11	3.982	1.36	5y-EDAU11	-94.710

Price = Outright Decimal Price - Euro Contract Price

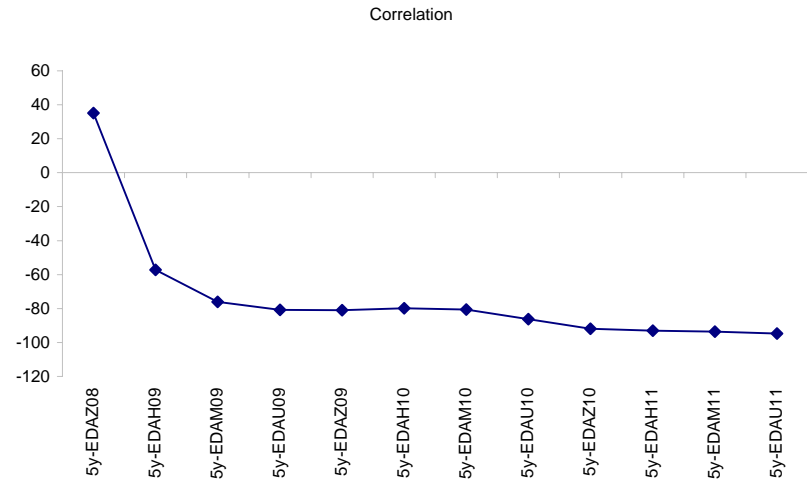
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			5Y Duration	Spread Duration	
EDAZ08	0.019	4.72	4.70	5y-EDAZ08		
EDAH09	0.268	4.72	4.45	5y-EDAH09		
EDAM09	0.517	4.72	4.20	5y-EDAM09		
EDAU09	0.766	4.72	3.95	5y-EDAU09		
EDAZ09	1.016	4.72	3.70	5y-EDAZ09		
EDAH10	1.265	4.72	3.45	5y-EDAH10		
EDAM10	1.514	4.72	3.20	5y-EDAM10		
EDAU10	1.764	4.72	2.95	5y-EDAU10		
EDAZ10	2.013	4.72	2.70	5y-EDAZ10		
EDAH11	2.262	4.72	2.45	5y-EDAH11		
EDAM11	2.512	4.72	2.20	5y-EDAM11		
EDAU11	2.780	4.72	1.94	5y-EDAU11		

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



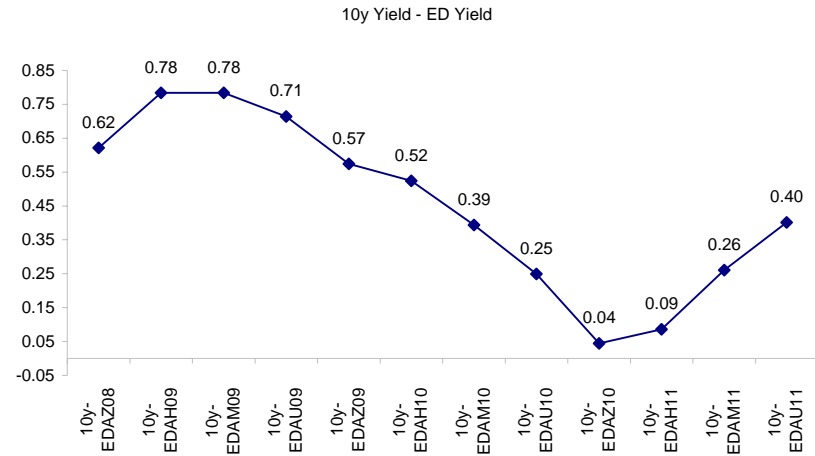


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.959	0.62	10y-EDAZ08	44.152
EDAH09	2.797	0.78	10y-EDAH09	-52.769
EDAM09	2.797	0.78	10y-EDAM09	-73.693
EDAU09	2.867	0.71	10y-EDAU09	-79.712
EDAZ09	3.007	0.57	10y-EDAZ09	-80.823
EDAH10	3.057	0.52	10y-EDAH10	-79.919
EDAM10	3.187	0.39	10y-EDAM10	-80.751
EDAU10	3.332	0.25	10y-EDAU10	-86.502
EDAZ10	3.537	0.04	10y-EDAZ10	-92.068
EDAH11	3.667	0.09	10y-EDAH11	-93.581
EDAM11	3.842	0.26	10y-EDAM11	-94.750
EDAU11	3.982	0.40	10y-EDAU11	-96.384

Price = Outright Decimal Price - Euro Contract Price

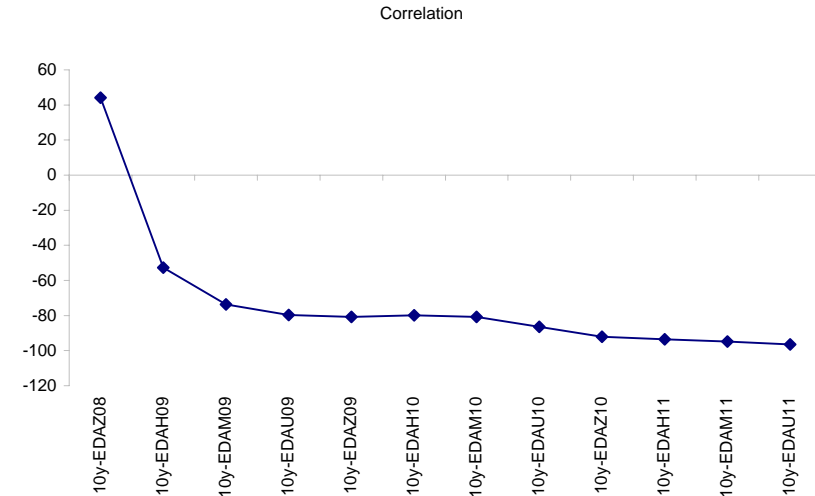
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.019	8.32	8.30	10y-EDAZ08
EDAH09	0.268	8.32	8.06	10y-EDAH09
EDAM09	0.517	8.32	7.81	10y-EDAM09
EDAU09	0.766	8.32	7.56	10y-EDAU09
EDAZ09	1.016	8.32	7.31	10y-EDAZ09
EDAH10	1.265	8.32	7.06	10y-EDAH10
EDAM10	1.514	8.32	6.81	10y-EDAM10
EDAU10	1.764	8.32	6.56	10y-EDAU10
EDAZ10	2.013	8.32	6.31	10y-EDAZ10
EDAH11	2.262	8.32	6.06	10y-EDAH11
EDAM11	2.512	8.32	5.81	10y-EDAM11
EDAU11	2.780	8.32	5.54	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.

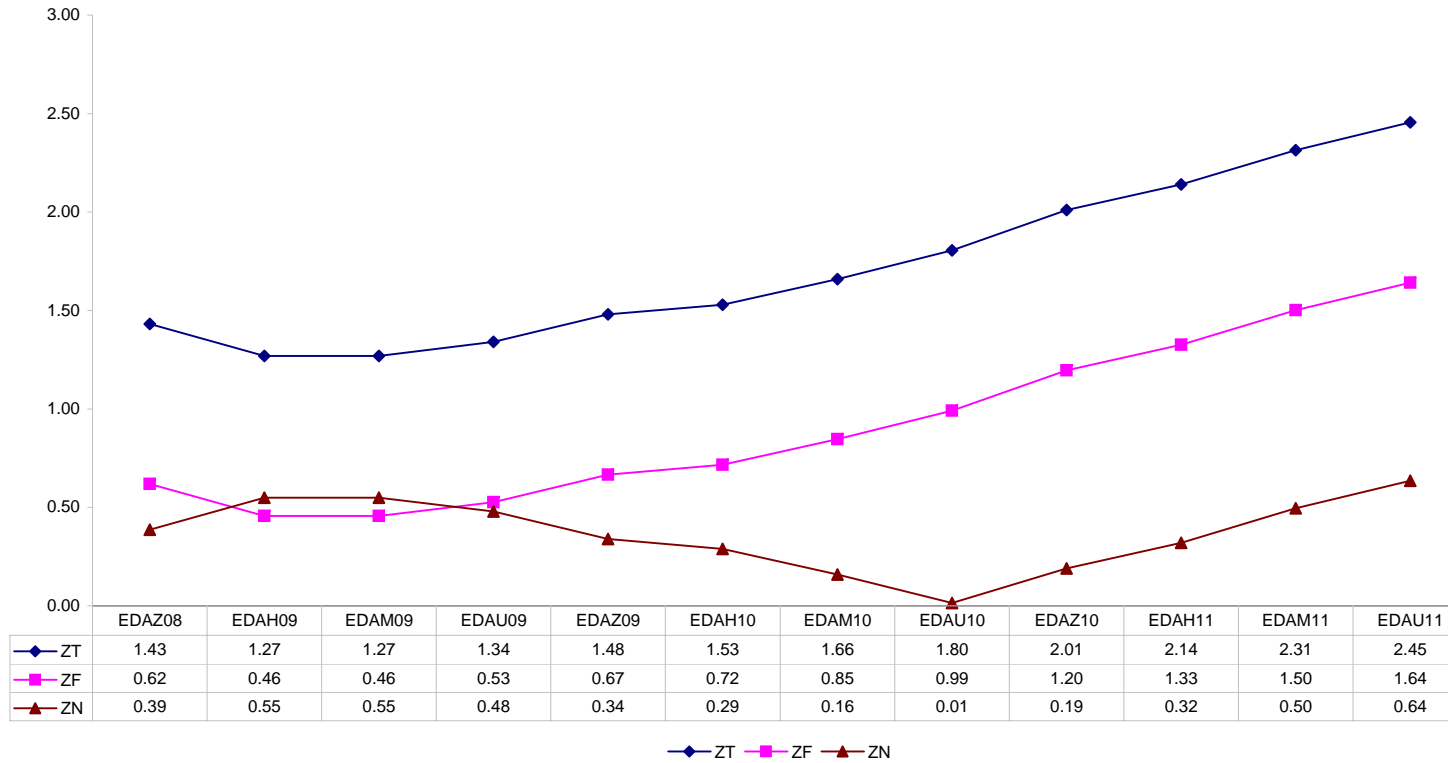
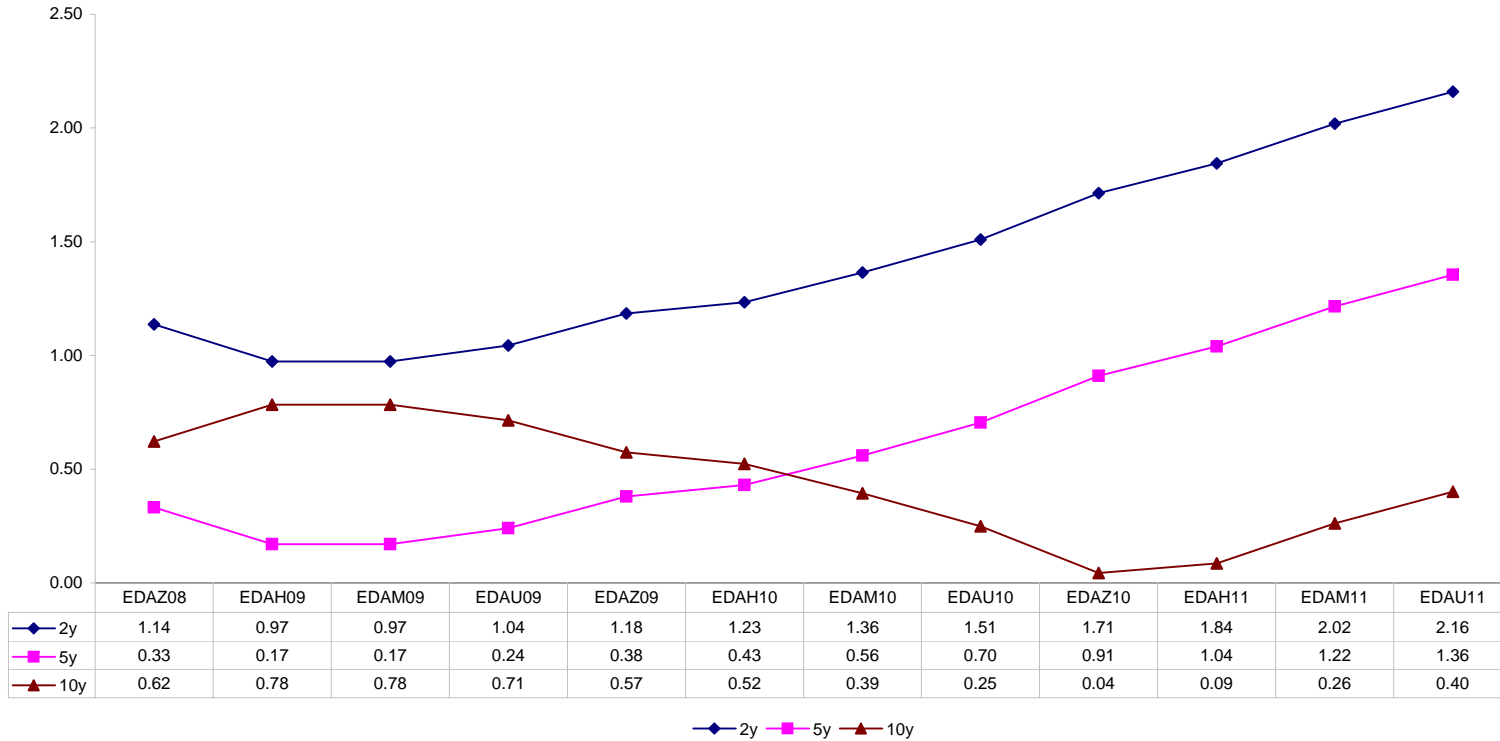
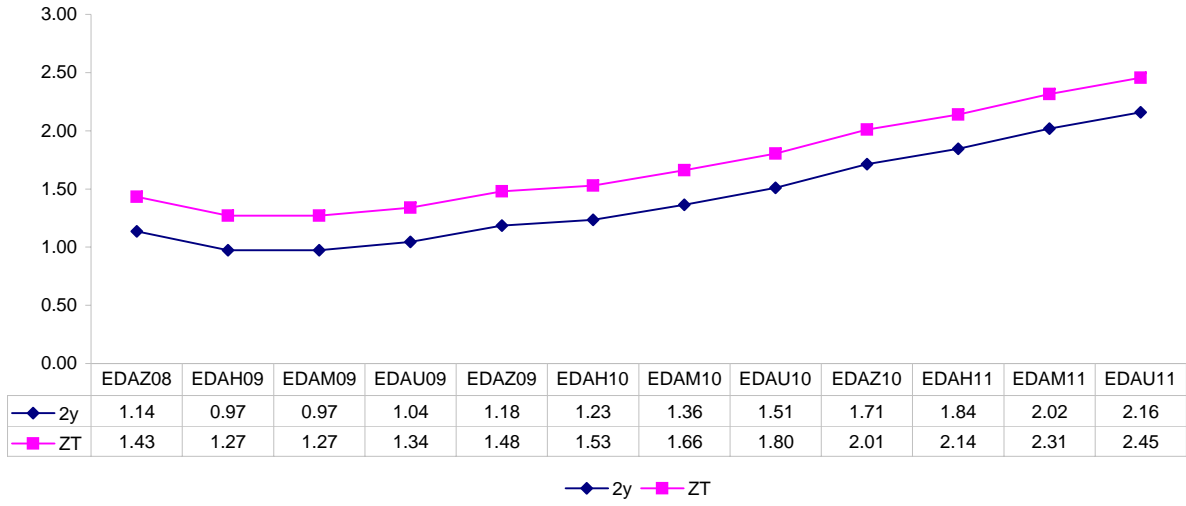


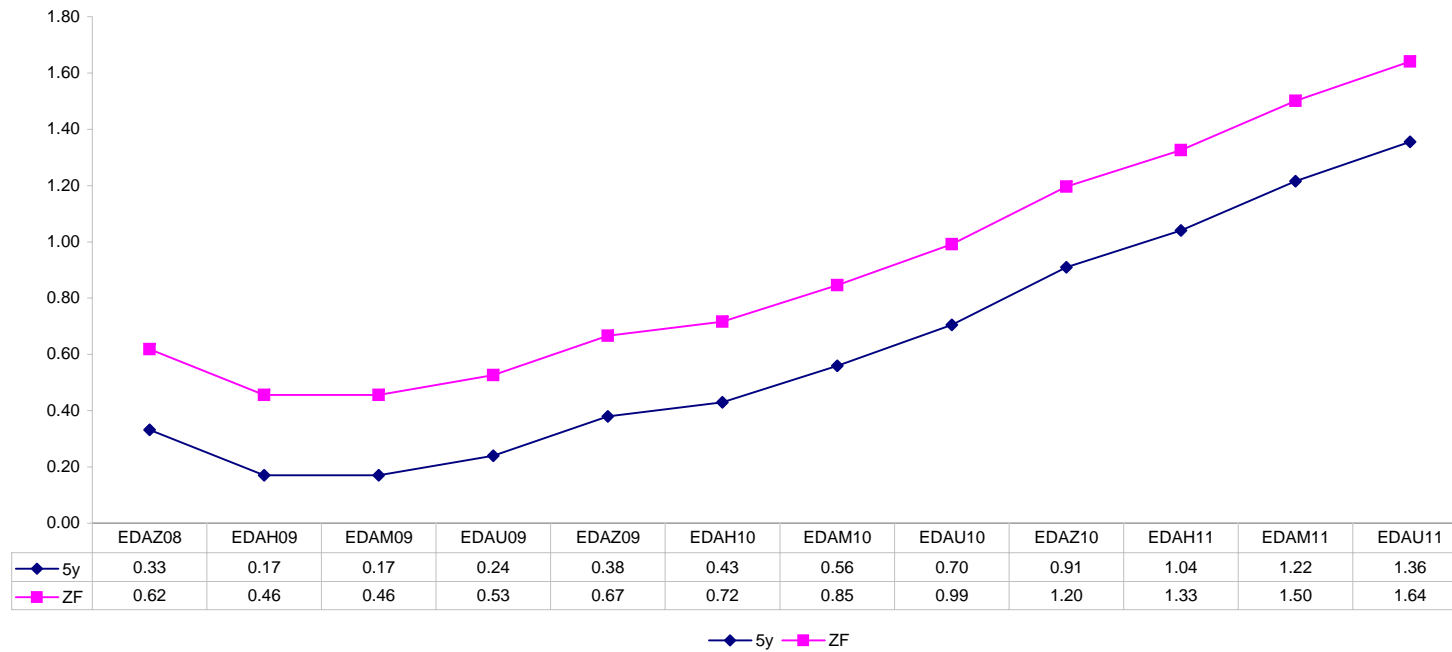
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



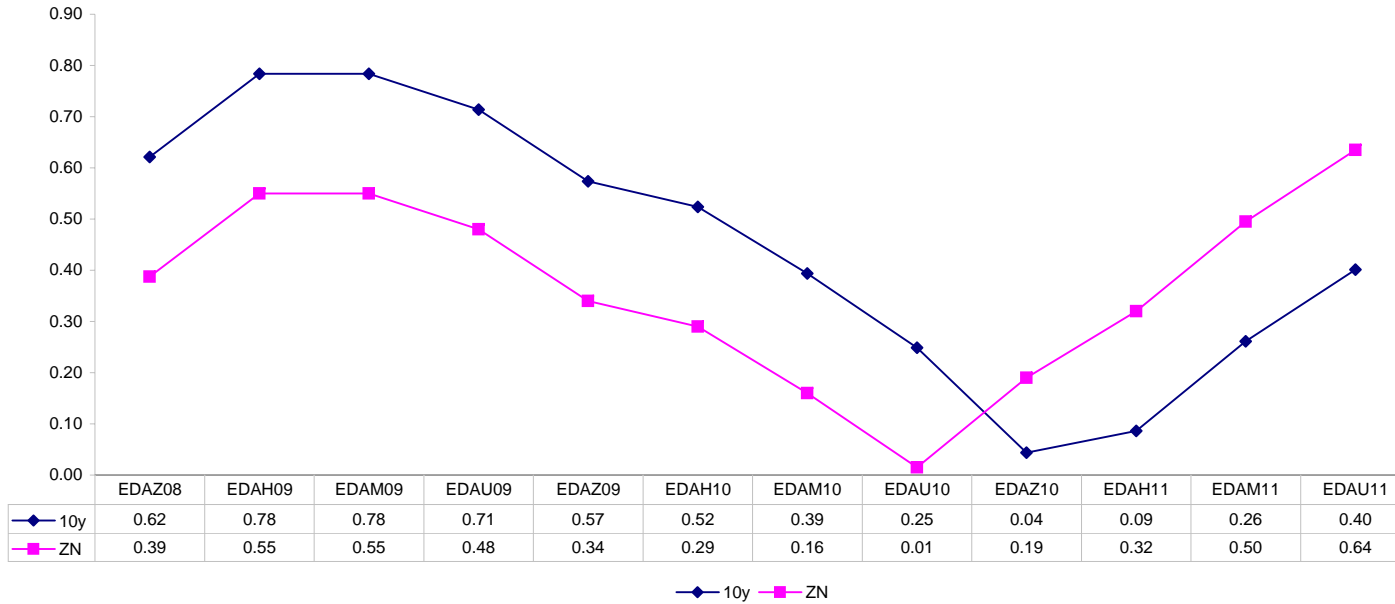
2y Basis TED Curve



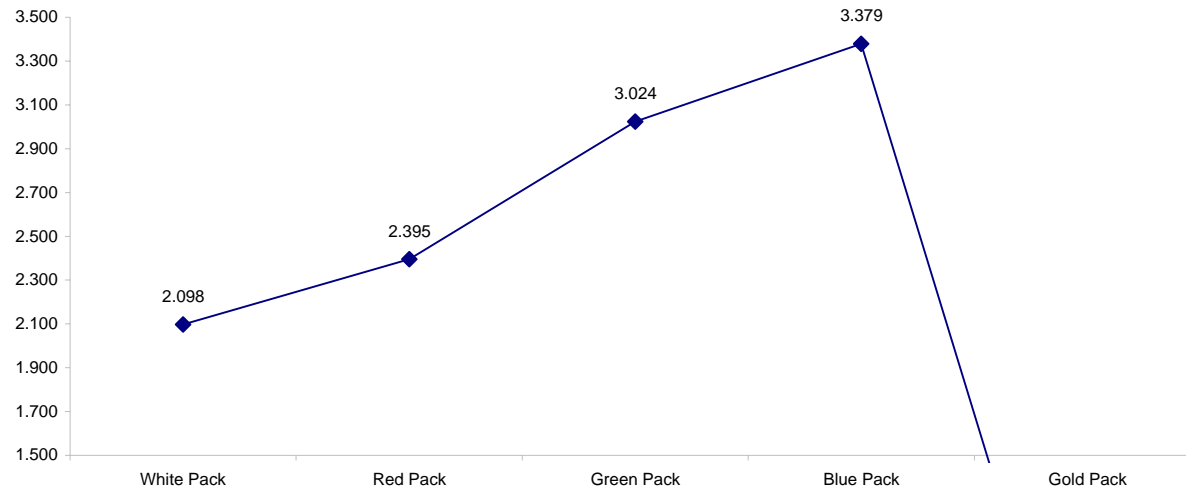
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.098	-4.250	9794.188
Red Pack	2.395	-12.750	9765.125
Green Pack	3.024	-19.875	9704.000
Blue Pack	3.379	-18.750	9669.500
Gold Pack		0.000	9675.125



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

