

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

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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	106.4531	106.145	2.263	1.78
ZF	112.5469	112.175	2.885	3.92
ZN	116.8594	116.275	3.543	6.64
2y	100.813	100.2600	2.317	1.86
5y	101.531	101.1700	3.036	4.50
10y	101.750	101.2400	3.786	8.17

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAU08	97.178	2.822	20	0.054	SEP	
EDAZ08	97.010	2.990	111	0.303	DEC	White
EDAH09	97.035	2.965	202	0.553	MAR	Pack
EDAM09	96.915	3.085	293	0.802	JUN	
EDAU09	96.695	3.305	384	1.051	SEP	
EDAZ09	96.410	3.590	475	1.301	DEC	Red
EDAH10	96.185	3.815	566	1.550	MAR	Pack
EDAM10	95.965	4.035	657	1.799	JUN	
EDAU10	95.800	4.200	748	2.049	SEP	
EDAZ10	95.650	4.350	839	2.298	DEC	Green
EDAH11	95.580	4.420	930	2.547	MAR	Pack
EDAM11	95.510	4.490	1021	2.797	JUN	
EDAU11	95.440	4.560	1119	3.065	SEP	
EDAZ11	95.395	4.605	1210	3.314	DEC	Blue Pack
EDAH12	95.380	4.620	1301	3.564	MAR	
EDAM12	95.315	4.685	1392	3.813	JUN	
EDAU12	95.255	4.745	1483	4.062	SEP	
EDAZ12	95.235	4.765	1574	4.312	DEC	Gold Pack
EDAH13	95.200	4.800	1665	4.561	MAR	
EDAM13	95.135	4.865	1756	4.810	JUN	

	Last Yield	Net Yield	Last Price	
White Pack	3.029	1.187	9703.438	Pack Prices
Red Pack	3.772	2.125	9631.375	
Green Pack	4.474	3.125	9563.500	
Blue Pack		0.875	9537.000	
Gold Pack		0.000	9518.250	

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)

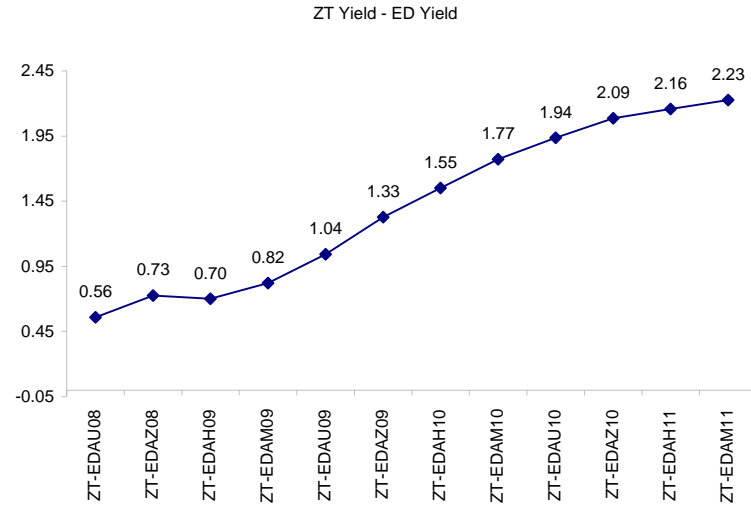
**Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations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

	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	9.276	0.56	ZT-EDAU08	31.809
EDAZ08	9.443	0.73	ZT-EDAZ08	47.036
EDAH09	9.418	0.70	ZT-EDAH09	79.794
EDAM09	9.538	0.82	ZT-EDAM09	91.602
EDAU09	9.758	1.04	ZT-EDAU09	94.350
EDAZ09	10.043	1.33	ZT-EDAZ09	94.841
EDAH10	10.268	1.55	ZT-EDAH10	96.699
EDAM10	10.488	1.77	ZT-EDAM10	96.966
EDAU10	10.653	1.94	ZT-EDAU10	96.617
EDAZ10	10.803	2.09	ZT-EDAZ10	95.947
EDAH11	10.873	2.16	ZT-EDAH11	95.069
EDAM11	10.943	2.23	ZT-EDAM11	94.216

Price = Outright Decimal Price - Euro Contract Price

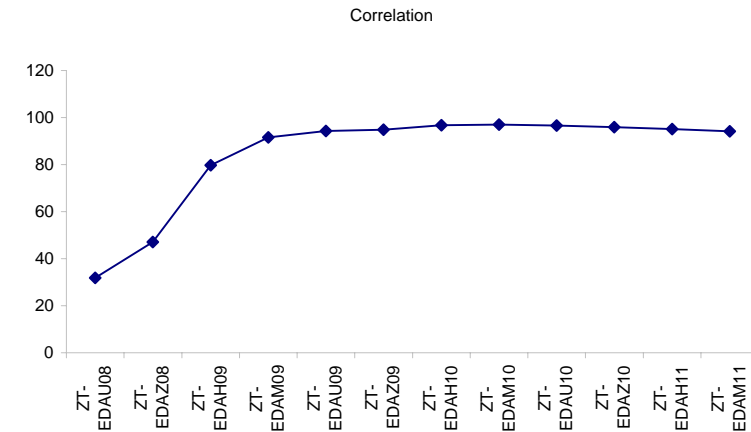
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		ZT Duration	Spread Duration	
EDAU08	0.054	1.78	1.73	ZT-EDAU08	
EDAZ08	0.303	1.78	1.48	ZT-EDAZ08	
EDAH09	0.553	1.78	1.23	ZT-EDAH09	
EDAM09	0.802	1.78	0.98	ZT-EDAM09	
EDAU09	1.051	1.78	0.73	ZT-EDAU09	
EDAZ09	1.301	1.78	0.48	ZT-EDAZ09	
EDAH10	1.550	1.78	0.23	ZT-EDAH10	
EDAM10	1.799	1.78	(0.02)	ZT-EDAM10	
EDAU10	2.049	1.78	(0.27)	ZT-EDAU10	
EDAZ10	2.298	1.78	(0.52)	ZT-EDAZ10	
EDAH11	2.547	1.78	(0.77)	ZT-EDAH11	
EDAM11	2.797	1.78	(1.02)	ZT-EDAM11	

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

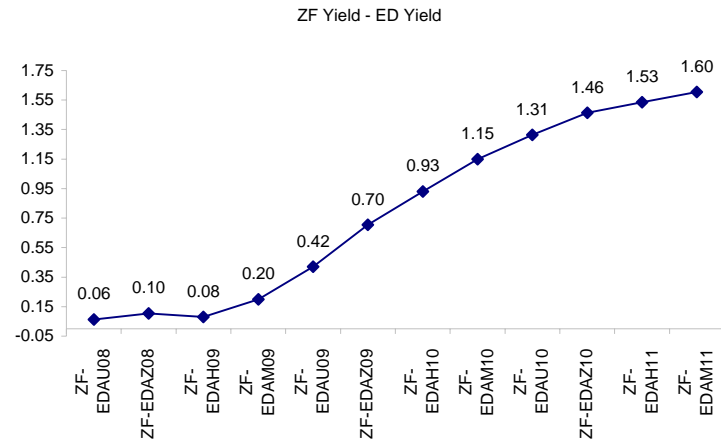


ZF				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	15.369	0.06	ZF-EDAU08	31.555
EDAZ08	15.537	0.10	ZF-EDAZ08	42.717
EDAH09	15.512	0.08	ZF-EDAH09	73.454
EDAM09	15.632	0.20	ZF-EDAM09	87.771
EDAU09	15.852	0.42	ZF-EDAU09	90.417
EDAZ09	16.137	0.70	ZF-EDAZ09	91.180
EDAH10	16.362	0.93	ZF-EDAH10	93.399
EDAM10	16.582	1.15	ZF-EDAM10	93.829
EDAU10	16.747	1.31	ZF-EDAU10	94.443
EDAZ10	16.897	1.46	ZF-EDAZ10	94.587
EDAH11	16.967	1.53	ZF-EDAH11	94.988
EDAM11	17.037	1.60	ZF-EDAM11	95.613

Price = Outright Decimal Price - Euro Contract Price

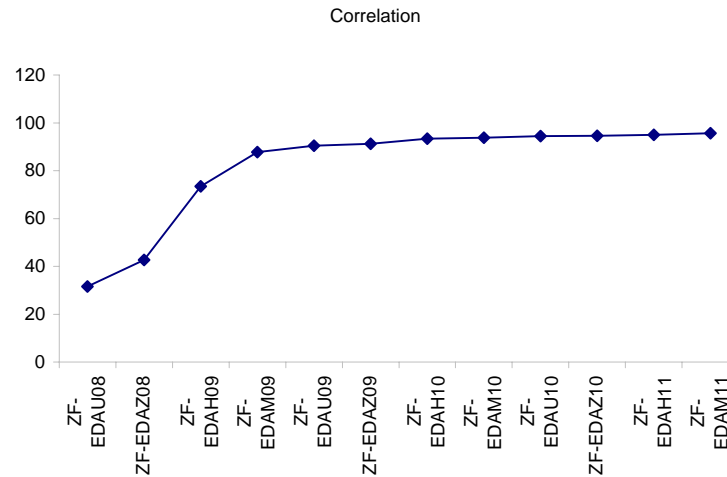
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZF Duration	Spread Duration	
EDAU08	0.054	3.92	3.87	ZF-EDAU08		
EDAZ08	0.303	3.92	3.62	ZF-EDAZ08		
EDAH09	0.553	3.92	3.37	ZF-EDAH09		
EDAM09	0.802	3.92	3.12	ZF-EDAM09		
EDAU09	1.051	3.92	2.87	ZF-EDAU09		
EDAZ09	1.301	3.92	2.62	ZF-EDAZ09		
EDAH10	1.550	3.92	2.37	ZF-EDAH10		
EDAM10	1.799	3.92	2.12	ZF-EDAM10		
EDAU10	2.049	3.92	1.87	ZF-EDAU10		
EDAZ10	2.298	3.92	1.62	ZF-EDAZ10		
EDAH11	2.547	3.92	1.37	ZF-EDAH11		
EDAM11	2.797	3.92	1.12	ZF-EDAM11		

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

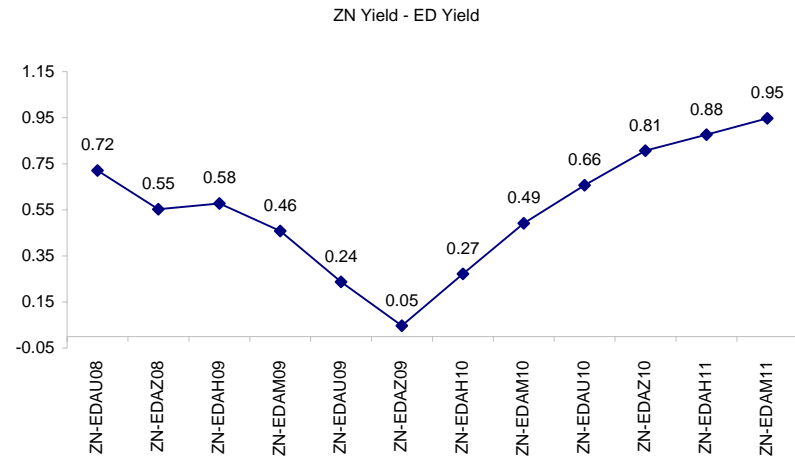


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	19.682	0.72	ZN-EDAU08	38.584
EDAZ08	19.849	0.55	ZN-EDAZ08	38.714
EDAH09	19.824	0.58	ZN-EDAH09	65.822
EDAM09	19.944	0.46	ZN-EDAM09	80.315
EDAU09	20.164	0.24	ZN-EDAU09	82.152
EDAZ09	20.449	0.05	ZN-EDAZ09	82.778
EDAH10	20.674	0.27	ZN-EDAH10	93.399
EDAM10	20.894	0.49	ZN-EDAM10	93.829
EDAU10	21.059	0.66	ZN-EDAU10	94.443
EDAZ10	21.209	0.81	ZN-EDAZ10	94.587
EDAH11	21.279	0.88	ZN-EDAH11	94.988
EDAM11	21.349	0.95	ZN-EDAM11	95.613

Price = Outright Decimal Price - Euro Contract Price

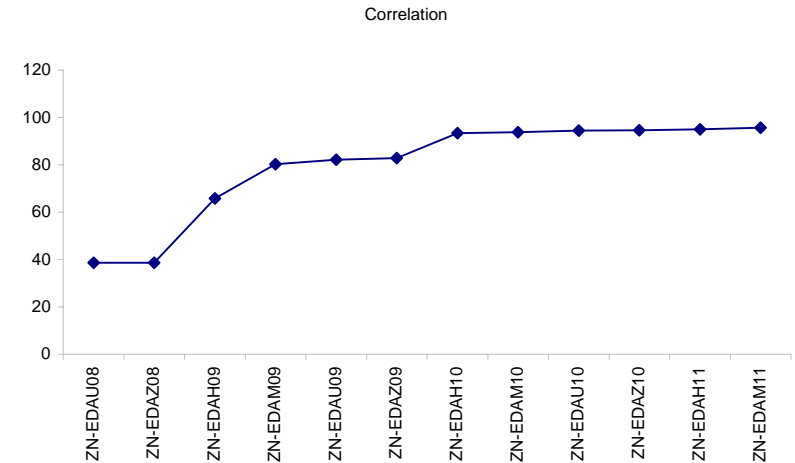
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZN Duration	Spread Duration	
EDAU08	0.054	6.64	6.58	ZN-EDAU08		
EDAZ08	0.303	6.64	6.33	ZN-EDAZ08		
EDAH09	0.553	6.64	6.08	ZN-EDAH09		
EDAM09	0.802	6.64	5.83	ZN-EDAM09		
EDAU09	1.051	6.64	5.58	ZN-EDAU09		
EDAZ09	1.301	6.64	5.33	ZN-EDAZ09		
EDAH10	1.550	6.64	5.09	ZN-EDAH10		
EDAM10	1.799	6.64	4.84	ZN-EDAM10		
EDAU10	2.049	6.64	4.59	ZN-EDAU10		
EDAZ10	2.298	6.64	4.34	ZN-EDAZ10		
EDAH11	2.547	6.64	4.09	ZN-EDAH11		
EDAM11	2.797	6.64	3.84	ZN-EDAM11		

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

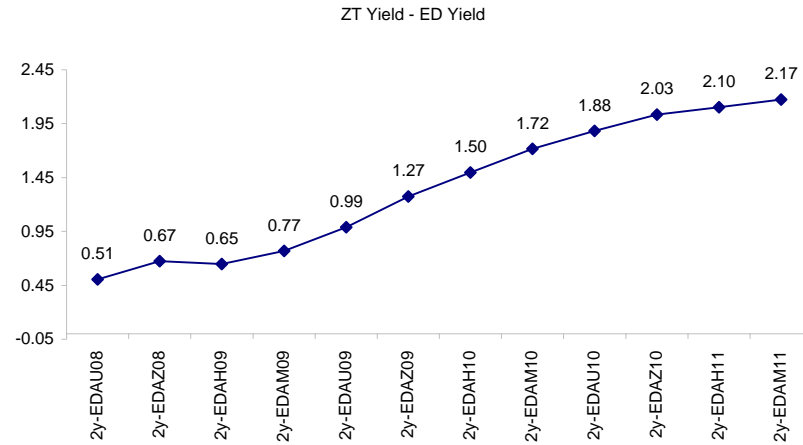


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	3.635	0.51	2y-EDAU08	-22.740
EDAZ08	3.803	0.67	2y-EDAZ08	-51.024
EDAH09	3.778	0.65	2y-EDAH09	-83.368
EDAM09	3.898	0.77	2y-EDAM09	-93.622
EDAU09	4.118	0.99	2y-EDAU09	-95.688
EDAZ09	4.403	1.27	2y-EDAZ09	-95.506
EDAH10	4.628	1.50	2y-EDAH10	-95.378
EDAM10	4.848	1.72	2y-EDAM10	-94.689
EDAU10	5.013	1.88	2y-EDAU10	-92.879
EDAZ10	5.163	2.03	2y-EDAZ10	-91.474
EDAH11	5.233	2.10	2y-EDAH11	-89.947
EDAM11	5.303	2.17	2y-EDAM11	-88.304

Price = Outright Decimal Price - Euro Contract Price

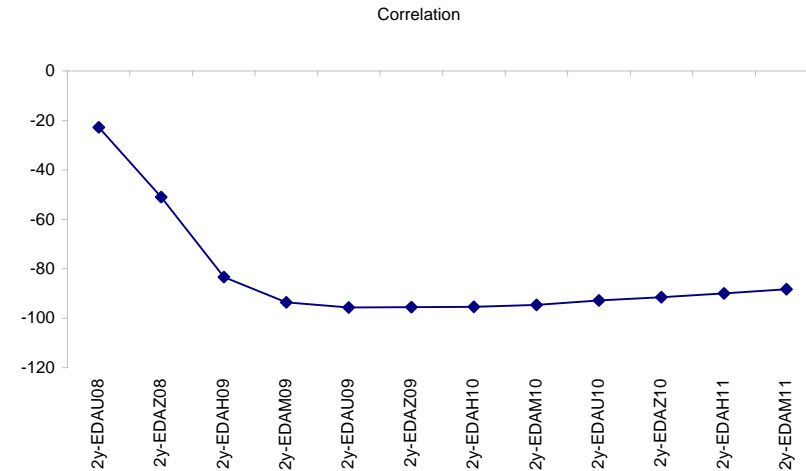
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		2Y Duration	Spread Duration	
EDAU08	0.054	1.86	1.81	2y-EDAU08	
EDAZ08	0.303	1.86	1.56	2y-EDAZ08	
EDAH09	0.553	1.86	1.31	2y-EDAH09	
EDAM09	0.802	1.86	1.06	2y-EDAM09	
EDAU09	1.051	1.86	0.81	2y-EDAU09	
EDAZ09	1.301	1.86	0.56	2y-EDAZ09	
EDAH10	1.550	1.86	0.31	2y-EDAH10	
EDAM10	1.799	1.86	0.07	2y-EDAM10	
EDAU10	2.049	1.86	(0.18)	2y-EDAU10	
EDAZ10	2.298	1.86	(0.43)	2y-EDAZ10	
EDAH11	2.547	1.86	(0.68)	2y-EDAH11	
EDAM11	2.797	1.86	(0.93)	2y-EDAM11	

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

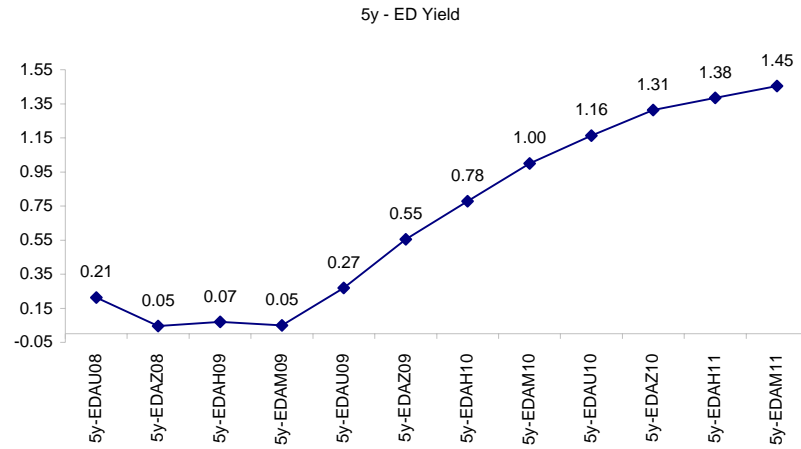


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	4.354	0.21	5y-EDAU08	-24.929
EDAZ08	4.521	0.05	5y-EDAZ08	-45.089
EDAH09	4.496	0.07	5y-EDAH09	-76.842
EDAM09	4.616	0.05	5y-EDAM09	-89.942
EDAU09	4.836	0.27	5y-EDAU09	-92.355
EDAZ09	5.121	0.55	5y-EDAZ09	-92.761
EDAH10	5.346	0.78	5y-EDAH10	-93.809
EDAM10	5.566	1.00	5y-EDAM10	-93.732
EDAU10	5.731	1.16	5y-EDAU10	-93.443
EDAZ10	5.881	1.31	5y-EDAZ10	-93.326
EDAH11	5.951	1.38	5y-EDAH11	-93.380
EDAM11	6.021	1.45	5y-EDAM11	-93.528

Price = Outright Decimal Price - Euro Contract Price

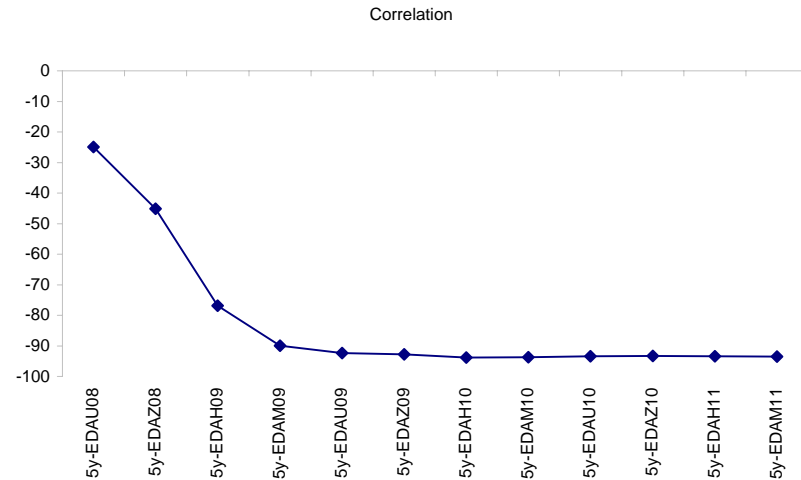
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAU08	0.054	4.50	4.45	5y-EDAU08
EDAZ08	0.303	4.50	4.20	5y-EDAZ08
EDAH09	0.553	4.50	3.95	5y-EDAH09
EDAM09	0.802	4.50	3.70	5y-EDAM09
EDAU09	1.051	4.50	3.45	5y-EDAU09
EDAZ09	1.301	4.50	3.20	5y-EDAZ09
EDAH10	1.550	4.50	2.95	5y-EDAH10
EDAM10	1.799	4.50	2.70	5y-EDAM10
EDAU10	2.049	4.50	2.46	5y-EDAU10
EDAZ10	2.298	4.50	2.21	5y-EDAZ10
EDAH11	2.547	4.50	1.96	5y-EDAH11
EDAM11	2.797	4.50	1.71	5y-EDAM11

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

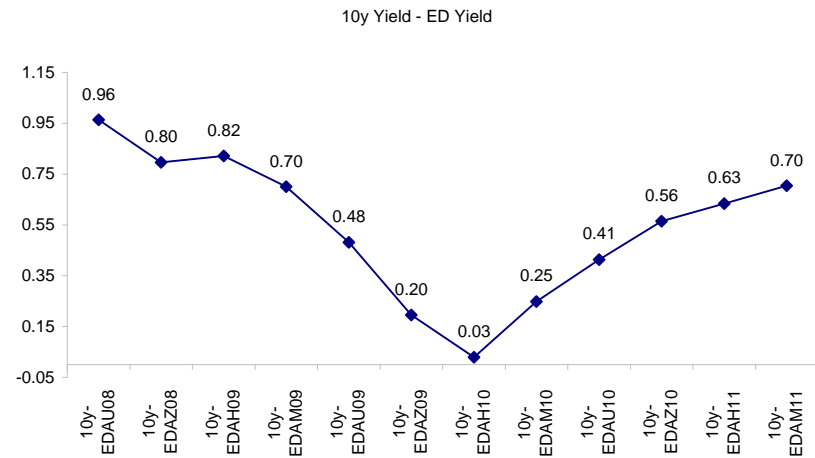


	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAU08	4.354	0.96	10y-EDAU08	-25.499
EDAZ08	4.521	0.80	10y-EDAZ08	-28.212
EDAH09	4.496	0.82	10y-EDAH09	-62.828
EDAM09	4.616	0.70	10y-EDAM09	-77.789
EDAU09	4.836	0.48	10y-EDAU09	-81.097
EDAZ09	5.121	0.20	10y-EDAZ09	-81.744
EDAH10	5.346	0.03	10y-EDAH10	-85.020
EDAM10	5.566	0.25	10y-EDAM10	-86.051
EDAU10	5.731	0.41	10y-EDAU10	-87.420
EDAZ10	5.881	0.56	10y-EDAZ10	-88.473
EDAH11	5.951	0.63	10y-EDAH11	-89.962
EDAM11	6.021	0.70	10y-EDAM11	-91.543

Price = Outright Decimal Price - Euro Contract Price

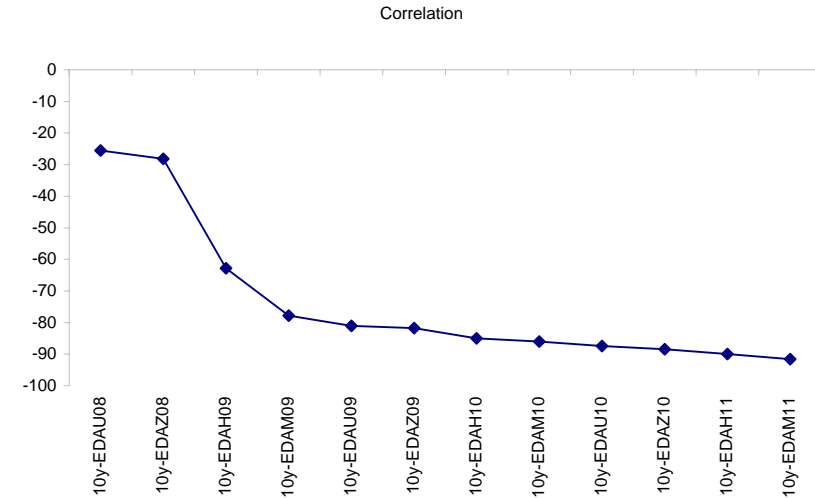
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as			
	Fraction of year	10Y Duration	Spread Duration	
EDAU08	0.054	8.17	8.12	10y-EDAU08
EDAZ08	0.303	8.17	7.87	10y-EDAZ08
EDAH09	0.553	8.17	7.62	10y-EDAH09
EDAM09	0.802	8.17	7.37	10y-EDAM09
EDAU09	1.051	8.17	7.12	10y-EDAU09
EDAZ09	1.301	8.17	6.87	10y-EDAZ09
EDAH10	1.550	8.17	6.62	10y-EDAH10
EDAM10	1.799	8.17	6.37	10y-EDAM10
EDAU10	2.049	8.17	6.12	10y-EDAU10
EDAZ10	2.298	8.17	5.87	10y-EDAZ10
EDAH11	2.547	8.17	5.62	10y-EDAH11
EDAM11	2.797	8.17	5.37	10y-EDAM11

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.

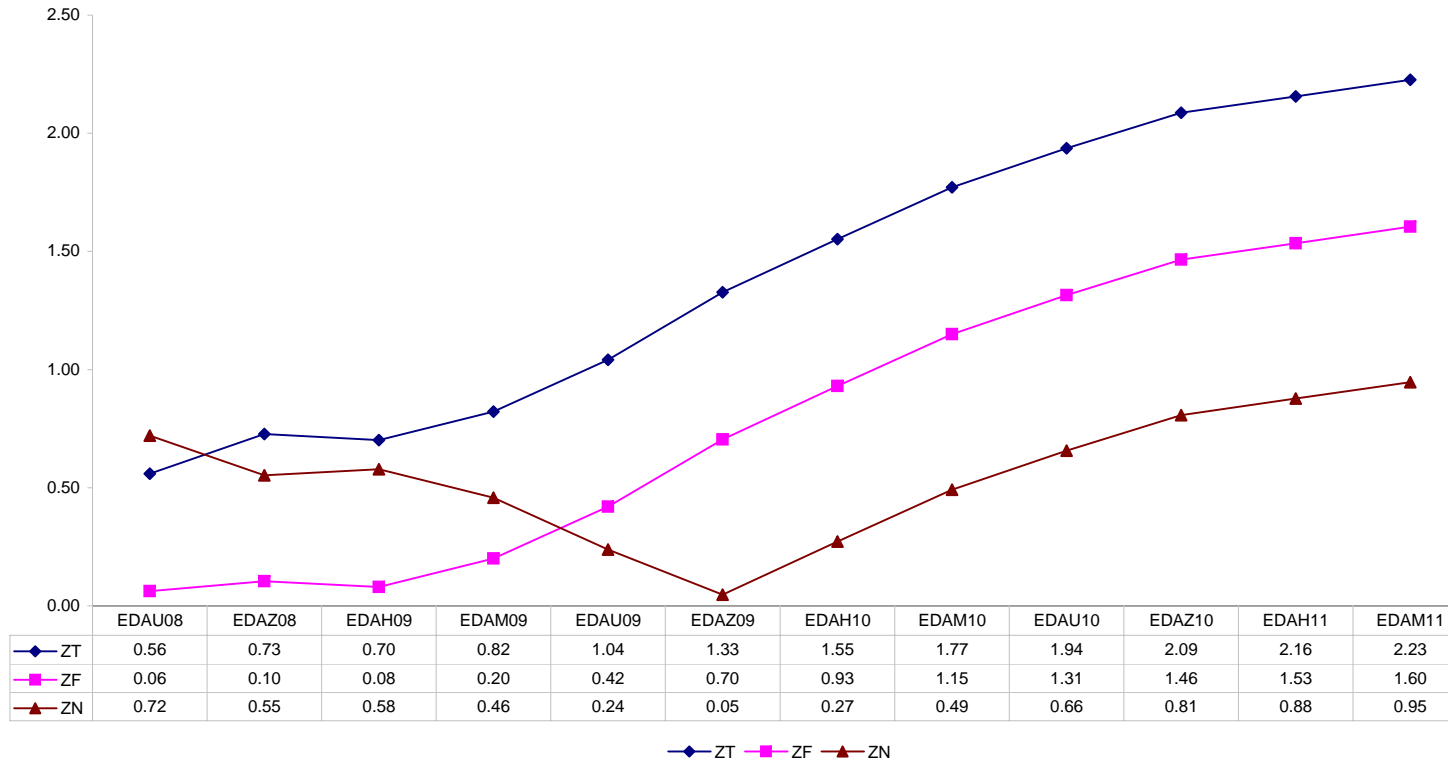
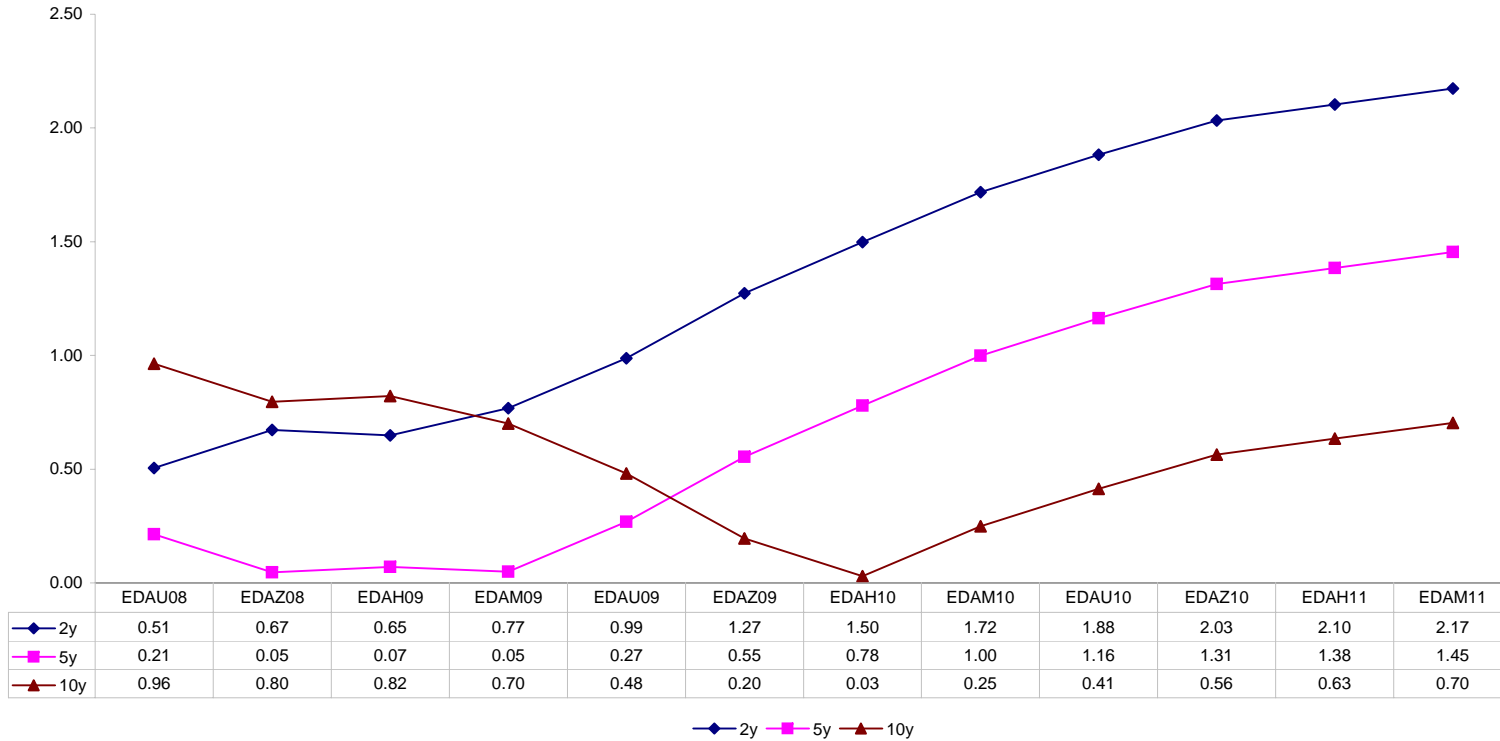
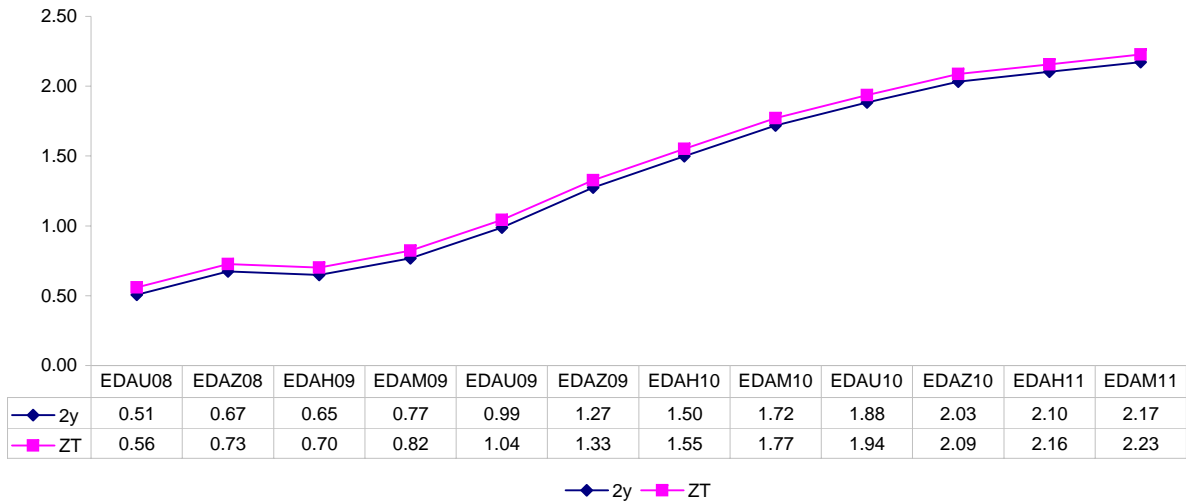


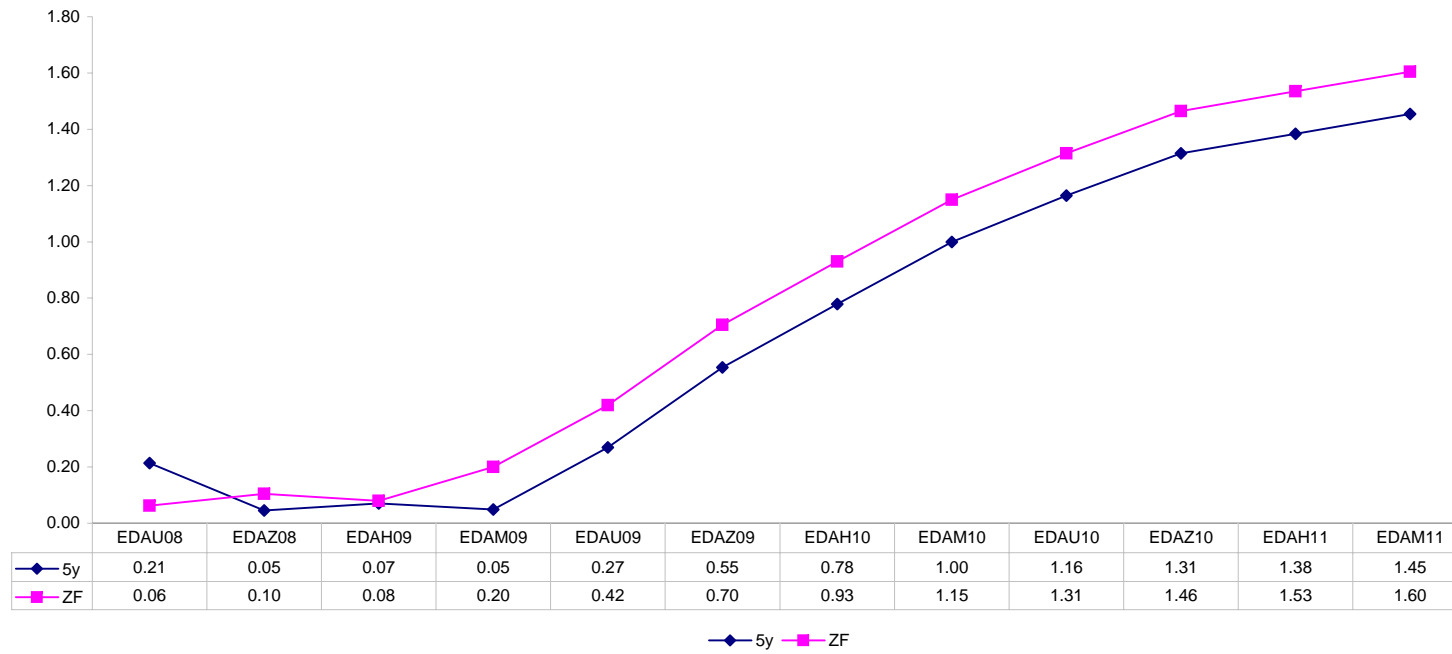
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



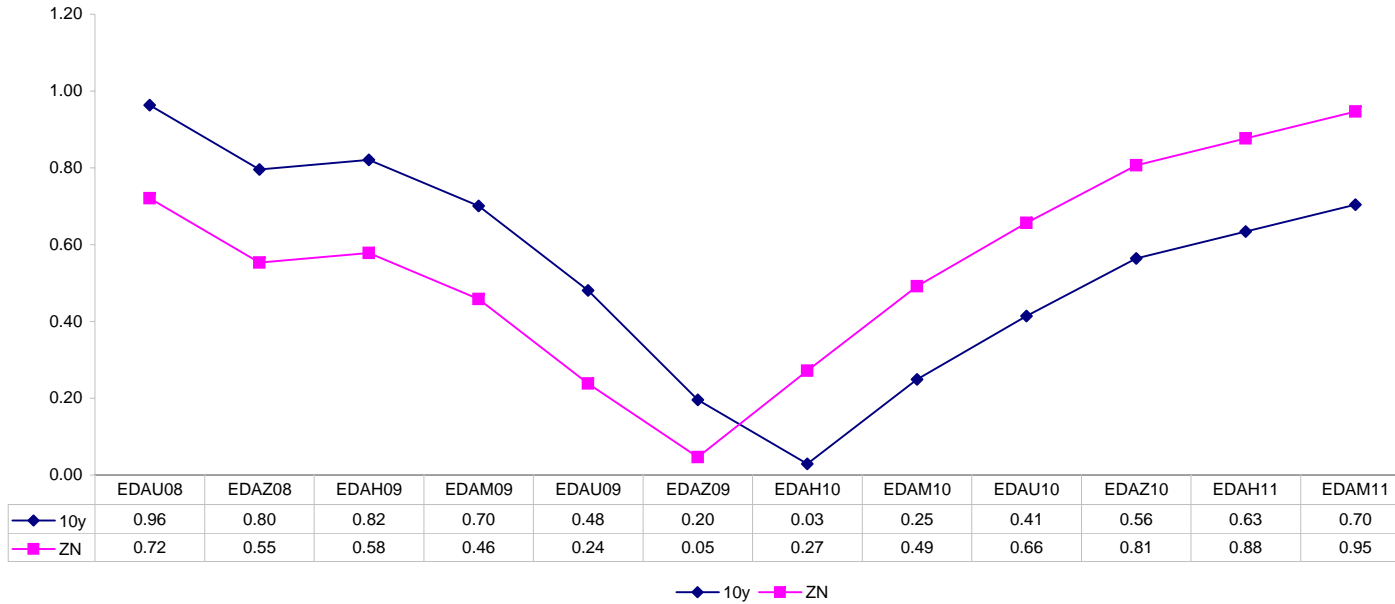
2y Basis TED Curve



5y Basis TED Curve

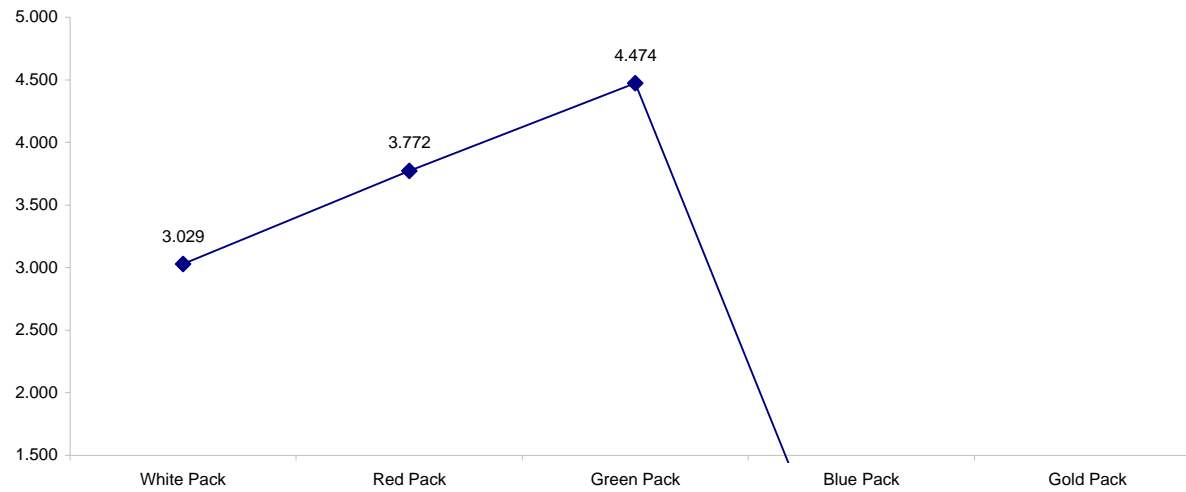


10y Basis TED Curve



### Packs

	Last Yield	Net Last Yield	Last Price
White Pack	3.029	1.187	9703.438
Red Pack	3.772	2.125	9631.375
Green Pack	4.474	3.125	9563.500
Blue Pack		0.875	9537.000
Gold Pack		0.000	9518.250



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

