

## **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	106.3594	106.115	2.171	1.76
ZF	112.3188	112.102	2.869	3.91
ZN	115.8906	115.285	3.582	5.86
2y	99.772	99.2470	2.244	1.91
5y	100.663	100.2120	2.980	4.50
10y	100.734	100.2350	3.786	8.11

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAM08	97.350	2.650	35	0.095	JUN	
EDAU08	97.335	2.665	126	0.345	SEP	White
EDAZ08	97.170	2.830	217	0.594	DEC	Pack
EDAH09	97.060	2.940	308	0.843	MAR	
EDAM09	96.900	3.100	399	1.092	JUN	
EDAU09	96.730	3.270	490	1.342	SEP	Red Pack
EDAZ09	96.535	3.465	581	1.591	DEC	
EDAH10	96.395	3.605	672	1.840	MAR	
EDAM10	96.235	3.765	763	2.090	JUN	
EDAU10	96.085	3.915	854	2.339	SEP	Green
EDAZ10	95.935	4.065	945	2.588	DEC	Pack
EDAH11	95.830	4.170	1036	2.838	MAR	
EDAM11	95.745	4.255	1127	3.087	JUN	
EDAU11	#VALUE!	#VALUE!	1225	3.355	SEP	Blue Pack
EDAZ11	95.550	4.450	1316	3.605	DEC	
EDAH12	#VALUE!	#VALUE!	1407	3.854	MAR	
EDAM12	#VALUE!	#VALUE!	1498	4.103	JUN	
EDAU12	95.350	4.650	1589	4.353	SEP	Gold Pack
EDAZ12	95.290	4.710	1680	4.602	DEC	
EDAH13	95.210	4.790	1771	4.851	MAR	

	Last Yield	Net Yield	Last Price	
White Pack	2.829	-3.500	9722.875	
Red Pack	3.436	-4.000	9664.000	Pack
Green Pack	4.075	-2.875	9602.125	Prices
Blue Pack		-0.125	9561.250	
Gold Pack		0.000	9532.750	

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.

**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)

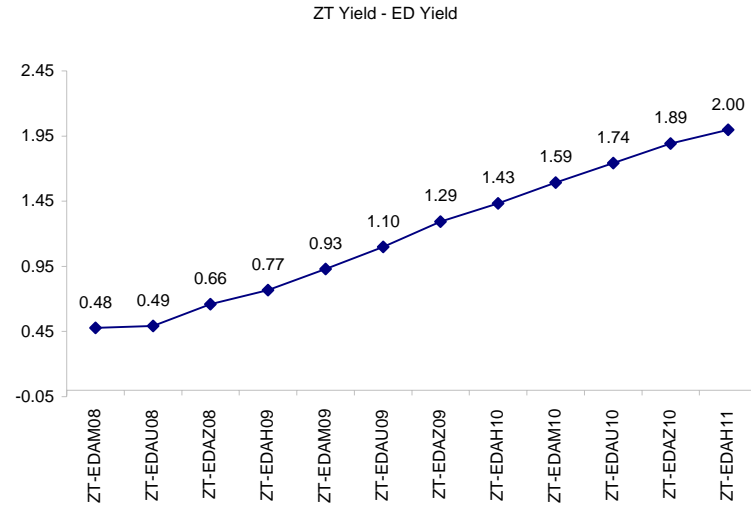
**Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations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

ZT				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	9.009	0.48	ZT-EDAM08	27.839
EDAU08	9.024	0.49	ZT-EDAU08	47.456
EDAZ08	9.189	0.66	ZT-EDAZ08	81.045
EDAH09	9.299	0.77	ZT-EDAH09	95.866
EDAM09	9.459	0.93	ZT-EDAM09	97.704
EDAU09	9.629	1.10	ZT-EDAU09	97.706
EDAZ09	9.824	1.29	ZT-EDAZ09	97.195
EDAH10	9.964	1.43	ZT-EDAH10	96.573
EDAM10	10.124	1.59	ZT-EDAM10	95.058
EDAU10	10.274	1.74	ZT-EDAU10	91.739
EDAZ10	10.424	1.89	ZT-EDAZ10	85.747
EDAH11	10.529	2.00	ZT-EDAH11	76.975

Price = Outright Decimal Price - Euro Contract Price

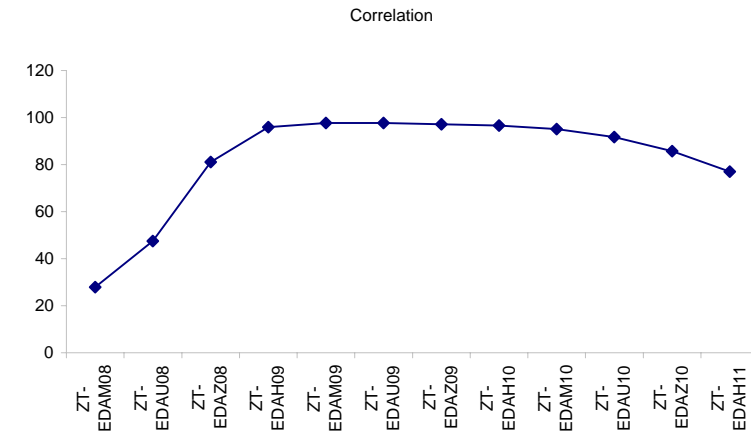
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as Fraction of year				ZT Duration	Spread Duration	
EDAM08	0.095	1.76	1.67	ZT-EDAM08		
EDAU08	0.345	1.76	1.42	ZT-EDAU08		
EDAZ08	0.594	1.76	1.17	ZT-EDAZ08		
EDAH09	0.843	1.76	0.92	ZT-EDAH09		
EDAM09	1.092	1.76	0.67	ZT-EDAM09		
EDAU09	1.342	1.76	0.42	ZT-EDAU09		
EDAZ09	1.591	1.76	0.17	ZT-EDAZ09		
EDAH10	1.840	1.76	(0.08)	ZT-EDAH10		
EDAM10	2.090	1.76	(0.33)	ZT-EDAM10		
EDAU10	2.339	1.76	(0.58)	ZT-EDAU10		
EDAZ10	2.588	1.76	(0.82)	ZT-EDAZ10		
EDAH11	2.838	1.76	(1.07)	ZT-EDAH11		

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

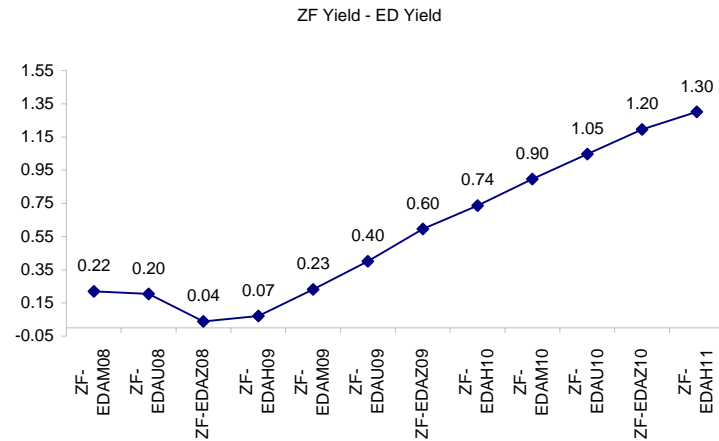


	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	14.969	0.22	ZF-EDAM08	34.137
EDAU08	14.984	0.20	ZF-EDAU08	50.247
EDAZ08	15.149	0.04	ZF-EDAZ08	82.948
EDAH09	15.259	0.07	ZF-EDAH09	96.475
EDAM09	15.419	0.23	ZF-EDAM09	97.231
EDAU09	15.589	0.40	ZF-EDAU09	96.699
EDAZ09	15.784	0.60	ZF-EDAZ09	96.287
EDAH10	15.924	0.74	ZF-EDAH10	96.837
EDAM10	16.084	0.90	ZF-EDAM10	98.075
EDAU10	16.234	1.05	ZF-EDAU10	98.404
EDAZ10	16.384	1.20	ZF-EDAZ10	96.394
EDAH11	16.489	1.30	ZF-EDAH11	89.822

Price = Outright Decimal Price - Euro Contract Price

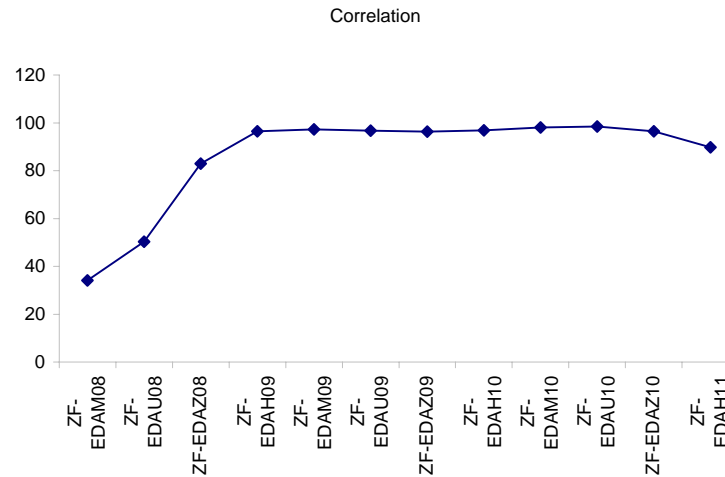
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year		ZF Duration	Spread Duration	
EDAM08	0.095	3.91	3.81	ZF-EDAM08	
EDAU08	0.345	3.91	3.56	ZF-EDAU08	
EDAZ08	0.594	3.91	3.31	ZF-EDAZ08	
EDAH09	0.843	3.91	3.06	ZF-EDAH09	
EDAM09	1.092	3.91	2.81	ZF-EDAM09	
EDAU09	1.342	3.91	2.56	ZF-EDAU09	
EDAZ09	1.591	3.91	2.32	ZF-EDAZ09	
EDAH10	1.840	3.91	2.07	ZF-EDAH10	
EDAM10	2.090	3.91	1.82	ZF-EDAM10	
EDAU10	2.339	3.91	1.57	ZF-EDAU10	
EDAZ10	2.588	3.91	1.32	ZF-EDAZ10	
EDAH11	2.838	3.91	1.07	ZF-EDAH11	

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

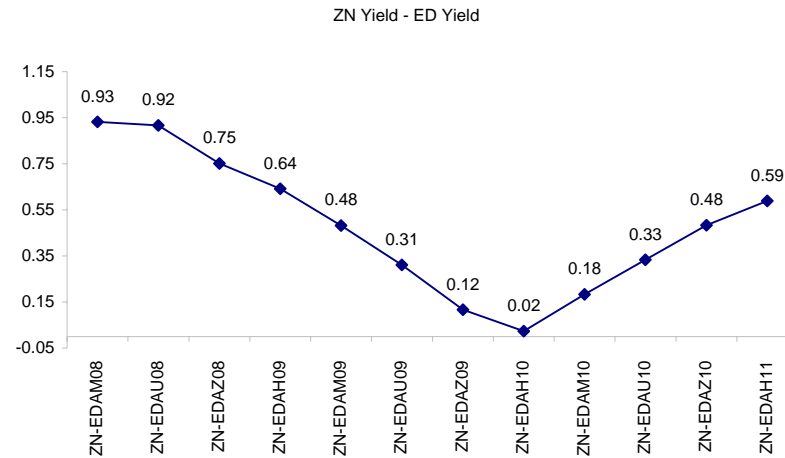


ZN				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	18.541	0.93	ZN-EDAM08	5.485
EDAU08	18.556	0.92	ZN-EDAU08	21.140
EDAZ08	18.721	0.75	ZN-EDAZ08	57.242
EDAH09	18.831	0.64	ZN-EDAH09	82.347
EDAM09	18.991	0.48	ZN-EDAM09	85.980
EDAU09	19.161	0.31	ZN-EDAU09	86.156
EDAZ09	19.356	0.12	ZN-EDAZ09	85.563
EDAH10	19.496	0.02	ZN-EDAH10	96.837
EDAM10	19.656	0.18	ZN-EDAM10	98.075
EDAU10	19.806	0.33	ZN-EDAU10	98.404
EDAZ10	19.956	0.48	ZN-EDAZ10	96.394
EDAH11	20.061	0.59	ZN-EDAH11	89.822

Price = Outright Decimal Price - Euro Contract Price

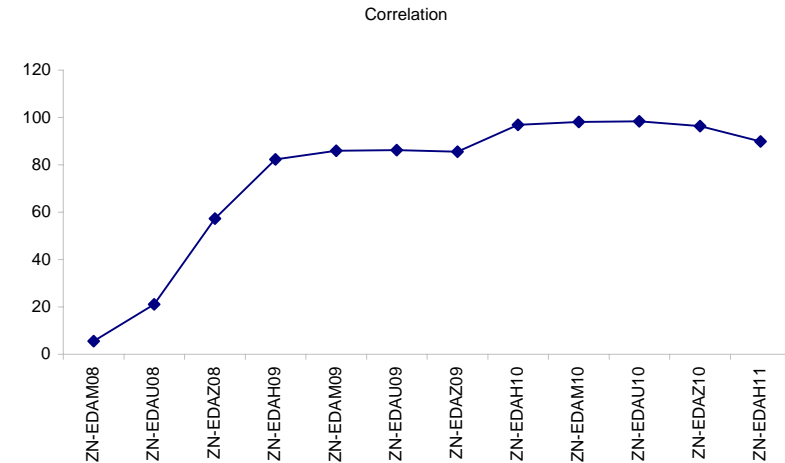
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year	ZN Duration	Spread Duration	
EDAM08	0.095	5.86	5.76	ZN-EDAM08
EDAU08	0.345	5.86	5.51	ZN-EDAU08
EDAZ08	0.594	5.86	5.26	ZN-EDAZ08
EDAH09	0.843	5.86	5.01	ZN-EDAH09
EDAM09	1.092	5.86	4.76	ZN-EDAM09
EDAU09	1.342	5.86	4.51	ZN-EDAU09
EDAZ09	1.591	5.86	4.26	ZN-EDAZ09
EDAH10	1.840	5.86	4.01	ZN-EDAH10
EDAM10	2.090	5.86	3.77	ZN-EDAM10
EDAU10	2.339	5.86	3.52	ZN-EDAU10
EDAZ10	2.588	5.86	3.27	ZN-EDAZ10
EDAH11	2.838	5.86	3.02	ZN-EDAH11

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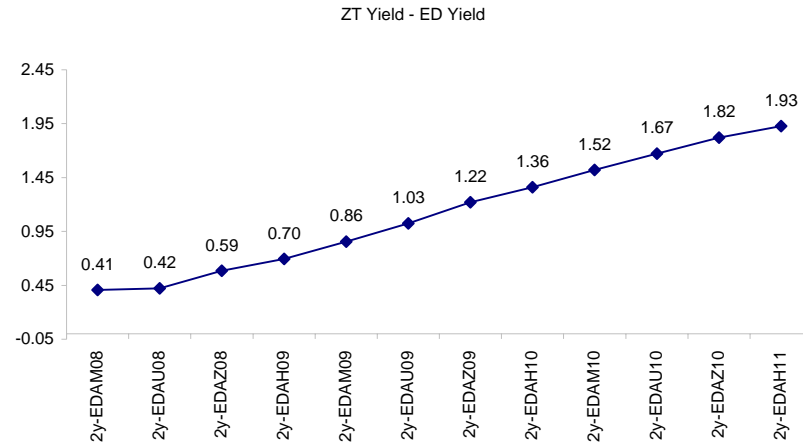


	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	2.422	0.41	2y-EDAM08	-24.418
EDAU08	2.437	0.42	2y-EDAU08	-44.946
EDAZ08	2.602	0.59	2y-EDAZ08	-80.220
EDAH09	2.712	0.70	2y-EDAH09	-95.425
EDAM09	2.872	0.86	2y-EDAM09	-96.783
EDAU09	3.042	1.03	2y-EDAU09	-96.813
EDAZ09	3.237	1.22	2y-EDAZ09	-96.661
EDAH10	3.377	1.36	2y-EDAH10	-95.948
EDAM10	3.537	1.52	2y-EDAM10	-94.017
EDAU10	3.687	1.67	2y-EDAU10	-90.149
EDAZ10	3.837	1.82	2y-EDAZ10	-83.558
EDAH11	3.942	1.93	2y-EDAH11	-74.670

Price = Outright Decimal Price - Euro Contract Price

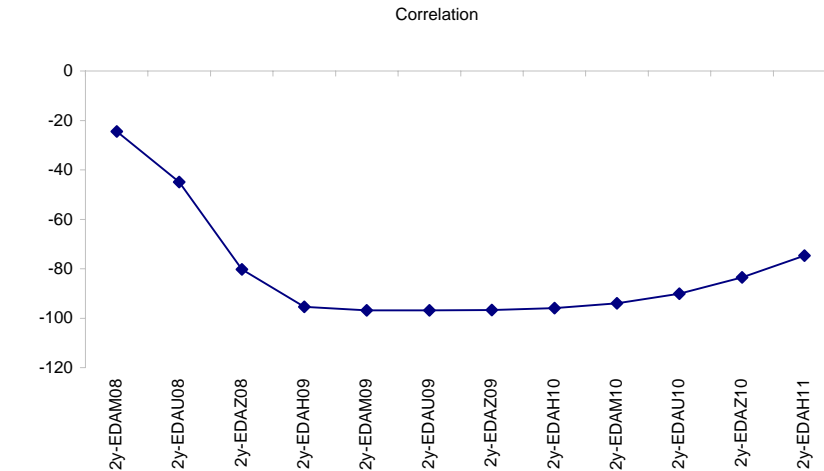
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	2Y Duration	Spread Duration		
EDAM08	0.095	1.91	1.82	2y-EDAM08
EDAU08	0.345	1.91	1.57	2y-EDAU08
EDAZ08	0.594	1.91	1.32	2y-EDAZ08
EDAH09	0.843	1.91	1.07	2y-EDAH09
EDAM09	1.092	1.91	0.82	2y-EDAM09
EDAU09	1.342	1.91	0.57	2y-EDAU09
EDAZ09	1.591	1.91	0.32	2y-EDAZ09
EDAH10	1.840	1.91	0.07	2y-EDAH10
EDAM10	2.090	1.91	(0.18)	2y-EDAM10
EDAU10	2.339	1.91	(0.43)	2y-EDAU10
EDAZ10	2.588	1.91	(0.68)	2y-EDAZ10
EDAH11	2.838	1.91	(0.93)	2y-EDAH11

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

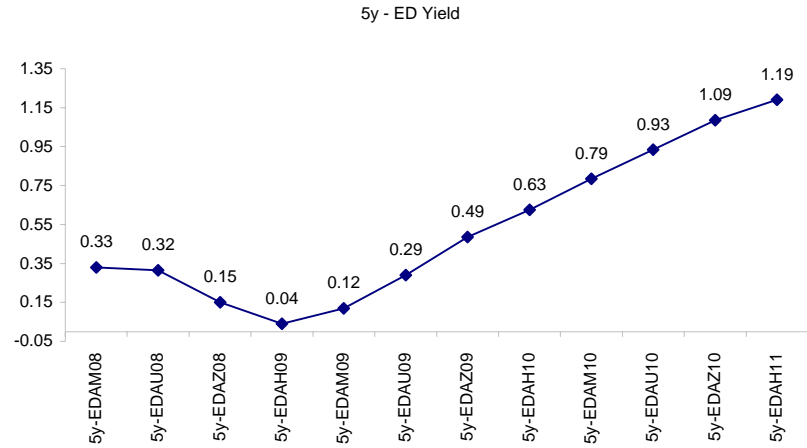


	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM08	3.313	0.33	5y-EDAM08	-27.969
EDAU08	3.328	0.32	5y-EDAU08	-46.261
EDAZ08	3.493	0.15	5y-EDAZ08	-27.969
EDAH09	3.603	0.04	5y-EDAH09	-95.894
EDAM09	3.763	0.12	5y-EDAM09	-96.777
EDAU09	3.933	0.29	5y-EDAU09	-96.010
EDAZ09	4.128	0.49	5y-EDAZ09	-95.503
EDAH10	4.268	0.63	5y-EDAH10	-96.069
EDAM10	4.428	0.79	5y-EDAM10	-96.819
EDAU10	4.578	0.93	5y-EDAU10	-96.586
EDAZ10	4.728	1.09	5y-EDAZ10	-93.915
EDAH11	4.833	1.19	5y-EDAH11	-88.488

Price = Outright Decimal Price - Euro Contract Price

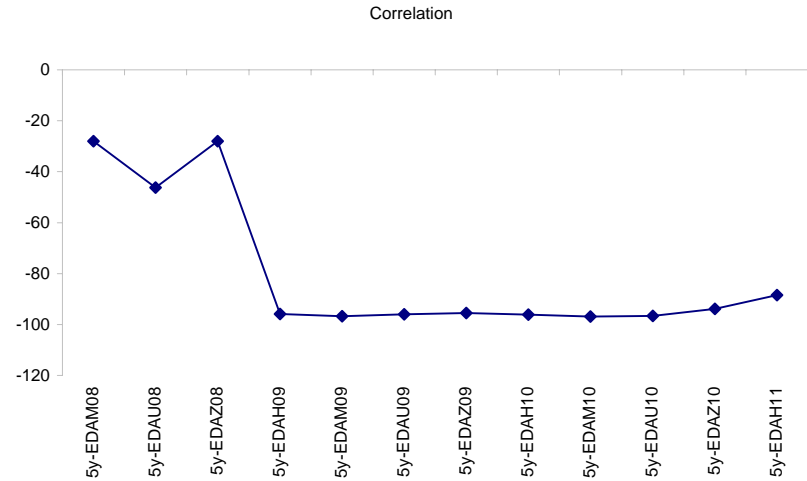
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



	ED Duration as Fraction of year			
	Fraction of year	5Y Duration	Spread Duration	
EDAM08	0.095	4.50	4.41	5y-EDAM08
EDAU08	0.345	4.50	4.16	5y-EDAU08
EDAZ08	0.594	4.50	3.91	5y-EDAZ08
EDAH09	0.843	4.50	3.66	5y-EDAH09
EDAM09	1.092	4.50	3.41	5y-EDAM09
EDAU09	1.342	4.50	3.16	5y-EDAU09
EDAZ09	1.591	4.50	2.91	5y-EDAZ09
EDAH10	1.840	4.50	2.66	5y-EDAH10
EDAM10	2.090	4.50	2.41	5y-EDAM10
EDAU10	2.339	4.50	2.16	5y-EDAU10
EDAZ10	2.588	4.50	1.91	5y-EDAZ10
EDAH11	2.838	4.50	1.66	5y-EDAH11

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



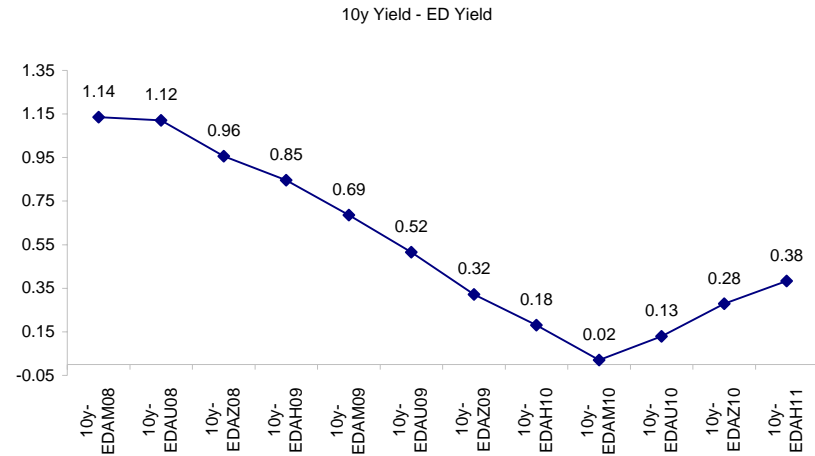


10y				Correlation* (percent)
Spread Price	Spread Yield	Spread Name		
EDAM08	3.313	1.14	10y-EDAM08	9.692
EDAU08	3.328	1.12	10y-EDAU08	-5.431
EDAZ08	3.493	0.96	10y-EDAZ08	9.692
EDAH09	3.603	0.85	10y-EDAH09	-62.230
EDAM09	3.763	0.69	10y-EDAM09	-66.267
EDAU09	3.933	0.52	10y-EDAU09	-65.566
EDAZ09	4.128	0.32	10y-EDAZ09	-64.335
EDAH10	4.268	0.18	10y-EDAH10	-67.768
EDAM10	4.428	0.02	10y-EDAM10	-72.240
EDAU10	4.578	0.13	10y-EDAU10	-77.087
EDAZ10	4.728	0.28	10y-EDAZ10	-81.133
EDAH11	4.833	0.38	10y-EDAH11	-87.422

Price = Outright Decimal Price - Euro Contract Price

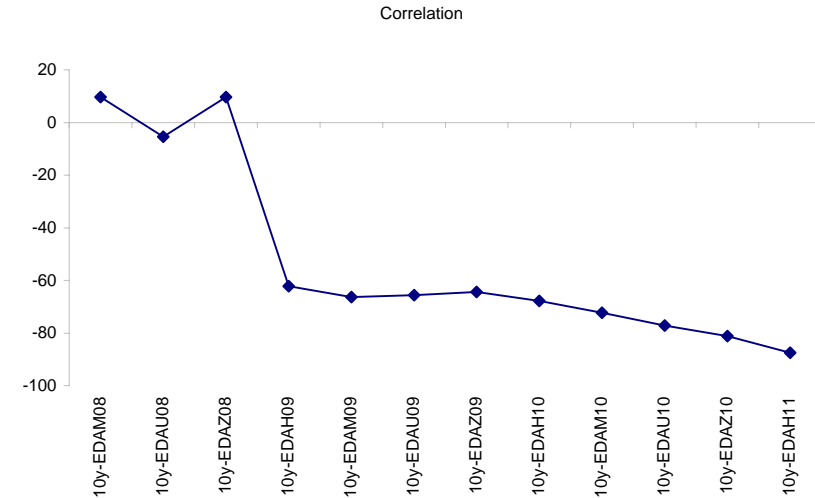
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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



ED Duration as				10Y Duration	Spread Duration	
Fraction of year	10Y Duration	Spread Duration				
EDAM08	0.095	8.11	8.01	10y-EDAM08		
EDAU08	0.345	8.11	7.76	10y-EDAU08		
EDAZ08	0.594	8.11	7.51	10y-EDAZ08		
EDAH09	0.843	8.11	7.26	10y-EDAH09		
EDAM09	1.092	8.11	7.01	10y-EDAM09		
EDAU09	1.342	8.11	6.76	10y-EDAU09		
EDAZ09	1.591	8.11	6.52	10y-EDAZ09		
EDAH10	1.840	8.11	6.27	10y-EDAH10		
EDAM10	2.090	8.11	6.02	10y-EDAM10		
EDAU10	2.339	8.11	5.77	10y-EDAU10		
EDAZ10	2.588	8.11	5.52	10y-EDAZ10		
EDAH11	2.838	8.11	5.27	10y-EDAH11		

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.

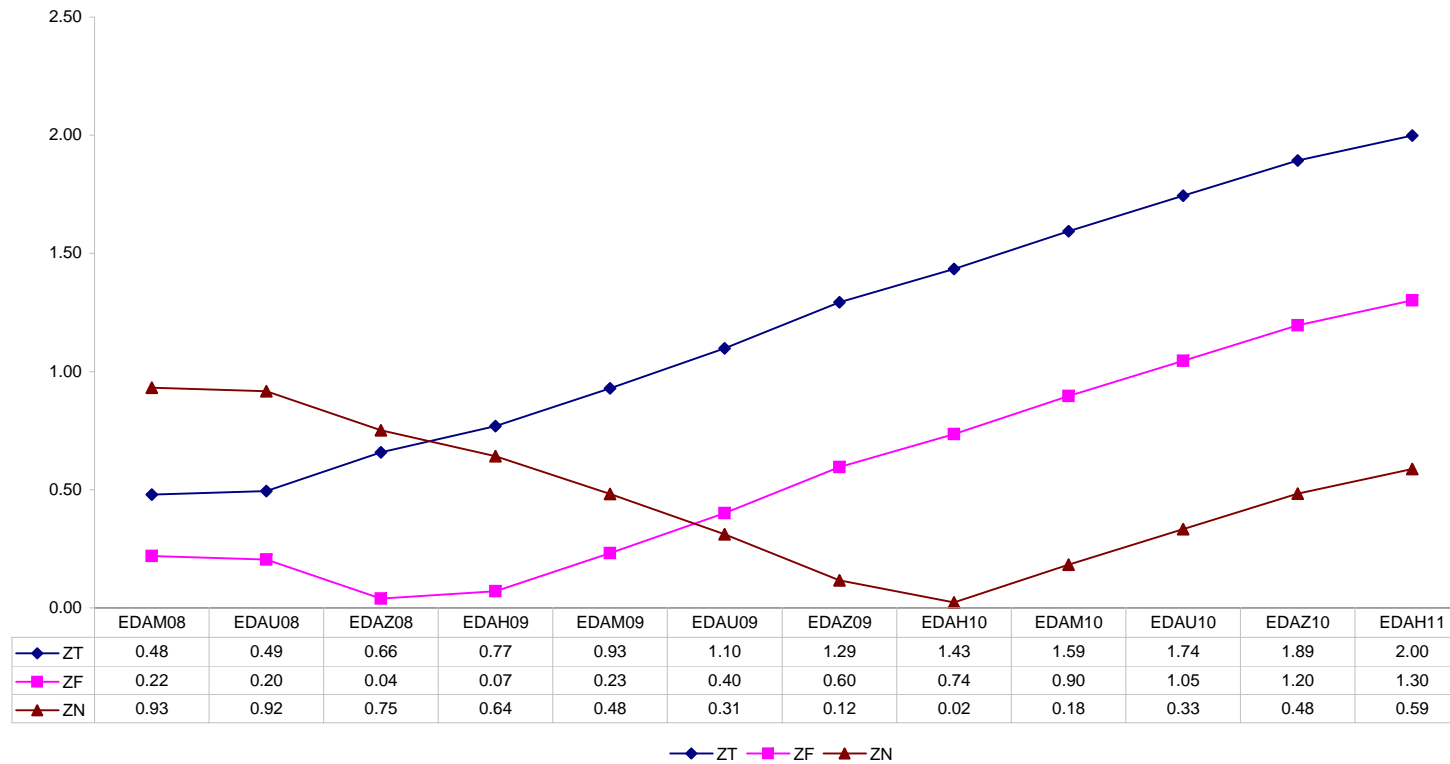
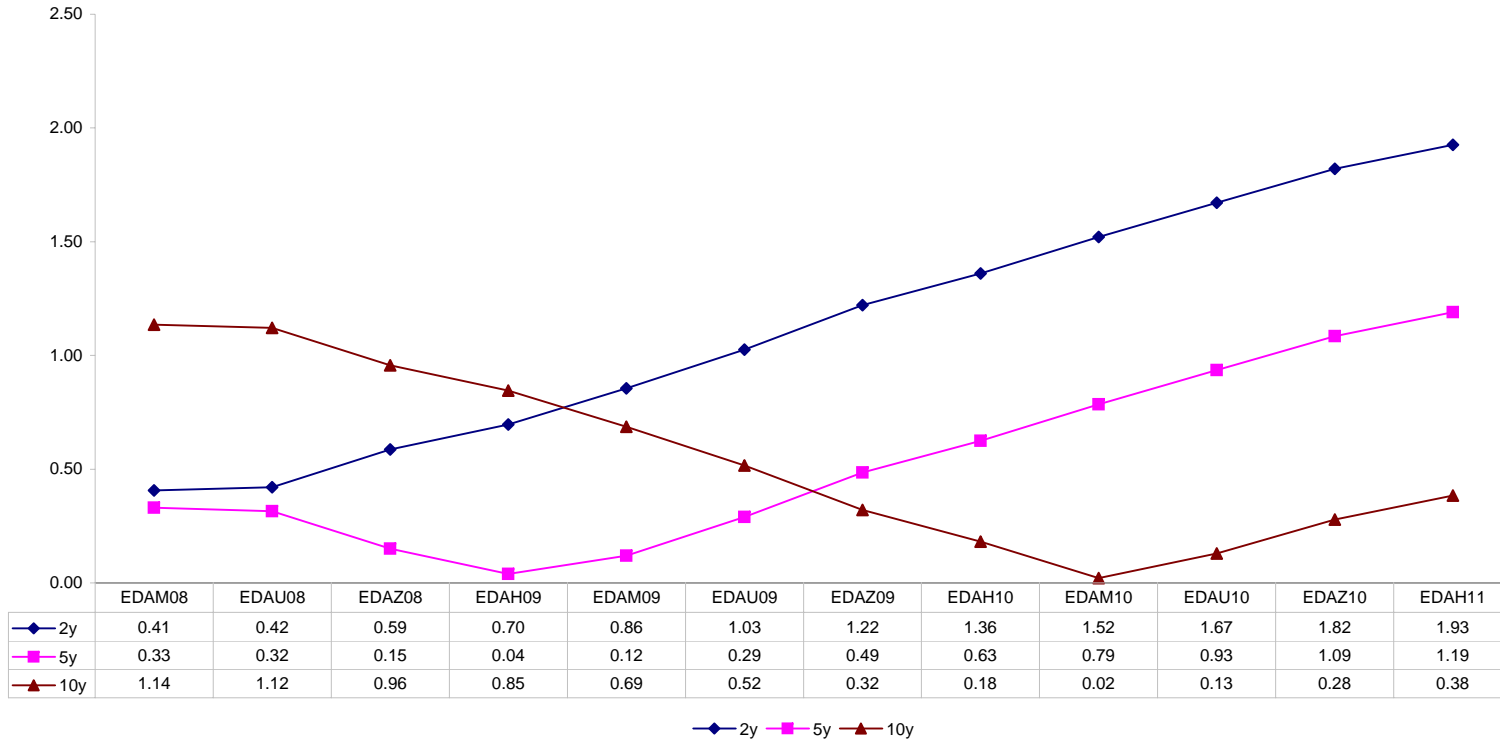
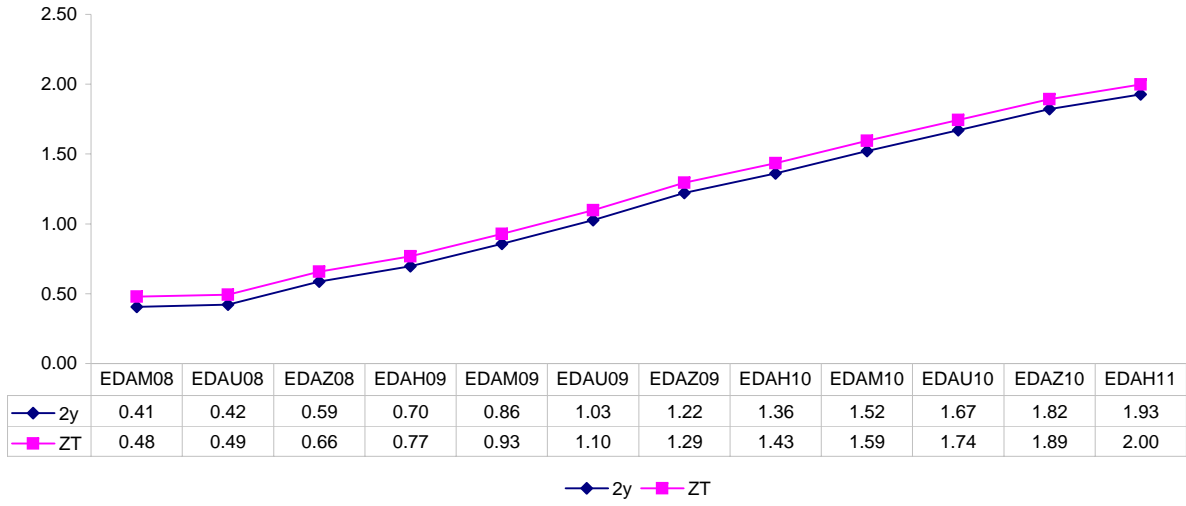


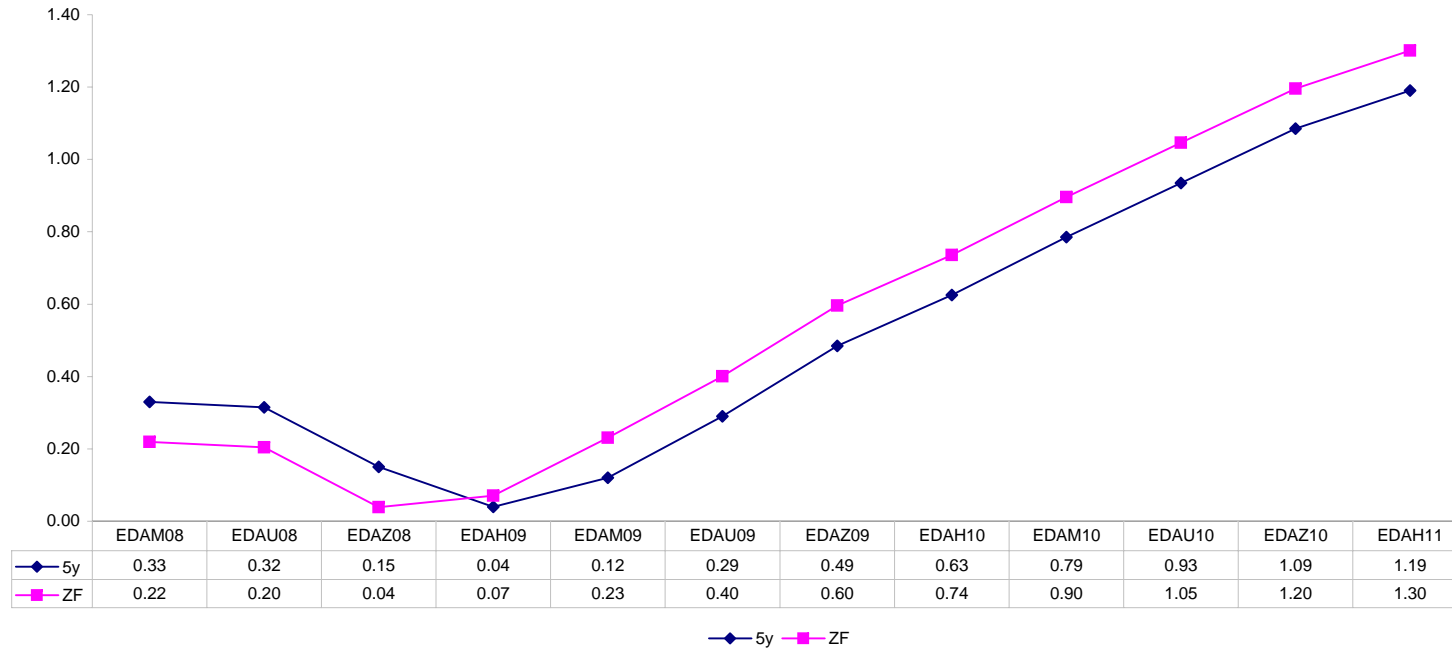
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



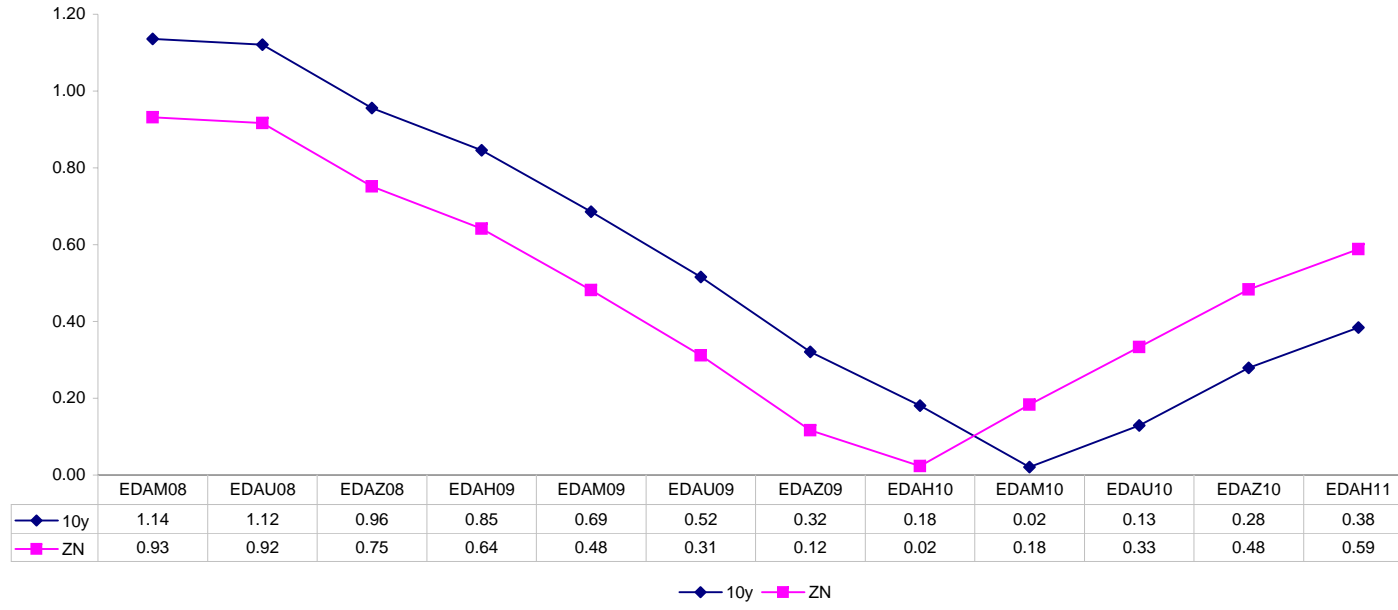
2y Basis TED Curve



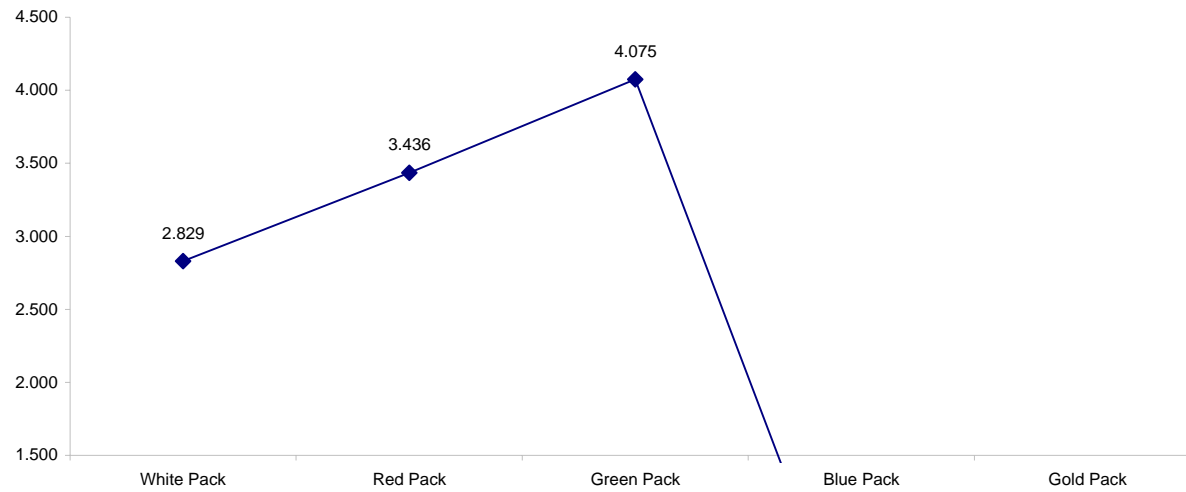
5y Basis TED Curve



10y Basis TED Curve



	Last Yield	Net Last Yield	Last Price
White Pack	2.829	-3.500	9722.875
Red Pack	3.436	-4.000	9664.000
Green Pack	4.075	-2.875	9602.125
Blue Pack		-0.125	9561.250
Gold Pack		0.000	9532.750



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

