The Morning Email: TERM TEDS & Dirty TEDS

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Want something added? Let me know: jgoulding@ghco.com

Treasury Futures and Cash

	Last Decimal	Last 32	Last Yield*	MDuration
ZT	108.2969	108.095	1.005	1.76
ZF	116.7188	116.230	2.122	4.23
ZN	117.2656	117.085	3.412	6.42
2y	100.553	100.1770	1.212	1.91
5y	102.022	102.0070	2.318	4.61
10y	100.281	100.0900	3.714	8.27

Eurodollars (ED)

	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAZ08	97.783	2.218	28	0.076	DEC	
EDAH09	97.960	2.040	119	0.325	MAR	White Pack
EDAM09	97.920	2.080	210	0.575	JUN	
EDAU09	97.845	2.155	301	0.824	SEP	
EDAZ09	97.680	2.320	392	1.073	DEC	
EDAH10	97.615	2.385	483	1.323	MAR	Red Pack
EDAM10	97.410	2.590	574	1.572	JUN	
EDAU10	97.115	2.885	665	1.821	SEP	
EDAZ10	96.730	3.270	756	2.071	DEC	
EDAH11	96.460	3.540	847	2.320	MAR	Green Pack
EDAM11	96.190	3.810	938	2.569	JUN	
EDAU11	95.970	4.030	1036	2.838	SEP	
EDAZ11	#VALUE!	#VALUE!	1127	3.087	DEC	
EDAH12	#VALUE!	#VALUE!	1218	3.336	MAR	Blue Pack
EDAM12	95.575	4.425	1309	3.586	JUN	
EDAU12	95.440	4.560	1400	3.835	SEP	
EDAZ12	95.295	4.705	1491	4.084	DEC	
EDAH13	95.270	4.730	1582	4.334	MAR	Gold Pack
EDAM13	#VALUE!	#VALUE!	1673	4.583	JUN	
EDZU13	#VALUE!	#VALUE!	1855	5.082	DEC	

	Last Yield	Net Yield	Last Price
White Pack	2.164	8.437	9787.688
Red Pack	2.597	3.500	9745.500
Green Pack	3.748	4.250	9633.750
Blue Pack		0.875	9560.000
Gold Pack		0.000	9521.000

Pack Prices

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.

Overview of Hedging, Notes

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

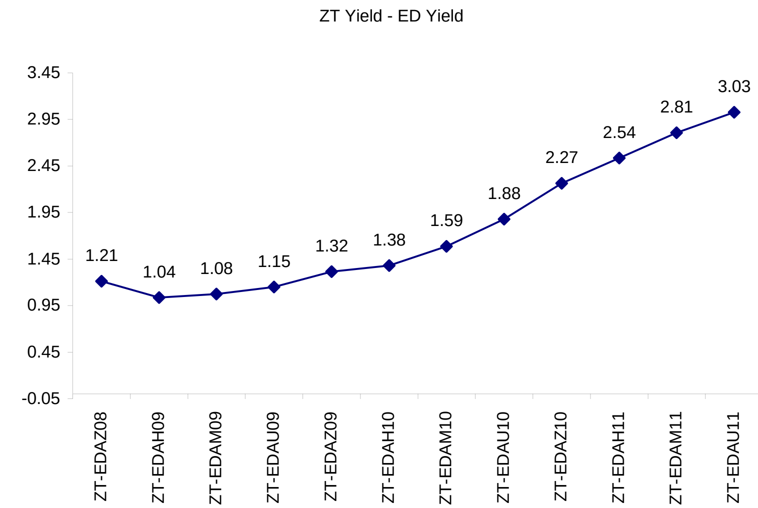
Correlations (Important)

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.

Dirty TED: ZT vs Eurodollar Contracts

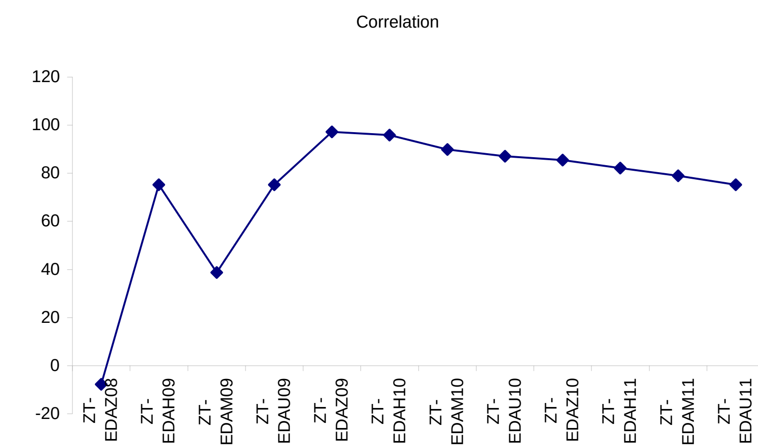
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	10.514	1.21	ZT-EDAZ08	-7.729
EDAH09	10.337	1.04	ZT-EDAH09	75.291
EDAM09	10.377	1.08	ZT-EDAM09	38.760
EDAU09	10.452	1.15	ZT-EDAU09	75.291
EDAZ09	10.617	1.32	ZT-EDAZ09	97.262
EDAH10	10.682	1.38	ZT-EDAH10	95.834
EDAM10	10.887	1.59	ZT-EDAM10	89.857
EDAU10	11.182	1.88	ZT-EDAU10	87.082
EDAZ10	11.567	2.27	ZT-EDAZ10	85.485
EDAH11	11.837	2.54	ZT-EDAH11	82.155
EDAM11	12.107	2.81	ZT-EDAM11	78.958
EDAU11	12.327	3.03	ZT-EDAU11	75.249

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	0.076	1.76	1.68	ZT-EDAZ08
EDAH09	0.325	1.76	1.43	ZT-EDAH09
EDAM09	0.575	1.76	1.19	ZT-EDAM09
EDAU09	0.824	1.76	0.94	ZT-EDAU09
EDAZ09	1.073	1.76	0.69	ZT-EDAZ09
EDAH10	1.323	1.76	0.44	ZT-EDAH10
EDAM10	1.572	1.76	0.19	ZT-EDAM10
EDAU10	1.821	1.76	(0.06)	ZT-EDAU10
EDAZ10	2.071	1.76	(0.31)	ZT-EDAZ10
EDAH11	2.320	1.76	(0.56)	ZT-EDAH11
EDAM11	2.569	1.76	(0.81)	ZT-EDAM11
EDAU11	2.838	1.76	(1.08)	ZT-EDAU11

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



Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	18.936	0.10	ZF-EDAZ08	-49.427
EDAH09	18.759	0.08	ZF-EDAH09	-32.457
EDAM09	18.799	0.04	ZF-EDAM09	-3.267
EDAU09	18.874	0.03	ZF-EDAU09	40.320
EDAZ09	19.039	0.20	ZF-EDAZ09	79.250
EDAH10	19.104	0.26	ZF-EDAH10	95.916
EDAM10	19.309	0.47	ZF-EDAM10	98.610
EDAU10	19.604	0.76	ZF-EDAU10	98.844
EDAZ10	19.989	1.15	ZF-EDAZ10	98.675
EDAH11	20.259	1.42	ZF-EDAH11	97.782
EDAM11	20.529	1.69	ZF-EDAM11	96.453
EDAU11	20.749	1.91	ZF-EDAU11	94.555

Price = Outright Decimal Price - Euro Contract Price
Yield = ABS (Proxy Yield - Implied Euro Contract yield)
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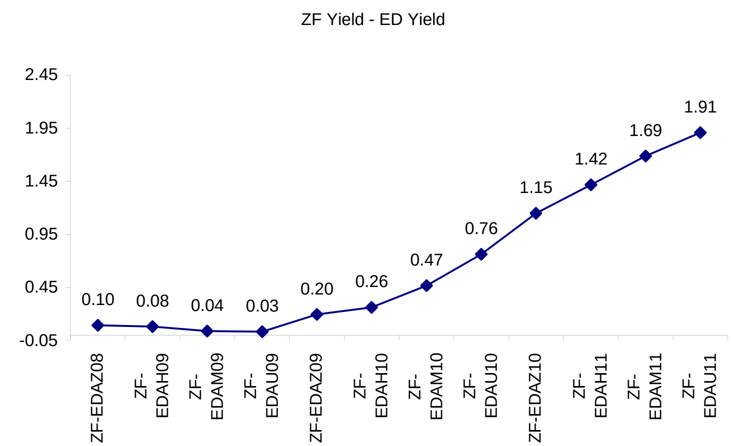

	ED Duration as Fraction of year	ZF Duration	Spread Duration	
EDAZ08	0.076	4.23	4.15	ZF-EDAZ08
EDAH09	0.325	4.23	3.90	ZF-EDAH09
EDAM09	0.575	4.23	3.65	ZF-EDAM09
EDAU09	0.824	4.23	3.40	ZF-EDAU09
EDAZ09	1.073	4.23	3.15	ZF-EDAZ09
EDAH10	1.323	4.23	2.90	ZF-EDAH10
EDAM10	1.572	4.23	2.66	ZF-EDAM10
EDAU10	1.821	4.23	2.41	ZF-EDAU10
EDAZ10	2.071	4.23	2.16	ZF-EDAZ10
EDAH11	2.320	4.23	1.91	ZF-EDAH11
EDAM11	2.569	4.23	1.66	ZF-EDAM11
EDAU11	2.838	4.23	1.39	ZF-EDAU11

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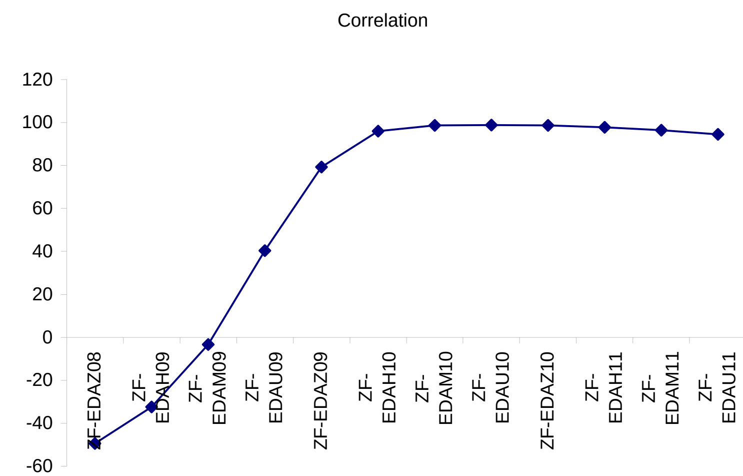

Dirty TED: ZN vs Eurodollar Contracts

	ZN			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	19.483	1.19	ZN-EDAZ08	-54.260
EDAH09	19.306	1.37	ZN-EDAH09	-39.137
EDAM09	19.346	1.33	ZN-EDAM09	-13.278
EDAU09	19.421	1.26	ZN-EDAU09	29.401
EDAZ09	19.586	1.09	ZN-EDAZ09	70.917
EDAH10	19.651	1.03	ZN-EDAH10	90.685
EDAM10	19.856	0.82	ZN-EDAM10	98.610
EDAU10	20.151	0.53	ZN-EDAU10	98.844
EDAZ10	20.536	0.14	ZN-EDAZ10	98.675
EDAH11	20.806	0.13	ZN-EDAH11	97.782
EDAM11	21.076	0.40	ZN-EDAM11	96.453
EDAU11	21.296	0.62	ZN-EDAU11	94.555

Price = Outright Decimal Price - Euro Contract Price
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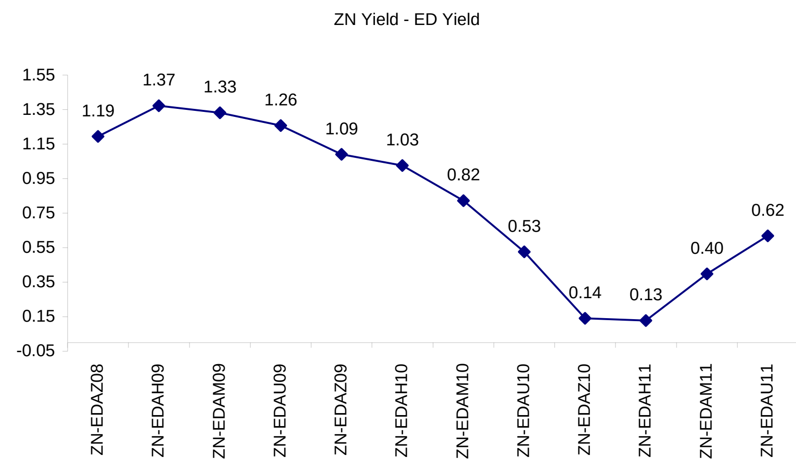
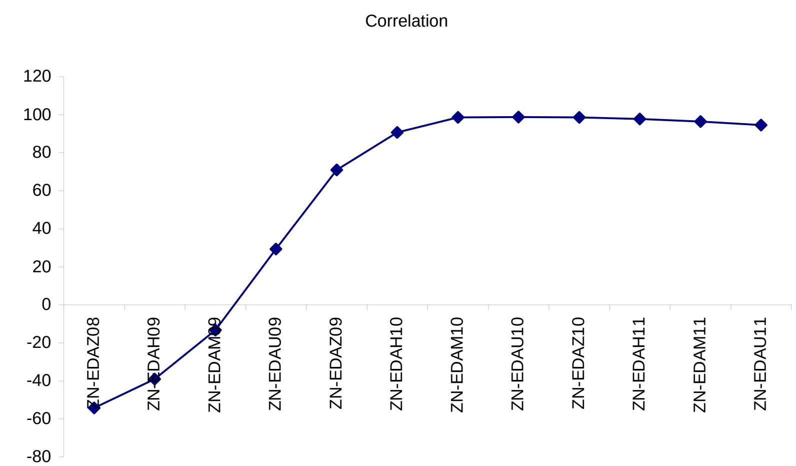


	ED Duration as Fraction of year	ZN Duration	Spread Duration	
EDAZ08	0.076	6.42	6.35	ZN-EDAZ08
EDAH09	0.325	6.42	6.10	ZN-EDAH09
EDAM09	0.575	6.42	5.85	ZN-EDAM09
EDAU09	0.824	6.42	5.60	ZN-EDAU09
EDAZ09	1.073	6.42	5.35	ZN-EDAZ09
EDAH10	1.323	6.42	5.10	ZN-EDAH10
EDAM10	1.572	6.42	4.85	ZN-EDAM10
EDAU10	1.821	6.42	4.60	ZN-EDAU10
EDAZ10	2.071	6.42	4.35	ZN-EDAZ10
EDAH11	2.320	6.42	4.10	ZN-EDAH11
EDAM11	2.569	6.42	3.85	ZN-EDAM11
EDAU11	2.838	6.42	3.59	ZN-EDAU11

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



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	2.771	1.01	2y-EDAZ08	7.517
EDAH09	2.593	0.83	2y-EDAH09	-24.866
EDAM09	2.633	0.87	2y-EDAM09	-58.956
EDAU09	2.708	0.94	2y-EDAU09	-82.369
EDAZ09	2.873	1.11	2y-EDAZ09	-93.640
EDAH10	2.938	1.17	2y-EDAH10	-96.869
EDAM10	3.143	1.38	2y-EDAM10	-96.432
EDAU10	3.438	1.67	2y-EDAU10	-95.458
EDAZ10	3.823	2.06	2y-EDAZ10	-94.724
EDAH11	4.093	2.33	2y-EDAH11	-93.401
EDAM11	4.363	2.60	2y-EDAM11	-92.337
EDAU11	4.583	2.82	2y-EDAU11	-91.128

Price = Outright Decimal Price - Euro Contract Price
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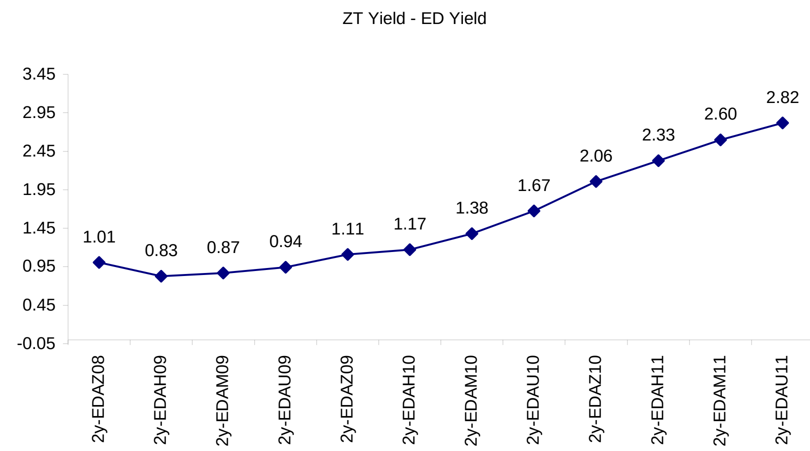
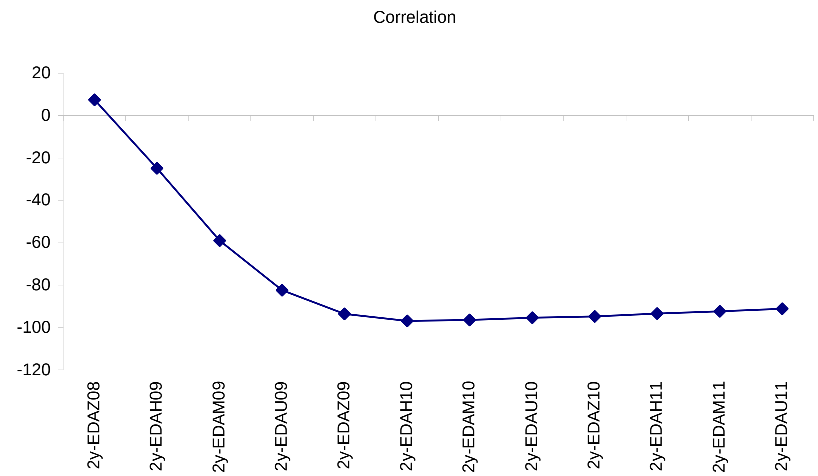


	ED Duration as Fraction of year	2Y Duration	Spread Duration	
EDAZ08	0.076	1.91	1.84	2y-EDAZ08
EDAH09	0.325	1.91	1.59	2y-EDAH09
EDAM09	0.575	1.91	1.34	2y-EDAM09
EDAU09	0.824	1.91	1.09	2y-EDAU09
EDAZ09	1.073	1.91	0.84	2y-EDAZ09
EDAH10	1.323	1.91	0.59	2y-EDAH10
EDAM10	1.572	1.91	0.34	2y-EDAM10
EDAU10	1.821	1.91	0.09	2y-EDAU10
EDAZ10	2.071	1.91	(0.16)	2y-EDAZ10
EDAH11	2.320	1.91	(0.41)	2y-EDAH11
EDAM11	2.569	1.91	(0.66)	2y-EDAM11
EDAU11	2.838	1.91	(0.92)	2y-EDAU11

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



TERM TED: 5y vs Eurodollar Contracts

	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	4.239	0.10	5y-EDAZ08	25.906
EDAH09	4.062	0.28	5y-EDAH09	-6.842
EDAM09	4.102	0.24	5y-EDAM09	-41.954
EDAU09	4.177	0.16	5y-EDAU09	-70.053
EDAZ09	4.342	0.00	5y-EDAZ09	-87.109
EDAH10	4.407	0.07	5y-EDAH10	-94.658
EDAM10	4.612	0.27	5y-EDAM10	-96.361
EDAU10	4.907	0.57	5y-EDAU10	-96.341
EDAZ10	5.292	0.95	5y-EDAZ10	-96.369
EDAH11	5.562	1.22	5y-EDAH11	-96.700
EDAM11	5.832	1.49	5y-EDAM11	-97.491
EDAU11	6.052	1.71	5y-EDAU11	-97.982

Price = Outright Decimal Price - Euro Contract Price
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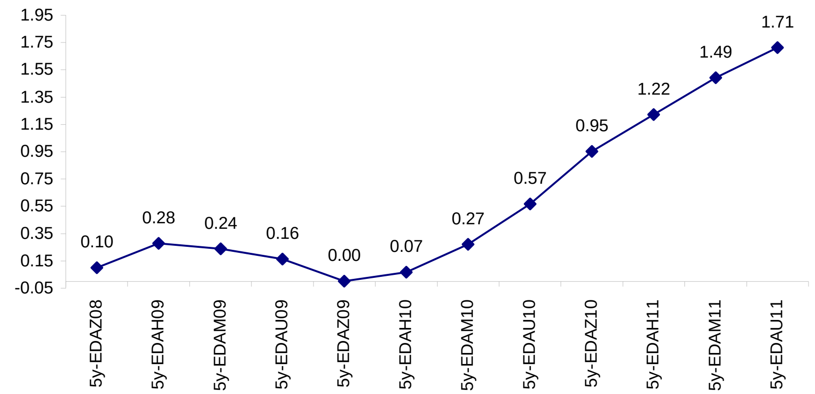
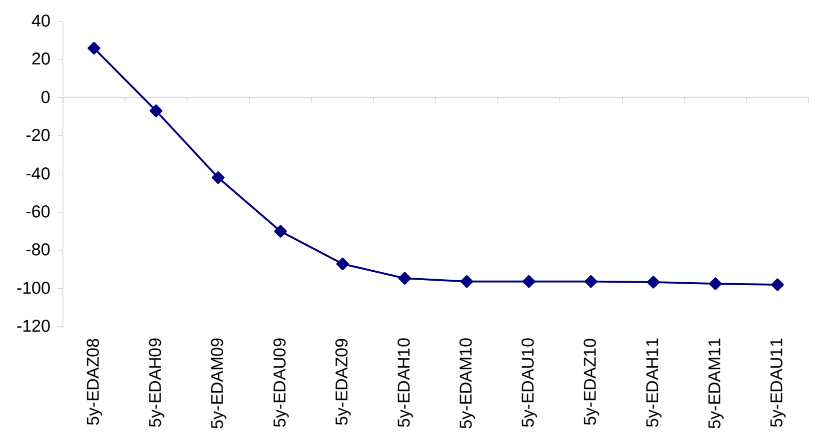
5y - ED Yield



	ED Duration as Fraction of year	5Y Duration	Spread Duration	
EDAZ08	0.076	4.61	4.53	5y-EDAZ08
EDAH09	0.325	4.61	4.28	5y-EDAH09
EDAM09	0.575	4.61	4.03	5y-EDAM09
EDAU09	0.824	4.61	3.78	5y-EDAU09
EDAZ09	1.073	4.61	3.53	5y-EDAZ09
EDAH10	1.323	4.61	3.28	5y-EDAH10
EDAM10	1.572	4.61	3.03	5y-EDAM10
EDAU10	1.821	4.61	2.78	5y-EDAU10
EDAZ10	2.071	4.61	2.54	5y-EDAZ10
EDAH11	2.320	4.61	2.29	5y-EDAH11
EDAM11	2.569	4.61	2.04	5y-EDAM11
EDAU11	2.838	4.61	1.77	5y-EDAU11

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

Correlation



TERM TED: 10y vs Eurodollar Contracts

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAZ08	4.239	1.50	10y-EDAZ08	-38.073
EDAH09	4.062	1.67	10y-EDAH09	-55.049
EDAM09	4.102	1.63	10y-EDAM09	-64.558
EDAU09	4.177	1.56	10y-EDAU09	-67.461
EDAZ09	4.342	1.39	10y-EDAZ09	-64.427
EDAH10	4.407	1.33	10y-EDAH10	-57.301
EDAM10	4.612	1.12	10y-EDAM10	-49.989
EDAU10	4.907	0.83	10y-EDAU10	-45.585
EDAZ10	5.292	0.44	10y-EDAZ10	-44.857
EDAH11	5.562	0.17	10y-EDAH11	-45.910
EDAM11	5.832	0.10	10y-EDAM11	-50.029
EDAU11	6.052	0.32	10y-EDAU11	-54.082

Price = Outright Decimal Price - Euro Contract Price
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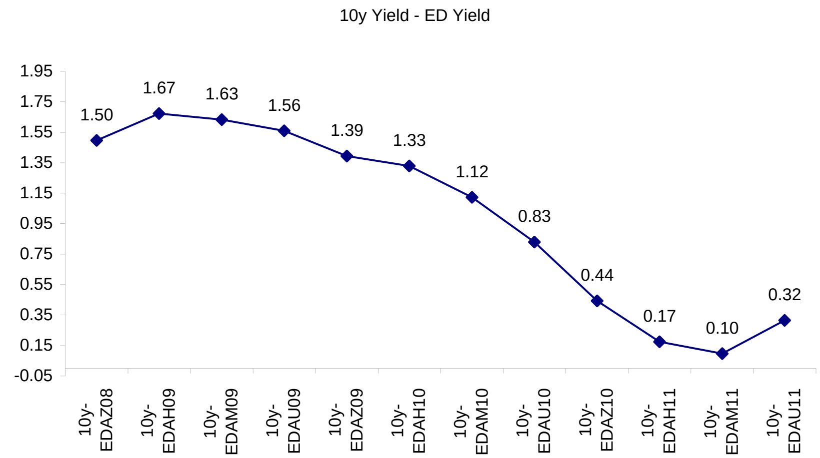
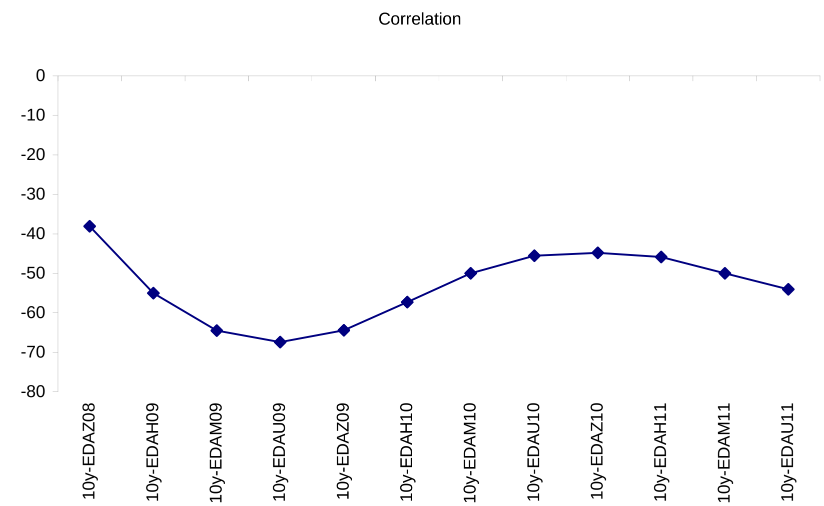


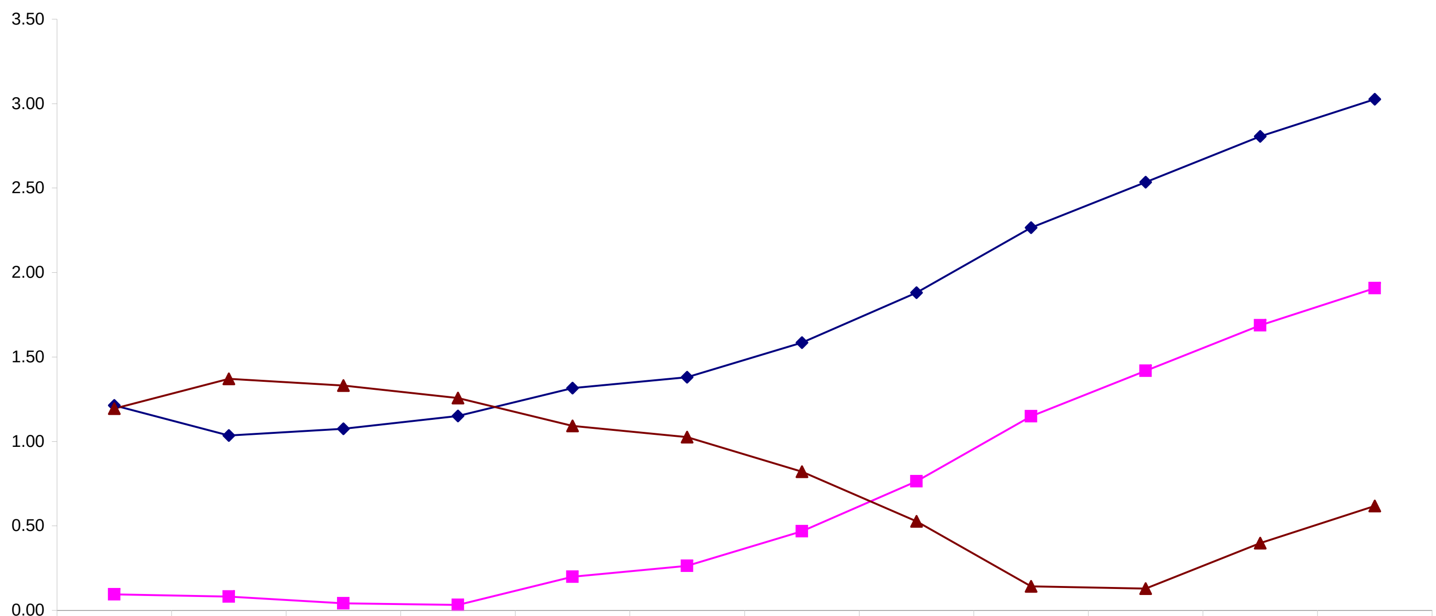
	ED Duration as Fraction of year	10Y Duration	Spread Duration	
EDAZ08	0.076	8.27	8.20	10y-EDAZ08
EDAH09	0.325	8.27	7.95	10y-EDAH09
EDAM09	0.575	8.27	7.70	10y-EDAM09
EDAU09	0.824	8.27	7.45	10y-EDAU09
EDAZ09	1.073	8.27	7.20	10y-EDAZ09
EDAH10	1.323	8.27	6.95	10y-EDAH10
EDAM10	1.572	8.27	6.70	10y-EDAM10
EDAU10	1.821	8.27	6.45	10y-EDAU10
EDAZ10	2.071	8.27	6.20	10y-EDAZ10
EDAH11	2.320	8.27	5.95	10y-EDAH11
EDAM11	2.569	8.27	5.70	10y-EDAM11
EDAU11	2.838	8.27	5.43	10y-EDAU11

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



Dirty TED Curve

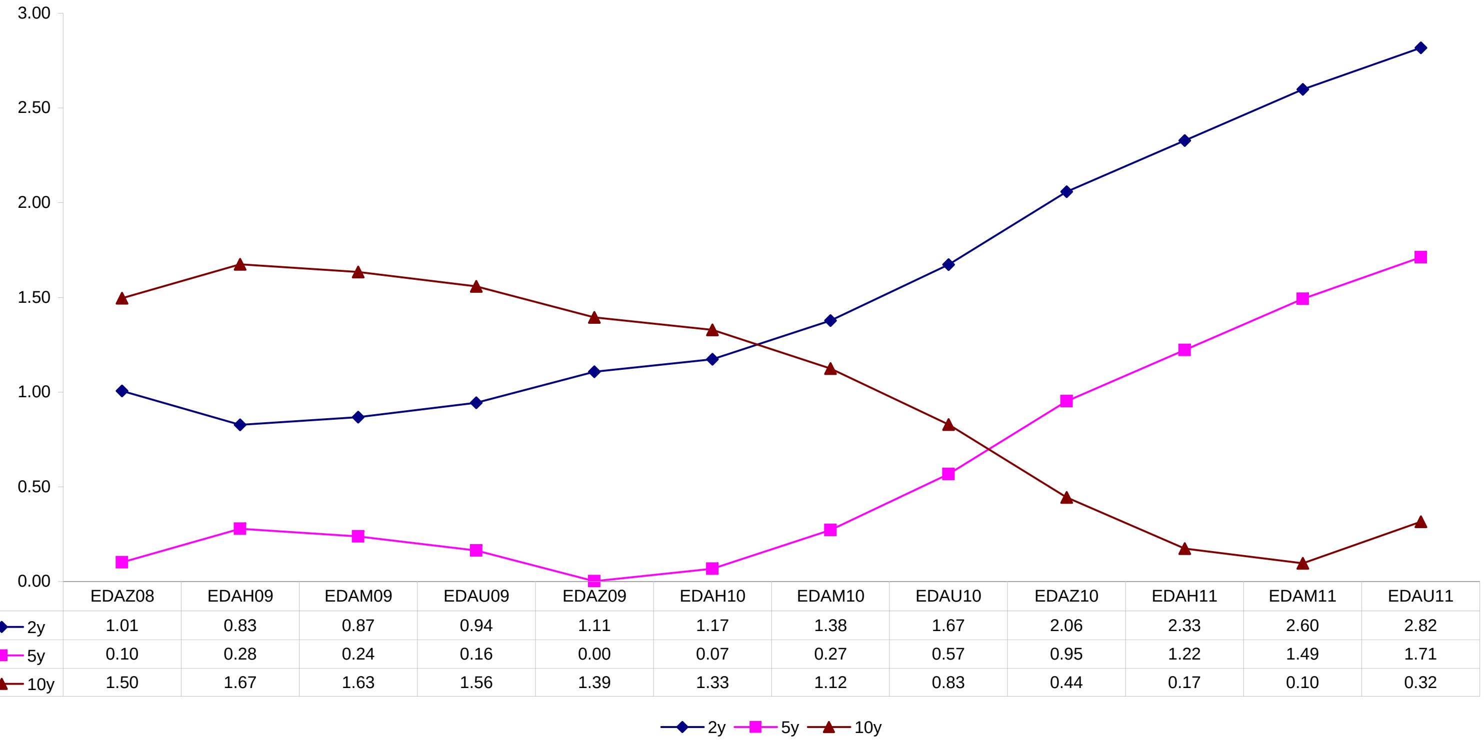
Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart.
Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



	EDAZ08	EDAH09	EDAM09	EDAU09	EDAZ09	EDAH10	EDAM10	EDAU10	EDAZ10	EDAH11	EDAM11	EDAU11
ZT	1.21	1.04	1.08	1.15	1.32	1.38	1.59	1.88	2.27	2.54	2.81	3.03
ZF	0.10	0.08	0.04	0.03	0.20	0.26	0.47	0.76	1.15	1.42	1.69	1.91
ZN	1.19	1.37	1.33	1.26	1.09	1.03	0.82	0.53	0.14	0.13	0.40	0.62

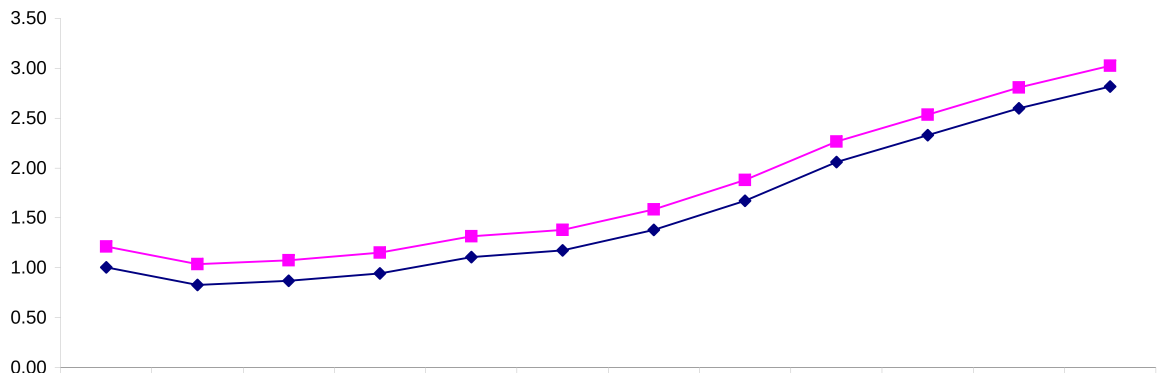
ZT ZF ZN

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.



	EDAZ08	EDAH09	EDAM09	EDAU09	EDAZ09	EDAH10	EDAM10	EDAU10	EDAZ10	EDAH11	EDAM11	EDAU11
2y	1.01	0.83	0.87	0.94	1.11	1.17	1.38	1.67	2.06	2.33	2.60	2.82
5y	0.10	0.28	0.24	0.16	0.00	0.07	0.27	0.57	0.95	1.22	1.49	1.71
10y	1.50	1.67	1.63	1.56	1.39	1.33	1.12	0.83	0.44	0.17	0.10	0.32

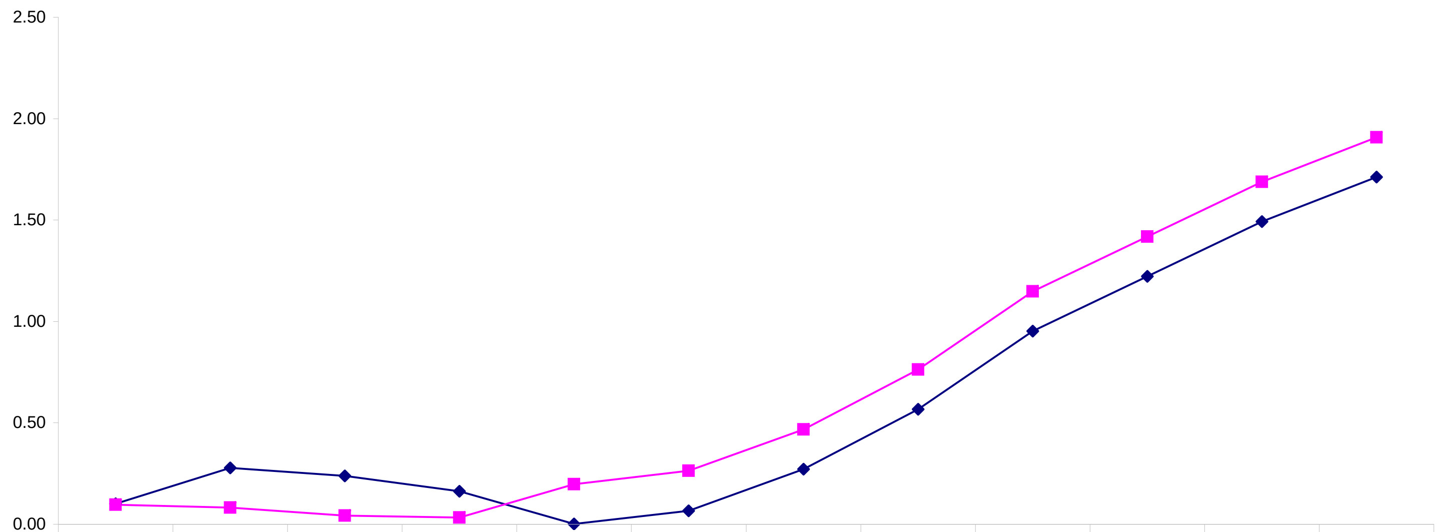
2y Basis TED Curve



	EDAZ08	EDAH09	EDAM09	EDAU09	EDAZ09	EDAH10	EDAM10	EDAU10	EDAZ10	EDAH11	EDAM11	EDAU11
2y	1.01	0.83	0.87	0.94	1.11	1.17	1.38	1.67	2.06	2.33	2.60	2.82
ZT	1.21	1.04	1.08	1.15	1.32	1.38	1.59	1.88	2.27	2.54	2.81	3.03

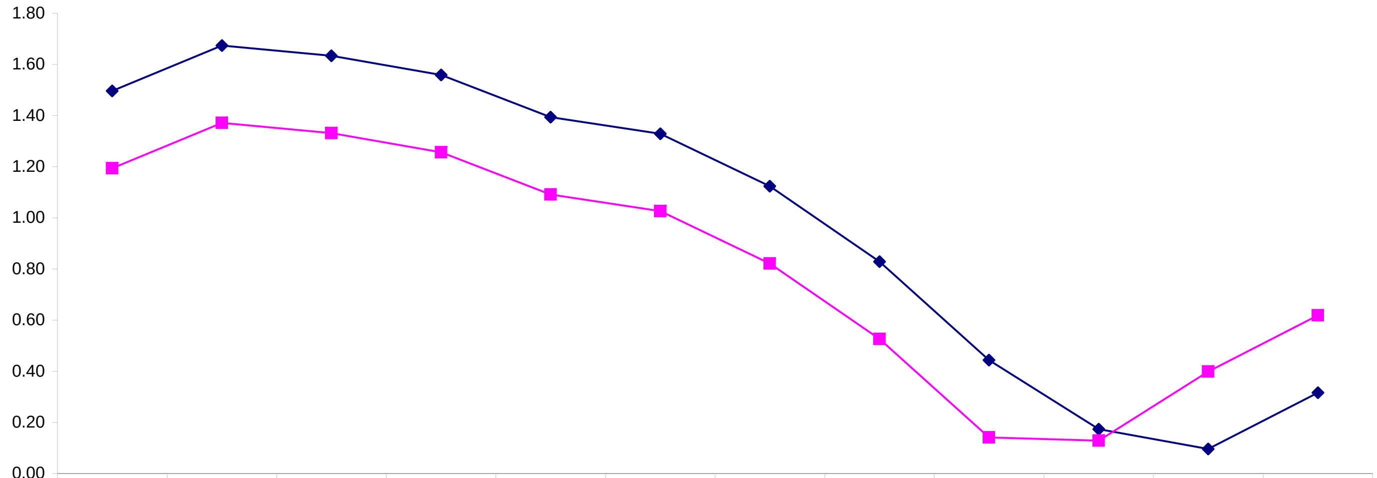
2y ZT

5y Basis TED Curve



	EDAZ08	EDAH09	EDAM09	EDAU09	EDAZ09	EDAH10	EDAM10	EDAU10	EDAZ10	EDAH11	EDAM11	EDAU11
5y	0.10	0.28	0.24	0.16	0.00	0.07	0.27	0.57	0.95	1.22	1.49	1.71
ZF	0.10	0.08	0.04	0.03	0.20	0.26	0.47	0.76	1.15	1.42	1.69	1.91

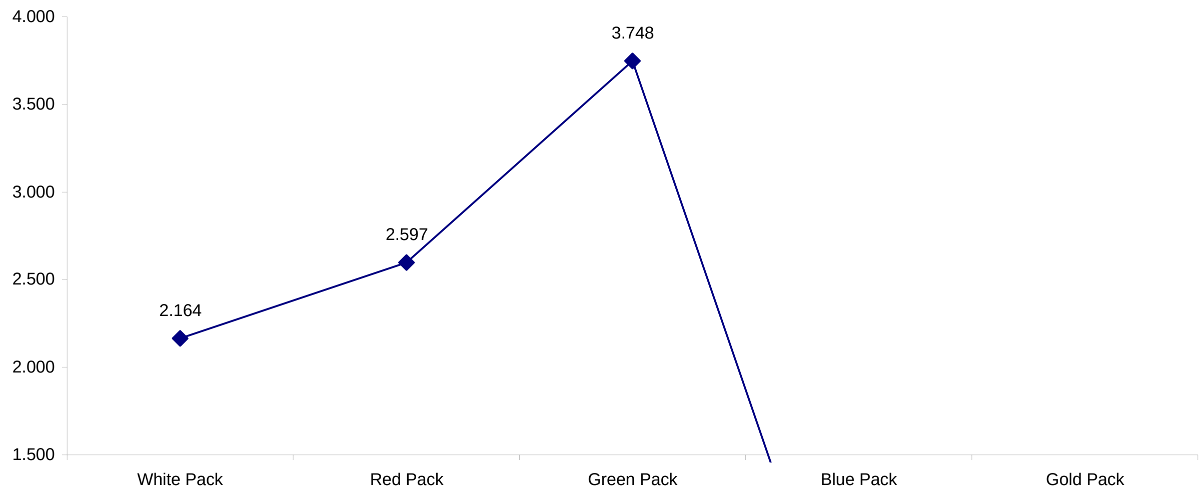
10y Basis TED Curve



	EDAZ08	EDAH09	EDAM09	EDAU09	EDAZ09	EDAH10	EDAM10	EDAU10	EDAZ10	EDAH11	EDAM11	EDAU11
10y	1.50	1.67	1.63	1.56	1.39	1.33	1.12	0.83	0.44	0.17	0.10	0.32
ZN	1.19	1.37	1.33	1.26	1.09	1.03	0.82	0.53	0.14	0.13	0.40	0.62

Packs

	Last Yield	Net Last Yield	Last Price
White Pack	2.164	8.437	9787.688
Red Pack	2.597	3.500	9745.500
Green Pack	3.748	4.250	9633.750
Blue Pack		0.875	9560.000
Gold Pack		0.000	9521.000



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