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	108.9844	108.3150	0.839	1.96
ZF	118.5625	118.1800	1.420	1.42
ZN	124.1719	124.0550	1.623	6.27
2y	100.0781	100.0250	0.839	1.96
5y	99.0313	99.0100	1.702	4.64
10y	110.8281	110.2650	2.506	8.28

Eurodollars (ED)

	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAH09	98.875	1.125	69	0.188	MAR	
EDAM09	98.835	1.165	160	0.438	JUN	White Pack
EDAU09	98.690	1.310	251	0.687	SEP	
EDAZ09	98.470	1.530	342	0.936	DEC	
EDAH10	98.310	1.690	433	1.186	MAR	
EDAM10	98.080	1.920	524	1.435	JUN	Red Pack
EDAU10	97.875	2.125	615	1.684	SEP	
EDAZ10	97.655	2.345	706	1.934	DEC	
EDAH11	97.520	2.480	797	2.183	MAR	
EDAM11	97.370	2.630	888	2.432	JUN	Green Pack
EDAU11	97.250	2.750	986	2.701	SEP	
EDAZ11	97.145	2.855	1077	2.950	DEC	
EDAH12	97.120	2.880	1168	3.199	MAR	
EDAM12	97.055	2.945	1259	3.449	JUN	Blue Pack
EDAU12	97.010	2.990	1350	3.698	SEP	
EDAZ12	96.935	3.065	1441	3.947	DEC	
EDAH13	96.905	3.095	1532	4.197	MAR	
EDAM13	96.880	3.120	1623	4.446	JUN	Gold Pack
EDZU13	96.775	3.225	1714	4.695	SEP	
EDZZ13	96.675	3.325	1805	4.945	DEC	

	Last Yield	Net Yield	Last Price
White Pack	1.305	-2.250	9871.750
Red Pack	2.059	-0.750	9798.000
Green Pack	2.734	-1.500	9732.125
Blue Pack	3.034	-2.000	9703.000
Gold Pack		-0.625	9680.625

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.

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)

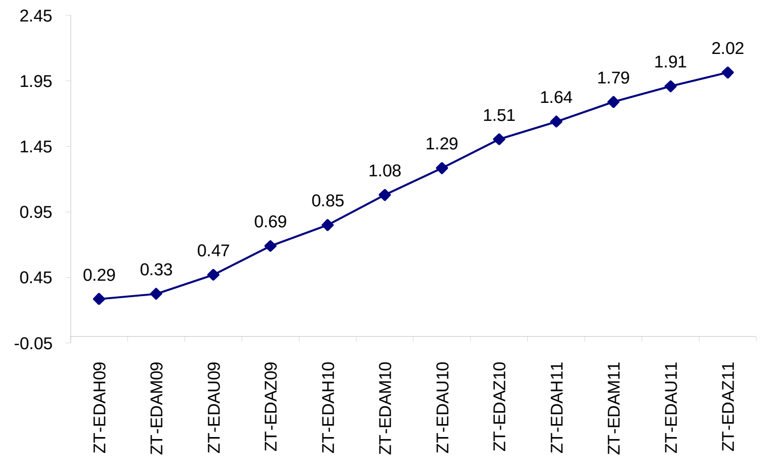
Correlations for the US Cash Treasuries are done on a YIELD basis.
Therefore, you'll see negative values. The reason for this is due to
the new issues. Every new issue takes too long to 'catch up' because
the correlation formula looks back 10days. So, it's much easier
to formulate the correlations based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

Dirty TED: ZT vs Eurodollar Contracts

	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	10.109	0.29	ZT-EDAH09	94.955
EDAM09	10.149	0.33	ZT-EDAM09	97.314
EDAU09	10.294	0.47	ZT-EDAU09	87.240
EDAZ09	10.514	0.69	ZT-EDAZ09	65.793
EDAH10	10.674	0.85	ZT-EDAH10	52.875
EDAM10	10.904	1.08	ZT-EDAM10	38.522
EDAU10	11.109	1.29	ZT-EDAU10	17.361
EDAZ10	11.329	1.51	ZT-EDAZ10	0.931
EDAH11	11.464	1.64	ZT-EDAH11	-8.846
EDAM11	11.614	1.79	ZT-EDAM11	-12.041
EDAU11	11.734	1.91	ZT-EDAU11	-16.976
EDAZ11	11.839	2.02	ZT-EDAZ11	-20.326

Price = Outright Decimal Price - Euro Contract Price
Yield = ABS (Proxy Yield - Implied Euro Contract yield)
*Correlation = ED Correlation to Treasury Future over 10 days

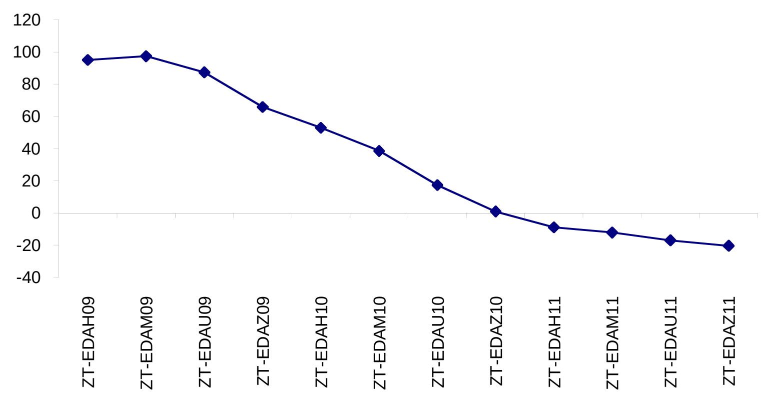
ZT Yield - ED Yield



	ED Duration as Fraction of year	ZT Duration	Spread Duration	
EDAH09	0.188	1.96	1.77	ZT-EDAH09
EDAM09	0.438	1.96	1.52	ZT-EDAM09
EDAU09	0.687	1.96	1.27	ZT-EDAU09
EDAZ09	0.936	1.96	1.02	ZT-EDAZ09
EDAH10	1.186	1.96	0.77	ZT-EDAH10
EDAM10	1.435	1.96	0.52	ZT-EDAM10
EDAU10	1.684	1.96	0.28	ZT-EDAU10
EDAZ10	1.934	1.96	0.03	ZT-EDAZ10
EDAH11	2.183	1.96	(0.22)	ZT-EDAH11
EDAM11	2.432	1.96	(0.47)	ZT-EDAM11
EDAU11	2.701	1.96	(0.74)	ZT-EDAU11
EDAZ11	2.950	1.96	(0.99)	ZT-EDAZ11

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

Correlation

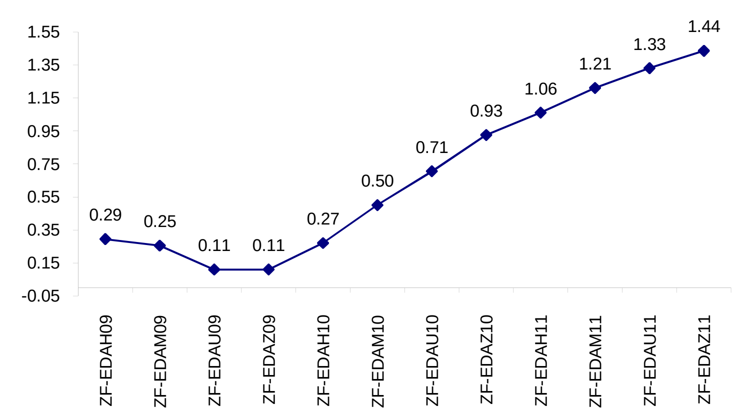


Dirty TED: ZF vs Eurodollar Contracts

	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	19.688	0.29	ZF-EDAH09	8.595
EDAM09	19.728	0.25	ZF-EDAM09	14.999
EDAU09	19.873	0.11	ZF-EDAU09	42.276
EDAZ09	20.093	0.11	ZF-EDAZ09	68.931
EDAH10	20.253	0.27	ZF-EDAH10	76.690
EDAM10	20.483	0.50	ZF-EDAM10	82.233
EDAU10	20.688	0.71	ZF-EDAU10	88.659
EDAZ10	20.908	0.93	ZF-EDAZ10	91.287
EDAH11	21.043	1.06	ZF-EDAH11	92.606
EDAM11	21.193	1.21	ZF-EDAM11	92.512
EDAU11	21.313	1.33	ZF-EDAU11	92.216
EDAZ11	21.418	1.44	ZF-EDAZ11	91.347

Price = Outright Decimal Price - Euro Contract Price
Yield = ABS (Proxy Yield - Implied Euro Contract yield)
*Correlation = ED Correlation to Treasury Future over 10 days

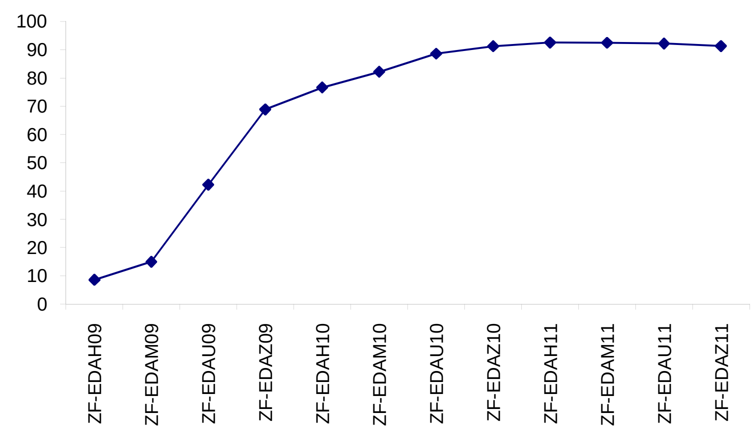
ZF Yield - ED Yield



	ED Duration as Fraction of year	ZF Duration	Spread Duration	
EDAH09	0.188	1.42	1.23	ZF-EDAH09
EDAM09	0.438	1.42	0.98	ZF-EDAM09
EDAU09	0.687	1.42	0.73	ZF-EDAU09
EDAZ09	0.936	1.42	0.48	ZF-EDAZ09
EDAH10	1.186	1.42	0.23	ZF-EDAH10
EDAM10	1.435	1.42	(0.02)	ZF-EDAM10
EDAU10	1.684	1.42	(0.26)	ZF-EDAU10
EDAZ10	1.934	1.42	(0.51)	ZF-EDAZ10
EDAH11	2.183	1.42	(0.76)	ZF-EDAH11
EDAM11	2.432	1.42	(1.01)	ZF-EDAM11
EDAU11	2.701	1.42	(1.28)	ZF-EDAU11
EDAZ11	2.950	1.42	(1.53)	ZF-EDAZ11

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

Correlation

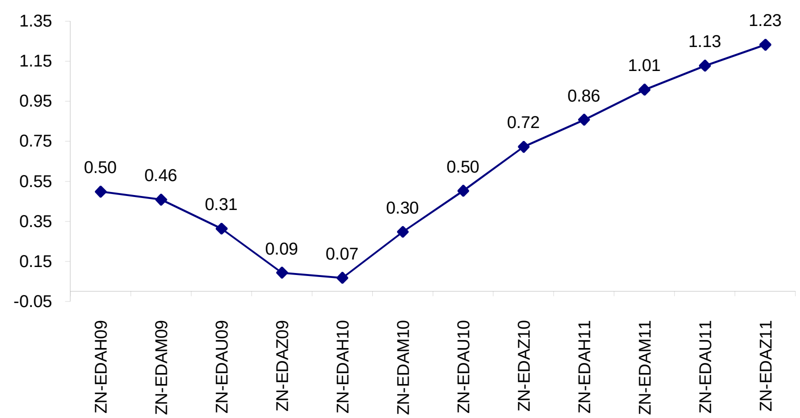


Dirty TED: ZN vs Eurodollar Contracts

	ZN			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	25.297	0.50	ZN-EDAH09	-11.111
EDAM09	25.337	0.46	ZN-EDAM09	-8.439
EDAU09	25.482	0.31	ZN-EDAU09	19.216
EDAZ09	25.702	0.09	ZN-EDAZ09	51.031
EDAH10	25.862	0.07	ZN-EDAH10	63.198
EDAM10	26.092	0.30	ZN-EDAM10	72.667
EDAU10	26.297	0.50	ZN-EDAU10	83.834
EDAZ10	26.517	0.72	ZN-EDAZ10	90.228
EDAH11	26.652	0.86	ZN-EDAH11	93.194
EDAM11	26.802	1.01	ZN-EDAM11	93.906
EDAU11	26.922	1.13	ZN-EDAU11	94.834
EDAZ11	27.027	1.23	ZN-EDAZ11	94.747

Price = Outright Decimal Price - Euro Contract Price
Yield = ABS (Proxy Yield - Implied Euro Contract yield)
*Correlation = ED Correlation to Treasury Future over 10 days

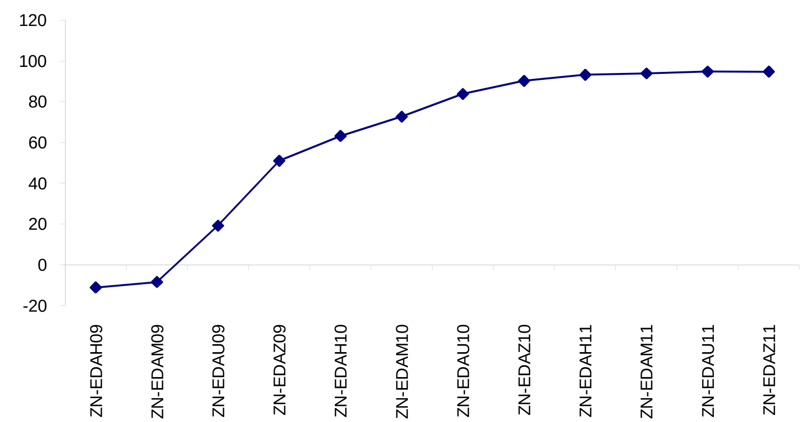
ZN Yield - ED Yield



	ED Duration as Fraction of year	ZN Duration	Spread Duration	
EDAH09	0.188	6.27	6.08	ZN-EDAH09
EDAM09	0.438	6.27	5.83	ZN-EDAM09
EDAU09	0.687	6.27	5.58	ZN-EDAU09
EDAZ09	0.936	6.27	5.33	ZN-EDAZ09
EDAH10	1.186	6.27	5.08	ZN-EDAH10
EDAM10	1.435	6.27	4.83	ZN-EDAM10
EDAU10	1.684	6.27	4.58	ZN-EDAU10
EDAZ10	1.934	6.27	4.33	ZN-EDAZ10
EDAH11	2.183	6.27	4.09	ZN-EDAH11
EDAM11	2.432	6.27	3.84	ZN-EDAM11
EDAU11	2.701	6.27	3.57	ZN-EDAU11
EDAZ11	2.950	6.27	3.32	ZN-EDAZ11

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

Correlation



TERM TED: 2y vs Eurodollar Contracts

	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	1.203	0.29	2y-EDAH09	-81.888
EDAM09	1.243	0.33	2y-EDAM09	-82.867
EDAU09	1.388	0.47	2y-EDAU09	-75.517
EDAZ09	1.608	0.69	2y-EDAZ09	-63.439
EDAH10	1.768	0.85	2y-EDAH10	-59.299
EDAM10	1.998	1.08	2y-EDAM10	-50.760
EDAU10	2.203	1.29	2y-EDAU10	-34.487
EDAZ10	2.423	1.51	2y-EDAZ10	-20.725
EDAH11	2.558	1.64	2y-EDAH11	-11.085
EDAM11	2.708	1.79	2y-EDAM11	-8.209
EDAU11	2.828	1.91	2y-EDAU11	-4.357
EDAZ11	2.933	2.02	2y-EDAZ11	-1.935

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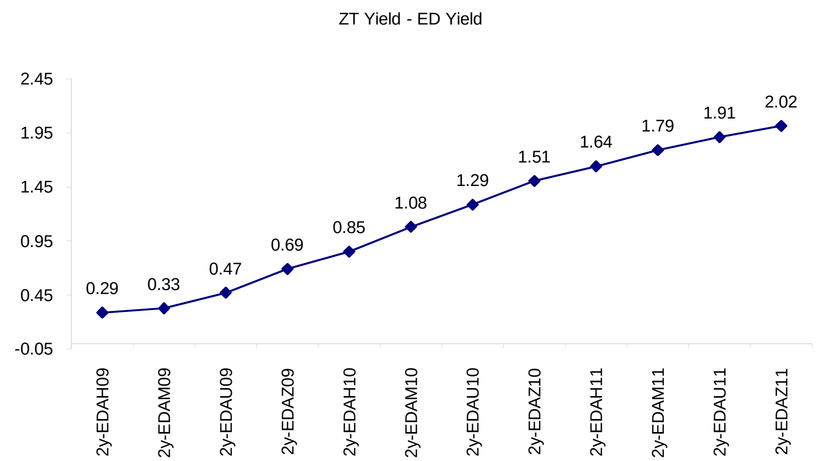
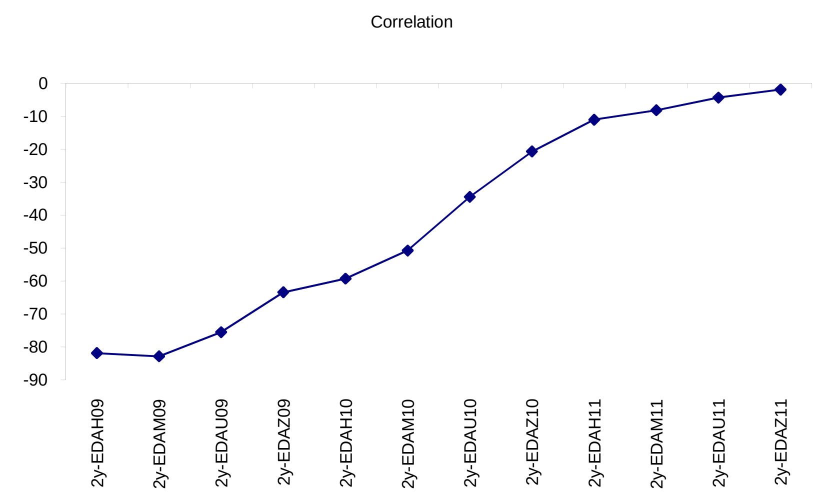


	ED Duration as Fraction of year	2Y Duration	Spread Duration	
EDAH09	0.188	1.96	1.77	2y-EDAH09
EDAM09	0.438	1.96	1.52	2y-EDAM09
EDAU09	0.687	1.96	1.27	2y-EDAU09
EDAZ09	0.936	1.96	1.02	2y-EDAZ09
EDAH10	1.186	1.96	0.77	2y-EDAH10
EDAM10	1.435	1.96	0.52	2y-EDAM10
EDAU10	1.684	1.96	0.28	2y-EDAU10
EDAZ10	1.934	1.96	0.03	2y-EDAZ10
EDAH11	2.183	1.96	(0.22)	2y-EDAH11
EDAM11	2.432	1.96	(0.47)	2y-EDAM11
EDAU11	2.701	1.96	(0.74)	2y-EDAU11
EDAZ11	2.950	1.96	(0.99)	2y-EDAZ11

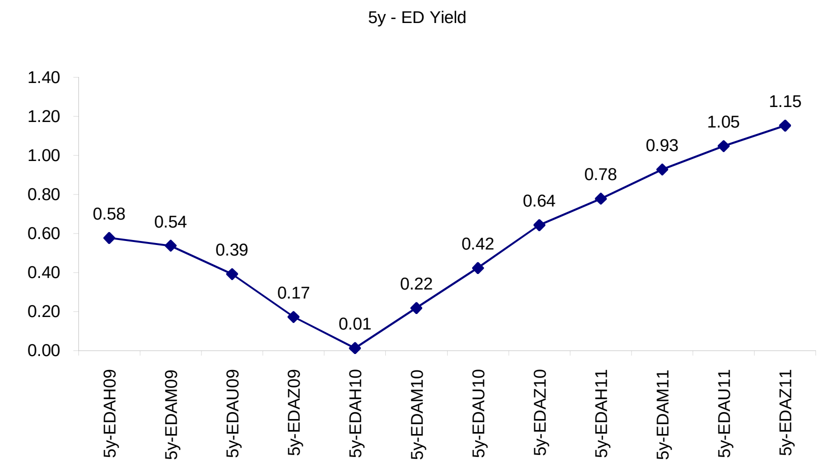
The farther away from 0 the spread duration is the riskier the trade.



TERM TED: 5y vs Eurodollar Contracts

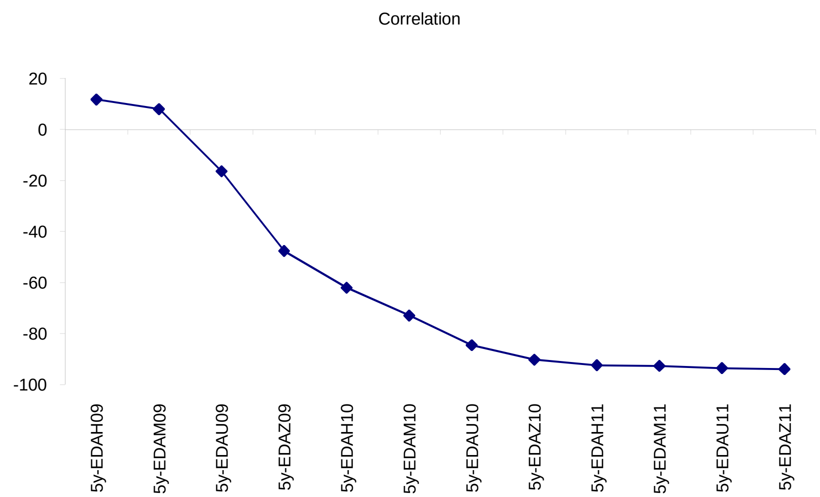
	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	0.156	0.58	5y-EDAH09	11.872
EDAM09	0.196	0.54	5y-EDAM09	8.096
EDAU09	0.341	0.39	5y-EDAU09	-16.301
EDAZ09	0.561	0.17	5y-EDAZ09	-47.546
EDAH10	0.721	0.01	5y-EDAH10	-61.965
EDAM10	0.951	0.22	5y-EDAM10	-72.870
EDAU10	1.156	0.42	5y-EDAU10	-84.508
EDAZ10	1.376	0.64	5y-EDAZ10	-90.172
EDAH11	1.511	0.78	5y-EDAH11	-92.349
EDAM11	1.661	0.93	5y-EDAM11	-92.649
EDAU11	1.781	1.05	5y-EDAU11	-93.467
EDAZ11	1.886	1.15	5y-EDAZ11	-93.903

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	
EDAH09	0.188	4.64	4.45	5y-EDAH09
EDAM09	0.438	4.64	4.21	5y-EDAM09
EDAU09	0.687	4.64	3.96	5y-EDAU09
EDAZ09	0.936	4.64	3.71	5y-EDAZ09
EDAH10	1.186	4.64	3.46	5y-EDAH10
EDAM10	1.435	4.64	3.21	5y-EDAM10
EDAU10	1.684	4.64	2.96	5y-EDAU10
EDAZ10	1.934	4.64	2.71	5y-EDAZ10
EDAH11	2.183	4.64	2.46	5y-EDAH11
EDAM11	2.432	4.64	2.21	5y-EDAM11
EDAU11	2.701	4.64	1.94	5y-EDAU11
EDAZ11	2.950	4.64	1.69	5y-EDAZ11

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

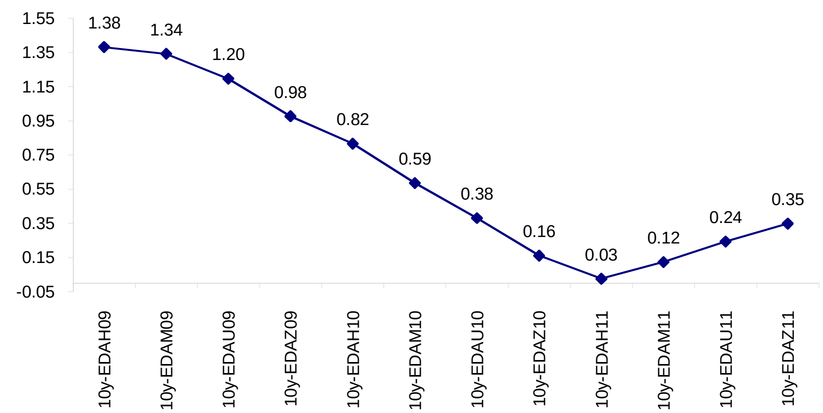


TERM TED: 10y vs Eurodollar Contracts

	10y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAH09	0.156	1.38	10y-EDAH09	-0.464
EDAM09	0.196	1.34	10y-EDAM09	3.321
EDAU09	0.341	1.20	10y-EDAU09	-20.795
EDAZ09	0.561	0.98	10y-EDAZ09	-52.722
EDAH10	0.721	0.82	10y-EDAH10	-67.085
EDAM10	0.951	0.59	10y-EDAM10	-77.477
EDAU10	1.156	0.38	10y-EDAU10	-87.525
EDAZ10	1.376	0.16	10y-EDAZ10	-92.845
EDAH11	1.511	0.03	10y-EDAH11	-94.200
EDAM11	1.661	0.12	10y-EDAM11	-94.757
EDAU11	1.781	0.24	10y-EDAU11	-95.450
EDAZ11	1.886	0.35	10y-EDAZ11	-95.376

Price = Outright Decimal Price - Euro Contract Price
Yield = ABS (Proxy Yield - Implied Euro Contract yield)
*Correlation = ED Correlation to Treasury Future over 10 days

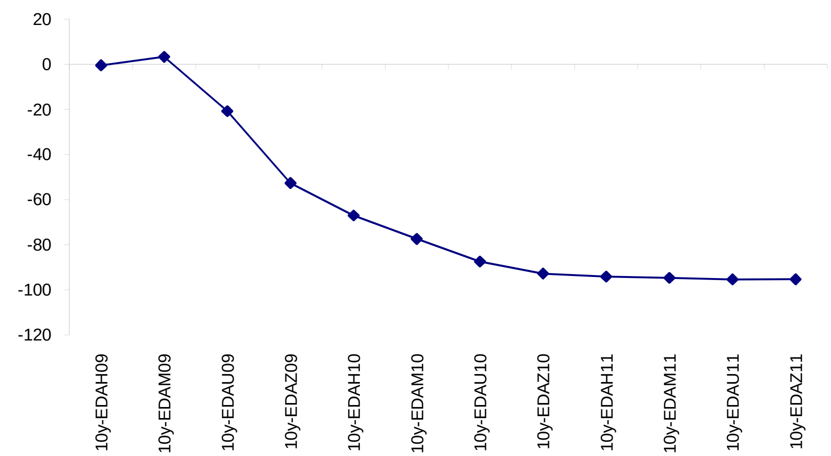
10y Yield - ED Yield



	ED Duration as Fraction of year	10Y Duration	Spread Duration	
EDAH09	0.188	8.28	8.09	10y-EDAH09
EDAM09	0.438	8.28	7.84	10y-EDAM09
EDAU09	0.687	8.28	7.59	10y-EDAU09
EDAZ09	0.936	8.28	7.34	10y-EDAZ09
EDAH10	1.186	8.28	7.09	10y-EDAH10
EDAM10	1.435	8.28	6.84	10y-EDAM10
EDAU10	1.684	8.28	6.59	10y-EDAU10
EDAZ10	1.934	8.28	6.34	10y-EDAZ10
EDAH11	2.183	8.28	6.09	10y-EDAH11
EDAM11	2.432	8.28	5.84	10y-EDAM11
EDAU11	2.701	8.28	5.58	10y-EDAU11
EDAZ11	2.950	8.28	5.33	10y-EDAZ11

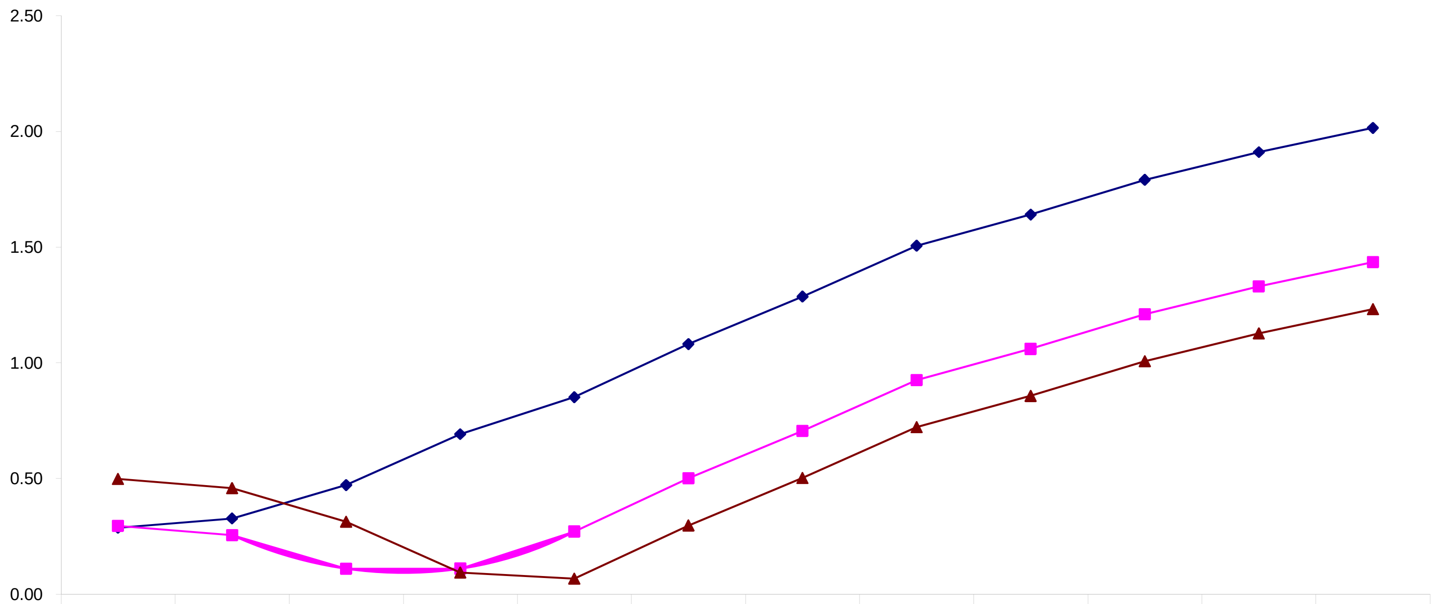
The farther away from 0 the spread duration is the riskier the trade.

Correlation



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.

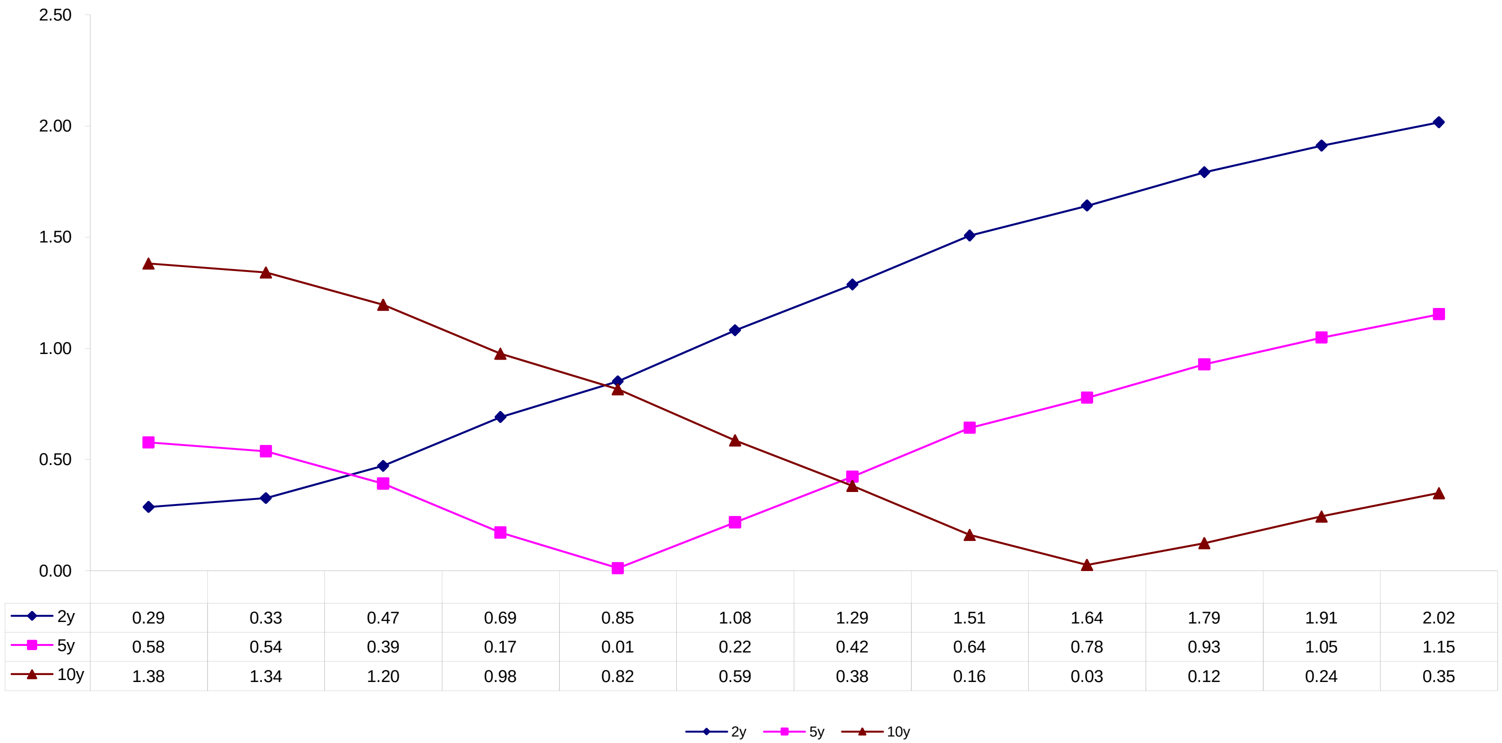


ZT	0.29	0.33	0.47	0.69	0.85	1.08	1.29	1.51	1.64	1.79	1.91	2.02
ZF	0.29	0.25	0.11	0.11	0.27	0.50	0.71	0.93	1.06	1.21	1.33	1.44
ZN	0.50	0.46	0.31	0.09	0.07	0.30	0.50	0.72	0.86	1.01	1.13	1.23

ZT ZF ZN

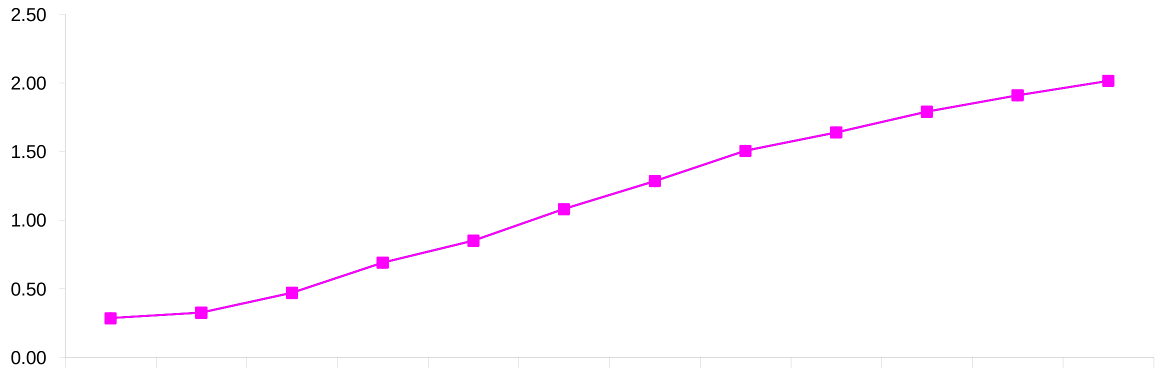
TED Curve

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	0.29	0.33	0.47	0.69	0.85	1.08	1.29	1.51	1.64	1.79	1.91	2.02
5y	0.58	0.54	0.39	0.17	0.01	0.22	0.42	0.64	0.78	0.93	1.05	1.15
10y	1.38	1.34	1.20	0.98	0.82	0.59	0.38	0.16	0.03	0.12	0.24	0.35

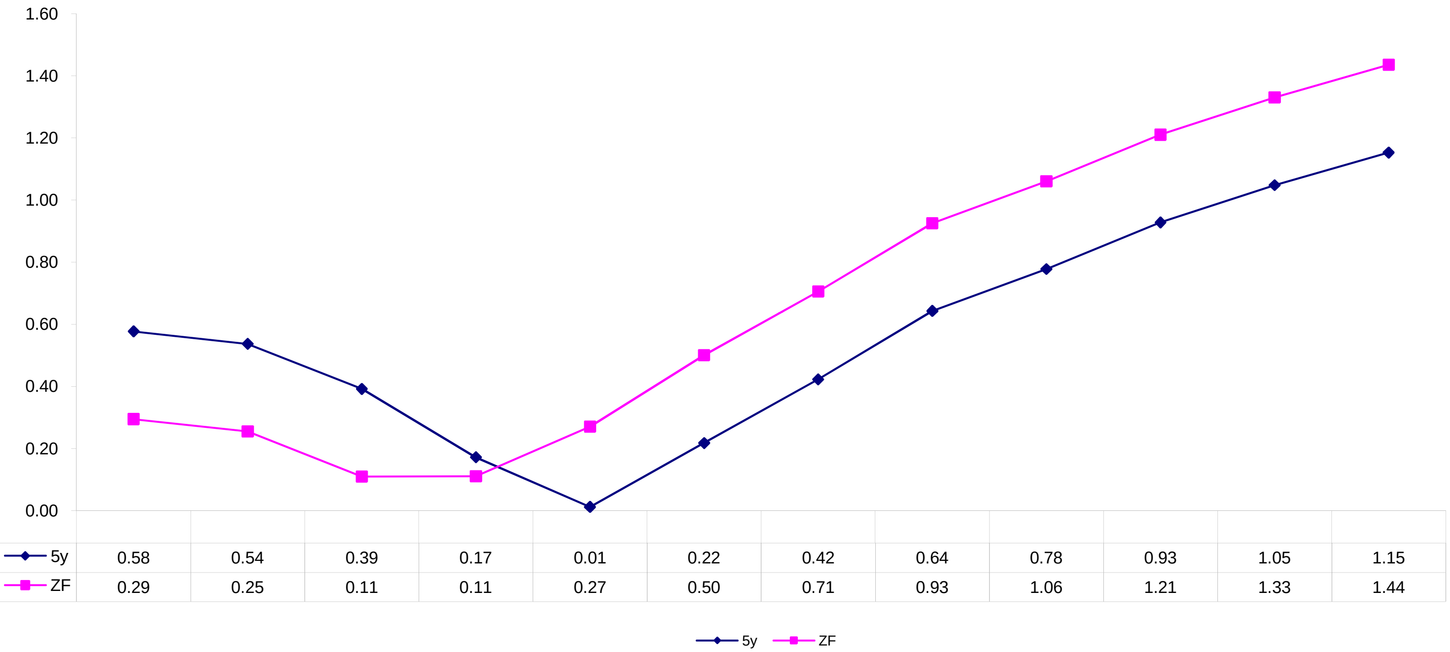
2y Basis TED Curve



2y	0.29	0.33	0.47	0.69	0.85	1.08	1.29	1.51	1.64	1.79	1.91	2.02
ZT	0.29	0.33	0.47	0.69	0.85	1.08	1.29	1.51	1.64	1.79	1.91	2.02

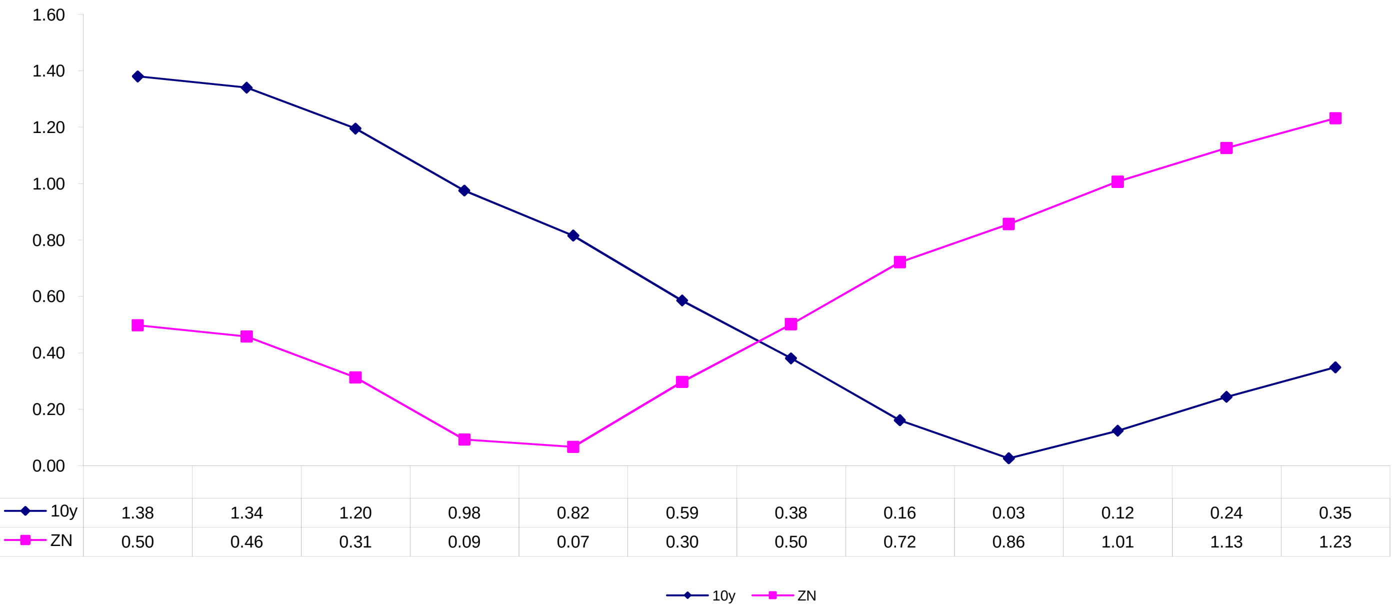
2y ZT

5y Basis TED Curve



5y	0.58	0.54	0.39	0.17	0.01	0.22	0.42	0.64	0.78	0.93	1.05	1.15
ZF	0.29	0.25	0.11	0.11	0.27	0.50	0.71	0.93	1.06	1.21	1.33	1.44

10y Basis TED Curve



10y	1.38	1.34	1.20	0.98	0.82	0.59	0.38	0.16	0.03	0.12	0.24	0.35
ZN	0.50	0.46	0.31	0.09	0.07	0.30	0.50	0.72	0.86	1.01	1.13	1.23

Packs

	Last Yield	Net Last Yield	Last Price
White Pack	1.305	-2.250	9871.750
Red Pack	2.059	-0.750	9798.000
Green Pack	2.734	-1.500	9732.125
Blue Pack	3.034	-2.000	9703.000
Gold Pack		-0.625	9680.625