The nature of futures contracts is such that they exist during a specified, finite period of time after which they are settled either in cash or through a delivery process. By contrast, many albeit certainly not all, spot instruments that serve as the underlying basis for futures contracts may be perpetual in nature.

While futures serve many of the same economic purposes as underlying spot instruments, we pose the question – does the finite term of a futures contract impact the way in which these products are utilized? In order to gain some insight into this question, we study the average holding period (AHP) of futures relative to the AHP associated with comparable spot or over-the-counter (OTC) instruments.

Our study generally confirms our intuitive hunch. Specifically, the AHP for futures tends to be shorter than the AHP for comparable spot or OTC instruments, often by a considerable margin.

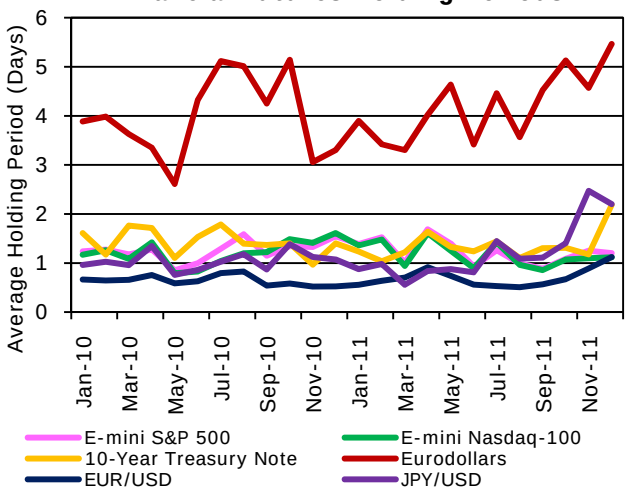
This implies that futures may generally be characterized as *short-term trading vehicles*. *Spot or other comparable instruments may more likely be used* as *longer term investment* vehicles.

Average Holding Period - The average holding period of a futures contract, spot or OTC instrument may be estimated as a function of open interest or outstanding positions divided by average daily volume (ADV) over a particular period. This is an intuitively appealing calculation because it generates an AHP measured in days despite the limitation of representing a general measure that is not tied to any specific trading strategy.

Our charts and Table 1 (below) provide a summary of AHPs associated with "flagship" CME Group futures contracts selected from various asset classes including equities, interest rates, currencies and commodities. As a general rule, we find that the AHP for futures tends to be reasonably brief. AHPs ranged from 1.0 days in the context of the EUR/USD currency futures contract to 6.1 days in corn futures.

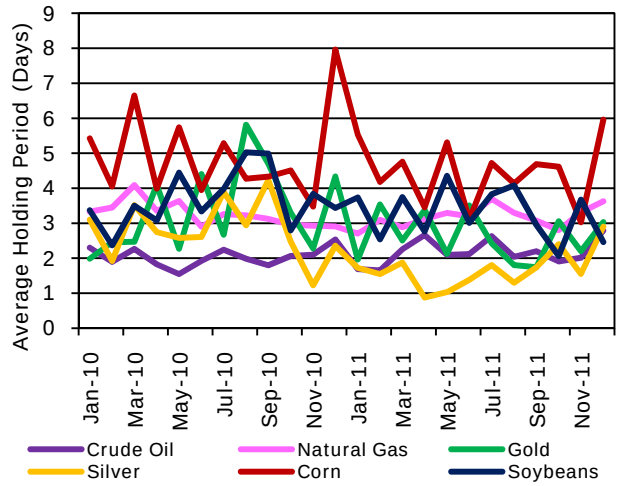
As a general rule, AHP tends to be shorter (or turnover tends to be higher) in financial futures relative to commodity futures. A notable exception, however, is found in Eurodollar futures with a reasonably long AHP of 5.9 days. This is consistent with the observation that Eurodollar futures are frequently used to hedge OTC Interest Rate Swaps (IRS) and, as such, may be held over extended periods of time. This application is further supported by the fact that Eurodollar futures are listed a full ten (10) calendar years into the future.

Financial Futures Holding Periods



By contrast, the AHP associated with comparable spot or OTC instruments tends to be longer than that associated with futures. *E.g.,* the AHP associated with the SPDR S&P 500 Exchange Traded Fund (ETF) (NYSE: "SPY") is 2.9 days compared to 1.3 days associated with the E-mini S&P 500 futures contract.

Commodity Futures Holding Periods



The iShares Barclays Aggregate Bond (NYSE: "AGG") and the Vanguard Total Bond Market (NYSE: "BND") ETFs had AHPs of 104.4 and 105.7 days, respectively. These figures may be compared to the AHP=2.2 days associated with 10-year T-note futures.

Commodity ETFs tended to have relatively long AHPs relative to futures as well. The most extreme example is found in the PowerShares DB Agriculture Fund ETF (NYSE: "DBA") with an AHP=65.3 days. This may be compared to the 6.1 and 2.7 day holding periods associated with CME Group corn and soybean futures, respectively.

OTC instruments tend to have even more elongated holding periods. *E.g.,* OTC Forward Rate Agreements (FRAs) had an AHP of 93.6 days while OTC IRS had an AHP of 272.6 days. These figures are much longer than the 5.9 days associated with Eurodollar futures. A similar observation may be made in the context of interbank FX forwards and FX swaps with a holding period of 11.4 days relative to 1.0 and 2.2. days associated with CME Group EUR/USD and JPY/USD currency futures contracts, respectively. [1]

Explaining our Findings - The next question is why? *I.e.,* why is the AHP for futures relatively short? We offer a number of explanations as follows.

- *Perpetuity* – Spot instruments such as ETFs are perpetual in nature. While an ETF may be dissolved, typically there is no pre-programmed maturity or dissolution date. Treasury notes and bonds are not perpetual but may have a life of upwards to 30 years. Similarly OTC instruments such as FX forwards, FRAs or IRS are not perpetual. Still, it would not be uncommon to find an interest rate swap with a term of up to 30 years as well.

  Futures contracts, by contrast, are characterized by a relatively short maturity or termination date at which point they call for a final settlement either in cash or through a delivery process. While futures are listed for settlement upwards to ten years in advance, *e.g.,* CME Eurodollar futures, it is far more typical to observe futures listed with much shorter life spans. The most actively traded futures tend to be the near-term contracts that mature relatively shortly.

  Long-term investors using futures are compelled to maintain their positions by "rolling" forward, *i.e.,* by liquidating positions in an expiring contract month only to re-establish the position in a deferred month. This reduces AHPs despite the fact that the investor is maintaining the position over time.

  Thus, the non-perpetual nature of futures may foster a shorter term outlook relative to comparable spot or OTC investments that may be perpetual in nature or at least longer-term in nature.

- *Coupon and Dividend Income* –Many ETFs such as the SPDR S&P 500 (NYSE: "SPY") and the iShares Barclays Aggregate Bond (NYSE: "AGG") products distribute income on a monthly or quarterly basis. By contrast, futures do not directly generate cash income although futures pricing does implicitly reflect such income. [2] As a result, long-term investors may prefer the cash flows associated with spot investments over the "implicit income" associated with futures.

- *Leverage* - Futures often allow the trader to deploy a large amount of leverage relative to other instruments. Certainly futures performance bonds (*aka* "margins") are proportionately low relative to their notional value, as opposed to

[1] Actually, we might expect to find that the AHP for many OTC derivatives will be extremely long. This expectation is rooted in the fact that the outstanding notional value of OTC derivatives is generally inflated by virtue of accounting practices. Specifically, if a trader holds economically offsetting positions with two different OTC dealers, they do not automatically offset, although there is growing use of so-called "tear-up" services to facilitate such offsets. Thus, one may buy and sell the same position with the same dealer and nonetheless find that the two positions are held on the books until maturity despite the fact that the two positions economically offset. Note further that OTC markets promote development of many highly customized products, often on a "one-off" basis which further reduces the possibility of an offset that would reduce the nominal value of positions held on the books. Futures contracts, by contrast, tend to be standardized and automatically offset as a matter of course. Thus, the outstanding notional value of OTC instruments tends to be inflated relative to futures contracts. This factor will tend to inflate the calculated AHP of OTC instruments.

[2] We note, however, that dividend or coupon income associated with the spot instruments that underlie futures contracts are reflected in futures pricing patterns. Thus, Treasury futures in successively deferred months tend to price at lower and lower levels to reflect the fact that coupon income associated with Treasury holdings tends to exceed short-term financing costs – a condition known as "positive carry." Stock index futures tend to price at successively higher and higher prices to reflect the typical relationship where short-term rates exceed dividend receipts – "negative carry." Actually, given the fact that dividend yields often exceed today's extremely low short-term rates, we find stock index futures exhibiting positive carry as well. But the point is that income is implicitly reflected in futures pricing.

ETFs where margins may be 50% of the notional value of the instrument.

This is not, however, universal as one may deploy leverage in, *e.g.,* spot Treasuries that is at least comparable to the leverage associated with futures through the use of repurchase (repo) transactions. Similarly, the leverage historically associated with OTC instruments may be comparable to that associated with futures as well. [3]

The point is that the higher the leverage associated with a position, the more likely the position will be held for a reasonably short period. The greater the degree to which a position is funded, the less likely one is to receive a margin call, which is conducive to longer-term holding periods with minimal position management.

- *Tax Policy* - Futures are Section 1256 instruments generally subject to so-called 60/40 accounting treatment and marked-to-market (MTM) at the conclusion of every tax year. This implies tax advantages for short-term trading activity and tax disadvantages for longer-term investment activity. Specifically because futures subject to 60/40 do not qualify for favorable long-term capital gain treatment. ETFs, on the other hand, can generally qualify for long-term capital treatment. Thus, if one's holding period is likely to be long, one may prefer ETFs for tax reasons.

- *Customer Base* - Futures are generally patronized by institutional investors. While there is retail participation, the proportion has historically been low. Those institutional investors are more apt to be sophisticated traders and, to the extent that trading is a full-time job, more likely to deploy active trading strategies. Of course, all OTC activity is institutional in character. And, statistics have suggested that ETFs are more frequently patronized by institutional clients than retail. Still, futures are sometimes regarded are relatively complex instruments that require a greater degree of financial sophistication than other investments.

- *Electronic Trading* – It is reasonable to theorize that the evolution of electronic trading technologies may contribute to a reduction in the AHP. Certainly, the CME Globex® electronic trading platform offers low latency, high capacity, reliability and tremendous functionality. The application of algorithmic or even so-called high frequency trading (HFT) methods might further be a factor. These considerations would seem to be conducive to a reduction in AHPs.

  We further note that markets apart from futures, certainly including ETFs, are likewise offered on electronic trading platforms. While we assert that CME Globex is a superior electronic trading platform, this point nonetheless calls into question whether this factor represents a significant contributor to the gap between spot and futures AHPs.

  However, our graphics above do not support the supposition that AHPs are declining over the past two years. Rather, the AHP in CME Group financial and commodity futures has been relatively stable with no clear upward or downward trends over the past two years. This may suggest that other factors, notably fundamental market considerations, dictate one's trading strategy and, ultimately, one's AHP.

To summarize, futures tend to be utilized as reasonably short-term trading vehicles rather than longer-term investment vehicles. The distinction between short- and long-term, as well as the distinction between trading and investment activity, is quite fuzzy and perhaps rather arbitrary. Nonetheless, we believe it is a reasonable broad characterization in this context.

Volatility – How might we explain the ebb and flow of AHPs? Again, we look to fundamental market conditions for an explanation.

It is intuitive that volatility and AHP should be negatively correlated. As volatility declines, there may be fewer day-to-day trading opportunities. Reduced short-term trading opportunity motivates traders to pursue longer-term opportunities by way of compensation and AHPs may increase. But as

[3] We note, however, that the Dodd-Frank financial reform package, once implemented, will significantly alter this relationship. Futures performance bond or margin requirements are generally established to cover one-day's maximum expected price movement with a high degree of certainty (95-99%). The Dodd-Frank legislation would require that cleared OTC instruments be margined to cover five-day's movement with a high degree of confidence. A reasonable rule of thumb is to assume that the margin associated with a cleared OTC instrument may be approximately 2.24 times higher ($2.24 = \sqrt{5}$) than that associated with a comparable futures contract bearing comparable risk characteristics. This aspect of the legislation is expected to be implemented in the 2nd half of 2012.

volatility increases, there may be more day-to-day trading opportunities and AHPs might tend to decline.

To test this proposition, we ran a simple correlation between monthly reads of AHP vs. 30-day historic volatilities (HV) in CME Group "flagship" futures contracts. The results were generally as expected – there are significant negative correlations between AHP and volatility.

A visual reference to our graphics above confirms that the AHP in Eurodollar futures has been extending somewhat during the latter half of 2011. Not coincidentally, the Federal Open Market Committee (FOMC) announced on August 9, 2010 its intent to maintain the target Fed Funds rate, its primary monetary policy tool, at the current level of 0 to ¼ percent "at least through mid 2013."

Correlation - AHP vs. Volatility
(2010-2011)

	Correlation
E-mini S&P 500	-0.611
E-mini Nasdaq-100	-0.686
10-Year T-note	-0.241
Eurodollars	-0.301
EUR/USD	-0.232
JPY/USD	-0.324
Crude Oil	-0.302
Natural Gas	-0.365
Gold	-0.522
Silver	-0.420
Corn	-0.280
Soybeans	-0.296

We may further note the pattern in corn AHPs such that the figures tend to rise during the winter months but decline during the summer or so-called "weather months" when the crop is in the ground and changing weather conditions may significantly impact pricing.

Concluding Note – The average holding period (AHP) tends to be low, or turnover tends to be high, with respect to futures contracts relative to comparable spot or OTC instruments. We may identify several reasons for this observation including the finite nature of futures, leverage, tax policies and other considerations. The result is that futures tend to be utilized as short-term trading vehicles more so than long-term investment vehicles.

Average holding periods in futures markets are negatively correlated with volatility. This is intuitive as reduced volatility is conducive to longer term trading strategies while higher levels of volatility may be more conducive to shorter-term trading strategies.

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Table 1: Average Holding Periods (AHP)
Futures vs. Comparable Spot or OTC Instruments

Futures	Average Daily Volume (Contracts) (1)	Open Interest (Contracts) (2)	Average Holding Period (Days)	Comparable Spot or OTC Instrument (3)	Average Daily Volume (Mil $) (4)	Outstanding Value (Mil $) (5)	Average Holding Period (Days)
E-mini S&P 500	2,183,343	2,850,948	1.3	SPDR S&P 500 (SPY)	$29,514.1	$86,090.0	2.9
E-mini Nasdaq-100	229,790	300,131	1.3	PowerShares QQQ Trust (QQQ)	$3,537.0	$24,140.0	6.8
E-mini ($5) DJIA	114,048	88,391	0.8	SPDR DJIA (DIA)	$1,052.6	$10,520.0	10.0
10-Year T-note	683,399	1,488,989	2.2	iShares Barclays Aggregate Bond (AGG)	$133.0	$13,880.0	104.4
				Vanguard Total Bond Market (BND)	$130.9	$13,837.8	105.7
				U.S. Treasury Market	$595,900	$9,466,400	15.9
Eurodollars	1,372,461	8,147,889	5.9	Forward Rate Agreements	$601,000	$56,242,000	93.6
				Interest Rate Swaps	$1,275,000	$347,508,000	272.6
EUR/USD	254,211	263,796	1.0	Rydex CurrencyShares Euro (FXE)	$241.8	$382.2	1.6
				FX Forwards & FX Swaps	$2,240,000	$25,624,000	11.4
JPY/USD	71,949	157,014	2.2	Rydex CurrencyShares Japanese Yen (FXY)	$46.5	$628.1	13.5
				FX Forwards & FX Swaps	$2,240,000	$25,624,000	11.4
Crude Oil	475,888	1,329,054	2.8	U.S. Oil Fund (USO)	$472.3	$1,120.0	2.4
Natural Gas	279,917	972,964	3.5	U.S. Natural Gas Fund (UNG)	$63.9	$1,280.0	20.0
Gold	138,184	432,449	3.1	SPDR Gold Trust (GLD)	$2,109.6	$72,870.0	34.5
Silver	36,456	104,633	2.9	iShares Silver Trust (SLV)	$598.5	$9,780.0	16.3
Corn	193,104	1,176,524	6.1	PowerShares DB Agriculture Fund (DBA)	$33.8	$2,210.0	65.3
Soybeans	186,780	502,883	2.7				

Notes

(1) Average daily volume observed during 4th calendar quarter 2011

(2) Average of open interest sampled at end-of-month (EOM) in October, November and December 2011

(3) Select spot or over-the-counter instruments deemed comparable to futures contract. This largely includes Exchange Traded Funds (ETFs). But we have also included information on the spot Treasury markets as well as interbank FX forwards and FX swaps; OTC Forward Rate Agreements (FRAs) and OTC Interest Rate Swaps (IRS).

(4) Average Daily Volume (ADV) expressed in million of US Dollars. For ETFs, the number is sampled during the 4th quarter 2011. For spot Treasury market, number is sampled during 3rd calendar quarter 2011 from www.sifma.org website. For OTC instruments including FX forwards & FX swaps, FRAs and IRS, figure represents April 2010 volume gleaned from Bank for International Settlements (BIS) Triennial survey of OTC derivatives volume.

(5) Represents the Net Asset Value (NAV) for ETFs as of the end-of-month November 2011. For spot Treasury market, represents the outstanding value as of conclusion of 3rd calendar quarter 2011 from www.sifma.org website. For OTC instruments including FX forwards & FX swaps, FRAs and IRS, figure represents June 2010 outstanding notional values gleaned from Bank for International Settlements (BIS) website at www.bis.org.