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by

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HEDGE FUNDS CHANGE ENERGY TRADING

Peter C. Fusaro and Gary M. Vasey*

Introduction

Why are hedge funds now attracted to the energy industry? One reason is that hedge-fund returns have disappointed investors over the last year, and the funds are seeking new areas of investment where returns may be better. The volatile world of energy is seen by the funds as potentially providing such an opportunity.

Today in 2005, there are more than 8,100 hedge funds with at least $1 trillion invested in markets—double the number of 1999. That number is rising as pension funds look for greater returns and diversification of financial risk. The energy industry fits the investment profile of hedge funds and is under intense scrutiny and investment interest. It is simply a matter of risk/reward.

Ironically, hedge funds trading oil are not doing anything very different than the large investment banks such as Goldman Sachs, Bank of America, or Morgan Stanley already do. The proprietary trading desks of these and other large investment banks are actually "hedge funds in drag," just as Enron was. The banks never talk about what they do and, consequently, they tend to fall under the radar screen. But they must be doing something right as Morgan Stanley and Goldman Sach's commodity trading groups have had substantial profits in recent years and continue to do so in 2005.

After the shock of the demise of Enron and merchant energy trading generally, it has taken more than two years to rebuild energy trading. The warnings that the industry would be in turmoil for many years were likely overly exaggerated, but also predictions regarding the demise of the market were wrong. We have not seen the predicted globalization of electric utilities; instead, we have seen foreign utilities retreat from U.S. power markets. We also have witnessed the Wall Street power companies rise as they bought distressed assets and began to trade those assets through various asset-optimization strategies. We have seen the resurfacing of financial institution/utility joint ventures with Merrill Lynch's purchase of Entergy/Koch and, more recently, the entrance of financial hedge funds focusing on the energy industry.

What has occurred is the merger of big money and big energy. This is no longer a game for small companies including electric and gas utilities. This is investment banking, asset-backed trading, pure commodity trading and, most importantly, that of financial balance sheets that assume "capital at risk." Our research has revealed there are more than 330 hedge funds focused on energy that include pure energy commodity trading on the New York Mercantile Exchange (NYMEX) or over-the-counter (OTC) markets, commodity/energy equity plays, distressed asset plays, and various other financial undertakings. That number is likely to grow quickly in 2005 as international markets are beginning to attract hedge-fund interest into the energy sector beyond the United States in London, Zurich, Frankfurt, Singapore, Tokyo, and Shanghai. The number of hedge funds entering continues to grow daily.

Hedge Funds in Energy

The world of the hedge fund is both somewhat secretive and largely unregulated, making it difficult to get a clear and true measure of just how significant its impact really is on energy markets. Many hedge funds trade through banks, making it difficult to disaggregate data sufficiently. Thus, the evidence for the activities of hedge funds has to be gathered somewhat indirectly; some of the best evidence is to be found in market activity such as increased open interest on the NYMEX for open crude oil, heating oil, and gasoline primarily due to hedge-fund trading activity and a smaller amount of volume on the International Petroleum Exchange (IPE) in London. Many of our findings by necessity rely upon anecdotal evidence from various energy traders, bankers, brokers, energy analysts, and hedge funds.

Investment management professionals have been using managed futures for more than 30 years. In fact, there are more than 450 commodity trading advisors actively trading in energy, managing over $70 billion in assets that look similar to hedge funds; a proportion of hedge funds are registered as Commodity Pool Operators. However, our research also has identified new energy-specific hedge funds being created to trade both physical and financial energy commodities and, as importantly, a growing number of macro funds that have shifted significant proportions of their assets into energy in the last year. Hedge funds, commodity trading advisors, and pension funds are now estimated to control at least $200 billion in the energy market. While a small market share, its significance is magnified because they are very active traders as opposed to energy companies that are naturally long or short in energy markets and use futures to hedge themselves against adverse price movements.

Inspection of U.S. Commodity Futures Trading Commission (CFTC) data demonstrates that noncommercial investors in 2004 gambled on higher prices

and accounted for almost one-third of all oil futures bets, a 250-percent rise over 2002. Both trading volumes and contract open interest on the NYMEX have set daily volume records for energy futures while IPE data show around a 20-percent increase in open interest for Brent crude-oil futures since 2004. However, CFTC data reveal futures and options positions only on the New York Mercantile Exchange and do not reflect OTC energy markets at all. The best indicator of OTC activity is the increased trading on the NYMEX's Clearport where a record 137,195 off-exchange contracts were cleared on September 16, 2004, exceeding the record 124,427 contracts of the previous day.

Buying on a commodity index is another strategy used by the hedge funds. This strategy allows the investor to profit on rising energy prices and other commodities without the risk of either financial futures or physical commodity trading. It is estimated that more than $20 billion is tied up in index trading today largely in the four major indices: Goldman Sachs Commodity, Dow Jones-AIG, CRB Reuters, and Deutsche Bank.

Energy commodity markets are being driven by news more than ever before, thus creating significant volatility. These recent higher volatilities, particularly in oil, now are causing the funds' oil traders to take smaller positions. This is reflected in the open interest levels in futures contracts trading in the back months of 2005 and 2006, where there is less volatility.

While there has been much media commentary on the possibility that energy prices currently display a speculation premium, our analysis of the fundamental geopolitical risk and supply/demand factors for each of the major energy commodities suggests that these have dictated recent upward price movements. In our view, hedge funds and other speculators have simply followed that trend. However, the higher sustainable prices for energy will have an impact across and beyond the energy world. Ironically, the combination of higher energy prices and the current state of the North American industry is creating a further opportunity for other hedge funds in energy. Hedge-fund activity in energy includes equities, distressed asset plays, debt, and emissions trading.

While it is difficult to measure succinctly the impact of the hedge funds' activities in energy, our research concludes that there is significant evidence to suggest that the funds and the investment banks are here to stay, bringing back both liquidity and a risk-taking culture to energy markets. In fact, we have concluded that there are many more funds forming throughout the world to take advantage of continuous price volatility driven by supply tightness and higher-than-expected demand. Traditional energy utility companies are either exiting or becoming further marginalized by these activities. On the other hand, many of the funds do not understand energy and, although they have sophisticated tools and models,

there remains a very real danger that this lack of specific energy knowledge and modeling will result in further market fallout at some stage in the near future.

Why Now and Why Energy?

The current financial energy markets are the culmination of 27 years of energy trading, but we still are trading only on a notional basis $2 trillion of paper energy compared to $4 trillion of physical business (i.e., notional is the outstanding value of all energy contracts on both energy futures exchanges and the OTC markets). We have a long growth trajectory ahead. Today, we are seeing a sustained bull market for oil and gas globally. This will continue for several years due to supply constraints and robust energy demand. We are seeing a resurgence of interest in coal trading and the globalization of that market, and the impact on electricity fuel supply cannot be understated. We observe both physical electricity trading and many distressed asset plays in both the United States and Europe in the electric power sector by the funds. We are seeing even more esoteric plays in green trading with carbon and renewable energy-trading hedge funds in formation as those markets emerge.

Energy commodity markets have become characterized by increasing prices and price volatilities. Moreover, the general business environment in a post-Enron world is spurring previously unseen interest in energy equities and assets. While oil markets continue to boom as a result of geopolitical issues, the relative weakness of the U.S. dollar, and other supply/demand factors, the other commodities have followed suit. North American natural gas supply and production declines have resulted in higher sustainable prices and increased and sustained price volatilities. Meanwhile, robust demand for coal also is apparent as generators eye the higher costs of generating electric power using natural gas as a base-load fuel. Electric power is seeing renewed trading interest as well due to its price volatility and inability to store.

Seeking new opportunities to obtain greater returns, hedge funds view energy markets as providing that opportunity. Likewise, investment banks have a risk-trading culture, deep pockets, and access to both physical and financial traders. Even energy merchant companies with surviving trading arms are now seeking to partner with investment banks to sustain and improve trading operations while obtaining access to increased expertise, more sophisticated tools, and risk capital. Moreover, the multinational oil and gas companies have the balance sheet to put their capital at risk. It is no accident that BP is the number one gas trader and in the top five in power trading in the United States with a $2-billion trading profit in 2004. They have the balance sheet and supply to play in this new financial market.

We believe the next three to five years (to 2010) will see the accelerated financialization of global energy-trading markets. The investment banks eventually will sell back their generation assets to utilities as the supply surpluses burn off. The emergence of a global climate change regime will bring new financial risks directly to the utility sector. Risk is now more pervasive in the energy patch than ever before.

The multi-commodity market that has been talked of for many years with its multiplicity of risks finally has arrived. We will see more hedging of fuels such as oil, oil products, gas, and coal. We will hedge environmental risks, such as carbon and greenhouse gases, that will take its place alongside the sulfur oxide and nitrogen oxide markets of today. We will hedge financial renewable energy, and there are now several Green Hedge Funds involved in trading carbon dioxide and renewable energy credits. We will hedge negawatts (the value energy efficiency) as demand response regimes come into maturity and show a financial benefit of energy efficiency linked to carbon reductions. But most importantly, we will see markets that work and a more sophisticated and savvy financial form of energy risk management emanating from New York, where it all started. And in Europe, London will benefit from this uptick in energy trading.

Speculative energy trading has a strong future, but it will likely not be the traditional utilities and energy merchants that will create and maturate that market. While much of the energy industry has returned to the relative safety of trading around assets and marketing activities, energy markets have become characterized across all energy commodities by increasing prices and price volatilities.

Opportunities in Oil Trading

The more established oil futures and OTC markets are the most attractive for hedge-fund trading as they are more liquid and have ease of access and exit. There are a variety of factors that currently are influencing high oil prices and greater oil-price volatility: unusually high geopolitical risk among members of the Organization of the Petroleum Exporting Countries (OPEC), continued economic growth in China tied to oil, rising U.S. gasoline demand, and the lack of investment in oil exploration and production by the oil majors. Each of these factors is interconnected and is leading to the current high oil-price environment.

Oil demand has surprised many analysts by the extent of its growth in 2004. The International Energy Agency (IEA) is now projecting oil demand growth of 2.5 million barrels per day (b/d) or 3.2 percent over 2004's 81.1 million b/d, rising to over 84 million b/d in 2005.[1] It seems that the world economy finally has recovered from the shocks of 9/11. Oil consumption in China and the United States is driving much of this increased demand.

Structural Change Under Way

We believe that global energy commodity markets are undergoing a fundamental structural change. For each energy and energy-related commodity, global and regional markets are displaying a new level of supply/demand tightness. As a result, we have argued that energy commodities prices will remain high for some time to come and will ratchet higher this summer (2005) due to global refining capacity constraints. In London, we found this to be a view readily shared by the bankers and hedge-fund contacts but apparently not by oil company traders. We heard comments that recent relatively small downward movements in oil prices were symptomatic of mean reversion. Indeed, many oil firms are still holding onto internal oil price forecasts of around $25 to $30 per barrel and, at times, seem to be in denial of the current supply and demand environment. There may be mean reversion, but in our opinion, it will be reversion to a higher mean!

At a time when OPEC's ability to be the "swing" producer is diminished and when Asian nations such as China and India are busy securing supply to feed their increased consumption, one is forced to ask why the major oil companies appear to be looking for a low-price future? According to Gao Shixian, Director of the China Energy Institute, China's net oil imports are set to rise by 33 percent over 2004 to 140 million metric tons, with demand predictions of 7 million b/d of oil.[2] Within OPEC, only Saudi Arabia has any real spare capacity, estimated at 1.6 million b/d, and there are increasing questions over the accuracy of that estimate among industry pundits since its reserve estimates have never been audited by an independent third party. At the same time, major oil companies continue to downgrade their own reserves estimates and have singularly failed to add any major new finds over the last decade or so (as evidenced by Shell and El Paso downgrades during the past year). Estimates from Deutsche Bank also suggest that oil companies have reduced their exploration budgets by more than a quarter while the IEA has calculated that something of the order of $2.2 trillion needs to be spent on exploration and production (E&P) between now and 2030 if future oil demands are to be met.[3]

What we now observe is a strange dichotomy in views on where future oil and other commodity prices are headed. On the one hand, the oil companies and their traders see a return to a lower price while the "speculators" view a $40- to $50-per-barrel or higher price as being the norm. A recent poll on our web site, the Energy Hedge Fund Center (www.energyhedgefunds.com), illustrates the same dichotomy of views with two peaks of between $20 to $30 per barrel and $40 to $50 per barrel. In the fourth quarter of 2004, hedge funds and other speculators went long on oil prices and their gamble paid off in the form of good returns. They were right and the oil companies were wrong.

Once Bitten—Twice Shy?

Perhaps the oil companies have been caught wrong too many times in the past when price rises proved to be temporary spikes and are focused too much on the price collapses in 1986 and 1998. In those instances of price spikes, incremental monies spent on E&P resulted in diminished returns as the oil price reverted to levels that made new developments sub-economic. On the other hand, could it be that exploration is too much risk for oil companies to bear? After all, increased exploration activities and, therefore, risk have simply not been rewarded by analysts and Wall Street. Instead, Wall Street likes share buy-back programs and large dividends. In fact, in recent years, majors like BP, ExxonMobil, and others apparently have spent more on share buybacks and other programs designed to improve share price than they have on their E&P activities. The irony is that the oil industry has prided itself for decades on its risk-taking acumen. It seems today it is most influenced by accountants and economic models that usually are wrong since they look at the past not the future.

On the surface, the evidence seems to suggest that major oils, having been conditioned into a behavior set based on meeting or exceeding the expectations of Wall Street analysts in a prolonged regime of low oil prices, find it difficult to see and/or react to the sweeping and fundamental shift in markets we are witnessing now. Given the current supply/demand tightness (as opposed to supply shortages) and projections for increased demand in Asia and other markets such as the United States this summer (2005), any potential for supply disruption through industrial dispute, terrorism, or natural disaster is likely to have a serious impact on prices. The speculators see this clearly and are betting significant sums on it. In the meantime, if the majors delay too long in reevaluating their views of future oil prices, the situation will simply become worse.

Increased Potential for Acquisition Activities?

According to a Dundee University study, a $1-per-barrel increase in the price of oil translates into a 6-percent rise in earnings for major oil companies and with increasing oil prices, this ratio surely gets better for the majors.[4] Perhaps the easiest way for major oil companies to increase reserves in the short term is to acquire them in the ground via the acquisition of independents. However, even on this front, the oil firms seem to be lagging the speculators as investment banks already have been actively buying reserves in the ground. Morgan Stanley is reported to have purchased 24 million barrels of reserves for $775 million from Anadarko Petroleum over next four years and, in conjunction with Deutsche Bank, to have purchased equity North Sea production as well between 2007 and 2010, among others. Plainly, they see an opportunity for profit in their activities.

When we look to the future of oil supply, we assume that it is oil companies that have the expertise and know-how to find, develop, and exploit new reserves. In fact, we are relying on them to do so. Today, however, both the anecdotal evidence that we have collected and the published evidence suggest that the investment banks and hedge funds are ahead of the majors in terms of understanding that we have entered, almost unannounced, a new paradigm of oil supply and demand. From where we sit, the speculators have it right and, if the oil companies do not react and respond soon, then supply issues could take on even more importance in the coming years.

What Is a Hedge Fund?

"Hedge fund" is a general, non-legal term that was originally used to describe a type of private and unregistered investment pool that employed sophisticated hedging and arbitrage techniques to trade in the corporate equity markets. Hedge funds traditionally have been limited to sophisticated, wealthy investors (also called "high new worth individuals"). Over time, the activities of hedge funds broadened into other financial instruments and activities. The term "hedge fund" now refers not so much to hedging techniques, which hedge funds may or may not employ, as it does to their status as private and unregistered investment pools.

Hedge funds are similar to mutual funds in that they both are pooled investment vehicles that accept investors' money and generally invest it on a collective basis. Nonetheless, hedge funds differ significantly from mutual funds Historically, most hedge fund managers have not been required to register with the U.S. Securities and Exchange Commission (SEC) and, therefore, have not been subject to regular SEC oversight. However, in December 2004 the Commission issued a "final rule and rule amendments" that require certain hedge fund managers to register with the SEC by February 1, 2006 as investment advisors under the Investment Advisers Act.

Further, hedge funds are not subject to the numerous regulations that apply to mutual funds for the protection of investors, such as those requiring a certain degree of liquidity, the ability to redeem mutual fund shares at any time, the protection against conflicts of interest, assurance of fairness in the pricing of fund shares, disclosure regulations, the limitation in the use of leverage, etc. This freedom from regulation permits hedge funds to engage in leverage and other sophisticated investment techniques to a much greater extent than mutual funds. Although hedge funds are not subject to registration and all of the regulations that apply to mutual funds, hedge funds are subject to the anti-fraud provisions of the federal securities laws.

In the United States, hedge funds generally rely on Sections 3(c)(1) and 3(c)(7) of the Investment Company Act of 1940 to avoid registration and regulation as

investment companies. To avoid having to register the securities they offer with the Securities and Exchange Commission (SEC), hedge funds often rely on Section 4(2) and Rule 506 of Regulation D of the Securities Act of 1933. The recent SEC financial disclosure requirements are really light-handed regulation used to assuage public concerns over financial markets and have had little impact on hedge-fund investment.

Types of Funds

According to Eichengreen and Mathieson, there are really three major classes of funds: (1) macro funds that take large unidirectional positions based on a top-down analysis of macroeconomic and financial conditions; (2) global funds that take positions world-wide but employ bottom-up analysis; and (3) relative-value funds that take bets on the relative prices of closely related securities.[5] Funds also are classified according to their strategy: relative-value, event-driven, or "other" strategies.

The five types of **relative-value strategies** include the following. *The equity-market-neutral strategy* seeks to profit by exploiting price inefficiencies between related securities, neutralizing exposure to market risk by combining long and short positions. (2) *Convertible arbitrage* involves purchasing a portfolio of convertible securities and hedging a portion of the equity risks by selling short the underlying common stocks. (3) *Fixed-income arbitrage* is a market-neutral hedging strategy that seeks to profit by exploiting pricing inefficiencies between related fixed-income securities while neutralizing exposure to market rate risk. (4) The *fixed-income strategy* involves investment in non-investment grade debt. Objectives may range from high current income to acquisition of undervalued instruments. Emphasis is placed on assessing credit risks of the issuer. Some of the available high-yield instruments include extendible/reset securities, increasing rate notes, pay-in-kind securities, step-up coupon securities, split coupon securities, and usable bonds. (5) The *mortgage-backed fixed-income strategy* invests in mortgage-backed securities. Many funds focus on AAA-rated bonds.

Event-driven strategies include the following two strategies. (1) *Distressed-securities strategies* invest in, and may sell short, the securities of companies where the security's price has been impacted by a distressed situation, for example, reorganization, bankruptcy, distressed sales, and other corporate restructuring. (2) *Merger arbitrage* is sometimes called *risk arbitrage.* This strategy involves investment in event-driven situations such as leveraged buyouts, mergers, and hostile takeovers.

Among the **other strategies** are the following five approaches. (1) *Equity hedge* is comprised of long stock positions with short sales of stock or stock index

options/futures; it has a long market bias. (2) *Sector composite* involves investment in specific sectors, primarily long energy, financial, health-care/biotechnology, real-estate, and technology sectors. (3) The *emerging-markets strategy* invests in the securities of companies or the debt of developing or emerging countries; its investments are primarily long. (4) *Global macro strategies* involve leveraging investments on anticipated price movements of stock markets, interest rates, foreign exchange, and physical commodities. (5) *Short selling* involves the sale of a security not owned by the seller and is a technique used to take advantage of an anticipated price decline.

A Historical Perspective

This is not the first time that hedge funds have tried to enter the energy trading markets. In the late 1990s there was a concerted effort by the NYMEX to entice hedge funds to become more active in energy futures trading. That effort failed when only two hedge funds responded. It should be remembered that this was early in the cycle of hedge-fund activity and that energy always has been perceived by the financial world as a "step child" in that it is a much smaller financial market with its own commodity-related exposures and a very complex physical market. It was just not attractive to hedge funds at that time. They remained active in energy-stock equity trading and still are.

Around 2001, hedge funds were very active shorting both Enron and the merchant power-sector stock equities. They made massive amounts of money on the financial debacle that ensued. During 2003, they had money to put to work in energy but did not see the equity opportunity. The August 14, 2003, electricity blackout in the U.S. northeast brought more fund interest but no major investment as they still were interested in equity investment plays; moreover, there are few investment opportunities in power reliability and alternative energy.

Continued oil-market price volatility in 2004 and 2005 has been the catalyst for the hedge funds. Frankly, the daily news reports in all media of energy-market price volatility are driving the attention of funds to trade commodity energy. This has been the opening to the transformation of financial energy markets as the funds provide liquidity and exacerbate price volatility. Their presence has escalated intra-price volatility and increased trading volumes and open interest in oil futures contracts. They also became more active in North American gas futures trading in 2004. It is this movement to trading commodities that is now new.

The Hedge-Fund Factor: Is It Here to Stay?

Markets need speculation. Markets will adapt to more speculative trading. The funds look for liquid markets, like energy, and price uncertainty. Energy,

particularly oil trading, fits that bill. They are betting on long-term risk, and they have found it in the energy patch. Hedge funds, on the other hand, are finding that energy is only one place to put their money to work. But in reality, it is difficult to know how much hedge funds have contributed to previous market declines or how much they are fueling the rise in oil prices today (2005). What their impact really appears to be is an increase in intra-day price volatility and trading volumes. Some energy players expect hedge funds to try to push contracts outward.

One impact seems certain: the energy markets have become more volatile in recent months, traders and analysts say, as speculators and large institutional investors, frustrated by the lackluster equity and bond markets, turn to oil in search of richer returns. Their activity is helping to move crude prices faster and farther than market fundamentals would seem to warrant—and not always in the expected direction.

Both the unpredictability of price movements and the unexpectedly rapid 50-percent jump in oil prices during 2004 can be traced in part to major growth in trading activity in the oil markets. However, speculators do not set the price, although they do intensify price movements in either direction beyond what the fundamental factors normally would warrant. But to look at oil inventory levels, as many analysts still do, begs the question, which is that oil markets and, to a lesser degree, North American gas market prices are becoming more volatile due to the increased trading by the funds and the investment banks. From our current research, it is impossible to quantify how much of that capital went into energy trading but it has been substantially risk capital.

So What Determines Oil and Gas Prices?

Crude prices are currently a combination of market fundamentals and market psychology. Fundamental drivers within the crude market are a combination of the domestic and international. In general, domestic West Texas intermediate (WTI) crude prices are determined by (1) U.S. stocks of crude oil and petroleum variance from a five-year average; (2) OPEC production variance from quotas; (3) strategic petroleum reserve (SPR) variance from targets; (4) U.S. gross domestic product growth; (5) demand factors; (6) OPEC spare capacity (e.g., Saudi Arabia); (7) U.S. refinery capacity variance from the maximum; (8) the U.S. federal funds interest rate; (9) the U.S. dollar; and (10) hedge funds.

In addition to using fundamentals, hedge funds currently appear to be a good proxy for expected WTI crude prices due to a strong correlation between hedge-fund positions and price movements in the U.S. WTI crude markets. Because hedge funds have entered into the commodities market recently, they appear to be increasing daily price volatility. In other words, they are amplifying daily price

movements on both energy futures exchanges. However, arguments have been made recently using trading data that the hedge-fund activity in fact may in be reducing market volatility.[6] The jury is still out on hedge funds and volatility.

Although the correlation between crude and natural-gas prices may not remain constant in the long term, indicators suggest that gas prices will continue to be strongly correlated with WTI crude prices.

There are many bullish factors supporting elevated WTI prices, such as the constant threat of import supply disruptions and the general perception of world supply shortage. Moreover, hedge-fund interest in commodities with net long position is likely to increase. Among other factors are the extreme upside potential of equity market shifts to the commodities market, simultaneous work economy growth (especially China), and inventory levels that are expected to remain below historical norms although they have been building as of early 2005. Further, gasoline and sweet crude will likely remain tight (with a wide sweet-sour crude price spread) and growth in world oil supply will be in the medium sour category. The average sulfur content will be 1.1 percent to 1.2 percent, which will create problems for the United States as sulfur requirements are 0.5 percent for gasoline production under the Clean Air Act. Additionally, the Russian export program is marked by uncertainty. And finally, there is the continued lack of U.S. refinery capacity.

Given the number of bullish factors supporting a high WTI price and the current strong correlation with natural gas prices, it would not be surprising to see very bullish natural gas prices in the winter of 2004-2005. It will be important for all concerned with natural gas prices not only to understand and monitor gas fundamentals and psychology but also to be well versed in crude oil markets.

Turning to natural gas, its markets now are heavily influenced by many interrelated and global factors in the commodity and financial markets including coal, electric power, liquefied natural gas, crude oil, emissions, and hedge-fund markets as well as regulatory and public-policy influences. Yet, understanding natural gas markets means understanding not only fundamental drivers but cross-commodity relationships and prevailing market psychology as well. These additional factors can lead to seemingly counter-intuitive results.

Factors that normally would determine the direction of natural-gas prices no longer seem to have a significant impact. Almost every natural-gas price movement, either up or down, in the last few months of 2004 has been linked to corresponding moves in the WTI crude price.

Natural-gas spot prices as well as NYMEX future prices have been very difficult to rationalize based solely upon what would be considered "natural gas fundamentals." From a fundamental analysis perspective, this relationship

between natural gas and crude oil during summer months is less intuitive than during winter period, when there is competition between the two commodities for heating purposes. However, while there is no strong fundamental reason for crude prices to move natural-gas prices, crude oil and natural gas prices historically have been correlated at irregular intervals, and correlation has become today's market psychology. There are a number of factors intuitively that would support higher price levels for natural gas, including forecasts of declining production for 2004 and 2005, and a projected increase in demand.

Rebuilding the Energy Trading Markets

For many years, floor traders on the NYMEX have complained about hedge funds entering the energy markets. For the most part, they were wrong. Today, the funds have arrived. They are looking for greater returns on equity for their investors than the flat trading of stock market equities. The missing ingredient is the understanding of energy markets and its complexity. Funds like to "move money in and move money out," as one experienced energy trader commented for our research. However, what they are overlooking is that there are now fewer trading opportunities for that type of trading and secondly that there are greater risks in the market because they have arrived to trade. Another seasoned energy trader commented to the effect that "there is a billion-dollar fund with three traders; the oldest is 29 years old." The funds lack knowledge and experience in energy markets. Energy trading is the most volatile and complex of any commodities. As noted earlier, energy prices are driven by supply/demand fundamentals, technical trading, weather, events, geopolitical issues, and regulatory issues. Credit risk is still an important risk to manage since the energy industry has lower credit and more so since the downgrades in the utility sector. The funds have better credit and less knowledge although the credit issue is now rising among their counterparties as there are concerns about with whom the companies are trading. Moreover, they also appear to have a know-it-all attitude. These factors bode for more impending energy-trading disasters. While funds have lower costs of capital and lower overhead, the fear is that funds are financially unstable due to their very short-term perspective.

Hedge funds primarily are organized as private partnerships to provide maximum flexibility in constructing a portfolio. They can take both long and short positions, make concentrated investments, use leverage, use derivatives, and invest in many markets. This is in sharp contrast to mutual funds, which are highly regulated and do not have the same breadth of investment instruments at their disposal. In addition, most hedge-fund managers commit a portion of their wealth to the funds in order to align their interest with that of other investors.

Thus, the objectives of managers and investors are the same, and the nature of the relationship is one of true partnership. This differs from energy traders on the trading desks of banks or energy companies.

Traditionally, hedge funds traded the stock equities; however, in 2004 they have entered energy-commodity trading in a big way. The hedge funds are gambling that the energy complex will continue to exhibit price volatility as the stock markets have basically traded sideways for the past year. While many of the investment banks are now moving into the physical oil, gas, and electric power businesses, hedge funds generally stay out of the physical market, although this now starting to change.

This drive for greater profits in energy trading is altering as well the nature of taking risks. Banks are feeling more confident that they can place longer-term bets on which way oil and gas prices will go. For example, in the past power traders have felt comfortable going out only about 18 months in the future. However, the longer the contract, the greater the chance to earn revenues on a well-chosen trade when armed with sophisticated risk management and modeling systems that have been honed in the derivatives markets.

There are many positives in bringing in the larger financial players, because new participants bring more market liquidity to the table. Banks and funds not only have increased liquidity, in the banks' case they also have greatly improved the risk profile of the entire sector. Instead of trades being conducted by companies teetering on junk-level ratings, many deal counterparties are now highly rated financial institutions with large balance sheets.

As more banks and funds enter energy trading and try to push the envelope, it is unsurprising that many long-term players view the newcomers with suspicion, arguing that their presence is causing increased volatility. Because funds and banks have made highly leveraged bets that prices will stay at high levels, the argument is that something of an energy bubble has been created. So far, their strategy has appeared to pay off in the present bull market. However, we have seen this all before.

It is still early in this round of hedge-fund activity in energy as we see the following trading plays: (1) crude-oil futures on exchanges and OTC markets in the United States and Europe; (2) natural-gas futures and OTC markets in the United States; (3) heating oil (gas/oil) futures trading; (4) gasoline futures trading; (5) electricity trading; (6) coal trading; (7) distressed generation asset plays; (8) midstream oil and gas acquisitions; (9) emissions trading; (10) renewable energy trading; (11) water trading; and (12) weather derivatives.

Of all of these, crude oil dominates trading as it is the most liquid market. The funds have increased intraday trading and price volatility accordingly. They have no physical positions to cover so they are pure speculators. This has upset

some oil traders and refiners. Moreover, there are many small hedge funds that are being seeded by larger funds.

There are essentially two main types of funds entering energy trading: (a) the macro funds with assets under management often in excess of $2billion that now have a proportion of their funds in energy and (b) the energy-specific funds created to trade energy by ex-merchant energy traders. It is the former—the macro fund traders with black boxes and macro models—who are essentially clueless about the underlying complexity of energy. They follow market trends using black-box algorithms and, while so far many have done well in crude-oil futures markets, at least one took a bath by shorting the market.

Disturbingly, our research has revealed that there may be a good deal of ignorance and perhaps even some arrogance on the part of these well-capitalized yet relative neophytes new to energy trading. Energy trading and risk management form the most complex, volatile market in the world. Its prices are influenced by weather, geopolitical factors, supply/demand fundamentals, news, and other elements that cannot be quantified into simple black-box algorithms. Many of these funds are quite small and should have modest effects on energy-trading markets. There is no threat of systemic risk in energy trading from the funds.

Meanwhile, the energy specific funds, often a good deal smaller in terms of assets under management, frequently are founded and led by ex-energy traders. Our study has identified numerous such funds mostly set up in the recent past and, with new energy-specific funds being announced with increasing frequency, they represent an identifiable trend. In general, these funds are not limited to energy commodities markets but use their energy-industry knowledge to participate in physical markets and other energy commodities, including electric power and natural gas. In fact, one such fund seems to have made its investors around 20 percent in its first month of operation.

Plainly, the entrance of hedge funds is reigniting the energy-trading phenomena. By increasing liquidity through the introduction of additional risk capital and by improving the counterparty credit situation with strong balance sheets, the funds are providing the market some positives. Yet the lack of detailed physical energy knowledge and reliance on black-box models by some in the hedge-fund community, combined with the lack of visibility into their activities, ought to cause some unease and concern as well. The last thing the energy markets need is yet another speculative trading-led implosion.

Outlook

As 2005 opens, oil markets promise to continue to be both volatile and higher priced for the foreseeable future. Some of the factors causing this have been

described in this paper. However, it should be remembered that the key price driver is rapidly expanding demand fueled by the global economic recovery. The wild card is the extremely tenuous security situation in the Middle East that could cut off Iraqi oil and is likely to continue indefinitely. Furthermore, there is the possibility of political upheaval and supply disruptions in Saudi Arabia, Nigeria, and/or Venezuela as well as possible supply disruptions from Russia. We are not yet seeing much of an energy conservation effect due to higher prices as Chinese demand, coupled with U.S. gasoline demand, continues to soar. The prognosis is for higher and more volatile prices over the course of 2005 and possibly 2006.

Rising oil demand, geopolitical risk, hedge funds, low oil inventories, and price uncertainty will continue to fuel the markets. A supply disruption caused by terrorists cannot be ruled out and could raise prices to $100 per barrel in the short term, and $100-calls on oil have been written during March 2005. A significant terrorist act could undermine both economic growth and oil demand similar to post-September 11 impacts on global markets.

Global oil demand, while still robust, is starting to show signs of slowing relative to earlier in 2004 as economic growth slows primarily due to higher oil and other commodity prices. While the supply/demand fundamentals still underpin high oil prices in early 2005, speculative investment, primarily through hedge funds, is exaggerating prices to the upside. However, slower economic growth, particularly in the United States, could undermine higher prices as a "conservation effect" takes place. We have not seen that since 1979-1980 during the Iranian oil crisis.

Natural-Gas Trading

Natural-gas trading markets are emerging as global markets and are influenced by coal, power, liquefied natural gas, emissions, crude oil, fuel oil, and regulatory factors as well as by hedge funds. Although hedge funds are only one element of many, they can influence daily price movements in North America.

Many of the funds do not just trade in energy commodity future contracts but also in over-the-counter oil contracts or commodity index funds that are offered by the funds or large investment banks. When the bank or trader places this kind of financial risk on an exchange, regulators in the United States classify them as "commercial" volumes as opposed classifying them in the "noncommercial" category of big money funds.

Energy versus Equities

It is important to put the scale of the energy markets in perspective to the funds. It has been estimated that the value of all outstanding NYMEX contracts

is equal to one one-thousandth of the U.S. equities market. There is tremendous opportunity for growth in this area, not only in commodity markets but also in energy equity markets. Some hedge funds are trying to arbitrage this play between the commodity and energy equity prices.

Power-Trading Opportunities

Following the development of independent system operators or ISO, electric-power trading is essentially a physical power market with a small electricity derivatives market. The fact is that very few traders can handle 3,000-percent to 4,000-percent price volatility. This has made financial power trading both a short-term market and one requiring a physical presence. Having said that, some hedge funds are now entering financial power trading in 2005. They will probably fail.

The Future of Energy Trading

In 2005, the second round of energy hedge funds entering and expanding their participation in the energy complex has begun. Besides trading oil, gas, power, and coal as commodities, they now trade sulfur dioxide, nitrogen oxide, and carbon dioxide emissions as well as renewable energy credits. They are buying distressed generation assets, oil and gas reserves in the ground, and energy debt. They are trading weather derivatives. And most recently, there are several hedge funds ready to trade long-dated water rights in the western United States. The greatest bull market in natural resources now under way is sustainable due to relatively low energy prices in real dollars, globalization of markets, and higher and sustained price volatility. Already, several energy and natural resource funds of funds have entered the markets (these are hedge funds that invest in other hedge funds). Usually, they wait for several years of market maturation and performance records before they invest. However, in the energy sector, the old rule book is thrown out. In 2005 and next year, we will see a piling on of energy hedge funds entering this sector with the attendant great returns. But the fact is that energy trading has changed forever as the markets now move into more mature financial markets. Hedge funds add to that financial sophistication.

NOTES

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