

# Why “Peak Oil” Will Never Lead To \$500/bbl Crude Oil

By Erik Townsend · May 3, 2010

## ***Executive Summary***

- Although there’s more than 100 years’ supply of crude oil left in the ground, the resources that are “cheap and easy” to extract have for the most part already been discovered.
- By 2012 the decline of production output from *conventional sources* coupled with much higher extraction cost of unconventional sources will lead to *peak cheap oil*, a phenomenon that will put extreme upward pressure on oil prices.
- To a limited extent, a strong case exists for speculation on a moderate increase in petroleum prices.
- Those who anticipate extraordinarily high prices (upwards of \$300/bbl) have failed to consider what George Soros calls *reflexivity*. The global economy simply cannot afford such prices, and the rules will be changed before they are reached.
- The future is likely to bring price controls, government intervention in the petroleum supply chain, and nationalization of oil resources.
- The oil industry will face many unanticipated challenges during this period, capping the price appreciation potential of both commodity and equity plays in the oil industry.
- Wise investors will focus on the initial price run-up expected to occur before large-scale government intervention ensues.

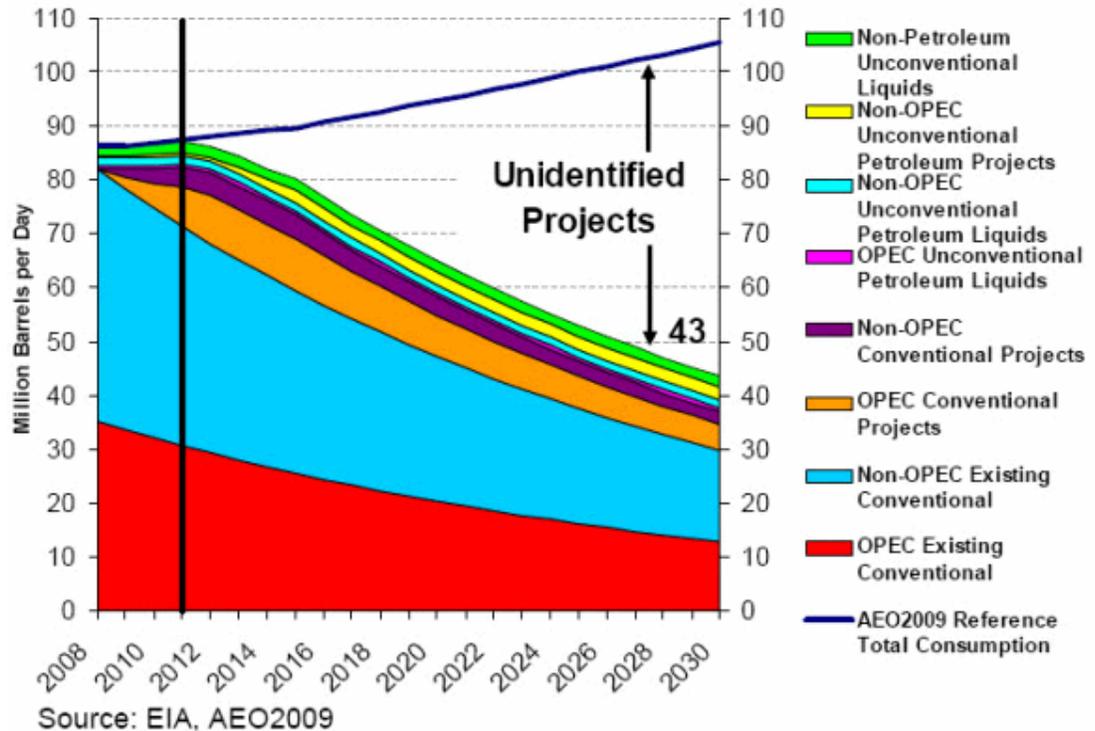
## ***Background***

If you’re an investor and you haven’t yet learned about *Peak Oil*, you need to drop what you’re doing and go find out all about it. The implications of Peak Oil are far wider reaching than the energy sector. Peak Oil is a macroeconomic story that will dramatically affect virtually all investments in the coming decade. This article is intended for those already familiar with the Peak Oil prognosis, and focuses on why I think a lot of investors are making faulty predictions about what Peak Oil will mean for future oil prices. If you’re not already up to speed on the background material, here are some resources to start with:

- The very best basic introduction to the concepts of Peak Oil that I know of is [this free video](#) from Dr. Chris Martenson’s *Crash Course*.
- From there, read Eric Janszen’s excellent articles on the subject, paying particular attention to the distinction Janszen draws between *Peak Oil* and *Peak Cheap Oil*. Some of Janszen’s articles are free while others require a subscription to his web site. Start with [this free article](#) to get a taste of Janszen’s perspective.

I find it very interesting that Peak Oil has recently begun to get a lot more mainstream attention. Previously, despite overwhelming evidence, Peak Oil was considered a “fringe idea” and not taken particularly seriously by the mainstream investment community. Suddenly the tide seems to have changed. For example:

- Puru Saxena’s [recent interview on CNBC](#) was a milestone in my mind. Although Mr. Saxena didn’t say anything that came as any great surprise to the Peak Oil-aware community, the fact that this interview was aired on a mainstream financial station tells me we’re approaching a tipping point of Peak Oil awareness.
- The United States military recently [released a report](#) predicting “massive shortages by 2015” as a result of a decline in conventional oil production.
- This shocking chart from the U.S. DoE says it all:



This chart isn’t from some radical left-wing fringe blog site. It’s from the United States Government. Conspicuously absent is any mention of where these “Unidentified Projects” are going to come from. The deepwater well that was being drilled by the recently-sunk *Deepwater Horizon* rig in the Gulf of Mexico would appear to be off the table, and the ensuing ecological disaster is likely to encumber the viability of similar projects in the future.

If you’ve done your homework on Peak Oil and Janszen’s Peak *Cheap* Oil distinction, you should have come to the following conclusions:

- Societal complexity is a function of excess energy availability
- Continued global economic growth is possible only if affordable energy is available
- Alternative energy sources (wind, solar, nuclear, geothermal) will be important. However, the world’s existing systems and equipment are highly dependent on oil. Any plan to eliminate dependency on products derived from crude oil will take decades to implement fully.

- The world isn't running out of oil. There's at least 100 years' supply still in the ground
- However, the "cheap and easy to extract" oil has, for the most part, already been found
- Existing "cheap and easy" oil resources will or have peaked, and will be in decline by 2012
- Declining production from existing resources must be replaced by much more complex and expensive sources, such as deepwater offshore oil fields, tar sands, and oil shale.
- Regardless of supply-demand forces that determine end user price, *cost of production* of crude oil will increase considerably as "easy oil" sources are depleted

If these conclusions don't yet make sense to you, I encourage you to follow the links above and learn the basics of Peak Oil theory from the suggested sources before proceeding. Once you have this background information under your belt, you should understand why modern society simply cannot function, and why economic growth on a global scale cannot continue, unless petroleum products are available. Although alternative energy sources will be very important, the world's existing infrastructure (transportation in particular) will remain dependent on oil for a very long time. This leads many speculators to forecasts about the future price of crude oil that I think are flawed for several reasons. I'll first review the argument for extraordinarily high crude oil prices and a super-profitable oil and gas industry, and then I'll argue my case for why I believe these scenarios to be improbable if not impossible.

### ***The \$500/bbl Crude Oil Argument***

I've heard interviews and read articles by a variety of pundits who are forecasting an escalation of crude oil prices in the next five years to \$300, \$400, or even \$500-\$1000 per barrel accompanied by a wildly profitable oil and gas industry. These commentators believe oil companies will be able to expand their profit margins with the disappearance of the historical crude oil supply glut that existed before the peak of "cheap and easy" oil production. I disagree with many of their conclusions, but let's begin by first understanding their argument.

### **The world runs on oil and can't easily change**

The world literally runs on the products produced from crude oil, including gasoline, diesel fuel, home heating oil, and petrochemicals used to produce most plastics. This problem has been understood for decades, but little has been done until very recently to seriously explore alternative energy sources. Recent investments in wind, solar and geothermal energy sources are very important to be sure. But for many applications, particularly transportation, there's just no good alternative to liquid fuels. There are no battery-powered jet airliners, because the technology to build them simply doesn't exist. For short-haul applications like passenger cars, there are viable alternatives to gasoline and diesel. Perhaps the best alternative is natural gas powered vehicles, which are already in limited use. But natural gas is a product of conventional oil production and it too is subject to the peak cheap oil phenomenon. The recent discovery of a large natural gas reserve in North America provides some relief, but in the end, natural gas - just like crude oil, will suffer from the peak production curve phenomenon. For longer-haul applications such as cargo ships, there is no known

practical alternative to liquid fuels except for an onboard nuclear reactor, which most people assume will never be viable for anything other than military ships.

### **Electricity and Hydrogen are *not* alternative fuels**

Electricity and hydrogen are widely misunderstood with regard to their use as “fuels”. In many ways, both of these energy forms will be important. Electric vehicles are already in limited use and will grow in popularity with the advent of peak cheap oil. But electricity and hydrogen are not fuel *sources*. There are no electricity mines or hydrogen wells. The electricity or hydrogen must be *produced* from another energy source. Most electricity is generated from burning coal, which is also in limited supply. Hydrogen production requires electricity. Converting everything to nuclear power generation is a meaningful alternative, but would take decades to implement on a large scale. Wind and solar are promising, but here again a complete replacement of oil, gas and coal-burning systems with alternative-powered systems would take decades. Peak cheap oil will be upon us long before significant progress along those lines could be made.

### **Supply-demand curves from heaven**

For the reasons cited above, prognosticators of \$500 crude oil reason that this is a classic supply and demand problem, where supply destruction is inevitable due to peak cheap oil. In classical supply-demand analysis, demand destruction normally occurs when prices rise and consumers turn to alternative products, so large price dislocations are therefore relatively rare. The \$500/bbl oil pundits reasonably argue that this is a very special situation: Demand destruction in reaction to rising prices will be limited by the absolutely essential role that transportation plays in the global economy. You can't have a global economy without airplanes, ships and trucks. Running trucks on alternative fuel sources is a real challenge, and running ships and airplanes on those sources is not possible with current technology. The \$500 crude oil pundits argue that there will be no choice but to pay the going price for liquid fuel products. As soon as all present sources of crude oil are running at full capacity and new sources involve extraction costs several times higher than the conventional sources, prices are certain to rise dramatically, they argue.

### **What Peak Oil experts tell us to expect**

Most peak cheap oil investment prognostications I've heard go about the same way: Expect airline transportation to once again be the purview of the rich, and for the masses to rely on slower but more efficient rail and bus transport for long trips. Expect the prices of imported goods to increase considerably, and therefore assume that the global economy will go back to preferring locally produced products and raw materials. Everything that requires long-haul transportation will get more expensive, and therefore the globalization trend (in terms of physical goods) will reverse. Urbanization will increase as commuting long distances in private passenger cars becomes cost-prohibitive, and communities that thrived on offering luxury homes an hour's drive away from centers of employment will decline. People will be forced to make due with less, particularly with regard to products imported from afar. Economies will become more localized, and the United States will be forced to rebuild its manufacturing capacity, as wholesale reliance on imported goods becomes uneconomic.

## **Some say it already happened**

Some commentators believe that we actually saw the beginning of a dramatic peak cheap oil price shock in 2008, when crude oil prices ran all the way up to \$147/bbl. They dismiss the popular argument that excess speculation by hedge funds caused the run-up, and argue that it was actually the world's first taste of a peak cheap oil shock. They contend that if not for the demand destruction that resulted from the global economic crash that ensued from the U.S. housing and credit bubble collapse, crude prices might have quickly doubled again to \$300 or more by the end of 2008. They tell us that another such a price shock is imminent and will occur as soon as the world economy recovers from the credit crisis.

## **Common conclusions: Higher oil prices, more profitable oil companies**

The arguments presented above suggest that a dramatic increase in crude oil prices is on the horizon, and some say the sky is the limit. Some pundits go on to contend that the story gets even better on the equity side of energy investing. Historically, the supply of crude oil (from which virtually all liquid fuels are produced) has been limited only by the intentional actions of organizations like OPEC, which sought to artificially constrain supply in order to boost price. Relatively cheap and plentiful crude oil led to fierce competition in the downstream business of refining finished products like gasoline and diesel fuel. The U.S. oil industry has been criticized for over-building high-tech refinery capacity that is more efficient than its low-tech competitors, but not so much as to justify the enormous capital investments that have been made. As peak cheap oil is realized, higher scarcity and expense of crude oil will mean that refining efficiency has much higher economic value.

Most refineries in the world use a fairly low-tech distillation process to produce gasoline, diesel and other "distillates" from crude oil. Furthermore, they are only set up to process the easiest-to-refine variety of crude oil, which is known as *light sweet*, referring to its low specific gravity and sulfur content. Only relatively few high-tech refineries have the ability to process *heavy sour* crude, which may be the only kind plentifully available in future years. They also have sophisticated *cracking equipment* that makes it possible to produce a more favorable ratio of high-value products from a given volume of source product. Simply put, this means the high-tech refineries in the United States can make more gallons of expensive diesel and gasoline from a single barrel of crude oil than the low-tech refineries elsewhere can.

Taking stock of all this, it might seem like there's a sure bet on long-dated, deep out-of-the-money calls on oil futures and the shares of companies that operate the high-tech refineries that are more versatile and efficient in their processes, expecting a windfall as peak cheap oil hits and the world is forced to change its ways. But before calling your broker, please read on as I describe the reasons I don't think things are quite so simple. There will be an opportunity to ride oil futures up from present levels, but not all the way to \$500.

## ***Why it's really much worse than they think***

My primary contention is that the peak cheap oil problem is actually far worse than even most experts have come to realize. The realization of peak cheap oil will not simply involve a classical economic reaction to a changing supply-demand balance.

Rather, I anticipate a fundamental *game changing* event that will involve re-writing the rules of the game in ways that are likely to undermine the investment prognostications and strategies that have been outlined in the preceding section. This is what George Soros calls *reflexivity*. The key is not to simply apply the existing rules of the game to anticipated outcomes, but rather to contemplate how expected outcomes will ultimately change the rules of the game.

### **Oil is even more critical to the economy than most people realize**

Most people fail to comprehend the full implications of affordable energy on the world economy. Gasoline prices are the most visible symptom of the problem, but are far from the most important aspect of peak cheap oil. The global economy is dependent on cost-effective worldwide transportation of products. The United States in particular is extremely dependent on inexpensive goods imported from China and other Asian countries. A sudden dramatic rise in prices of all those goods would cripple an already-struggling economy. But the problem is much more far-reaching than that. Many of the things we take for granted would never be possible without abundant and relatively inexpensive energy. Skyscrapers and other large construction projects would not be economically viable without abundant energy to operate excavators, cranes, and construction tools. Many areas thought to have been unsuitable for habitation before the advent of modern air conditioning and refrigeration are now major population centers. Old fashioned supply chains involving warehouses and long-term stores of inventory have been entirely replaced with just-in-time delivery systems that are highly dependent on fast and reliable long-distance transportation. In the United States particularly, millions of people are dependent on employment 50 or more miles from their homes. Energy is a component cost of virtually all products. If energy costs were to increase dramatically, so would the cost of all other items. In short, the world simply cannot continue to function in the manner we associate with “modern times” unless energy continues to be available *at affordable prices*.

### **Peak cheap oil will become a national security issue**

My advice to investors dreaming of windfall profits from \$500/barrel crude oil futures would be this: Pretend it's 1940 and you have a magic crystal ball that tells you in advance that the United States will be drawn into World War II. You might start to speculate that by investing in rubber, airplane parts, materials needed to make bombs, and so forth you'll make a killing. Those products will become so important and so valuable that you might presume you'll be able to name your price and demand any amount you like for them. But of course you'd have been mistaken. World War II wasn't a routine macroeconomic event. ***It was a game changer.*** Laws were re-written, often retroactively. A state of national emergency was declared and people in possession of materials essential to the war effort were *ordered* to hand them over as price controls were implemented to thwart profiteering from speculation on the supply needs of the war effort. I predict that the onset of Peak Cheap Oil will eventually be met with a similar re-write of the rules of the game. We're not just talking about an “investment theme”. We're talking about a threat to the viability of the entire global economic system, and we should expect governments to intervene in previously free markets in the name of national security. *I contend that any Peak Cheap Oil investment strategy that fails to consider government intervention scenarios is flawed and likely to underperform.* That's not to say that there's no money to be made from

an early awareness of peak cheap oil. But it will be a complex puzzle and those with high-level connections in government will have an upper hand over other investors.

Perhaps you think my assertions that governments will eventually intervene in the free market system are far-fetched? If so, I'd encourage you ask yourself this question: What if governments had actually been planning for years to intervene exactly as I've described? Sound preposterous? Before you answer, consider this quote from a speech former Vice President Dick Cheney gave to an oil industry group while he was still campaigning for office more than a full decade ago, back in September of 1999:

*“By some estimates there will be an average of two per cent annual growth in global oil demand over the years ahead along with conservatively a three per cent natural decline in production from existing reserves. That means by 2010 we will need on the order of an additional fifty million barrels a day. So where is the oil going to come from? Governments and the national oil companies are obviously controlling about ninety per cent of the assets. **Oil remains fundamentally a government business.**”*

([Source](#))

Clearly, Dick Cheney understood the looming threat of peak cheap oil a full decade ago, and he made it resoundingly clear that he considers it the government's business to manage the problem. I strongly disagree with Mr. Cheney's politics, but his words should make it crystal clear to investors that the government will involve itself in this matter. Some believe the entire reason the United States has pursued war with Iraq under dubious pretenses of connections to Al Qaeda and non-existent WMDs is precisely because Mr. Cheney understands so well just how critical the problem of peak cheap oil will be to the U.S. I humbly suggest that if invading sovereign nations is on the table, investors should consider what else might be on the table that could derail their peak cheap oil speculation strategies.

### **“Curve Balls” Peak Cheap Oil speculators should anticipate**

In my opinion, a peak cheap oil investment thesis must contemplate several potential eventualities. Let's explore but a few of them.

#### **Price Controls**

In the short to intermediate term, I share the view that crude oil prices are headed higher. But not as much higher as many have speculated. The \$150 level tested briefly in 2008 put an enormous strain on the economy. A number of economists believe that the brief oil price shock of early 2008 may have had as much causal effect on the great recession as the subprime housing debacle. I think another run-up to \$150 or maybe even \$200/bbl is entirely possible in the course of the next two to three years. But the economy can't function – and certainly cannot recover from an already deep recession – in the face of \$300+ crude oil. For that reason, I expect government intervention of some kind to occur before prices get much above \$200/bbl. I do expect high inflation to be part of our future, so perhaps \$500/bbl is possible in nominal terms. But in 2010 dollars, I don't think the economy could ever support prices anywhere near that high. The fundamentals are certainly in place for an escalation to such levels, but I anticipate government intervention long before such a level is reached.

Price controls have proven over and over again to lead to certain disaster, manifested primarily in the form of shortages and rationing. Readers old enough to remember waiting hours in line for gasoline from one of the few stations that had any to sell back in the early 1970s know this all too well. But unfortunately, just as price controls have proven ineffective, governments have proven over and over that they seldom learn from their past mistakes. I think that an entirely likely scenario would involve a government-dictated fixed price for crude oil imports.

### **Oil resource nationalizations and war casualty costs**

There's good reason to assume nations with "cheap and easy" oil resources will seek to nationalize them. The oil industry has a long history of nationalization (that's a euphemism for theft by expropriation of privately owned assets in a given country). International oil companies have invested billions building oil rigs in foreign countries. In theory, the rights of these private enterprises to operate those assets under pre-agreed terms are protected by signed contracts. But signed contracts aren't worth much when your counter-party is the government of the nation in question, which has the ability to pass new laws both voiding your existing contract and having your personnel executed if they resist in any way. Thus, there are only two real reasons that foreign countries allow oil companies to operate in their nation rather than just expropriating the privately owned rigs. The first reason is that they need to cultivate an ongoing relationship with the oil companies in order to drill the *next well* and to build the *next rig* that will produce revenue for the country. But when they figure out that the rigs already in place will be the last of their kind because all the conventional oil fields have been exploited, this reason becomes moot. The second reason is that military force may be used to thwart such expropriations of private property. That might solve the problem, but it also leads to significant financial loss when the oil rigs themselves are proximal to the fighting or become the targets of sabotage by either side in the conflict.

The whole point here is that the prognostication that oil companies will have an easy ride through the times that are coming is badly flawed. It may well be true that oil companies with the right senior level connections in government will have their assets and profits protected by military action in reaction to a nationalization attempt by a foreign government. But by the same token, other oil companies who are less well-connected but are direct competitors of the well-connected just might find that their rig was the one that was "necessarily sacrificed" in a military conflict, making the company the target of a distressed takeover by the better-connected competitor.

My conclusion is that there will be both extraordinary profits realized and extraordinary losses suffered by equity investors in oil companies during the peak cheap oil era. Stock picking takes on a whole new meaning under such circumstances, and so I'll leave the equity plays to those better equipped than myself to understand the power game and which companies have the most political capital. Those with an insider's view of the politics and policy decisions involved will make a killing.

### **Market force vs. Military force**

One of the strongest arguments made by Peak Oil speculators is that prices will rise in large part because emerging economies (particularly China) are industrializing, radically growing their vehicle fleets, and generally likely to create enormous new

demand for decades to come. On its face, this is a sound and well-reasoned argument and the fundamentals in those countries strongly support this conclusion. But this argument assumes that oil prices will continue to be set by a free-market supply and demand system. I think that a dangerous assumption.

I'm convinced that as Peak Cheap Oil arrives, a series of peak oil price shocks will cripple developed economies, including the United States. If and when rising energy prices due to peak cheap oil begin to impose a markedly lowered standard of living in the United States, I fear that this will become the justification for further American imperialism. I can easily envision Dick Cheney returning to politics, campaigning on a "take the gloves off" platform, and proposing to simply tell the middle east that their choices are to either sell the United States all the oil it wants for (say) \$85 per barrel, or be annexed by military force. At present the American public would not support such an imperialistic policy, but sadly, history has shown that any time a developed, comfortable society is faced with the threat of losing its way of life and standard of living, the rules change and the previously unthinkable becomes acceptable. The last fellow to use this phenomenon as the center of his political strategy was wildly successful in convincing his people that previously unacceptable things were now somehow "necessary". His name was Adolph Hitler. And make no mistake; peak cheap oil will create an economic challenge for the United States very similar to the one that Germany faced at the time of Hitler's rise to power.

### **Punishing those evil speculators**

A recent trend in politics seems to be to scapegoat "speculators" for the policy mistakes of government. When the United States' staggering national debt and unfunded liabilities finally bring on the greatest sovereign debt fiasco the world has ever seen, there's no doubt in my mind that when treasury bond markets collapse, "speculators" will be assigned the blame. There's no reason to assume Peak Cheap Oil will be much different. Investors should be acutely aware that if they make large windfall profits in a short period of time, there will likely be pressure to claw back or retroactively tax those profits in the name of the common good. No amount well-reasoned argument that the investor put capital at risk for an extended period in order to eventually reap that reward will even be given due consideration. As the economy is crashing harder and deeper than it did in 2008, the government will need a scapegoat and the peak cheap oil speculator is a likely target. Investors should consider the possibility of profits from speculation on crude oil futures being confiscated.

### ***Forming an Investment Strategy***

The "curve ball" scenarios discussed above are presented to encourage you to think about a broad array of possibilities. This is not a complete list and I have no idea whether these particular scenarios will ever come into play. The point is that peak cheap oil is going to be a big deal for the world – possibly dwarfing the Cold War as the biggest international diplomacy challenge the world has ever seen. I humbly suggest that viewing the investment opportunity in the narrow context of supply-demand economics is naïve. Nobody can possibly predict how this will go, but it's certain to be a complex potpourri of politics, diplomacy, and economics, not to mention unknown advancements in oil exploration and production technology.

From all this, my conclusion is that the clearest and most opportune speculative investment plays will come early in the cycle. As “cheap and easy” resources go into cumulative decline by 2012, there will be price escalation and probably dramatic price shocks. During this period, speculating on crude oil futures seems a ripe opportunity, since government market intervention is relatively less likely in the near term. I’m not as comfortable with equity plays on oil companies, because I think they’re much more susceptible to reality catching up with the presently delusional equity markets. The biggest potential price shocks will come later, when the realities of Peak Oil’s implications are fully understood and the world realizes there are few alternatives for new supply creation. The few alternatives available (such as tar sands and shale) involve a relatively low EROEI and very high production costs, so the magnitude of the market reaction could be extreme. But they’ll likely be so extreme as to provoke government intervention, price controls, or even nationalization of the entire oil industry as a matter of national security.

I conclude that the key question in forming a speculative investment strategy is, *At what price level does government intervention become a significant risk?* I’m inclined to focus the investment strategy on deriving the maximum possible profit from the rise from present price levels to that figure. Presumably the number is at least \$147, which the market already tolerated once. But I don’t think it’s a whole lot higher than that. Perhaps \$200. There’s theoretically a much larger profit to be had beyond that, but I just can’t see it happening without governments stepping in and changing the rules. I’d rather lever up more profit in the \$100 - \$200 price target window using spreads to trade off the potential for even greater profit beyond \$200 in exchange for more leverage on the rise up to \$200.

Finally, I want to emphasize that any long play on crude oil futures – particularly a leveraged one – needs an economic hedge. Equity markets are presently delusional, pricing in a robust “economic recovery” when none really exists. Everyone is excited about improvements in personal consumption expenditures. Sadly, very few analysts bother to check the facts and notice that rapidly declining state sales tax receipts strongly refute the commonly accepted “wisdom” that consumers are spending again. Momentum indicators suggest that the false rally in equities has room to go much further, which means that when reality eventually sinks in, the correction will be that much deeper and more abrupt. America is not presently facing reality with respect to its economic condition. When America’s economic reality is eventually recognized, a major equity correction will occur and crude oil prices are certain to correct as well. What remains to be seen is how far long-dated oil futures correct. I expect a repeat of 2008, where near-term contracts collapse but contango blows out as long-dated contracts suffer a relatively smaller correction. For nearly a year, I had waited to enter my speculative long-term peak cheap oil trade, believing that the buying opportunity would come when economic reality set in. But the world is slowly waking up to the reality of peak cheap oil, and has been slow to come to terms with America’s economic reality. I now spend most of my time designing the optimal peak cheap oil trade – one which immediately gains long exposure to oil futures in what I call the *early crisis window*, of 2012-2014, while hedging the likely downside risk that oil prices will go way down before they go way up. That can be accomplished in several ways, including calendar spreads on oil futures and use of an economic hedge such as an equity short to balance long exposure to crude oil futures in the crisis window.

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**Erik Townsend** is a private investor based in Hong Kong.

Full disclosure: Long crude oil futures and call spreads on crude oil futures

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