

ENERGY IS IN A SLUMP – BUT CAN IT RECOVER?

The energy sector, with its history of ups and downs, is now in its deepest slump since the 1990s. Earnings are down for energy companies that were making record profits in recent years, leading them to decommission rigs and make sharp cuts to exploration and production investment. This has been driven by a marked decline in the price of oil.


“First rule of oil – addicts never tell the truth to their pushers. We are the addicts, the oil producers are the pushers.”

— Thomas Friedman, journalist, author and three-time Pulitzer Prize winner.

KEY POINTS

- > Our analysts agree that it has been supply not demand that has been driving energy prices down.
- > For a medium-to long-term time horizon, physical or geological constraints should put upward pressure on the real price of oil, although technological advances could slow the increase.
- > The decline in oil and gas prices is likely to support global growth and reduce global inflation over the medium-term.
- > There is a risk that the decline in energy revenues may lead to sovereign wealth funds selling assets to fund potential fiscal deficits.
- > In the depressed oil price environment, Master Limited Partnerships stock prices have decreased significantly.
- > From a fixed income perspective, the contagion risk from depressed energy prices has already played out.
- > In order to survive during the next few years, Australia's east coast gas energy producers will have to bring down their operating costs and capital expenditure.
- > Goals-based strategies need to be carefully designed to offset the negative impact of a price decline.

INSIGHTS.IDEAS.RESULTS.



Following a period of relative stability at around US\$105 per barrel (2010 through to mid-2014), oil prices have declined sharply since June 2014 and are expected to remain low for a considerable period of time. While we have seen some improvement in oil prices since the lows recorded at the start of 2016, the general weakness in prices represents the end of the commodity supercycle that began in the early 2000s.

In this paper, we assess the market implications of falling energy prices from multiple perspectives. The oil price shocks of the 1970s serve to remind us of the potential impact that energy prices can have on economies and markets. While the global economy is no longer as sensitive to oil prices, investors designing portfolios to fund consumption goals in the future do still need to pay close attention to the energy price sensitivities of their strategies.

SUPPLY GLUT: A DRIVING FORCE FOR PLUNGING OIL PRICES

At around US\$52 a barrel (as at 12 October 2016), Brent crude oil prices are down more than 50% from their levels two years ago – see figure 1. Our analysts agree that it has been supply not demand that has been driving energy prices down. The shale boom in the US saw a surge in production in recent years while major producers like Saudi Arabia have also dramatically increased their supply of oil. We expect that it will take a while to work through the excess in supply.

On the demand side, there are so many new technologies, especially when it comes to automobiles (such as fuel-cell motor technology or electric cars), which have reduced the growth rate of oil consumption and had a dramatic impact on the oil market.

According to Jonathan Reyes, AMP Capital Portfolio Manager and Analyst – Listed Infrastructure, the regular demand response hasn't played out in the market. He observes that typically, when oil prices decline more than 50%, there is an implied demand response for price elasticity. Surprisingly, this hasn't shown up in this cycle; demand hasn't increased as much as you'd expect from a price decline.

Figure 1: Oversupply has seen the price of oil plunge



Source: Bloomberg, AMP Capital, as at 12 October 2016

The regular demand
response hasn't played
out in the market.

SPOTLIGHT ON US SHALE OIL: EXPECT A GRADUAL CORRECTION IN SUPPLY AS THE LOW AND VOLATILE PRICES PERSIST OVER THE MEDIUM-TERM



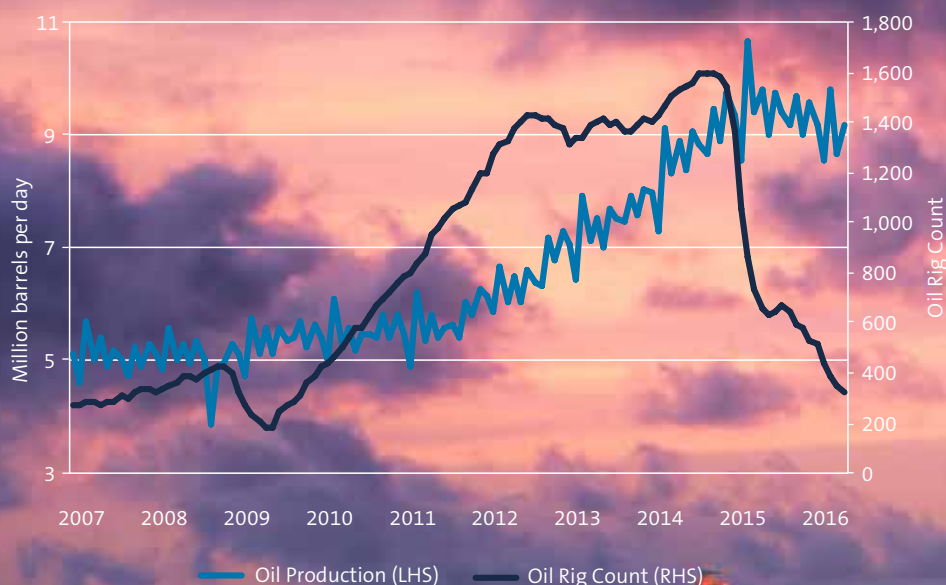
In the US, domestic stockpiles are more than 500 million barrels – the highest in decades – and operational capacity is effectively full; storage

is very tight with nowhere to put incremental barrels. This has seen production finally start to come down from the early-2015 peak of 9.08 million barrels per day.

Figure 2 shows that rig counts in the US (a rough measure of capacity of shale oil) dropped to 1,223 by end-January 2015 from a high of 1,609 in October 2014.

Oil production is now down around 7% from the early-2015 peak. Despite increased technological advancements, volumes will be affected with the decrease in drilling activity. The shale oil industry in the US will need to adjust to lower prices, as most of the underlying factors point to lower oil prices persisting over the medium-term, with considerable volatility in global oil markets.

Figure 2: US oil production and rig counts



Source: Baker Hughes/EIA as at 15 May 2016



THE OUTLOOK FOR ENERGY PRICES REMAINS UNCERTAIN

In 2000, Sheikh Yamani, who was Saudi Arabia's oil minister from 1962 to 1986, pre-empted a major decline in the price of crude oil, citing oil discoveries, the advance of new technology, and heavy investment in exploration and production as leading drivers for a collapse.

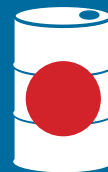
Commodity prices, including oil and LNG, are highly volatile making forecasting difficult. For oil, the unpredictability is exacerbated by the risk of geopolitical tensions and a sudden change in expectations regarding the Organisation of the Petroleum Exporting Countries (OPEC)'s policy objectives. Over a medium to long-term time horizon, physical or geological constraints should put upward pressure on the real price of oil although **technological advances** could slow the increase. Sharply diverging judgments on recoverable reserves and on the future price elasticity on energy demand and supply mean price forecasts are likely to be subject to wide error bands.

“30 years from now there will be a huge amount of oil – and no buyers. Oil will be left in the ground. The stone age came to an end, not because we had a lack of stones, and the oil age will come to an end not because we have a lack of oil.”

– Sheikh Yamani,
Minister of Petroleum
and Mineral Resources,
The Telegraph, 25 June 2000

IMPLICATIONS OF THE GREAT ENERGY PLUNGE: GLOBAL INSIGHTS FROM ACROSS AMP CAPITAL

According to our investment strategy and economics team, the decline in oil and gas prices is likely to support global growth and reduce global inflation over the medium-term. Past episodes of significant energy price declines have often been associated with a weak global economy and followed a sharp reduction in inflation. This will likely pose monetary policy challenges in countries with already uncomfortable low inflation such as Japan. In this section, we present a range of perspectives on what low and volatile energy prices mean for investment markets across our key global capabilities.



THE BOOST TO JAPAN'S GDP MAY BE SMALLER THAN OTHER IMPORTERS

Typically, oil importing countries benefit from low oil prices as consumers have more available money to spend on other goods and services.

According to Warren Potter, AMP Capital Senior Portfolio Manager in the Fixed Income team based in New Zealand, the boost to Japan's real GDP will not be as large as some other oil importers because:

- > **Energy-efficiency is high:** Japan consumes only a small volume of oil relative to the size of the economy.
- > **Oil product prices (e.g. petrol) are not highly sensitive to the price of crude oil:** Unlike some other economies, crude oil prices are not a key driver for oil product prices in Japan. Taxes and refining/transportation costs are more important. This means that the boost to the consumer from lower crude oil prices is more limited.
- > **Trading activity has slowed:** The Japanese economy is more negatively impacted by sluggish global growth and the resulting slowdown in trading partner activity offsets the stimulatory effect of a lower oil price.

While the overall boost to GDP may be more modest, there will still be benefits at the microeconomic level. Manufacturing businesses will likely see a boost to operating profits, which are estimated to be around 25%. The industries most positively impacted by weaker oil prices are chemical, transportation and automobile manufacturing.

Interestingly, this boost to profitability is not flowing to the wider economy because firms are adding to retained earnings rather than recycling the gains via spending and investment. Similarly, while households are benefitting from a boost in real wages, they appear to not be spending the gains at this time.

While lingering deflationary pressures continue to affect households' propensity to consume and corporates' willingness to invest, aggressive stimulus measures by the Bank of Japan and fiscal relief for households should see low oil prices lift domestic demand and lead to gains for the Japanese economy over the medium to long-term.

Real estate perspective:

Sovereign wealth fund investors have been the marginal buyer of many risk assets globally, having grown their assets in line with energy prices from US\$1.5 trillion in 2000 to more than US\$7 trillion in 2015.

Since 56% of sovereign wealth funds are dependent on energy revenues, there is a risk that the decline in energy revenues may lead to sovereign wealth funds selling assets to fund potential fiscal deficits.

Sovereign wealth funds have accounted for around 3% of all net commercial real estate transactions (US\$89 billion) during the last five years – a figure that grew to 6% in 2015. Any sell-off may have a flow-on impact in certain real estate markets. Interestingly, the majority (80%) of all sovereign fund real estate purchases are across 12 gateway cities; however three cities – London, New York and Paris – combine to represent 53% of these acquisitions.

The spread between the price of oil and the value of London office buildings pre-Brexit has never been greater.

Figure 3 shows that the spread between the price of oil and the value of London office buildings pre-Brexit has never been greater over the past 15 years.

Our view throughout 2016 has been that London commercial real estate is likely to be most vulnerable to depressed oil prices; this market has accounted for around 30% of all sovereign wealth fund real estate purchases and asset values are at a point in the cycle where capital gains are compressed (market capitalisation rates are transacting at historically low levels).

Post-Brexit, we have seen a considerable correction in UK REITs (listed real estate forward prices direct real estate) but we are yet to see significant transactions in the direct UK market to ascertain the full impact of Brexit on direct real estate values.

Figure 3: Barrels of oil required to buy one-square foot of London office pre-Brexit



Source: CBRE, IHS, Grosvenor Research, as at 31 December 2015



JAMES MAYDEU
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Infrastructure perspective:



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MIDSTREAM OVERVIEW

The midstream supply chain of the energy sector involves gathering systems, transportation systems (by pipeline, rail, barge, oil tanker or truck), terminals and storage of crude or refined petroleum products. Midstream assets are typically underpinned by fixed-fee or minimum volume commitment contracts which avoid commodity exposure as oil/gas prices are typically 'passed through' in the contract to the end-users (such as a refinery). Given the stable and transparent nature of cash flows, midstream assets are highly sought after infrastructure investments.

We are focused on well-located, fixed-fee or contracted midstream assets while avoiding near-term commodity swings.

Depressed oil prices often present opportunities to acquire fee-based or contracted midstream assets from either constrained Energy and Production (E&P) companies or to partner with Master Limited Partnerships (MLPs).

There are two types of structures prevalent in the current market environment:

- > **E&P companies monetising non-core midstream assets:** E&P companies with non-core midstream assets may be forced to monetise assets, de-risk or de-lever balance sheets or to fund growth capital relating to their core business such as drilling. As such, we see mergers and acquisitions activity picking up in this sector with the potential for direct bilateral trades.
- > **Equity-linked investments into MLPs:** In an effort to fund growth, MLPs have sought outside capital to make equity-linked investments directly into their capital structure. These are typically made via preferred equity investments to fund 'drop-downs' (where assets or ownership interests are transferred) from parent E&P companies or to fund future growth expansion. Continued growth in capital expenditure is needed to expand the pipeline capacity for the shale gas and oil basin discoveries in the US.

A SIGNIFICANT DECREASE FOR MLPs

MLPs are publicly-traded partnerships that invest in energy midstream infrastructure. MLPs typically have efficient cost of capital to acquire assets as they do not have to pay corporate level taxes (only investor level taxes). However, in doing so, MLPs must distribute essentially all of their cash flow to investors. As such, they are reliant on external debt and equity capital markets to fund future growth. This model works well when MLP stock prices are high (that is, the cost of equity is low to issue additional stock).

However, in the depressed oil price environment, MLP stock prices have decreased significantly. This is because the cost of equity is high and the MLP initial public offering – or follow-on – equity market has been dormant since 30 September 2015. This is further supported by examining MLP dividend yields (an estimation of MLP cost of equity to issue stock). MLP dividend yields have spiked to record highs, which implies a significantly higher cost of equity. The Alerian MLP index dividend yield is currently 7.16% as of 7 July 2016; up circa 2.0% from the same period in 2014.

The reliance on equity capital markets to fund necessary pipelines and growth in capital expenditure has so far been muted and we expect will continue to be subdued for the remainder of 2016, creating an opportunity for infrastructure fund capital to partner with MLPs and acquire midstream assets. We are focused on well-located, fixed-fee or contracted midstream assets while avoiding near-term commodity swings.

Fixed income perspective:

In the US high-yield market, the average default rate has been 4% during the past 45 years. In 2016-17, the consensus is that the default rate on high-yield credit will span 6-8%. This estimate assumes a 14% annual default rate for US energy companies where the price of oil is US\$45 per barrel. Figure 4 models the two-year cumulative default rate on US high-yield credit at various prices.

Figure 4: Model of expected high-yield credit defaults for US energy companies

2-YEAR DEFAULT RATES AT VARIOUS OIL PRICES	
\$55 WTI	11%
\$45 WTI	27%
\$35 WTI	36%
\$25 WTI	30%

Source: AMP Capital, as at 29 February 2016

We've seen two major spikes in the default rate on high-yield credit during the past 15 years. One was in 2001 where default rates hit 9.1%, driven by stress in the telecommunications industry; and the second was in 2009 where default rates rose to 10.3% as a result of the financial distress associated with the global financial crisis.

Putting this in perspective, a 6-8% default rate on high-yield credit in 2016-17 seems reasonable if not slightly high. That's because in 2001 and 2009, we were in economic recession where yield curves were flat to inverted; that is not the case today. As such, our view is that the high-yield market right now is reasonably pricing in default risk.

We believe that the contagion risk from depressed energy prices has already played out.

Credit markets can be highly interconnected at times, and disconnected at other times. Typically, when there is stress within a large sector, as there has been with energy, it's useful to refer to credit spreads excluding energy. The risk for non-energy high-yield contagion would be felt through capital flows, risk premia and refinancing risk.

We believe that the contagion risk from depressed energy prices has already played out. The spread between BBB and BB-rated bonds is something we continually monitor to quantify our downside scenario across our selection of investment grade bonds. The spread of the US dollar energy BB-rated and BBB-rated bonds peaked at approximately 470 basis points in December 2008; it was around 400 basis points in March 2016 and by the end of September 2016, the spread had tightened to approximately 160 basis points.

ARE WE THERE YET? RISING DEFAULT RATES CREATE SELF-CORRECTIVE MECHANISM FOR ENERGY

Interestingly, commodity producers have a self-correcting mechanism in that as they default, the decline in supply actually allows markets to firm up. The energy-related defaults we've seen in the US market have been low-quality oil producers (high-production costs and/or structural issues).

More recently, credit spreads globally have narrowed as commodity and energy prices have stabilised with the demand for credit remaining high as investors search for yield. This has seen the energy sector rebound; it is one of the strongest performing sectors this year despite the default outlook. Furthermore, many investment-grade energy and energy-related companies have taken material steps to strengthen their balance sheets by reducing debt and preserving cash flow by reducing capital expenditure.

Our investment process takes into account:

- > The sustainability of energy prices
- > Rating agency behaviour
- > Issuer behaviour and the prospect of a sell-off
- > Mergers and acquisitions
- > Liquidity

With so many moving variables and path dependencies, we need to ensure that risk premiums compensate investors across a wide range of scenarios.



SONIA BAILLIE
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Australian equities perspective:

Australia doesn't have oil companies; it has Liquid Natural Gas (LNG) companies. Whilst LNG markets are fundamentally different to oil, the extent of oversupply is as bad if not worse. As with oil, the problem is more caused by a surge in global supply rather than a big fall in demand. In 2016-17, we expect there will be a regional excess in the supply of LNG across Asia given weaker than expected Chinese demand. During the next 20 years, the significant oversupply, if left unaddressed, poses the risk that we see either lower production, 'dumping' in Europe or lower utilisation of US liquefaction capacity. It is likely to take some years to work through the surplus.

Given the oversupply, very few new projects will get built.

Like all commodities, pricing is under pressure. Most LNG in Australia is sold off a linkage to the price of Brent crude oil, usually 12-14%. With oil at around US\$52 per barrel, the LNG price is around \$5-6 per gigajoule. Given the oversupply, we could see prices in the spot (uncontracted) market go as low as \$3-\$4 per gigajoule over the next one to two years.

It's worth noting that there is a major difference between conventional and unconventional LNG projects:

- > Conventional LNG involves drilling into a massive reservoir of gas that is highly pressured. Due to the size of the reservoir and the pressure, you might need only two to three wells for 20 years of production. This is what we have on the west coast of Australia; for example, Pluto, North West Shelf and more recently Gorgon. These projects will typically have a cost of production of around \$1-\$2 per gigajoule of LNG.
- > Unconventional gas production or coal seam gas extraction is more like mining than oil and gas. East coast projects in Australia will need to drill tens of thousands of wells, which involves pumping of water, perhaps fracking and horizontal drilling. Given this complexity, costs of production are much higher; around \$7-\$8 per gigajoule of LNG.

In order to survive the next few years, Australia's east coast gas energy producers will have to bring down their operating costs and capital expenditure, similar to the cost-cutting that occurred in the mining sector. There is a lot more complexity to LNG projects than mining projects so management has a number of challenges ahead of them.



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ARE LNG CONTRACTS AT RISK?

Since Chinese importers are currently losing money on the gas price, there is continued speculation that they may break contracts. Our view is that while some contracts are starting to be renegotiated (for example in India and Malaysia), there won't be widespread contagion in contract risk.

Given the oversupply, very few new projects will get built. In fact, the market does not need new supply until 2022-23 at the earliest, at which time only the lowest cost projects will be developed. There is significantly less risk in infrastructure-related to LNG projects that have already been built. This is because the sunk capital component is high but the operating cost is low as 'no one ever turns off an LNG plant'. Interestingly, as price of LNG goes down, volume needs to increase in order to bring costs down. Therefore, we suggest investors gain exposure through brownfield expansions and de-bottlenecking opportunities, not greenfield assets. Given regional imbalances and multiple pricing mechanisms, nimble traders should be well placed to take advantage of arbitrage opportunities.



Multi-asset solutions perspective:

While the share of renewables in our energy consumption basket will grow over time, oil and gas (coal is being phased out) will most likely remain the main source of energy during the next 10-20 years. With bearish market sentiment around energy, valuations are attractive and this presents an argument for including energy as part of a multi-asset portfolio.



We maintain an underweight exposure to energy.

We maintain an underweight exposure to energy that is confined to upstream (exploration and production) as we believe these opportunities present the most value over the long-term. We are selective because over a short to medium-term time horizon, the potential outcomes may be too binary for a risk-controlled manager to participate meaningfully.

It is in OPEC's interest for the supply of renewables to remain under control and for the price of oil to remain at around US\$55-\$60 per barrel. This will serve as a 'natural ceiling' for oil for as long as the growth in demand (which actually remains strong) begins to outpace the supply.

There is the potential for broader knock-on effects on European banks. The sector's average exposure of 3% masks some substantial exposures at individual bank levels. Consequently, the exposure of some European banks to energy risk may not be widely appreciated. In the US, major banks are far less exposed, with 2% average asset base exposure to the energy sector.



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GOALS-BASED PERSPECTIVE:

PORTFOLIOS NEED TO BE CAREFULLY DESIGNED TO OFFSET THE NEGATIVE IMPACT OF A PRICE DECLINE

The future cost of consumption goals is dependent on the rates of inflation over the period. Energy price movements are an important input into inflation and this is especially the case for retirees who have an above-average exposure to energy in their consumption baskets.

They can also have a major impact on the price of assets in portfolios designed to meet customer goals. Interest rates and bond prices are impacted by central banks' response to the inflationary consequences of energy price movements. They can in turn impact economic growth, corporate profitability and returns on equity investment. If goal-based strategies aren't well designed, then the cost of the goal might be rising at the same time as the assets are being negatively impacted.

Oil prices in particular are important for two reasons:

- > Sovereign wealth funds from oil-producing countries recycle their national savings into the same assets we are looking to purchase to meet clients' goals. This competition for investment opportunities and its potential to drive asset price inflation needs to be taken into account in funding and planning a goals-based strategy.
- > Given the political situation in many of the largest oil-rich countries, oil price volatility can be transmitted (via geopolitical risk) into weakening investor sentiment.

Environmental, Social and Governance perspective:

The Paris Climate Change Agreement reaffirmed the global commitment of more than 190 countries (including Australia, the European Union, Canada, Japan and South Korea) to limit climate change to 2°C with an aspirational or desired target of 1.5°C by 2025-2030. Australia has proposed a 26-28% reduction by 2030 from a 2005 baseline; the US is targeting a similar reduction but by 2025 and New Zealand will be aiming to achieve a 30% reduction by 2030 from a 2005 baseline.



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AMP Capital
Head of
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POLICY UNCERTAINTY MAGNIFIED AS SIGNIFICANT REGULATORY CHANGE IS NEEDED TO REACH TARGET

Significant policy and regulatory interventions will be needed to reduce greenhouse gas emissions over the coming decade. Existing Paris commitments will only limit global warming to between 2.7-3.5°C and so greater reduction targets will be required by countries. To put this in perspective:

- > Australia would need to close every coal mine station and replace this with renewable energy in order to achieve its 26-28% reduction target by 2030;
- > The level of reduction needed to meet the 2°C limit would be equivalent to Australia reducing its emissions by approximately 90% by 2050.

ENERGY INNOVATION: GREATER BENEFITS IN EMERGING MARKETS

Given the electricity shortages in many emerging markets, cheaper renewable energies – especially decentralised solar generation – would have even more impact than in developed markets.

Emerging markets with less developed or 'old' infrastructure offer the greatest potential for the exploitation of renewables.

In these markets, energy innovation may actually prove less disruptive as it does not destroy jobs simply because they did not exist in the first place.

On the other hand, oil or gas-exporting emerging countries lack diversification and are thus more threatened by the negative impact of technology on hydrocarbons, and automation could undercut the cost advantage that often exists in emerging markets.

When there's a risk that what's built now, may not be around in 20 years' time, investors want to see a return on capital within a shorter 10-15 year timeframe.

We expect that policy responses will curb – and ultimately lead to a significant decrease in – demand for fossil fuel, most notably coal (the most intensive). The drive for more energy-efficient property may see lesser assets struggle to attract tenants.

Lower growth rates will continue to mean it is unlikely that demand for real estate will significantly outstretch supply, moderating energy price increases in the medium to long-term – negatively impacting both returns and growth potential for the more expensive fossil-fuels such as Australian LNG and Canadian oil sands and associated infrastructure.

The degree of structural change means that investment in energy, transport and associated infrastructure long-life assets will be challenged as asset life will be shortened (requiring higher returns) or potentially lead to assets being 'stranded' in the future. This is likely to favour fossil-fuel companies that can respond quickly to incremental changes in demand, such as US oil and gas shale companies.

We believe there is a greater risk to growth options in energy and infrastructure sectors which rely on long-life assets. The energy industry is used to having investments over a longer 20-25 year period; but when there's a risk that what's built now, may not be around in 20 years' time, investors want to see a return on capital within a shorter 10-15 year timeframe.



IN SUMMARY

- While energy prices have recovered a few times over the past year, they remain below what producers need to drill profitable wells.
- The decline in oil prices has significantly dampened investor sentiment about oil-exporting emerging market economies, and could lead to substantial volatility in financial markets as was observed in a number of countries during the last quarter of 2014.
- However, declining oil prices also present a significant window of opportunity to reinvigorate reforms and diversify oil-reliant economies.
- Over the medium-term, oil prices are projected to recover from their current lows, but are expected to remain below recent peaks and witness considerable bouts of volatility. The pace of the recovery in prices is likely to depend on the speed at which supply will adjust to weaker demand conditions.
- US shale oil producers, with their relatively short production cycles and low sunk costs, may see the greatest adjustments in the short-term.
- Over the longer term, adjustment will take place from both conventional and unconventional sources through cancellation of projects.
- While supply is likely to be truncated, ongoing demand will be underpinned by recovering global activity in line with broader demographic trends.

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