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Over a barrel:
Causes and consequences of the fall in oil prices

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Executive Summary

- The $30 fall in oil prices since July reflects greater U.S. supply as well as worries about a significant slowdown in global growth.
- We expect prices to range from $80-$90 per barrel over the medium term, which will lead to the postponement of expensive exploration and production (E&P) projects.
- Investment opportunities for equities may be found among refiners rather than E&P companies; in high-yield fixed income, higher-quality energy sector bonds should outperform the broader index.

Supply and demand

The sharp drop in the price of oil since June, from $108 per barrel (bbl) for the West Texas Intermediate (WTI) benchmark to under $80, caught most market participants by surprise. By June, equity analysts had raised their earnings per share (EPS) forecasts for the S&P 500 U.S. energy sector index to $50 for the next year. Spreads on high-yield debt had narrowed to just 321 basis points (bps), the lowest since 2007. EPS estimates have since plunged by 11% and spreads have jumped nearly 200 bps.

Short-term, technical factors can drive oil price volatility. A key issue currently is speculation around the upcoming OPEC meeting on November 27 and how the Saudis will react to the market's moves. We should focus, however, on the longer-term drivers of demand and supply to determine whether oil prices are likely to recover and to identify what investments in the sector may be attractive.

Demand for oil — as measured by global GDP — is still rising at a steady pace, suggesting that the drop in oil prices is not due to insufficient growth, at least for the moment (see Figure 1). While one can interpret the decline as a signal that GDP growth is going to slow sharply, that is not our view. We believe the U.S. recovery is on track and that activity is turning in Europe. There is a risk, however, that Chinese GDP slows more dramatically than markets currently expect. If this were to occur, the impact would be felt across

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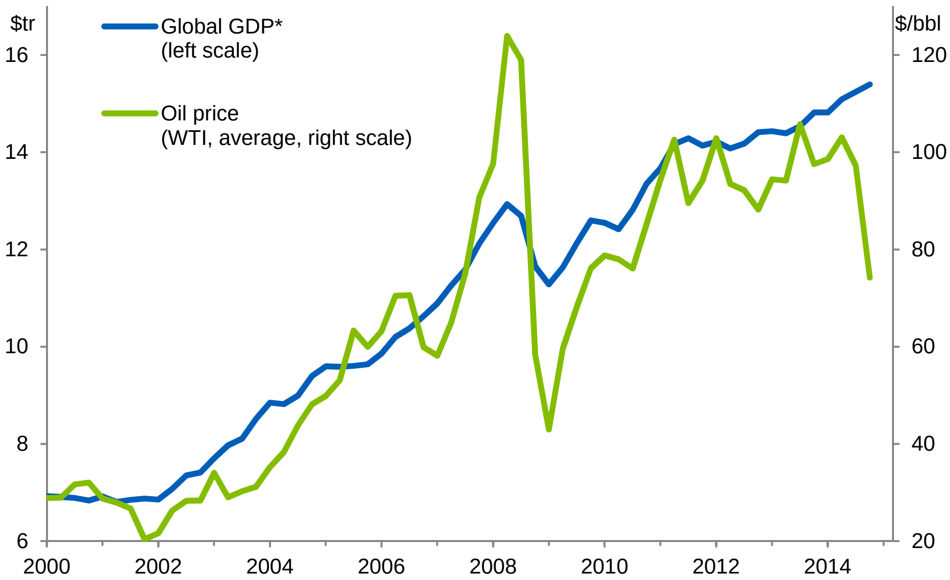
all of emerging markets as well as Japan and would lead to a significant drop in global demand growth.

Figure 1: Oil price and global GDP



Last data 13 November 2014. Sources: Haver, Dow Jones, IMF, TIAA-CREF Asset Management.

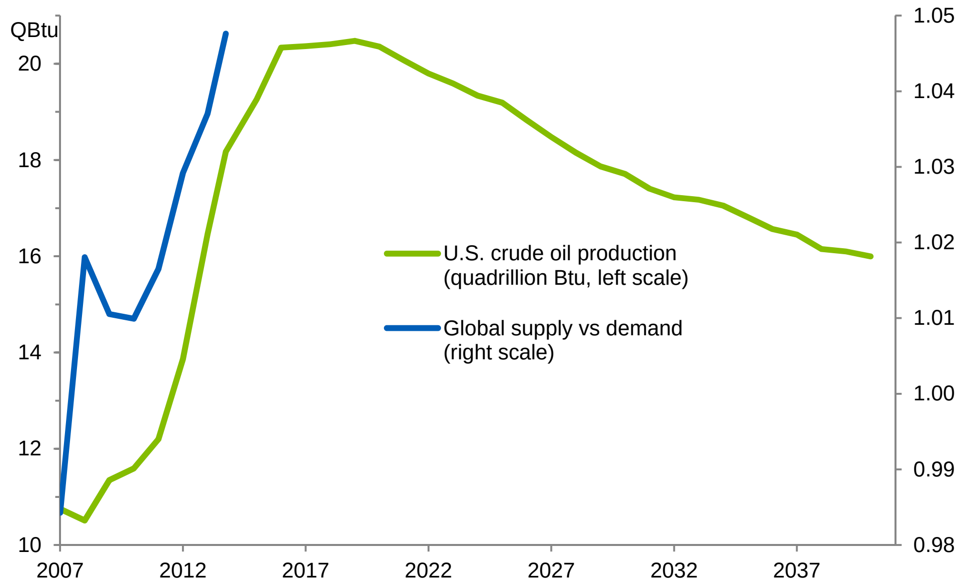
U.S. oil production has almost doubled over the last seven years.

The fall in prices is also due to an increase in supply. Thanks to the "fracking" revolution in the U.S., crude oil production has almost doubled from 10.8 QBtu (quadrillion British Thermal Units) in 2007 to 18.2 QBtu this year, according to the U.S. Energy Information Administration (EIA). As a result, global oil supply growth has outstripped global demand growth, which inevitably leads to a fall in oil prices.

This trajectory is not expected to persist, however. The EIA forecasts that U.S. production will continue to grow — but at a much slower pace — over the next five years, rising just 2.4% annually. After 2019, projections are for supply to actually decline (see Figure 2). The bigger impact of fracking technology will be for natural gas, where production forecasts increase steadily for the next two decades. The rise in natural gas supply will lead to less demand for oil as the economy switches to a cheaper source of fuel.

The current balance of supply and demand suggests that oil prices will remain weak for the time being but should start recovering by next year. We are expecting prices to stabilize around $85/bbl into 2015. Support for prices will come from less supply as exploration and production projects are postponed, and from higher demand as GDP expands thanks to cheaper energy. Though energy-producing sectors of the economy suffer from oil price declines, the broad economy clearly benefits thanks to lower input costs for companies and less expensive transportation and heating costs for consumers.

Figure 2: Oil supply and demand



Last data 14 November 2014. Sources: U.S. Energy Information Administration, U.S. Department of Energy, IMF, TIAA-CREF Asset Management.

Investment opportunities

Equities

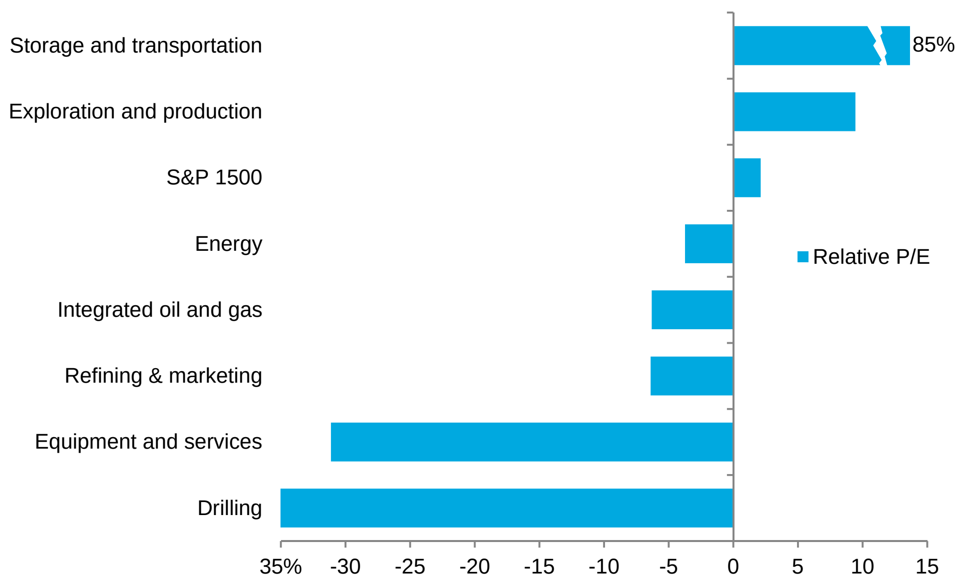
Valuations for the energy sector are not particularly low.

Negative earnings revisions for stocks in the S&P 1500 energy index mean that price declines have not improved sector valuations. The sector is currently trading at 14.3 times forward earnings estimates, barely below its long run average price-to-earnings (P/E) ratio of 14.5 times. Earnings are falling not simply because oil companies will earn less revenue from fuel sales, but also because projects that were profitable at $100/bbl become less so at $80, so demand for equipment and services declines. Corporate capital expenditures in the sector have risen steadily over the last several years, but budgets are now likely to be cut.

Equity markets meanwhile have rebounded from the selloff in October, but the energy sector has continued to underperform the broader market, advancing just 6% since October 15 to November 13 compared to 10% for the S&P 1500 Supercomposite. There is divergence, however, in performance and valuations among the sub-industries (see Figure 3). The integrated oil and gas industry is unlikely to offer much near-term opportunity, as any recovery in oil prices will be slow and cuts in capital expenditures will probably not provide a dramatic boost to earnings. The equipment and services industry, however, has the appeal of low valuations. Prices have fallen more than earnings estimates, so multiples now appear attractive at just 13.6x compared to the nearly 20x average since 1995. But even there caution is warranted. While earnings estimates have declined, more negative revisions may be ahead, meaning that the P/E ratio is only temporarily low.

Figure 3: Relative earnings multiples (P/Es)

Current forward multiple relative to historical median



Last data 13 November 2014. Sources: FactSet, TIAA-CREF Asset Management.

U.S. refiners have substantial competitive advantages over their European counterparts.

An opportunity may be found among refiners. U.S. refiners have substantial competitive advantages relative to their European counterparts, and U.S. stocks in the industry are likely to outperform those of the more expensive exploration and production companies.

Bonds

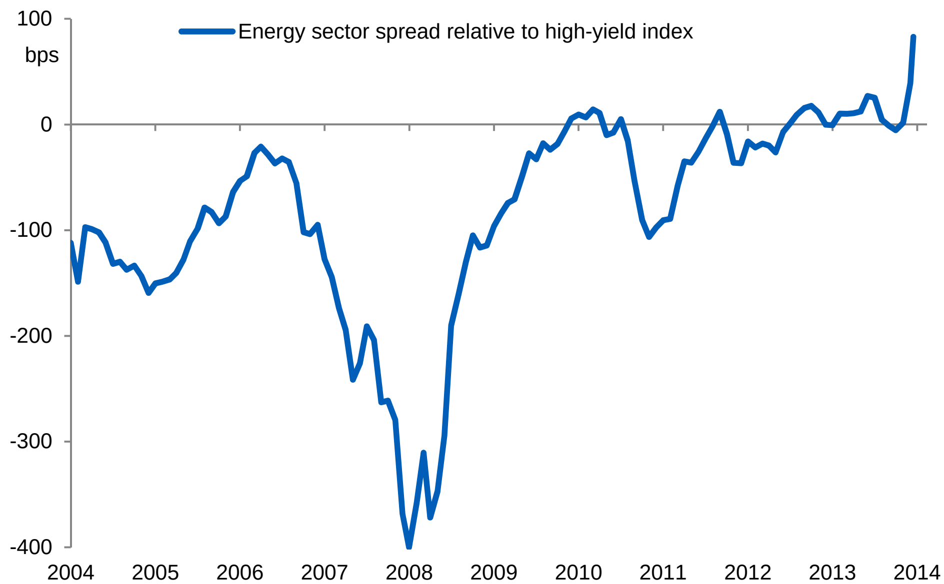
The energy sector is one of the largest issuers of high-yield bonds, and worries about corporate earnings have translated directly into an increase in high-yield bond spreads and price declines. The sector has returned -5.1% since the end of August, versus just a 1.1% decline for U.S. high-yield bonds overall. We currently like high-yield as an asset class, as spreads over Treasuries are above levels from 2005-2007, and steady economic growth suggests spreads are unlikely to widen significantly. The energy sector, however, has underperformed for the last several years, and the financial outlook for the sector is now worse

High-quality names in the sector should outperform relative to other high yield bond issues

thanks to lower prices. The sector may thus be riskier, but spreads reflect that and the relative returns should be better from here, especially for higher-quality names. The energy sector has typically traded at lower spreads than the index overall, but the difference in spread between them is now wider than at any point since 2004 (see Figure 4). The recent, broad selloff in the market means that bonds of companies that have hedged their exposure to oil prices or are low-cost producers seem attractively priced. Companies with more diversification in their business also have an advantage in this environment.

Figure 4: Spread between energy and high-yield index

Option-adjusted spread for energy sector less broad index*



Last data 13 November 2014. *Barclays US High Yield Corporate index. Sources: Barclays, TIAA-CREF Asset Management.

Conclusion

The drop in oil prices is the result, we believe, of an increase in supply, notably in U.S. oil production over the last several years, combined with concerns about global growth in Europe and China. Doubts persist in particular about the longer-term outlook for China, and any unexpected decline in growth would drive oil prices even lower. We expect prices to remain below $90 over the next year as oil markets absorb increased supply from the U.S. and smaller yearly increases in demand.

Daniel Morris is a Managing Director and Global Investment Strategist for TIAA-CREF. Prior to joining TIAA‑CREF in 2013, Mr. Morris worked in London as a Global Market Strategist at J.P. Morgan Asset Management, and before that as the Senior Equity Strategist for Lombard Street Research. Previously, he was part of the Institutional Investor-ranked portfolio strategy team at Banc of America Securities in New York. Mr. Morris began his career covering Latin American markets at BT Alex Brown and Dresdner Kleinwort Benson.

Mr. Morris holds an MBA from the Wharton School and a Master's Degree in International Relations from Johns Hopkins' School of Advanced International Studies (SAIS). His undergraduate degree is in mathematics from Pomona College, and he is a CFA charterholder. Mr. Morris is a frequent conference speaker, guest on CNBC, Bloomberg, and other financial networks, and is widely quoted in the press.