FRONTIER ADVISORS

20 years

Recent developments in oil prices

What do these developments mean for investment strategy?

Structure of this presentation

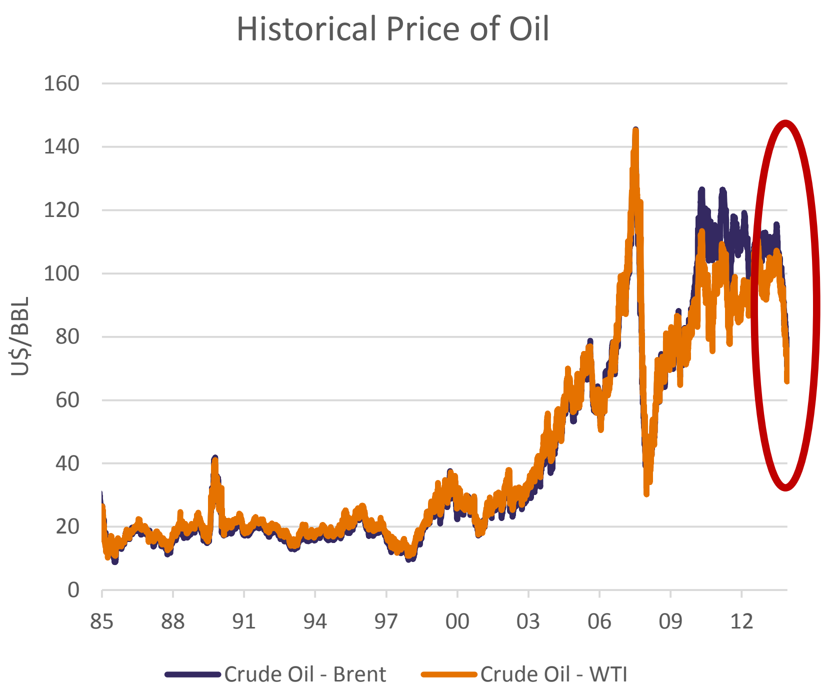
- Our investment conclusions
- Explaining recent oil price developments
  - Demand and supply factors
- Market reaction to lower oil prices
  - Commodities, bonds, equities and currencies
- Modelling the historical pattern of oil price changes on growth, equities and interest rates
- Will history be a guide to the oil price decline’s impact on future asset price performances?

Our key conclusions

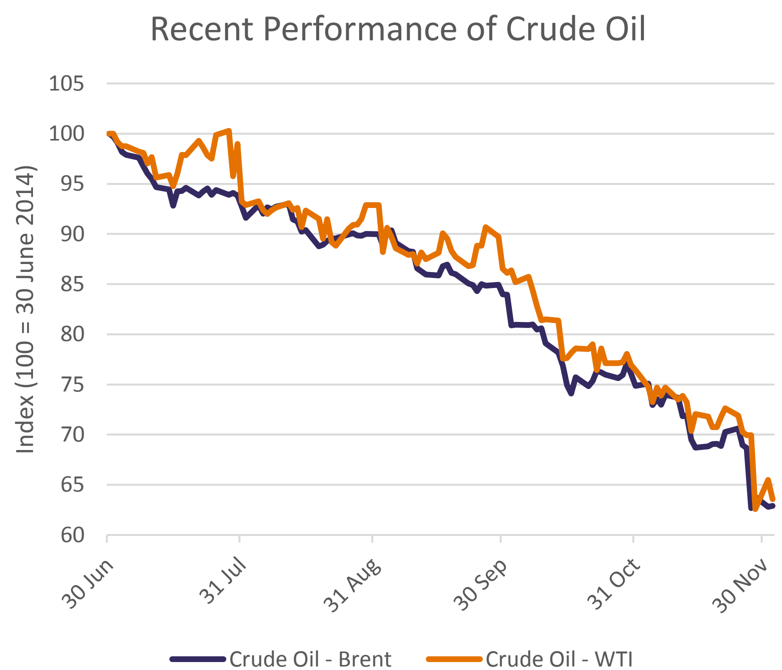
- Recent oil price weakness is a product of both weaker than expected demand and increased supply
- A price decline of the current magnitude is rare and usually associated with a recession.
  - However there have been two episodes in the past 30 years when sharp oil price drops were not associated with global recessions (1986 and 1997-8)[1]
  - This episode seems likely to be another such example
- The impact of lower oil prices is likely to vary from country to country (oil importers versus oil exporters) but is expected to be positive for overall global growth prospects:
  - Because it gives key central banks further room to maintain "lower-for-longer" policy rates; and
  - It acts not unlike a tax cut
  - But a potential downside risk is an increased probability of deflation
- Market reaction to the lower oil price has been generally as expected
- Our modelling of previous episodes of oil price declines suggests that the impact of lower oil will be positive for growth asset prospects – <u>equity prices and interest rates are likely to rise</u>
- Historical market relationships are likely to be a good guide to future asset price performances but we will be watching indicators signalling any change in investors' inflation/deflation expectations
- We are maintaining our current DAA advice

1. JP Morgan, "Oil and the global economy" December 05, 2014

The current episode is rare and significant



Source: DataStream, Frontier



Source: DataStream, Frontier

- The oil price has fallen by almost 40% since end June 2014
- Since 1985, a decline of this magnitude has not been seen apart from the GFC
- Both demand and supply factors seem to have caused this

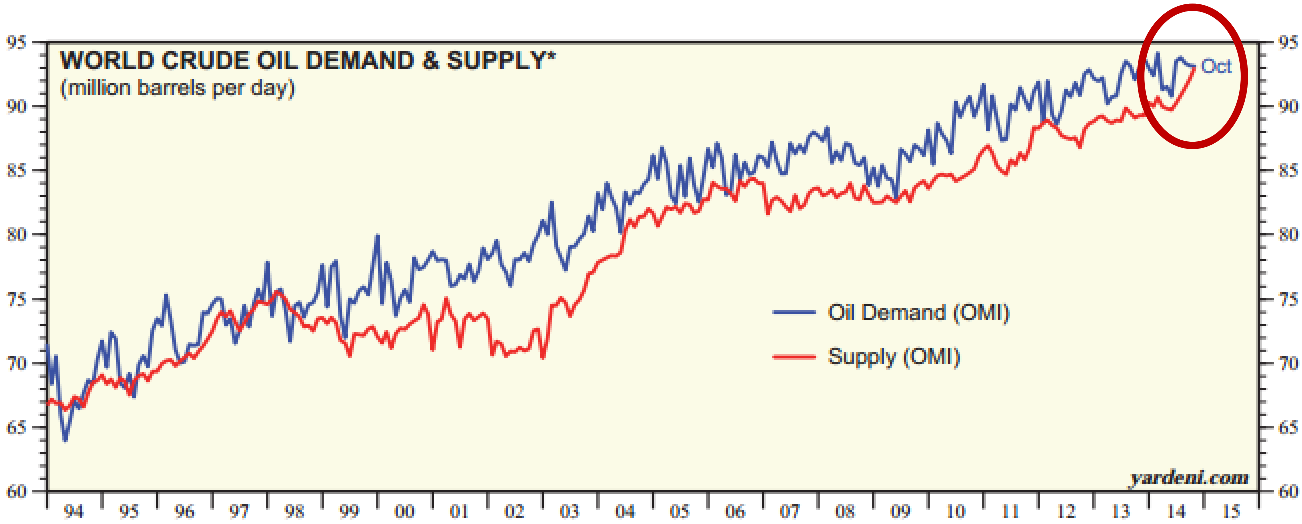
Why has the oil price fallen?

Reasons for the decline in the oil price seem to include:

- Increased oil output from the US (shale oil in particular) and North Africa
- Downward revisions in expected global demand
  - But, the decline in actual oil demand bottomed out earlier in the year, so lower expectations seem to be lagging actual developments
  - Lack of expected supply response, particularly OPEC's decision to leave output unchanged
- A (temporary?) easing in perceived geo-political risks which may have masked the changing supply/demand dynamics in oil markets

World Crude Oil Demand And Supply – both appear to be explanatory factors

World Crude Oil Demand And Supply

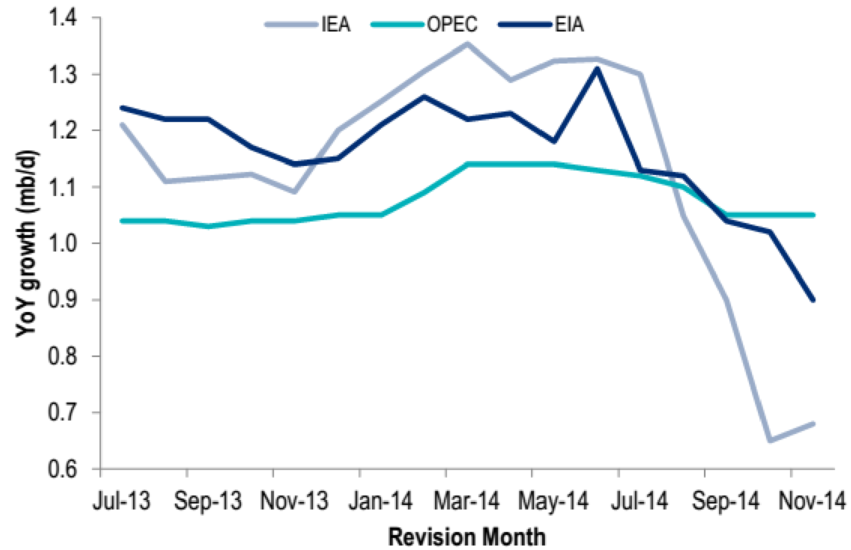


Source: Oil Market Intelligence and Yardeni Research

- Current price movement seems to have been largely driven by a ramping up of supply although demand has played a part as well

Forecasts of expected oil demand have weakened during the past year

Revision Of Oil Demand Growth

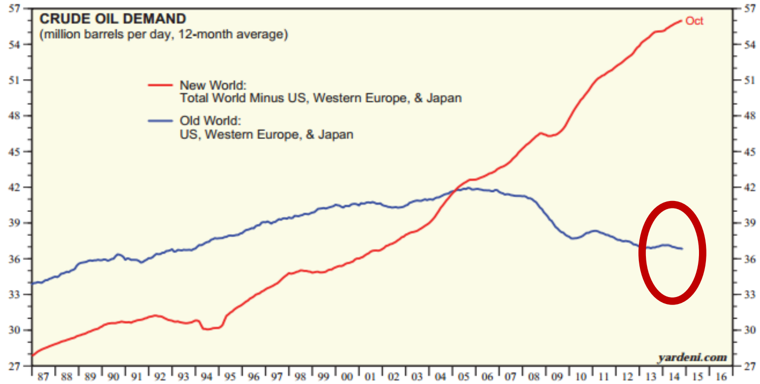


Source: IEA, OPEC, EIA, Citi Research

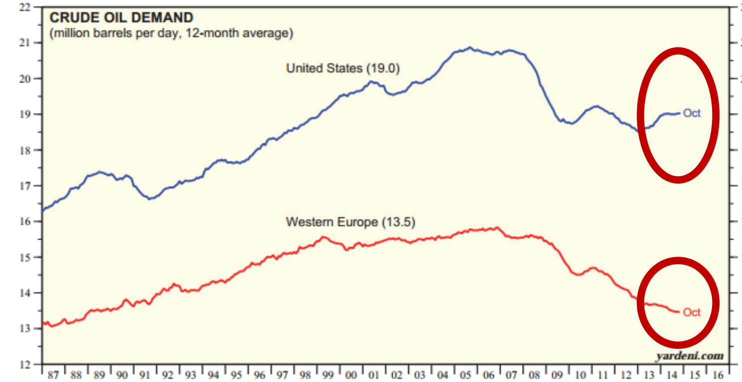
- Forecasts of oil demand growth have been revised down sharply recently by a range of energy agencies/bodies
- But this has actually coincided with an improvement in the previously weak trend in actual oil demand – forecasts seem to be lagging what's happening

In contrast to the lowering of oil demand growth expectations, the weakening oil demand trend actually bottomed-out several months ago

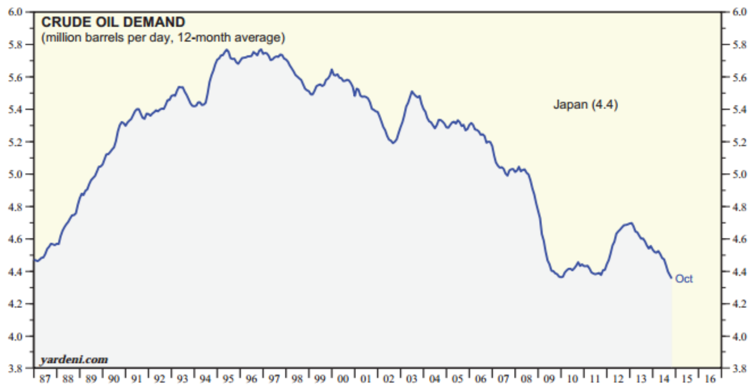
New World vs Old World Oil Demand



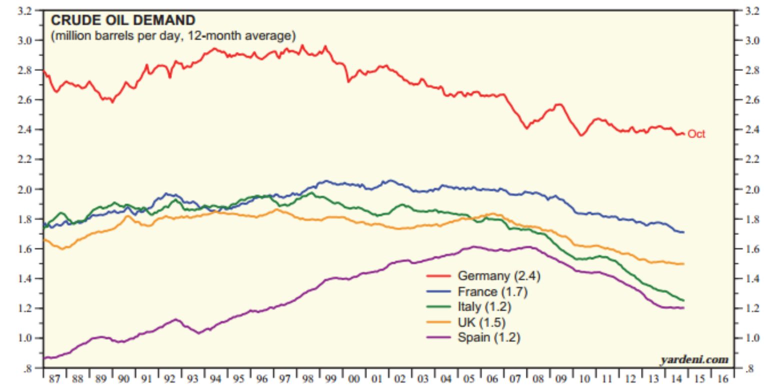
US vs Western Europe Oil Demand



Japanese Oil Demand



Breakdown of European Oil Demand



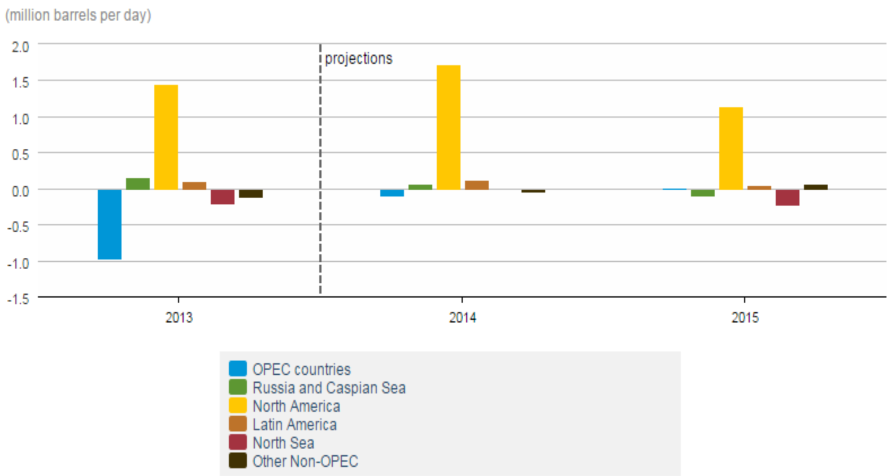
Source: EIG, Citi Research

Oil Supply has increased

US Crude Oil Production (mill b/day)

Source: EIA, Citi Research

World Crude Oil and Liquid Fuels Production Growth (mill b/day)



Source: EIA

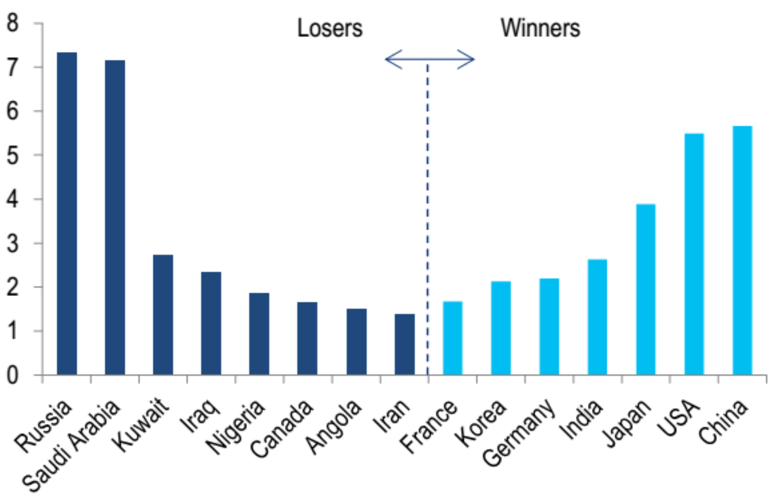
- US crude oil supply has ramped up in recent years
- The US is expected to be the fastest growing oil producing region for the next several years

The expected impact of lower oil prices

- The impact of lower oil prices will vary from country to country (oil exporters vs. oil importers)
- But the impact is likely to be positive (on balance) for global growth prospects because
  - It gives key central banks further room to maintain “lower-for-longer” policy rates; and
  - Acts like a tax cut for consumers and businesses
- But there is an increased probability of deflation and potential geopolitical risks related to oil-exporting countries (such as Russia)

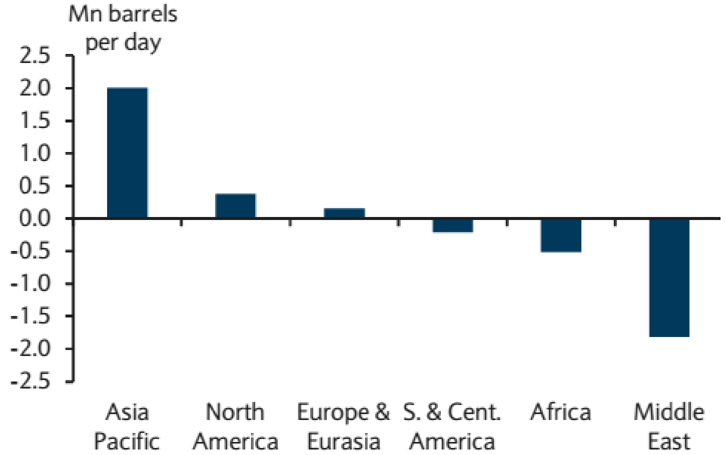
Oil Price "Winning" and "Losing" countries

Oil Exporters (dark blue) vs Oil Importers (light blue) (mill b/day)



Source: JODI, Citi Research

Oil Consumers By Regions (mill b/day)



Source: BP Statistical Review of World Energy 2014, Barclays Research

- Asia Pacific is the largest regional grouping of net oil importers
  - This region likely stands to benefit most from the fall in oil prices

Expected impact of lower oil prices – generally supportive for growth assets

Using history as a guide, most investors expect the likely key consequences of lower oil prices will be that:

- Global economic growth is likely to get a boost (lower oil acting like a tax cut)
- Global inflation pressures likely to remain benign (although outright deflation is a higher possibility in the Eurozone)
- Monetary policy settings can remain accommodative for longer than might have been the case

This would generally be expected to be a supportive environment for risk assets

But there is a risk that the sharp fall in the oil price could set off a deflationary cycle because:

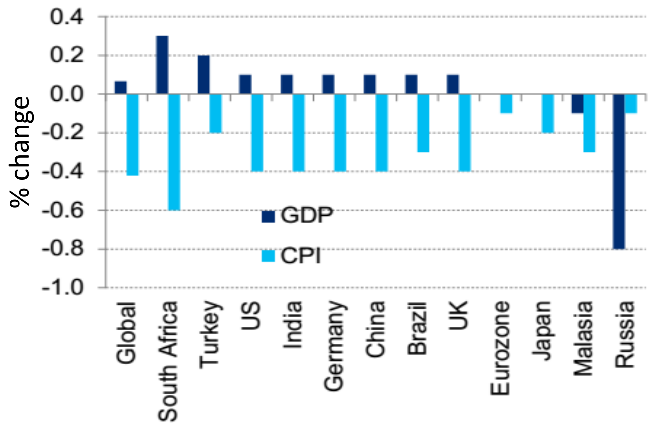
- Global growth and inflation momentum is still relatively fragile,
- Key central banks are already running highly accommodative policies, with only limited scope for additional policy easing

There are also potential geopolitical risks:

- Russian and Venezuelan trade and budgetary impact

Consequences Of Lower Oil Prices

Sensitivity of 2015E GDP Growth and CPI To $10 Fall In Oil Prices



Source: Citi Research using OEF Global Model

- Lower oil prices are expected to have a slightly positive impact on global economic growth overall and lower global inflation pressures

Performance of other markets as the oil price has fallen since end June

Other markets have performed generally as expected since end June

- Other commodity prices have also weakened
- Bond yields have declined, generally because inflation expectations have fallen
- Equity sector performance has reflected expected (positive and negative) beneficiaries of lower oil prices
- USD has rallied against key currencies
  - This has also contributed to weakness in USD-denominated oil (and other commodity) prices

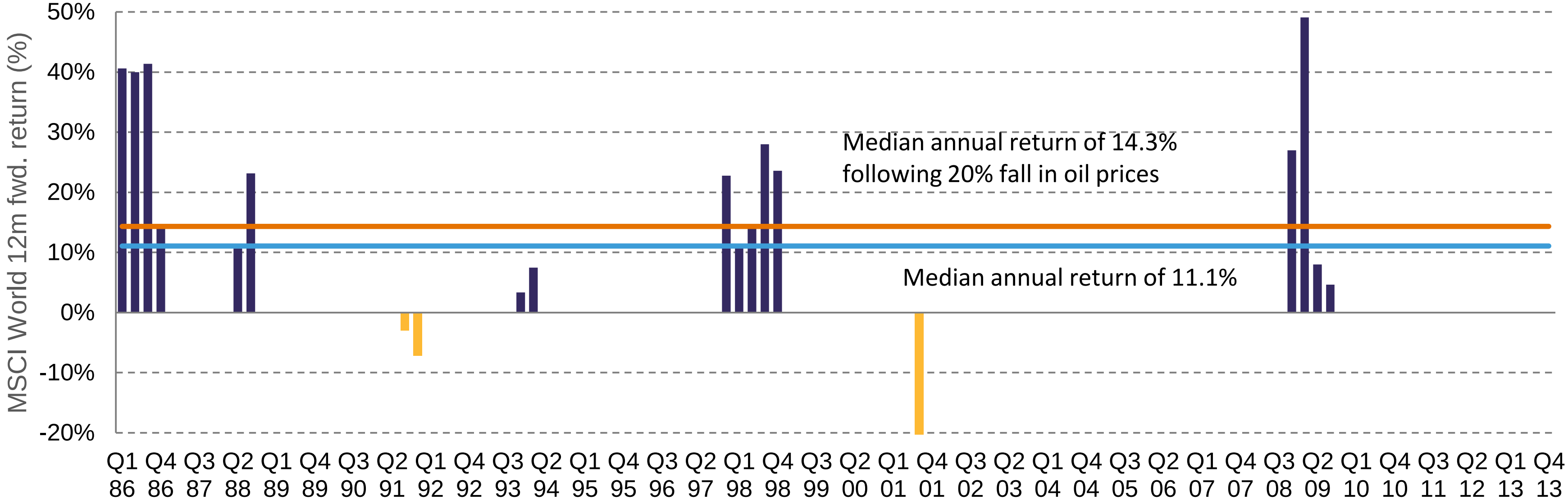
Prospective market and growth performance following an oil price decline

We model and examine the performance of growth, equities and interest rates during previous periods of oil price weakness

- We find that oil price declines are usually positive for economic growth and equity returns
- Interest rates tend to rise following an oil price decline

Historical performance of the MSCI World Equity Index

12mth forward MSCI World return following a 20% fall in oil price

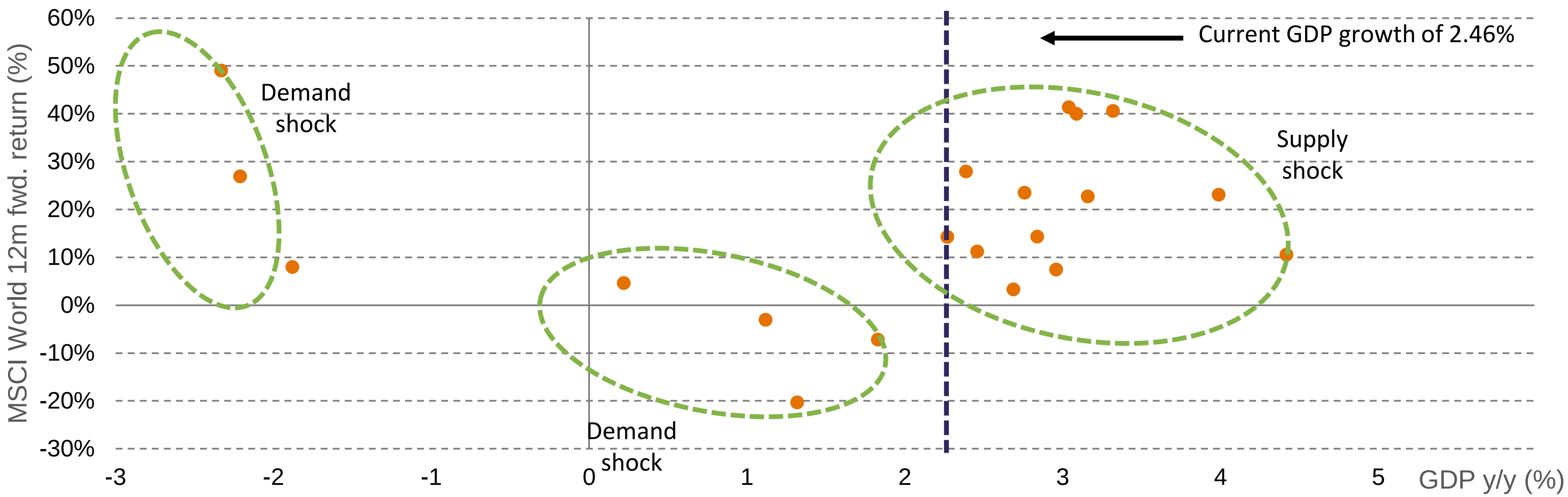


Source: DataStream, Frontier

- Sharply lower oil prices (20% or more) are generally positive for prospective global equity returns
- The chart shows equity market returns 12 months forward – i.e. the returns over the next 12 months following a sharp oil price decline
- These (post oil price fall) returns are typically higher than median equity returns

The current pace of global growth suggests positive prospective global equity returns following the recent oil price decline

12mth forward MSCI World return (following a 20% fall in oil price) vs Annual growth in global GDP

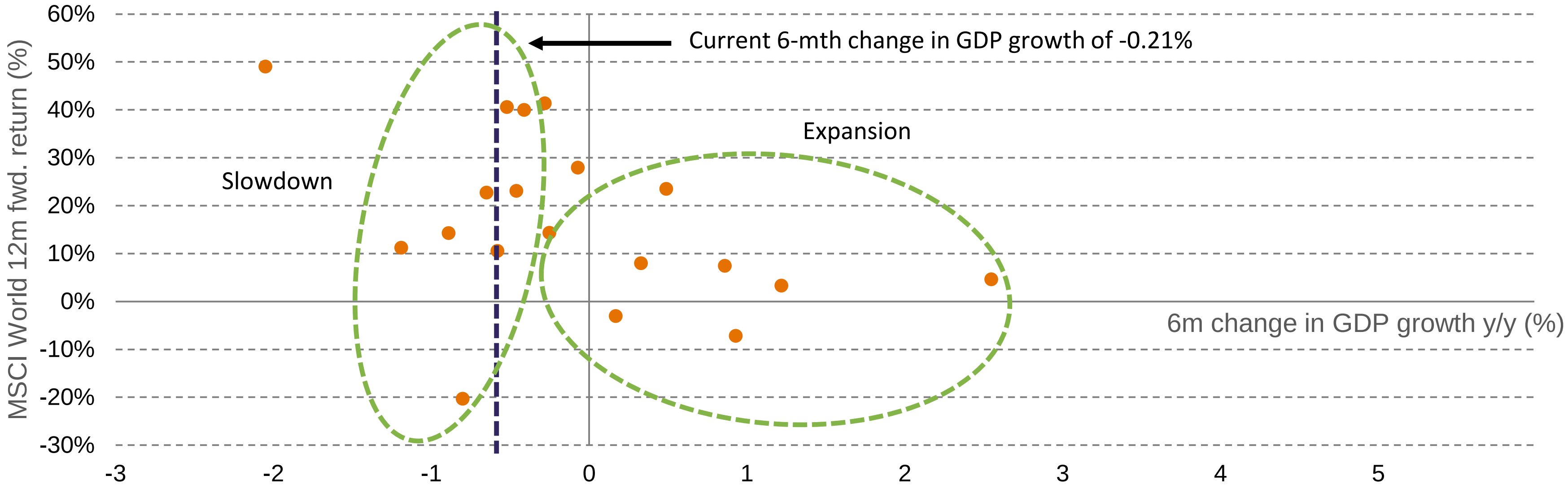


Source: DataStream, Frontier

- The current pace of global GDP (which is close to the long-term average growth rate of 3%) is consistent with the recent oil price decline is at least partly supply-driven because global growth is too healthy to suggest that only demand factors are at work
- The chart shows global GDP growth at the time of the oil price shock versus equity market returns 12 months forward

Change in global growth momentum (6 month change) and equity returns
Current conditions suggest positive prospective equity returns

12mth forward MSCI World return (following a 20% fall in oil price) vs 6mth change in global GDP

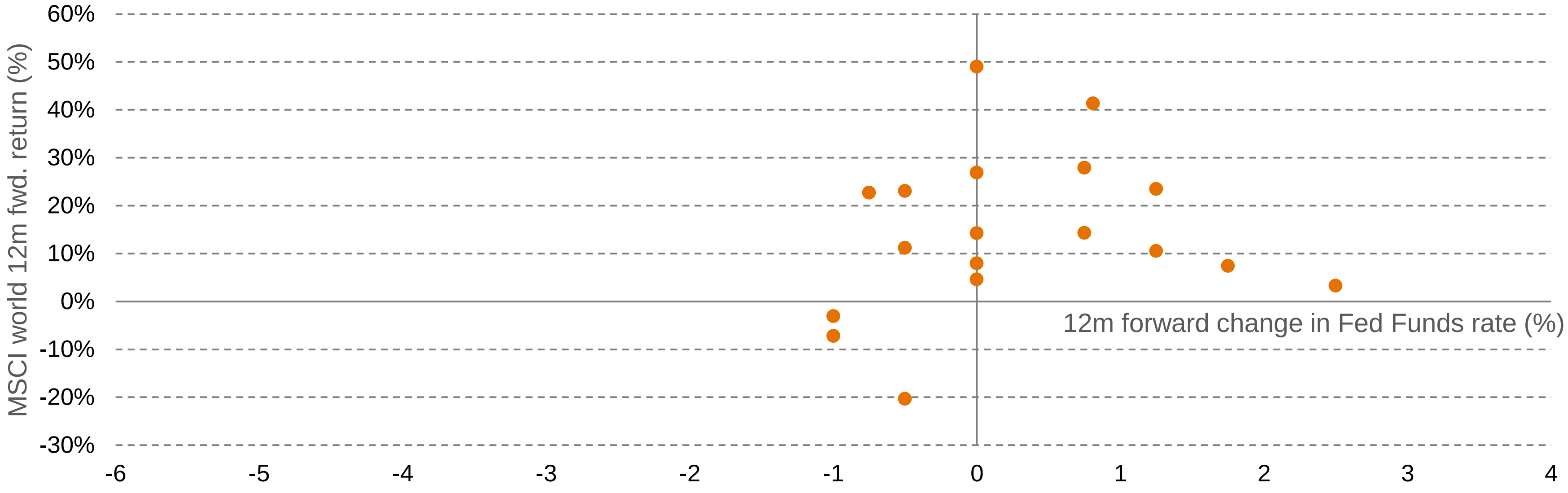


Source: DataStream, Frontier

- While the overall annual pace of global growth remains healthy, there has been a slowing in growth momentum in the past six months. This is consistent with demand factors having played a role in the oil price correction
- However, slowing growth and oil price declines have typically resulted in higher future equity returns

Change in the Fed Funds Rate (FFR) and equity returns

12mth forward MSCI World return following a 20% fall in oil price vs 12mth forward change in Fed funds rate

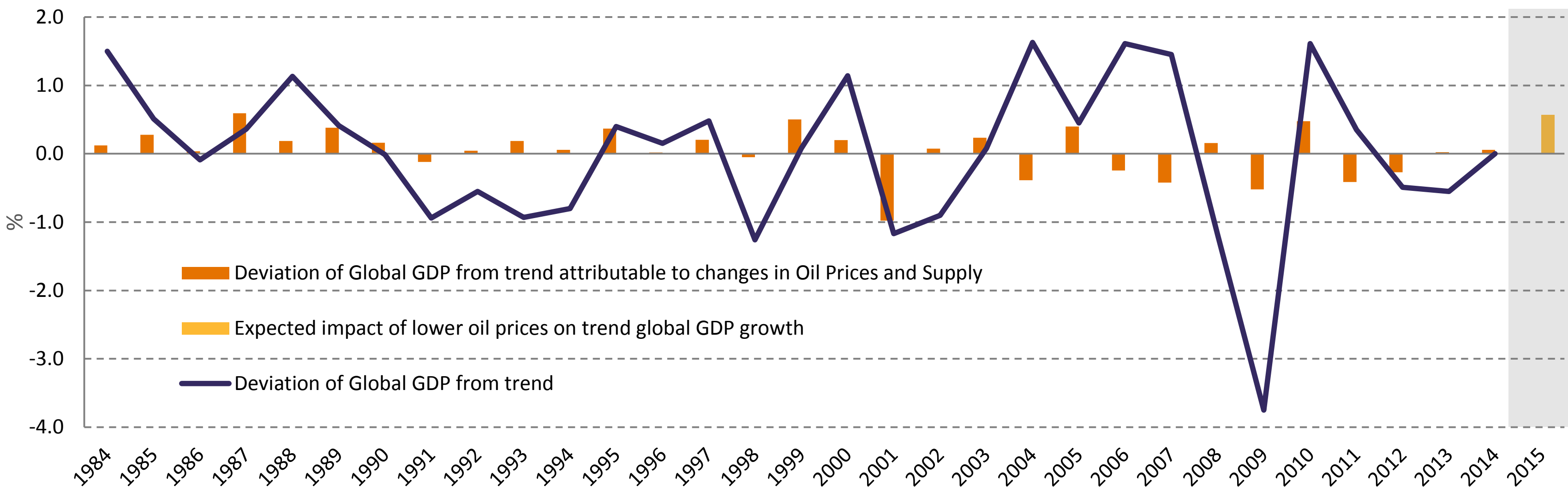


Source: DataStream, Frontier

- Historically, a large fall in oil prices has, nearly equally, led to rises and falls in the US Fed Funds Rate in the following 12 month period
- FFR falls following an oil price decline have usually been associated with recessions
- In the current environment, no change or a higher FFR is more likely than further policy easing

The impact on global trend GDP growth of changes in oil prices and oil supply
The lower oil price suggests stronger prospective global GDP growth

Contribution of Oil Prices and Supply to the Deviation of Global GDP from trend

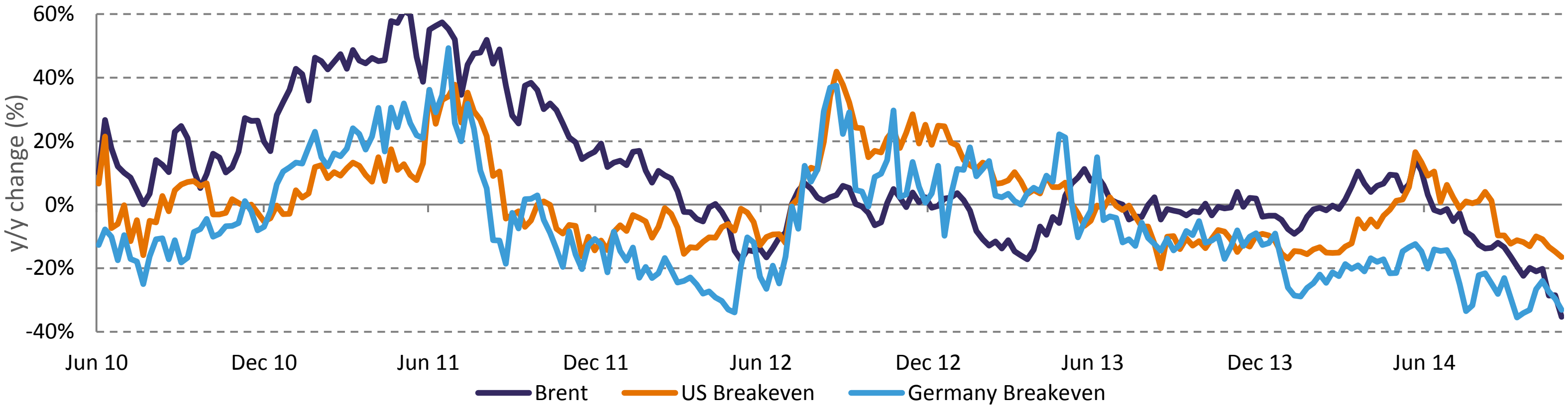


Source: DataStream, Frontier

- We model the deviation from trend of global GDP growth using changes in oil prices and supply
- Based on our econometric modelling, we expect the significant decline in oil prices and increased oil supply to contribute positively to global GDP growth (relative to trend) in 2015

But will past relationships with the oil price be the same?
Rising risk of deflation - Oil versus "Breakeven" inflation

Annual change in Brent oil prices versus US and German 10 year breakeven inflation



Source: DataStream, Frontier

- The recent sharp fall in oil prices is likely to downwardly bias global inflation rates in coming quarters
- Our modelling suggests that the oil price decline should be positive for prospective growth and growth asset performances
- But current weak global growth and inflation momentum do imply a non-trivial (and rising) probability of deflation
- We will be closely tracking leading market indicators of deflation expectations

Will past relationships between markets and the oil price be the same?

- **Our modelling of prior episodes suggests that the outlook for the performance of growth assets should be enhanced by the oil price decline**
- Contributions to the oil price decline from both demand and supply factors suggest a new equilibrium oil price is being set
- But the positive impact on prospective growth could be tempered by the current low level of global policy rates (which leave central banks with little room to fend-off an increase in deflationary pressures)
- The positive impact on US consumers and businesses may be tempered somewhat if the economics of the US oil shale boom are too adversely impacted by lower global oil prices
- We note the sharply negative impact of the oil price fall on the US high yield bond market – is this an oil-specific phenomenon or an indication that broader-based weakness is in prospect?
- There are also potential geopolitical risks – Russian and Venezuelan budgetary/trade trends

Will past relationships between markets and the oil price be the same?

- We maintain our positive view regarding an expected positive growth and earnings impact from the recent oil price decline but:
  - we'll be closely monitoring measures of potential deflation risks,
  - developments in the US high yield bond market, and
  - Geopolitical risks

Important information

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