NZ Insight: What an oil price shock could mean for inflation

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What an oil price shock could mean for inflation

- Oil prices rose steadily over July-September this year and have been volatile in recent weeks, reflecting geopolitical risks and supply concerns, offset by weakening global growth expectations. It's not a question for today, but given the risks, in this paper we look at whether an oil price shock would present a problem for the RBNZ.
- Fuel prices have a weight of only around 4% in the CPI, but there are spillover impacts into broader prices. We conservatively estimate that the indirect effects of higher oil prices comprise around 30% of the total inflation impact.
- For example, if retail fuel prices were to rise 10%, and that move was sustained, all else equal we estimate that would add 0.4%pt to inflation immediately, and a further 0.1-0.2%pt over the next year indirectly.
- The context matters. Given still-hot core inflation, elevated inflation expectations, squeezed margins, and an economy that, while cooling, is still inflationary, were an oil price shock to unfold soon, the RBNZ would have less scope than normal to "look though" what otherwise would typically be considered transitory noise. The RBNZ will have more optionality once it successfully brings core inflation lower.

What's happening in oil markets?

Oil prices rose substantially over July to September this year. Global supply tightened on the back of Saudi Arabia and Russia voluntarily cutting production by 1.3 million barrels per day (mb/d) in July. That move triggered a rally that saw prices gain over 25% over the next few months.

Adding to supply concerns, geopolitical instability continues to wreak havoc in oil markets – first the interruption to Russian supply, and now the war between Israel and Hamas and the risk of contagion within the region. The latter has caused renewed oil price volatility in recent weeks. However, overall, oil prices have actually fallen markedly from their late-September peak, as concerns about the outlook for global growth have weighed heavily.

That doesn't mean upside risks have gone away, however, particularly if the conflict broadens. If Iran were to become involved, up to 20mb/d could be at risks of disruption directly or through obstructed logistics. The Strait of Hormuz is a transit corridor for 17mb/d and a stretch of water over which Iran has often claimed dominion. Iran's administration threatened to close the Strait when the US imposed sanctions in 2011, but ultimately backed off. Any escalation of the conflict that threatens to block the Strait of Hormuz could see prices push towards USD120/bbl; however, ANZ's commodity analysts see a probability of only 20% of that occurring.

In quarter-average terms, oil prices are tracking close to the RBNZ's assumption (USD85/bbl on average over Q4). Still, with markets on edge and geopolitical risks elevated, it's worth asking the question of what a rise in oil prices might mean at this delicate juncture in the RBNZ's inflation battle.

How the RBNZ thinks about rising oil prices

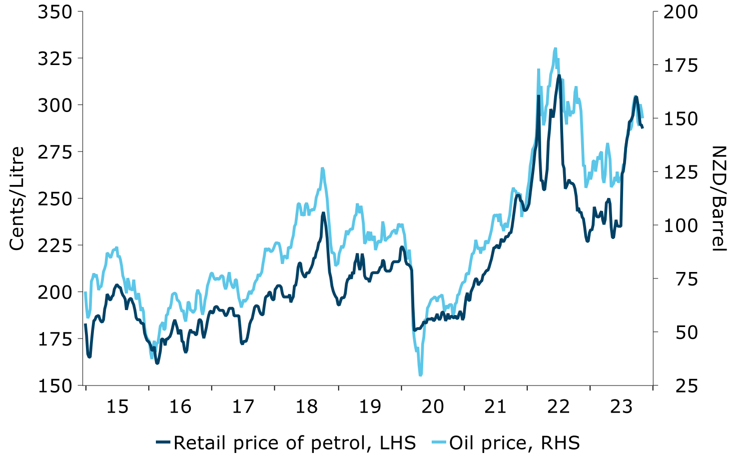
The RBNZ's objective under the Remit for Monetary Policy Committee is to "achieve and maintain annual inflation between 1-3% over the medium term, with a focus on keeping future inflation at the 2 percent mid-point." Given the medium-term focus of the Remit, the RBNZ Monetary Policy Committee can generally look through effects from oil price movements, provided that the impacts on inflation are transitory. There are three key channels through which higher oil prices can affect inflation:

- **direct effects** via the initial CPI impact of higher petrol and diesel prices;
- **indirect effects** via pass-through of higher fuel prices into the prices of other goods and services; and
- **broader effects on economic activity** via impacts on demand from a reduction in consumption due to budget constraints.

Direct effects

Petrol and diesel prices together have a weight of around 4% in the CPI. Rises in oil prices in NZD terms tend to be reflected in domestic petrol and diesel prices almost immediately, and despite the relatively small weight in the CPI, large shifts in prices can have substantial impacts on inflation.

Figure 1. Oil and petrol prices

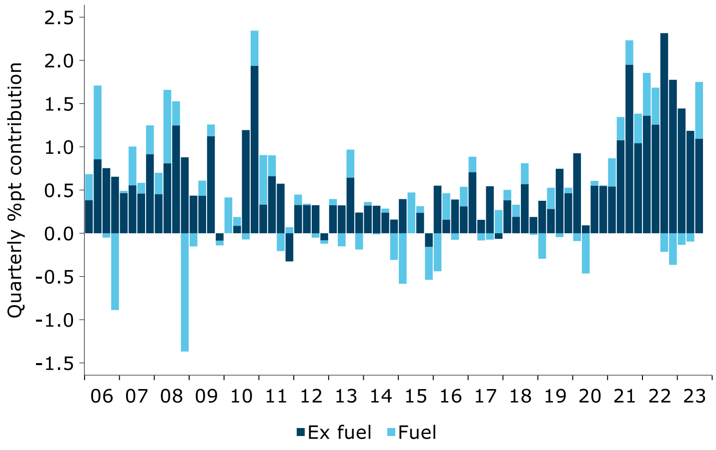


Source: MBIE, Macrobond, ANZ Research

Some recent examples:

- In the year to the June 2022 quarter in the fallout of the Russian invasion of Ukraine, the direct contribution of fuel prices to annual inflation was roughly 1.5%pt of the total annual rate.
- In the year to the June 2023 quarter, fuel prices subtracted around 0.8%pt from annual headline inflation. Indeed, lower oil prices were one of the key drivers of slowing headline CPI inflation across the first half of this year, masking a sticky underlying inflation impulse.
- The 25c/L fuel excise duty subsidy introduced by the Government in March 2022 in response to higher oil prices is estimated to have reduced annual headline inflation by approximately 0.5%pts.
- That subsidy ended in the June quarter this year, contributing to the 16.5% increase in petrol prices in Q3, which saw the contribution from fuel account for around 0.7%pts of the 1.8% q/q increase in headline inflation (see figure 2, over).

Figure 2. Fuel contribution to quarterly CPI



Source: Stats NZ, Macrobond, ANZ Research

Indirect effects

Higher oil prices can also contribute indirectly to other components of the CPI, given oil's ubiquity in production processes and transport costs. However, this contribution is difficult to estimate.

The producer price index (PPI) provides a decent starting point for gauging how significant fuel inputs are in production processes. The PPI does not necessarily align with the CPI basket and there are limitations in mapping producer cost passthrough to the CPI. But using the PPI commodity and industry weights, we conservatively estimate a direct weight of 3-3.5% of the cost of production to producers is attributed to fuel or indirectly via transport costs.[1] In practice, the magnitude of the impact of fuel prices on firm input costs is likely larger than our estimate of 3-3.5%, reflecting further indirect costs that are more difficult to gauge.

If one were to assume firms fully pass through the additional cost into consumer prices instantly, we estimate that a 10% rise in fuel prices would add 0.3%pt indirectly to the CPI, in addition to the roughly 0.4%pt direct impact. However, the cost channel passthrough is highly unlikely to be 1:1, or instant. Prices are sticky; margins expand and contract.

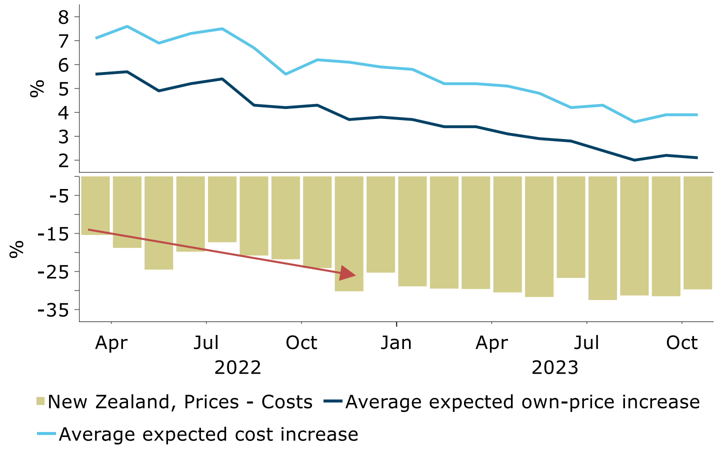
To determine the extent of producer cost passthrough to the CPI, we estimate a vector autoregression model of producer prices, consumer prices excluding fuel, the output gap, the 90-day interest rate and the real exchange rate. We find that a 1% shock to producer prices results in a cumulative 40% (0.4%pt) passthrough to ex-fuel CPI across one year and 60% (0.6%pt) across two years. Based on this passthrough, we conservatively estimate that a 10% fuel price shock would add around 0.1-0.2% to annual inflation over the course of one year (in addition to the direct impact via fuel prices).

The degree of indirect passthrough at any given time will depend upon economic conditions. How much pricing power do firms have? How price sensitive are consumers currently? How long do firms expect the cost increase to persist – should they just ride it out, rather than upset their customers unnecessarily?

[1] This weight excludes goods and services largely produced by the Government, for which the prices faced by consumers are determined more by policy settings than cost fluctuations.

Over the past few years, as inflation has risen, the sharply higher proportion of CPI items increasing in price in a given quarter suggests that firms' pricing has become far more dynamic and responsive to changing demand and supply conditions (ie costs). This has likely been exacerbated by the compression in firms' margins and the reduced sensitivity of consumers to rising prices (due to high inflation expectations, high job security and strong nominal wage growth). However, as the economy has cooled and cost-of-living pressures have seen consumers become more cautious with their spending, feedback from firms is that passing costs through into prices has become more difficult. This is certainly consistent with the deterioration in margins implied by firms' cost and price expectations in our Business Outlook survey. And it's no accident – it's all part of the Reserve Bank's plan to bring inflation down.

Figure 3. Firms' cost and price expectations, and implied change in margins

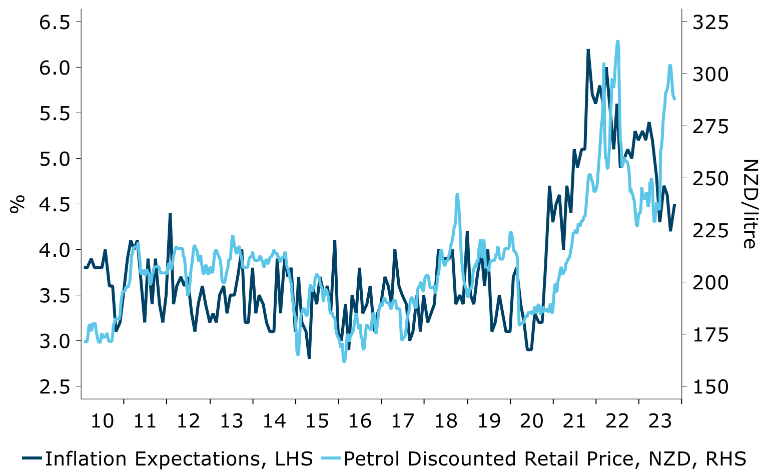


Source: Stats NZ, Macrobond, ANZ Research

Inflation expectations

If fuel prices were to rise, the RBNZ would be cognisant of the risks to inflation expectations. Our previous analysis has shown that for consumers, these are highly sensitive to fuel prices. Consumer inflation expectations have been bouncing between 4-5% in recent months in our survey, and still have a way to go to get back to 'normal'. Any further upside to fuel prices would put the ongoing normalisation of inflation expectations under threat.

Figure 4. Consumer inflation expectations and petrol prices

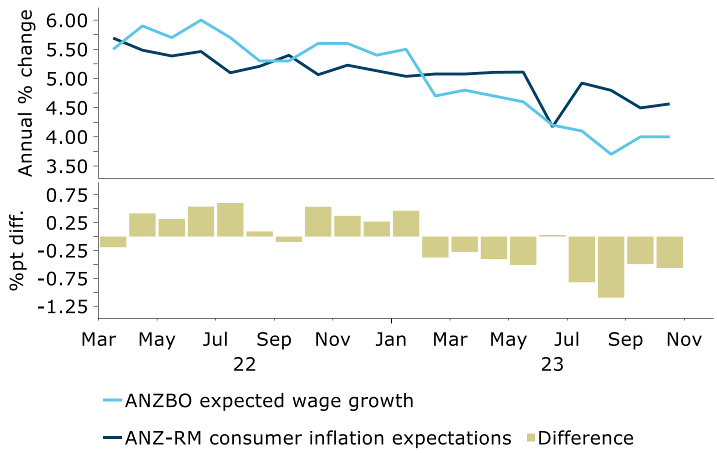


Source: Stats NZ, MBIE, Macrobond, ANZ Research

High inflation expectations reduce the price sensitivity of consumers and ultimately enable firms to pass on higher prices. However, the risks of elevated inflation expectations do not stem from cost passthrough alone, but broader wage and price dynamics, particularly when the labour market is tight.

Given extreme tightness in the labour market in recent years, employees had greater bargaining power, and up until February, businesses' expectations of wage growth in our Business Outlook survey were above consumer inflation expectations, indicating expected positive real wage growth around the bargaining table. However, that has now changed. Firms' expected wage growth is now *below* consumer inflation expectations, which could make for some interesting discussions. While in the context of a cooling labour market with unemployment on the rise, the balance of power is shifting toward businesses, if inflation expectations remain elevated this is likely to add upward pressure to wages, all else equal.

Figure 5. Inflation expectations and expected wage growth



Source: Roy Morgan, Macrobond, ANZ Research

Impact on broader spending

The third potential channel via which higher oil prices can affect inflation works in the opposite direction. Higher fuel prices typically constrain consumer spending insofar as a good chunk of fuel spending is a necessity; in that regard they are akin to an unavoidable tax. Higher fuel prices reduce GDP. But history shows clearly that inflation can't solve inflation; the on-paper disinflationary impact of reduced spending on other goods gets swamped in practice by the impacts described above.

Monetary policy implications

While fluctuations in oil prices can generally be looked through, if prices were to rise sharply while core inflation and inflation expectations were still too high, it could put a spanner in the works. The RBNZ would be reluctant to assume the worst, but any signs of second-round impacts on inflation expectations would demand a response.

The economy is cooling, and inflation pressures are gradually dissipating, but the process is far from complete, and ongoing progress is conditional on a bunch of things going right. And one of those things is oil prices behaving. For the RBNZ to look through an oil price shock and still be confident of inflation returning sustainably to target, we need to be in a better starting point than we are now.

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