

Some reflections on the world of central banking

A speech delivered to the Institute of Finance Professionals NZ in Auckland

On 14 October 2015

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1. Introduction

I recently read Andrew Graham-Dixon's excellent biography on Caravaggio, the early 17th century Italian painter whose bold realism, deep sense of humanity and stunning use of light, transformed the art world. As now deceased Australian art critic Robert Hughes said, 'there was art before him and art after him, and they were not the same.'

Caravaggio lived a dramatic and tumultuous life. Graham Dixon described it as 'the darkest and most dangerous life of any of the great painters'. While we could debate the desired temperament of central bankers, the world in which they have operated monetary policy over the past 8 years has also been dramatic and turbulent.

Today, I will describe a little of that world – particularly that faced by central bankers in small open economies. It's a world of complex global economic and financial linkages and interdependencies, and many unknowns: a world that requires constant reflection on new information, and where judgement in managing and balancing risks under considerable uncertainty plays a critical role.

It's also a world where people have strong views on monetary policy. That's understandable because monetary policy affects peoples' lives. It can affect the level of activity and distribution of income in the economy in the short term, the returns to savers and investors, the inflation expectations of wage and price setters, the price of real and financial assets, and the degree of financial risk taking. That's why central banks endeavour to be explicit about their frameworks and judgements in their monetary policy statements and on-the-record presentations.

In discussing the world that central banker's face in small open economies, I will offer some thoughts on: the international economy; the constraints and uncertainties around monetary policy judgements; and the recent application of monetary policy in New Zealand.

2. The global economy

This year the global economy has hit another weak patch. Concerns have intensified in recent months following weaker production and trade data for China, Latin America and East Asia, and greater financial volatility - including sizeable equity market adjustments in some financial centres, and large portfolio outflows from emerging markets.

The global economy appears to be growing at around 3 percent – slower than its average over the past three decades and the weakest growth since 2009. This weakness comes despite several supportive factors including: the unprecedented monetary stimulus; the positive effect of low commodity prices on spending power; and cheaper and more sophisticated information technology. For example:

- the world has never seen cheaper financing. Policy rates are close to zero in advanced economies that collectively generate 2/3rds of world output, and

quantitative easing by major central banks in advanced economies has totaled around USD7 trillion in recent years.¹

- due mainly to the weakening in Chinese demand (but also to strong supply in many markets), prices of a wide range of commodities have been falling since early-2014.² While this slows growth in the developing world (which is the main global source of commodities) falling commodity prices are generally positive for growth in developed countries.
- the decline in the cost of information technology over the past three decades possibly represents the largest continuous set of factor cost reductions the world has experienced. Not only is the marginal cost of storing, processing and transmitting information essentially zero, the creative destruction of information technology has generated new products and consumer markets, and enabled further efficiencies to be squeezed out of global supply chains.

Despite these factors, and the ease with which capital can flow across borders, economic growth rates even in the advanced commodity importing countries remain below potential growth rates eight years after the onset of the Global Financial Crisis (GFC).

Many reasons have been advanced for the disappointing global recovery. Some observers emphasise the depth of the GFC and its impact in repricing every asset across the globe, the scale of the household and corporate deleveraging that was unleashed and its prolonged impact on economic risk taking. Others link the weak recovery to the slowdown in global trade, which has been a major catalyst for global growth in recent decades, and to the impact of protectionism and the maturing of global supply chains.

There are also debates about future economic prospects, including whether these might look increasingly like the recent past or even worse. Some consider that the global economy may be in danger of entering a period of secular stagnation characterised by excess desired global savings relative to investment and weak global demand.³ Others question whether rates of innovation and technological progress are slowing and whether productivity gains from the ICT revolution have been largely realised.⁴

The inflation picture also, is complicated. In the vast majority of the 30 or so economies (mainly advanced economies) whose central banks pursue inflation targeting, headline and underlying inflation have averaged below specified goals over the past few years. There are several reasons for this: levels of excess capacity in factor and product markets remain high in many economies; wage outcomes have been subdued, even in countries with low

¹ This includes the 19 euro-area economies, USA, Japan, UK, Canada, Switzerland, Sweden, Denmark and Norway. In 13 European countries 2 year sovereign bond rates are still negative.

² The continuous commodity index is currently about 28 percent below its peak in April 2014.

³ Larry Summers blog: On Secular Stagnation: A response to Bernanke, April 1, 2015

⁴ Robert Gordon: Is US Economic Growth over? Fostering Innovation Confronts the Six Headwinds, NBER working paper no.18315, August 2012

unemployment; surveys show that inflation expectations have declined; commodity prices have fallen substantially over the past 18 months; and the internet and other technologies may be changing the tradables content of traditional non-tradable goods and services.

Turning to some regional perspectives, the greatest concern at this point lies around the growth outlook for China. Over the past 35 years, China has been the world's most successful economy, increasing its share of world output from below 3 percent to 15 percent currently. Although China's economy is just over 60 percent of that of the United States (at current exchange rates) it has a much greater impact on commodity markets and global trade volumes. China is now the number 1 or 2 trading partner for over 100 countries and its imports of non-oil commodities are around 2 ½ times higher than those of the US.

Recent indicators suggest that challenges in China's construction and manufacturing sectors continue to be a concern, particularly as much of the investment has been financed through extensive borrowing, much of it in the rapidly expanding shadow banking sector. China's debt burden has increased at an unprecedented rate – from 130 percent of GDP in 2008 to around 200 percent currently. But financial markets have also been unsettled by other factors, including the types of policy measures introduced as the Shanghai index began declining, the magnitude of recent capital outflows, and the questions raised by the decision to allow the RMB to depreciate by 3.5% over two days in August.

Although the Chinese Authorities have indicated they want a stable RMB, private capital outflows continue to be large. Any substantial depreciation in the RMB would have serious implications for the world economy: it would risk triggering exchange rate adjustment among competitor economies – particularly in Asia, and would spread deflationary forces across the globe.

Although its recovery has been slower than previous economic expansions, the US is the main bright spot in the global economy. But even here there are significant puzzles around the labour market and investment climate. Why, for example, has recent US labour productivity growth been so slow, and what explains the substantial wage moderation and weakness in business investment at this stage of recovery? On the policy side, there is uncertainty as to when and how fast the process of raising interest rates might take place, and its possible impact on international growth and asset prices – especially at a time when the Bank of Japan and European Central Bank are considering expanding their quantitative easing programs.

These are some of the considerations that shape the world of central bankers. It's a world of complex linkages, of instantaneous information, massive daily cross-border portfolio flows, unprecedented monetary accommodation and, in some instances, sharp swings in market liquidity and asset prices.

It's also a world in which high expectations have been placed on central banks to use all of the scope within their mandate to stimulate growth in demand and counter the risk of inflation remaining below desired goals for extended periods. In seeking to do so, central

bankers have often had to work without the support of fiscal policy, or the structural adjustment reforms needed to raise potential output growth.

3. Monetary policy in a small open economy

Central bankers also operate in a world where there is widespread overestimation and misunderstanding of what monetary policy can deliver. I will elaborate on three areas that may contribute to this. These concern the scope of monetary policy; the dynamics – notably in terms of transaction volumes, driving forces and time horizons — of financial markets and their interaction with monetary policy; and the degree of precision of the links between policy actions and outcomes.

i) Scope of influence

Flexible inflation targeting here and overseas has been successful over the last 25 years in reducing inflation to low and stable levels – the best contribution monetary policy can make to an economy’s long-run growth. Over the shorter term, monetary policy stabilises inflation by countering fluctuations in demand growth and employment away from their longer-run trends.⁵ With inflation expectations stabilised at low levels, and the associated gain in policy credibility, the ability of monetary policy to help counter short-run fluctuations in output and employment has increased.

Monetary policy is, however, relatively powerless to influence the decisions that determine long-run economic performance and distributional outcomes. For example, over the long run, monetary policy can do little to generate higher spending by households and firms. Even in the shorter term, monetary policy’s influence may be low in an environment where debt levels are high and where there is considerable uncertainty about economic prospects.

Monetary policy can influence risk-taking in asset markets, but this does not necessarily translate into risk taking in long term real assets – requiring the investment and entrepreneurial decisions that underpin productivity growth and hence long-run improvements in living standards. Monetary policy also can’t prevent international developments from affecting our economy, including through commodity prices and the exchange rate. In this regard, there is little that monetary policy can do to persistently lower an exchange rate, whether through the choice of exchange rate regime or direct policy actions.⁶

Similarly, the Reserve Bank is unable to influence long term real interest rates. These are affected by a range of factors, including global savings and investment flows, risk premia and expectations for economic growth and inflation. Monetary policy can only influence short term interest rates and, over the medium term, actual and expected rates of inflation.

⁵ G Wheeler, Reflections on 25 years of Inflation Targeting, International Journal of Central Banking, September 2015

⁶ McDermott, J (2013) “Understanding the New Zealand exchange rate”. Speech to Federated Farmers, Wellington

ii) Market and Policy Dynamics: Volumes and Time Horizons

Working over a medium-term horizon, monetary policy operates on the basis of limited and sometimes imprecise information around the economic outlook, and uses a relatively narrow platform of policy instruments. Monetary policy generally affects inflation outcomes with a 12 to 18 month lag, reflecting the pace at which changes in interest rates and the exchange rate typically spread to risk-taking and spending in the economy. This means that central banks are constantly trying to interpret the outlook for inflationary pressures, growth and financial stability 12 - 18 months ahead.⁷

Financial markets, which respond almost instantly to policy signals and expectations about risk and returns across the world, operate with a more immediate focus. Moreover, the magnitude of their transaction flows can swamp the balance sheet strength of any central bank.

For example, the BIS reported that the NZ dollar was the 10th most traded currency in 2013 with daily foreign exchange turnover of USD 105 billion, equivalent to over 55 percent of GDP.^{8,9} The Reserve Bank's foreign exchange reserves are approximately USD 6.5 billion.

Investors compete aggressively against benchmarks that trigger financial rewards. Dominant institutional investors often place similar bets, and share similar benchmarks and pricing and risk management platforms. At times, they exhibit herd-like behaviour that can lead to amplification of cycles and mispricing of risk—especially in a low interest environment. Rather than requiring higher risk premia from increasingly risky borrowers, investors often continue financing at declining spreads, fearful of missing out on the returns captured by those who preceded them.¹⁰

The combination of massive financial assets under management (totalling USD75 trillion in 2013), extraordinary advances in computing power, instantaneous information and reduced capital controls mean that financial markets have become deeply integrated around the globe. This has led to an increasingly rapid global transmission of economic and financial shocks and policy actions, and to increased global synchronisation of business cycles.¹¹

iii) Precision

Monetary policy involves many challenges and judgements. Mechanistic approaches to setting monetary policy don't work, and since monetary policy affects inflation with a 12-18

⁷ The full effect of monetary policy may not be felt for 18 to 24 months.

⁸ BIS Triennial Central Bank Survey: Foreign Exchange Turnover in April 2013 (September 2013).

⁹ BIS 2014-2015 Annual Report, page 85 reports that daily global financial exchange turnover totalled USD5.3 trillion in 2013, equivalent on an annual basis to 25 times global GDP. Total central bank foreign exchange reserves are currently around USD11.6 trillion.

¹⁰ We have seen this many times. For example: in the lead up to the Argentinian debt default of 2002 Argentina came to represent nearly one-quarter of the Emerging Market Bond Index. Rather than requiring higher risk premiums from an increasingly leveraged borrower, investors benchmarked to the Emerging Market Bond Index felt obliged to buy at the going price.

¹¹ Graham J (2014) "N Sync: How do countries' economies move together? RBNZ Analytical Note 2014/04.

month lag, by the time one is certain as to the correct policy adjustment, it may already be too late to be effective.

At a technical level, setting monetary policy involves estimating output levels and forecasting how they might evolve relative to the level of potential output. This “output gap”, together with inflation expectations, are seen as the main drivers of inflation pressure in the economy. The degree of monetary policy stimulus is assessed by comparing the current and projected policy interest rate (in our case the OCR) against the neutral interest rate.¹² A major challenge is that potential output, the output gap and the level of neutral interest rates are not observable; all have to be estimated through economic modelling.

Fortunately, economic management has come a long way since Paish described it in the 1960s as like driving a car with a brake and accelerator and only being able to look through the back window. The new-Keynesian based models and applied general equilibrium models used in central banks today are a significant advance and capable of producing complex economic simulations within minutes as to how the economy, and the path of inflation in particular, might respond to domestic and foreign-sourced disturbances, including changes to monetary policy.

Despite their impressive structure, however, such models are inevitably a highly stylised and simplified representation of an economy, and the complex linkages between the financial sector and the real economy are often not well represented. In essence, no economic model can capture the full complexity of economic behaviour or fully reflect key relationships, inter-dependencies, and driving forces in the economy. While adding judgement to the model and adjusting the model outputs can help, the simulations or scenarios produced by such models are still highly conditional on the model properties and a range of ‘exogenous assumptions’. In many respects, their value lies more in raising questions rather than delivering clear-cut answers.¹³

Central bankers try to acknowledge these uncertainties and the associated imprecision of policy through the nuances and conditional language that characterise their forward guidance and other policy statements. In publishing economic forecasts they make it clear — including through devices such as alternative scenarios, forecast ranges, and fan charts — that various economic outcomes are possible around a central projection.

4. Reflections on Recent Monetary Policy in New Zealand

Two important changes were introduced into the September 2012 Policy Targets Agreement (PTA).

¹² Potential output refers to the sustainable long term growth path of the economy when resources are fully employed and price stability is achieved. The output gap reflects the difference between the level of output in the economy and potential output and, as such, indicates the degree of excess capacity or capacity constraints in the economy and the implications for inflationary pressures. We regard the neutral interest rate as the policy rate consistent with the economy growing at its potential in the medium term and having inflation expectations matching the price stability objective.

¹³ McDermott, J (2013) “the role of forecasting in monetary policy”. Speech to FINSIA, Wellington, 15 March

Firstly, the PTA requires the Bank to focus on keeping future average CPI inflation near the 2 percent midpoint of the target range. Secondly, it includes a stronger focus on financial stability, by requiring the Bank to monitor asset prices and have regard to the soundness and efficiency of the financial system in setting monetary policy.

Including the reference to the midpoint in a medium-term context was aimed at lowering and stabilising inflation expectations close to 2 percent. This was important because for much of the period since 2000, annual CPI inflation has been in the top half of the 1-3 percent band, and measures of inflation expectations tended to average around 2.5 percent or higher. Recent data are positive on this front. As discussed in our September Monetary Policy Statement, survey measures of inflation expectations have fallen and are now consistent with inflation settling at 2 percent in the medium term.

The PTA's stronger focus on financial stability and the monitoring of asset prices requires the Bank to have regard to the potential impact of its monetary policy decisions on financial imbalances in the economy. We have used macro-prudential policy instruments and some prudential management interventions to help reduce the risks to the financial system and broader economy associated with a potential correction in Auckland house prices. Although financial stability considerations are secondary to the price stability objective in the PTA, housing market considerations do influence our thinking on the OCR.

Our economy has been affected by several major shocks and adjustments in recent years. These include: the Canterbury earthquakes and subsequent rebuild activity; the 2013 drought; the terms of trade hitting a 40 year high and the subsequent 70 percent decline in dairy prices and early signs of a recovery in recent weeks; the 60 percent decline in oil prices; the related large swings in the real exchange rate; net migration and labour force participation reaching historically high levels; and annual house price inflation in Auckland reaching 25 percent, with house price to income ratios that are double those in the rest of New Zealand. All this has taken place in the context of unprecedented global monetary accommodation and, more recently, a significant slowdown in China and other emerging market economies.

The PTA explicitly recognises (as has been the case), that annual headline inflation may fall outside the target band because of exceptional movements in commodity prices. The medium-term focus of policy means that the Bank does not try to immediately correct deviations of inflation from its target range, but aims to do so steadily over time.

Strong net migration flows have contributed to higher house price inflation, especially in Auckland, which attracts over half of the net migrant flow. Net migration however has had a smaller impact on broader inflationary pressures than in past cycles. One reason is the boost it provides to the labour force. In the two years to June 2015, the labour force expanded by 6.1 percent, enabling strong employment growth of 6.7 percent to be absorbed with only a moderate increase in wage costs. Moderate wage inflation, spare capacity and the decline in inflation expectations towards 2 percent have been important factors behind the subdued rate of non-tradables inflation. Structural elements linked to falling technology costs and the impact of on-line retailing may also have played a role.

As new economic information became available we began scaling back our interest rate projections in the June 2014 MPS and in subsequent MPS's. We commented more extensively on the level of the exchange rate, and cut the OCR three times in the period from June to September 2015.

Recent economic indicators have been more encouraging. Some further easing in the OCR seems likely but this will continue to depend on the emerging flow of economic data. At the same time however, we remain conscious of the impact that low interest rates can have on housing demand and its potential to feed into higher price inflation. It is important also to consider whether borrowing costs are constraining investment, and the need to have sufficient capacity to cut interest rates if the global economy slows significantly.

5. Concluding Comment

Salle 77 in the Louvre is dominated by Th odore G ricault's Raft of the Medusa, painted in 1819. G ricault drew inspiration from Caravaggio. It is a brilliant painting of the forlorn and exhausted sailors of the French Frigate, M duse, desperately clinging to life on a makeshift raft in stormy seas.¹⁴ Without wishing to draw any comparison between the occupants and central bankers, the wild seas are symptomatic of the world central bankers are trying to navigate.

Central bankers' goal of trying to smooth output gaps around the path of potential output hasn't changed. But they are tasked with doing so while the global economy is in a difficult configuration with growth slowing in the developing world, unprecedented monetary accommodation, and prospects of tighter monetary conditions in the US and further easings in the euro-area and Japan. Little wonder that central bankers closely dissect new data and information, and cautiously feel their way with their policy responses.

¹⁴ The French Royal Naval frigate, M duse, sank off the coast of Senegal in 1816. Of the original 150 people on the raft, only 15 survived.