Market Insights

Policy space heading into the next downturn

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The Market Insights publication provides regular research covering up-to-date market developments and in-depth investment research

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Abstract

- *The Global Financial Crisis (GFC) spurred a wave of monetary and fiscal policy easing in many areas of the world, which has supported economic activity and asset prices*
- *However, now more than ten years on, there are growing concerns about what policy space may be left to respond to the next downturn*
- *This paper examines how monetary and fiscal policy has evolved and the likely future consequences. We look at how effective 'unconventional' policy tools may be, like negative interest rates and Modern Monetary Theory (MMT), and how these changes could impact investment returns*
- *This paper also compares how policy space in Australia has changed compared to other countries, and how unconventional monetary policy in Australia could play out*
- *Overall, we find that the lack of current policy space (and regional nuances) together with rising risk levels, will continue to be an important macro input to how we assess investment asset allocation positioning as we head into the later stages of the economic and investment cycle. The lack of policy space is an input to our DAA positioning advice, which has recently moved to a small underweight risk assets*

Executive Summary

Monetary and fiscal policy space has become much more constrained since the GFC, leaving the world in a more vulnerable position heading into the next downturn.

How well prepared policy-makers are to respond to the next downturn has significant implications for investors, as well as for governments.

Policy space – both fiscal and monetary – has evolved materially since before the Global Financial Crisis (GFC). We focus on both developed and emerging countries, particularly from an investor perspective by examining countries included in both the MSCI World Index (DM countries) and the MSCI Emerging Markets Index (EM countries).

Our analysis highlights that, in aggregate, monetary and fiscal policy space is much more constrained than before the GFC.

Importantly for investors, there are key country and regional differences. For developed market countries, highly indebted nations in Europe, like Italy, look particularly exposed in the event that another major downturn were to occur in the near future. For emerging market countries, lower global levels of inflation have improved monetary policy conditions for several emerging market countries. However, countries with high debt levels, like Brazil, appear exposed.

One of the implications of the lack of policy space is that 'unconventional' policy responses, like quantitative easing (QE) and negative rates, are likely to be used more often in the future. This includes the possibility that some of these measures could be used in Australia.

In Australia, the Reserve Bank of Australia (RBA) has provided guidance that it will consider QE if deemed required, but that the hurdle to implement will be a lot higher than a 'traditional' interest rate cut. They also indicated it is highly unlikely that they will respond with negative interest rates, given the potential detrimental impacts of this policy. The RBA has stated that if it implemented QE it would focus on purchasing government bonds and it is unlikely to undertake outright purchases of private sector assets. However, we believe if required, purchasing residential mortgage back securities (RMBS) would be a particularly effective unconventional monetary policy tool available to the RBA.

Overall, our findings highlight that policy-makers across the globe have less capacity to respond to another GFC event if it were to happen. While the severity and timing of the next downturn is difficult to predict, a range of measures indicate that economic risks are heightened. The silver-lining is that history suggests that a downturn of the scale of the GFC is very rare, and a less severe downturn is more common. Also, for Australian based investors, there remains some comfort that, compared to some other advanced economies, Australia continues to be better placed in terms of policy space to weather the next downturn.

Importance of policy space and lessons from the GFC

One of the important lessons of the Global Financial Crisis (GFC) for investors was that no region was immune to the economic and financial market impacts, including Australia. The GFC re-highlighted the risk of economic and financial contagion and the importance of staying aware to emerging risks and issues.

While crises can reverberate across the globe, the starting point of policy space can be critical in responding to a downturn. The GFC hit all regions of the world, but the subsequent recovery of both the economy and financial markets across regions differed greatly.

The importance of policy space

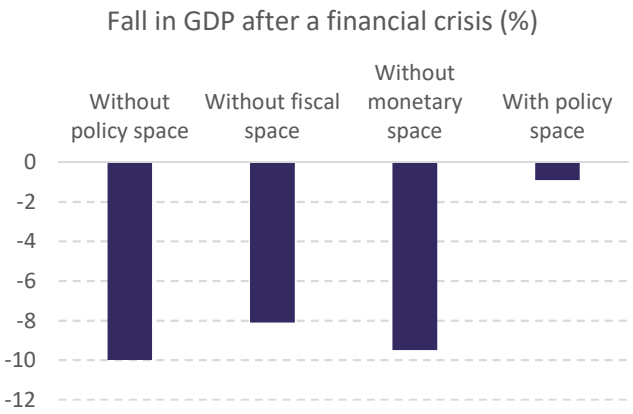
Although important, policy space is hard to measure. One definition comes from prominent economists Romer and Romer (2017) who define:

(i) a country is without monetary policy space if the policy rate is below 1.25%

(ii) a country is without fiscal policy space if public debt-to-GDP is above 96%.

Using data covering a range of OECD countries since 1980, they find that countries with either (or ideally both) fiscal on monetary space respond significantly better economically during a financial crisis. Their study considers alternative cut-off levels for policy space, but the findings remain similar.

Romer and Romer estimate that in response to a crisis, the decline in output from a country with policy space is close to zero, whereas for countries without either fiscal or monetary space, the hit to growth is estimated to be around 10%. This empirical finding underscores the importance of policy space in responding to a crisis.



Source: Romer and Romer (2017)

Experience from the Global Financial Crisis (GFC)

The findings of Romer and Romer that policy space matters was reinforced during the 2008 GFC.

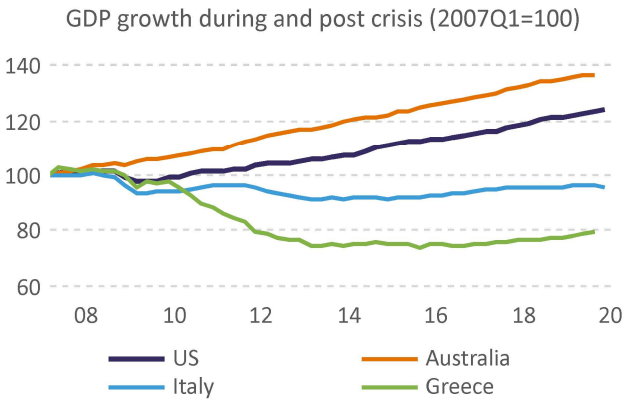
As an example, heading into the GFC, Australia was one of only a few advanced economies with both monetary and fiscal capacity. In contrast, countries such as Italy and Greece were particularly constrained in their fiscal space.

Policy space for some developed economies, pre-crisis 2007

	Monetary Policy Space (Policy rate, %)	Fiscal Policy Space (Public debt-to-GDP, %)
Australia	6.75	10
USA	4.25	65
Italy	4.00	100
Greece	4.00	103

Source: Romer and Romer (2017), IMF, and Frontier
(Green: substantial; Yellow: moderate; Red: limited, as defined by Romer and Romer)

Using these countries as an example, it is clear that both a capacity and willingness to use monetary and fiscal policy contributed to a much greater economic performance of Australia during the GFC.



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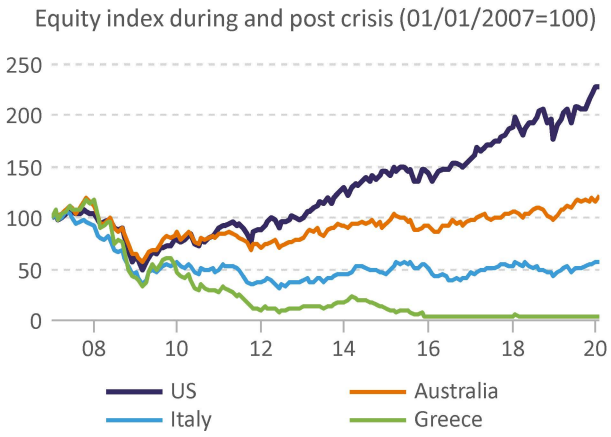
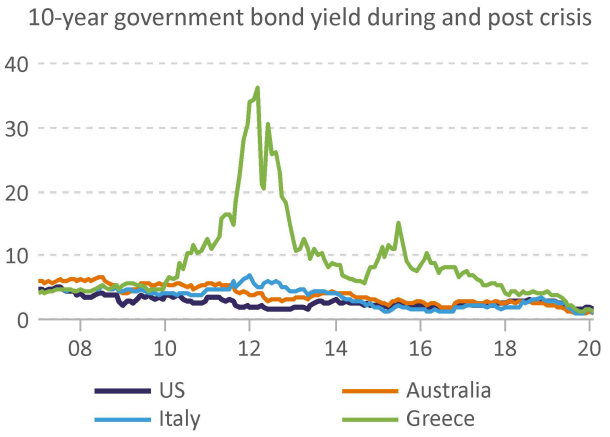


Source: Refinitiv Datastream

While policy space alone does not explain all of this difference in performance, it was likely a significant contributor (IMF, 2010). In Australia's case, spill-overs from stimulus in China and the mining boom were also critical to the recovery.

The divergence in economic performance during the GFC also drove a divergence in financial market performance during the GFC, which highlights that assessing policy space is not only important for policy-makers and economists, but also for investors.

With very limited policy space, both equity and bond markets for Italy and Greece. underperformed those for Australia and the US following the GFC.



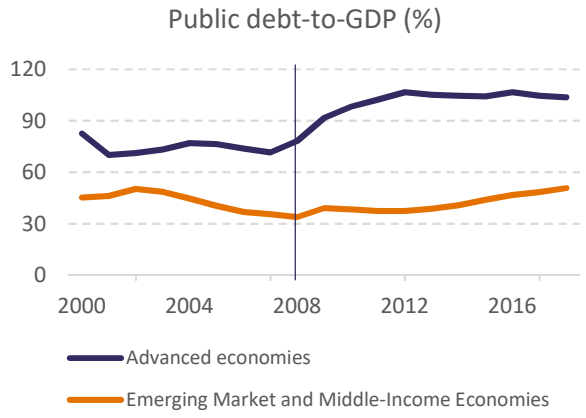
Source: Refinitiv Datastream

How policy space has evolved

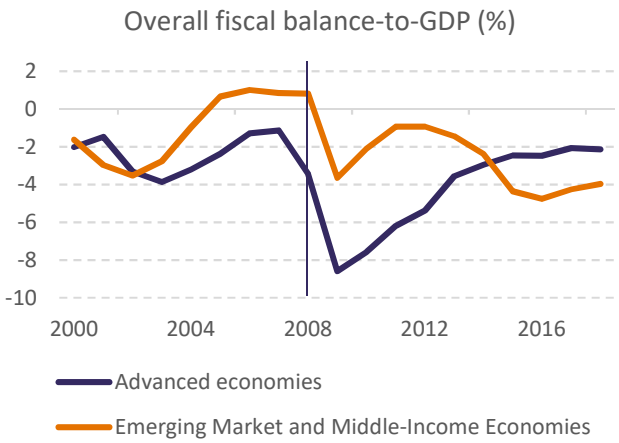
Using the measures set out in Romer and Romer (2017), we trace out how policy capacity across all countries currently in the MSCI World (DM) and MSCI Emerging Market (EM) equity benchmarks have evolved from the GFC to today.

The results are, on the surface, worrying. In aggregate, both monetary and fiscal policy space across DM countries have deteriorated since before the GFC.

Global public debt-to-GDP for advanced economies has risen from around 70% in 2007 to over 100% in 2018. Though a steady reduction in fiscal deficits has seen a slowing in the debt level increase in recent years.

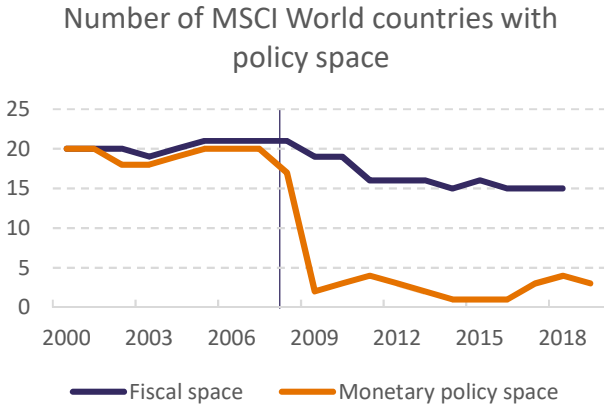


Source: IMF



Source: IMF

Monetary policy space has also declined significantly. Before the crisis there were 20 DM countries with monetary policy rates above 1.25%, the measure of monetary policy space used by Romer and Romer. Following recent cuts from Australia and New Zealand, only 3 countries in the MSCI World benchmark now have interest rates above 1.25% (US, Canada and Norway).



Source: Frontier's calculations

There remains key differences in policy space across countries. Appendix A contains a full table of policy space measures for DM countries for pre-GFC and latest.

This data highlights that heavily indebted countries in Europe, such as Italy, appear very vulnerable to another global downturn. Italy's public debt-to-GDP ratio has risen from around 100% in 2007 to 132% in 2018 and European policy rates are already negative.

Important for Australian investors (with large domestic investment exposures), Australia still appears in a relatively healthy shape. Although public debt (currently at around 40% of GDP) is more elevated than before the onset of the GFC, it is still low by international standards. Similarly, Australia is among the few advanced countries which still possess some (albeit now much more limited) monetary policy space.

An examination of conditions in emerging markets is critical from an investment perspective. However, the framework set out by Romer and Romer focuses on advanced economies.

The analysis for EM shows a mixed picture on how policy space has evolved since the GFC.

In aggregate, fiscal space has worsened as a result of persistent fiscal deficits and subsequent higher government debt.

In particular, some Latin American economies (particularly Brazil) appear to have very limited fiscal capacity.

In contrast to a worsening of fiscal conditions, monetary policy space has improved for many EM countries, supported by lower inflation and structural reform shifts from fixed to floating exchange rate regimes.

Historically, persistently high inflation has severely limited emerging market countries' ability to loosen monetary policy during a crisis. However, a reduction in global inflation since the GFC, which has also occurred in EM countries, has improved policy space available to these countries. For example, many of the EM countries in the MSCI index currently have positive real policy rates (that is, policy rates above their inflation rates).

Policy space for major emerging economies, pre and post crisis

Country	Current MSCI EM Index Weight (%)	2007		2018	
		Monetary Policy Space	Fiscal Policy Space	Monetary Policy Space	Fiscal Policy Space
China	34.56	Limited	Moderate	Limited	Moderate
Korea	11.71	Substantial	Substantial	Moderate	Substantial
India	8.88	Moderate	Limited	Moderate	Moderate
Brazil	7.28	Substantial	Limited	Substantial	Limited
South Africa	4.56	Moderate	Substantial	Substantial	Limited
Russia	4.00	Limited	Substantial	Substantial	Moderate
Mexico	2.46	Moderate	Moderate	Substantial	Limited
Thailand	2.43	Moderate	Substantial	Substantial	Moderate
Indonesia	1.92	Limited	Moderate	Moderate	Limited

Source: Frontier's estimations (Green: substantial; Yellow: moderate; Red: limited).

The future of monetary policy

Given both monetary and fiscal policy is currently constrained, the potential policy response to a future downturn is likely to include a number of unconventional monetary and fiscal policy tools. In this section, we focus on monetary policy.

The rise of the 'unconventional'

One of the hallmarks of the last decade has been the rise of unconventional monetary policy. In responding to the GFC, several of the large central banks – including the US Federal Reserve (Fed), European Central Bank (ECB) and Bank of Japan (BoJ) – have reached 0% policy rates and embarked on a range of unconventional monetary policy actions.

These actions have largely been aimed at suppressing long-term lending rates in the economy.

These actions include:

- 'quantitative easing' (QE) whereby the central bank buys long-dated financial assets (e.g. government bonds or mortgage backed securities)
- 'forward guidance' where the central banks uses messaging to suppress expectations of future policy tightening
- Negative policy rates

The level of success of these policies is subject to debate among economists. These policies have only been used for a relatively short period of time, making academic analysis difficult. Additionally, it is a topic made more difficult given the theory behind some of these actions is still not well understood – Former US Fed Chair Ben Bernanke once famously quipped in 2012 that *'the problem with QE is that it works in practice but it doesn't work in theory.'*

While the degree of impact of these policies is an area of ongoing debate, there are important aspects and implications of these policies.

Quantitative Easing – "*Honey, I shrunk the Term Premium*"

One of the intended effects of policies such as QE is to lower the yield on longer-dated government and private sector borrowing rates.

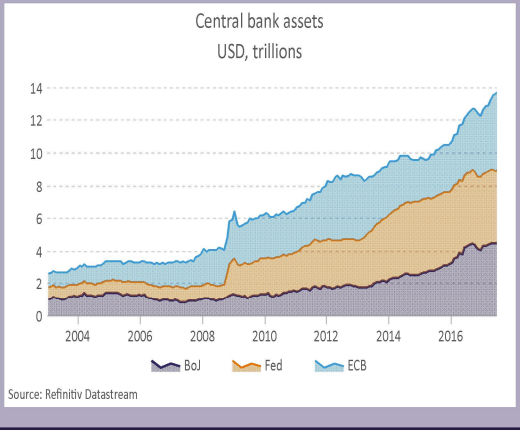
One way to decompose the impact of these policies is by examining estimates of the 'term premium' of bonds. That is, the yield on a government bond can theoretically be broken into two main parts:

(i) the expected path of short-term rates;

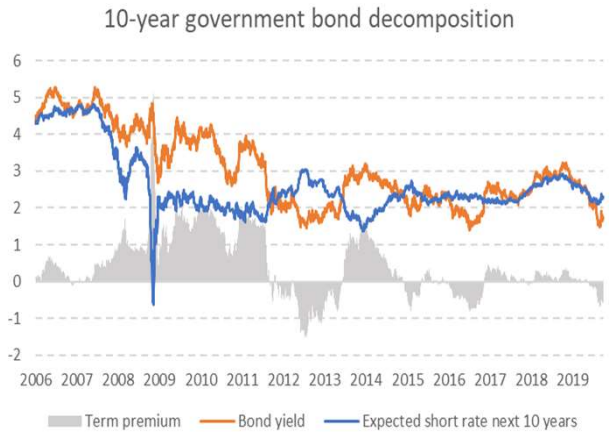
(ii) the extra premium bond holders require to hold longer-dated debt securities over short-dated debt securities (known as the term premium).

Box A: Mechanics of Quantitative Easing (QE)

Quantitative easing is an expansion of a central bank's balance sheet; the central bank buys financial assets, like government bonds (assets to the CB) from the private sector which leads to an equal increase in commercial bank reserve's with the central bank (liability to the central bank).
The purchase of the securities by the central bank drives up the price of those securities (lowering yields) which is aimed at supporting borrowing. The increased level of central bank reserve holdings by commercial banks (money supply) also improves commercial banks' capital, allowing them to increase loans (credit growth).



Since the GFC, estimates of the US term premium have declined, contributing to a fall in bond yields. Policies such as QE have been a major contributor to this fall in term premia (BIS, 2018).

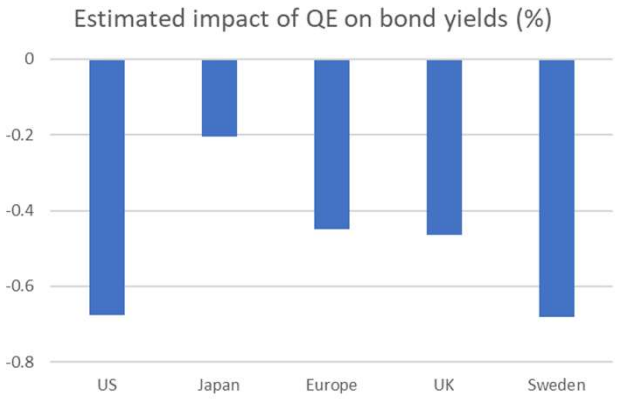


Source: San Francisco Federal Reserve

Effects of QE

Academic and empirical research into the effects of policies like QE and negative rates is still at an early stage.

For QE, there are various studies which have highlighted that policies like QE have generally been successful at lowering the term premium (and thus policy rates), for example Gagnon (2016) provides estimate from a range of studies covering different countries.



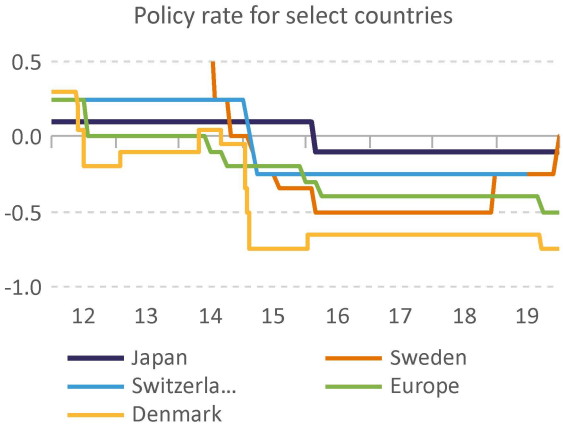
Source: Median estimate based on various academic studies considered in Gagnon (2016)

Other studies focusing on the US experience including by the NY Fed (2019) and Kansas City Fed (2013) have highlighted that QE focused on Residential Mortgage Backed Securities (RMBS) were particularly successful.

However, while these studies have shown positive effects of QE, other studies such as Borio and Hofmannn (RBA conference Paper, 2017) have found that successive rounds of QE by the same central bank have tended to have less and less impact, suggesting there may be a limit to the ongoing use of QE.

Negative Interest Rates - *To zero and beyond*

Since the GFC, a number of prominent central banks have reduced their policy rate beyond zero and into negative territory (including Japan, Europe, Switzerland, Sweden and Denmark).



Source: Refinitiv Datastream

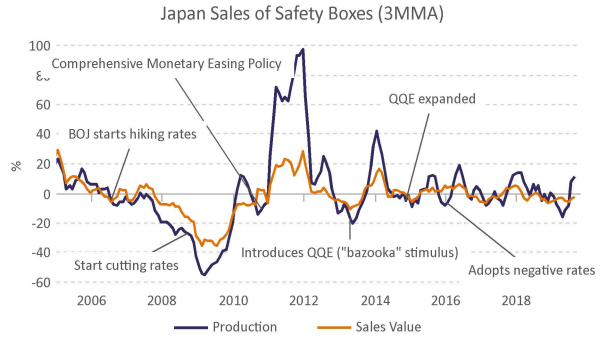
Rates limbo: how low can you go?

Until the last decade, many economists had seen 0% policy rates as the 'zero lower bound' (ZLB). However, a move to reduce policy rates below zero has caused many to now consider what a lower 'effective lower bound' (ELB) might be.

The Bank of Canada (2016) studied a variety of storage and insurance costs associated with storing physical cash and precious metals and estimate that the ELB could be around -0.5%. Other studies have suggested it could be closer to -1.0%.

While these estimates are subject to uncertainty, it highlights that the negative rates currently being employed by several central banks may be reaching its limits.

This is highlighted by the rise in demand in safety deposit boxes in Japan over the last ten years.



Source: Refinitiv Datastream

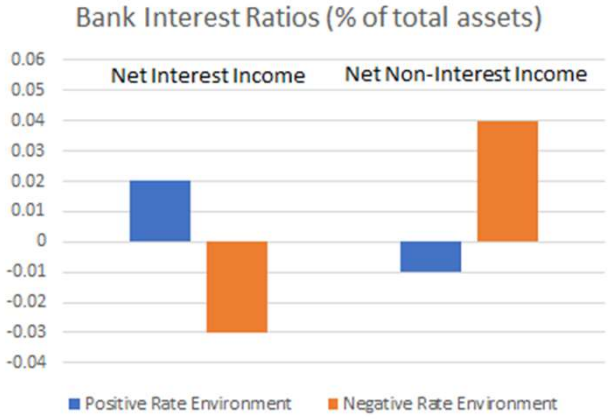
While policy rates are now currently close to estimates of the ELB, some commentators have suggested that radical changes to the current monetary system could dramatically lower the ELB (and give central banks much more room to move into negative rates). One such suggestion includes the abolishment of paper money, see for example Rogoff (2015). However, at this stage it appears very unlikely that government would make such a change.

Effects of Negative Rates

While the research on negative rates is still in its infancy, some studies show it to be a successful policy, see for example the ECB's Altavilla et al (2019).

However, there are also potential unintended consequences of negative rates. In particular, there are concerns that negative policy rates can badly impair the profitability of commercial banks, as banks may be unable to reduce deposit rates low enough to maintain levels of margins to lending rates.

A recent San Francisco Fed paper looking at both Japan and Europe finds that negative rates impair net interest margins for banks during negative rate periods. However, banks can respond to this policy regime by raising income and cutting expenses in other ways, such as through fee based lending, which can offset this impact, see Lopez et al. (2018).



Source: Lopez et al. (2018)

The long-term secular fall in interest rates since the 1970s and 1980s, of which negative rates could be seen as a recent extension, have also occurred alongside rising global inequality – a topic discussed in the Frontier 2018 *Annual Secular Outlook*. A recent study by Mian, Straub and Sufi (2019) that rising inequality and a 'glut' of savings from wealthy households has had a direct impact on lowering real interest rates.

Box B: How negative rates work

When a central bank sets its main policy rate at a negative rate, it has several potential effects:

- If passed on by commercial banks, it could encourage consumption over saving (aimed at spurring activity)
- It may encourage businesses borrowing and investment
- It may encourage government borrowing and investment
- It may put downward pressure on the country's currency, which could support exports and growth

Amount of negative-yielding bonds

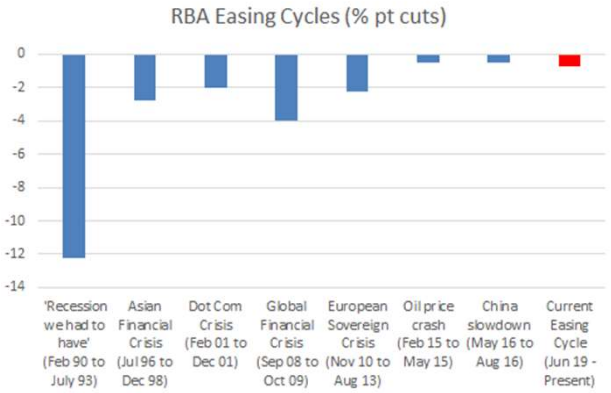
Source: BIS Quarterly Review (Sept 19)

Negative rates or QE in Australia?

There is a possibility that unconventional monetary policies could be used in Australia.

Looking at past easing responses by the RBA to downturns, we identify that the RBA has undergone around seven distinct easing cycles since 1990 (including the current easing).

The magnitude of easing in these periods has varied widely. However, the RBA has typically eased by around at least 2% in prior easing periods. Given the RBA's current historical low policy rate, this suggests that the RBA would likely hit the ZLB if another downturn were to occur in the near future.



Source: RBA, Frontier's calculations

In considering a possible move into unconventional policy by the RBA, we think there are several aspects to consider (which ultimately lead us to believe that a QE program is more likely in Australia than negative interest rates and the RBA has recently provided this guidance):

- Australia has an important, large (and vocal) banking industry. Given the emerging research showing that negative policy rates could impair bank profitability, the RBA would lean towards QE over negative rates;
- Overseas experience shows that QE could be deployed before interest rates hit 0% (Fiore and Tristani, 2019), potentially making it a policy that could be used sooner in Australia than negative rates.
- Although Australia has relatively low public debt, we also have high household debt (linked to housing). To the extent that a future downturn also leads to pressure on house prices and loan repayments, we think a QE program from the RBA which targeted RMBS would help both (i) concerns about the balance sheets of Australia's banks (by transferring assets off the private sector balance sheet and onto the public sector) and (ii) assist household loan serviceability by directly targeting downward pressure on mortgage rates.
- As highlighted earlier, some empirical research has shown that QE programs in the US that focused on MBS were more successful than QE programs than when the Fed just bought government securities.
- QE or negative rates in Australia could be particularly powerful here because of our small size and flexible exchange rate. When the large central banks (Fed, Bank of Japan, ECB) have embarked on QE or negative rates in the past, it has generally been done during a time of risk-aversion (which usually puts upward pressure on these central banks' currencies). However, such policies in Australia could see a meaningful weakening in the Australian dollar which would increase the effectiveness of these policies.
- As highlighted earlier, Australia has more fiscal space than many other advanced economies. If a future downturn came with a meaningful fiscal response from the Australian government, this could lessen the need for as much emphasis on unconventional policies from the RBA. This would be particularly effective in the long-term if the fiscal response was targeted at investments in productivity enhancing infrastructure. However, given the political focus on delivering surplus budgets, we believe there are some questions over if a large policy response in this area would be forthcoming in such a downturn event.

The future of fiscal policy

Modern Monetary Theory (MMT)

Just as constrained traditional levers of monetary policy has spurred the contemplation and creation of unconventional policy tools, it also seems likely that a similar debate could unfold surrounding fiscal policy.

One of the key developments in this area has been the rise in interest of 'Modern Monetary Theory' (MMT). MMT – a term first coined by Australian economist Bill Mitchell – has risen from obscurity in economic circles and has gained traction as an area of policy debate in part due to one of its major proponents – Stephanie Kelton, Professor of Economics at Stony Brook University and Economic Advisor to US Presidential Candidate Bernie Sanders.

MMT departs from conventional economic orthodoxy in it's belief about government debt. Proponents of MMT advocate that it is impossible for a country that issues debt in its own currency to default, and that there is nothing inherently wrong with large and growing debt levels. Under MMT, public debt can be expanded as long as it does not lead to high inflation.

This economic view is supported by those who see a greater role for expansionary fiscal policy, particularly by some potential US Democrat Presidential candidates. For example, some policy measures that are being debated by Democrats in the US include 'medicare for all', 'a green new deal' and 'a trillion infrastructure package' – all of which would see a major expansion of US fiscal policy.

Outside of politics, MMT has been met with fierce resistance by many prominent economists. They point to the experience of some emerging market economies where rapid fiscal expansion has led to outbreaks of hyperinflation. The experiences during the GFC outlined earlier in this report also suggests that while debt levels can be raised during good economic times, there can be severe consequences during downturn episodes. While MMT is likely to be an area of political and academic debate for some time ahead, we think there are some important implications for investors.

Regardless of it efficacy, we think that the rise in prominence of MMT is indicative of a greater willingness to use fiscal policy in a more active way than in the past.

Expansionary fiscal policy, if targeted at infrastructure, could both enhance economic productivity and support a growing desire for real assets by investors.

Investors should be cognisant to the possibility that more active fiscal policy would likely occur alongside higher than expected sovereign debt issuance which could put upward pressure on bond yields (potentially acting in the opposite way to efforts by central banks to suppress term premiums and bond yields).

Box C: Summary Table of conventional economic thought vs Modern Monetary Theory (MMT)

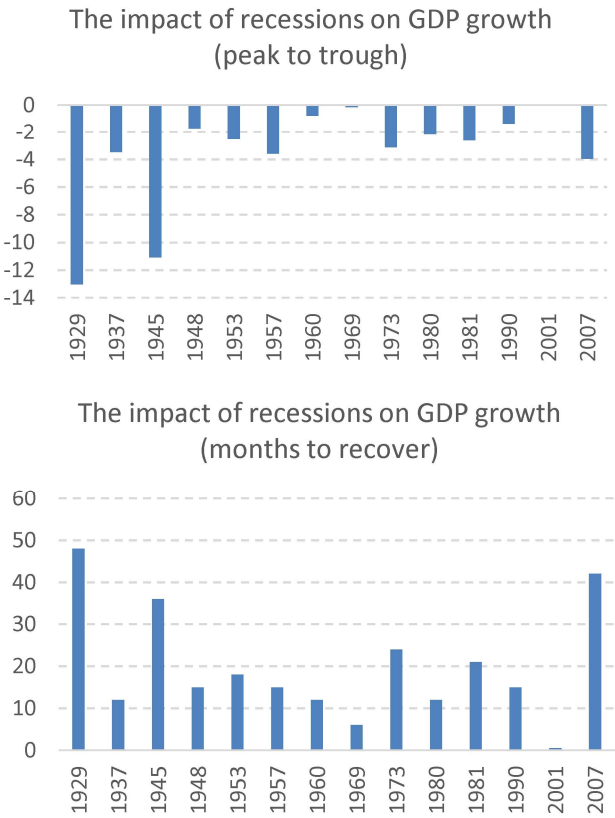
	Conventional economics	MMT
Importance of debt levels	Important. Governments should limit public debt by running a mix of fiscal deficits and surpluses.	Not important. Governments should ignore debt levels and run persistent deficits. Deficits should be maximised, subject to restraining inflation.
Role of policy levers	A mix of monetary and fiscal policy should be used to manage the business cycle.	Fiscal policy is the main policy tool, and monetary policy is used to monetise debt created by fiscal policy.

What a future downturn might look like

Are we doomed to face another GFC?

The sombre findings of our policy space analysis is that policy-makers appear to have less available space compared to pre-2008 (and that 'unconventional' may become conventional). The silver-lining from a macro perspective is that although policy-makers may have less capacity to respond to another GFC event, history suggests that a downturn of the scale of the GFC is very rare, and a less severe downturn is more common.

Focusing on the US where there is long reliable data and recession dating, the GFC was the most severe recession in the post-war period. This is highlighted by both the depth of the slowdown (peak to trough fall in GDP) and length of time to recover.



Source: IMF database

Therefore, while examining policy space since the GFC can help to highlight economic vulnerabilities, caution should be taken by investors in considering how future economic downturns could unfold.

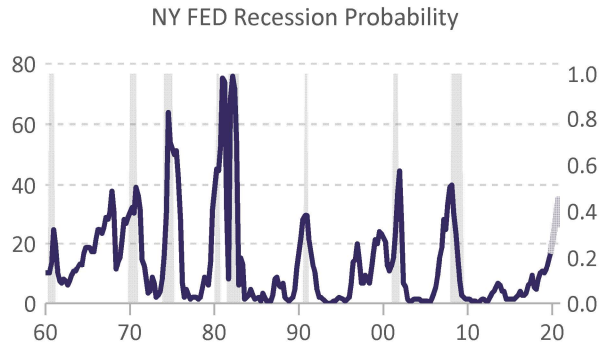
At Frontier, we advocate that investors should consider a arrange of possible economic scenarios in considering risks and opportunities to portfolio construction and portfolio positioning.

When will the next downturn hit?

Like the potential severity of the next downturn, the timing of the next downturn is similarly an area of great uncertainty.

At Frontier we monitor a range of indictors that can be useful (but not guaranteed) to suggest when a downturn is imminent.

Many of these tools, such as the NY Fed's recession model, are underpinned by the US yield curve. The US yield curve inverted in 2019 (i.e. long-term government bond yields lower than short-term yields). This has caused some recession indicators, like the Fed model, to show heightened probabilities of a downturn – the Fed model currently predicts around a one-third chance of a US recession in the next 12 months.



Source: Refinitiv Datastream

It is likely that policy measures like QE are contributing to depressed long-term yields, and thus making an inverted yield curve more difficult to analyse than in the past. Therefore, we monitor a range of indicators in assessing risks, one measure being our Frontier Market Crisis Indicator. However, regardless of the measure, these indictors generally suggest the probability of a downturn in the near future is higher now than in most times in the post-GFC period.

Implications for Investment Strategy

Is it time to run for the exit? (no, but it is time to be cautious)

While the timing of the next downturn is uncertain, risks are rising which supports moving towards a more defensive asset allocation. Our Dynamic Asset Allocation (DAA) positioning advice has been in favour of on overweight to growth assets (such as equities) for a number of years. However, we have reduced that position over the last few years and now recommend a slightly underweight position.

In arriving at this view to be slightly underweight, we are also cognisant that a greater use of unconventional policy measures could boost economic growth and risk asset returns in the short- to medium-term. This is despite conventional policy space being constrained. For example, MMT and an associated fiscal expansion could benefit equity returns.

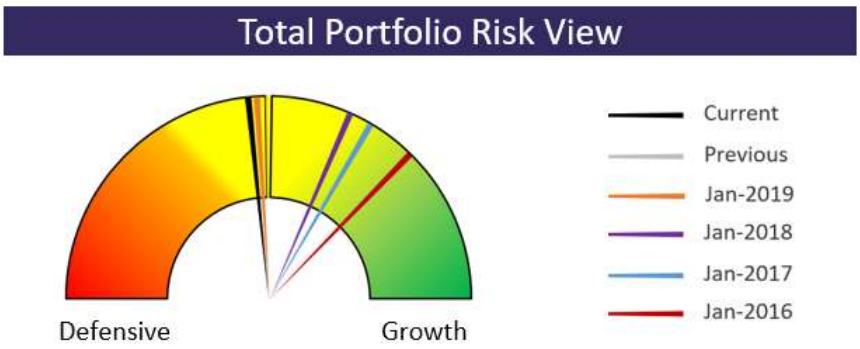
Looking ahead, investors should be cognisant of policy space differences across regions and countries when setting overall investment strategy. For example, a lack of policy space should be used as a macro input when considering medium-term regional or country equity tilts. However, we also consider closely other factors such as the earnings outlook and valuations as key inputs to those decisions.

Similarly, the aggregate improvement in policy space in many emerging markets could support an ongoing structural move towards emerging markets as a source of future economic growth and investment returns. However, country specific risks are also key considerations.

The expected greater use of unconventional policies will likely have a large impact on fixed income returns. It is possible that the ongoing (and increasing) use of unconventional monetary policy (like QE and negative rates) will continue to exert downward pressure on bond yields.

However, there would seem to be practical limits to how negative bond yields go and some of these unconventional policies (like negative rates and the impact of QE) appear to be reaching the limit in some countries. Therefore, the upside to fixed income investment returns appear limited, while over the medium-to-long-term bonds are likely to provide a negative real yield in an investment portfolio. In addition, a move towards unconventional fiscal policy, such as MMT, could eventually be a trigger for bond yields to rise if it causes inflation expectations to move higher, and fixed income returns will be negative.

Real asserts with long duration cash flows, like property and infrastructure, have benefited from the revaluation of lower discount rates. However, in general, discount rates have not fallen as much as risk free rates and therefore there is potential for further valuation increases if continued unconventional monetary policies keep bond yields low. Real assets may also benefit (at least initially) if unconventional fiscal policy does lead to some increase in inflation as infrastructure and property income streams can often be explicitly or at least implicitly linked to inflation.



Source: Frontier Advisors Q1 2020 *Quarterly Market Outlook* (QMO)

Appendix A

Summary of Policy space for DM countries

Country	Current MSCI DM Index Weight (%)	2007		2018	
		Monetary Policy Space (Policy rate, %)	Fiscal Policy Space (Public debt-to-GDP, %)	Monetary Policy Space* (Policy rate, %)	Fiscal Policy Space (Public debt-to-GDP, %)
United States	64.21	4.25	64.65	1.75	105.77
Japan	7.90	0.50	175.43	-0.10	237.12
United Kingdom	5.27	5.50	41.74	0.75	86.86
France	3.70	4.00	64.54	-0.50	98.59
Canada	3.36	4.25	66.86	1.75	90.63
Germany	2.81	4.00	63.66	-0.50	59.75
Switzerland	3.14	3.25	45.46	-0.75	40.51
Australia	2.22	6.75	9.69	0.75	40.67
Hong Kong*	1.11	n.a.	1.03	n.a.	0.05
Netherlands	1.31	4.00	41.97	-0.50	54.44
Spain	0.92	4.00	35.51	-0.50	97.02
Italy	0.77	4.00	99.79	-0.50	132.08
Sweden	0.83	4.00	39.20	0.00	39.01
Denmark	0.62	4.00	27.35	-0.75	34.27
Finland	0.32	4.00	33.99	-0.50	60.52
Singapore*	0.40	n.a.	84.72	n.a.	108.34
Belgium	0.32	4.00	87.03	-0.50	101.39
Norway	0.19	5.25	49.18	1.50	36.75
Ireland	0.19	4.00	23.91	-0.50	65.20
Israel	0.20	4.00	73.04	0.25	59.59
Austria	0.07	4.00	64.74	-0.50	74.24
New Zealand	0.09	8.25	16.30	1.00	29.39
Portugal	0.05	4.00	68.44	-0.50	121.43
Total countries:		**21**	**23**	**21**	**23**
With space		**20**	**21**	**3**	**15**
Without space		**1**	**2**	**18**	**8**

*Monetary Policy Space is updated until 5 February 2020 and not applicable to Hong Kong and Singapore
(Green: substantial; Yellow: moderate; Red: limited, as defined by Romer and Romer, 2017)

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