

**TREASURY MINISTERIAL SUBMISSION**

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Treasurer

**INFORMATION NOTE: UNCONVENTIONAL MONETARY POLICY**

- Your Office requested background information on unconventional monetary policy.
- We have provided an overview and summary of unconventional monetary policy (see **Attachment A**). We stand ready to provide further detailed information on any specific issue as required.

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Ian Beckett  
Division Head  
Macroeconomic Modelling and Policy Division  
Ph: 02 6263 3212

Contact Officer: s 22  
Ph: 02 s 22 

## ATTACHMENT A

## CONVENTIONAL AND UNCONVENTIONAL MONETARY POLICY

**Conventional monetary policy** involves adjusting a short-term ‘policy’ interest rate in order to influence the long-term borrowing and lending rates faced by firms and households. It relies on a well-functioning financial system to transmit the policy signal from the short end of the yield curve to longer term interest rates and the various credit markets that service the real economy (the ‘transmission mechanism’).

**Unconventional monetary policy** refers to a suite of policies that central banks have employed once their short-term policy rates hit the zero nominal bound. Broadly, there are three distinct unconventional monetary policy tools:

- i. Negative interest rate policy
- ii. Quantitative easing (QE)
- iii. Forward guidance

Although the instruments may differ, the objective of unconventional policy remains the same: to influence expected long-term borrowing rates faced by firms and households.

**Negative interest rate policy** is a continuation of conventional monetary policy in that it uses the same policy instrument. It can be effective but depends on the capacity of the financial system to transmit negative policy rates into lower borrowing rates for firms and households. However, theory and experience internationally suggests the transmission mechanism for conventional policy can be impeded at very low or negative interest rates (see below). To be effective, negative policy rates may need to be supplemented with other unconventional policies.

**Quantitative easing** involves the central bank lending to banks or buying financial assets to more directly target the long-term interest rates and/or credit spreads that determine borrowing rates for firms and households. QE is relevant when the transmission mechanism for conventional policy is not functioning.

**Forward guidance** involves the central bank making a commitment about the future path of monetary policy. The objective is to anchor interest rate expectations at a low level. It can be used in combination with both negative interest rates and QE.

## LIMITS TO CONVENTIONAL MONETARY POLICY AND ‘ZERO LOWER BOUND’

When short-term interest rates are close to zero, the monetary policy transmission mechanism can become impaired. Economists refer to this as the ‘**zero lower bound**’ (ZLB) constraint on (conventional) monetary policy. Transmission mechanisms can be impaired if savers decide to hold cash instead of bank accounts yielding negative interest or if banks fail to ‘pass on’ lower rates to lenders to maintain their margins.

Strictly, the ZLB is the notion that nominal interest rates cannot be negative. However, international experience has shown that negative interest rates are possible. More generally, the ZLB is best understood as referring to the limitations on the effectiveness of conventional monetary policy at low interest rates owing to market resistance to rates falling further.

It is helpful to distinguish the conceptual ZLB from the more practical ‘effective lower bound’. The latter is the level of the policy rate at which the central bank judges it is no longer feasible or desirable to further lower rates.

*Negative policy rates: the effective lower bound is below zero for some countries*

Central Banks in Denmark, the euro area, Japan, Sweden and Switzerland, have all implemented negative interest rate policies; with the Swiss policy rate reaching as low as minus 0.75 per cent. These examples demonstrate that in some circumstances the effective lower bound on the traditional policy interest rate is below zero. They also indicate that negative policy rates can be sustainable at least in the short-to-medium term without being too disruptive to the basic functioning of the financial system.

*The effective lower bound is a judgement call for the central bank*

In most cases, central banks that have used negative interest rates to stimulate their economies have also employed other unconventional policies including QE. However, not all central banks that have used QE have used negative interest rates. Notably, the US Federal Reserve and the Bank of England have both pursued QE but have kept the traditional policy rate slightly positive.

In summary, international experience suggests that the effective lower bound on the short-term policy interest rate is around zero; it can be below zero but it may also be a little above zero. The lesson from international experience is that the central bank needs to take account of each country's unique institutional and market circumstances when judging if conventional policy has reached the effective lower bound. In particular, what is the sensitivity of investors' choice between holding cash or deposits in a financial institution.

### **QE INVOLVES BUYING FINANCIAL ASSETS AND EXPANDING THE MONEY BASE**

The 'quantitative' element of QE refers to the **expansion of the amount of financial assets** the central bank holds on its balance sheet. These assets can be either loans to banks or financial securities issued by governments, banks or other entities. By being willing to buy and hold additional financial assets, the central bank can more directly target long-term interest rates and/or credit spreads that determine the borrowing rates faced by firms and households.

QE also involves **expanding the central bank's liabilities**. The expansion of the liabilities occurs automatically when the central bank purchases additional financial securities or lends to a bank. The central bank settles these transactions by crediting cash on the liability side of its balance to the counterparty of these transactions. This is the aspect of QE that is sometimes referred to as 'printing money'.

*The critical question with QE is: which assets to buy?*

Implementing QE requires the central bank to decide which financial assets to purchase. There are a range of issues to consider:

- i. What lending or asset purchases will be most effective in lowering borrowing rates and stimulating activity in the real economy?
- ii. What financial risks is the central bank capable and willing to take onto its own balance sheet?
- iii. What is operationally feasible for the central bank (legally and technically)?

*Conventional policy and QE can inflate asset prices and generate risks to financial stability*

As with conventional policy, central banks need to consider the implications of QE for financial stability. Both conventional policy and QE work in part by reducing yields on safe assets and thereby encouraging investors to seek out riskier investments offering higher returns. This can potentially encourage excessive growth in asset prices, including house prices. These developments can have adverse implications for financial stability that need to be subject to close supervision and potentially be a target for macroprudential policy action.

## PROSPECTS FOR UNCONVENTIONAL POLICIES IN AUSTRALIA

With the RBA's cash rate now at 1 per cent, there is a material prospect that Australia could reach the effective lower bound at some point and the RBA may need to consider unconventional policies. Nonetheless, in response to questions after a recent speech, RBA Assistant Governor Chris Kent opined that the adopt of unconventional policies is still "a very low likelihood event" and that "we're a long way away from something like that" but it is prudent to consider options.

Although unconventional policy has its critics, and as with conventional monetary policy there are genuine risks that need to be managed, the international experience suggests unconventional policies are a useful and in some cases necessary policy response when traditional policy tools are no longer effective. The appropriateness of specific unconventional policies needs to take account of Australia's particular circumstances. In most cases internationally, unconventional policies have been deployed in contexts where a weak financial system and limited fiscal policy space constrained other policy options.

### *The RBA will need to judge when the cash rate has hit the effective lower bound*

The first issue the RBA will face is assessing at what point cash rate cuts (in isolation) will have exhausted their effectiveness. Although the banking system passed through the two most recent rate reductions relatively comfortably, it is likely that the transmission of policy decisions will become impaired as the cash rate approaches zero and banks' margins come under more intense pressure from lower rates.

While a negative cash rate cannot be ruled out in advance, it may become necessary for the RBA to consider policies to improve the transmission of policy cuts even before the cash rate reaches zero. On the other hand, there may also be other reasons why the RBA may judge that keeping the cash rate slightly positive and using some form of QE is better than pursuing negative rates.

### *The RBA has a range of options for QE asset purchases*

The international experience indicates that a broad range of assets can be used to implement QE. The RBA will need to tailor QE to Australia's circumstances. Given that Australia's financial system is dominated by bank lending to households it is likely that the Bank would first consider options aimed at lowering bank funding costs or supporting mortgage funding directly. This would involve either buying commercial bank bills or residential mortgage backed securities (RMBS). The latter may be particularly attractive as the RBA already holds these assets as collateral as part of its existing operations.

The RBA could also consider purchasing state or commonwealth government securities. Although these would be low risks purchases for the RBA, it is less certain that they would be an effective form of stimulus as governments are unlikely to respond directly to lower interest rates and, unlike in other countries, relatively few borrowers have interest rates linked directly to government bond yields. Beyond this, the RBA could also consider more risky assets, such as corporate bonds or even special purpose 'QE infrastructure bonds', but these options are more complex, would potentially involve adverse side effects, and would take longer to develop and implement.

### *Forward guidance will be important*

Credible communication to the market and public will be crucial for a successful transition to using unconventional monetary policy tools. The RBA has already signalled via speeches that it has studied the international experience and understands the mechanisms involved. It has emphasised that the key lesson learnt is that policies will need to be tailored to Australia's circumstances. It will be important for the RBA to also explain the risks associated with unconventional policy and how it sits within the existing inflation targeting framework. Insuring policy actions are credible will be key to their effectiveness.



## Supporting the Economy with Monetary and Fiscal Policy

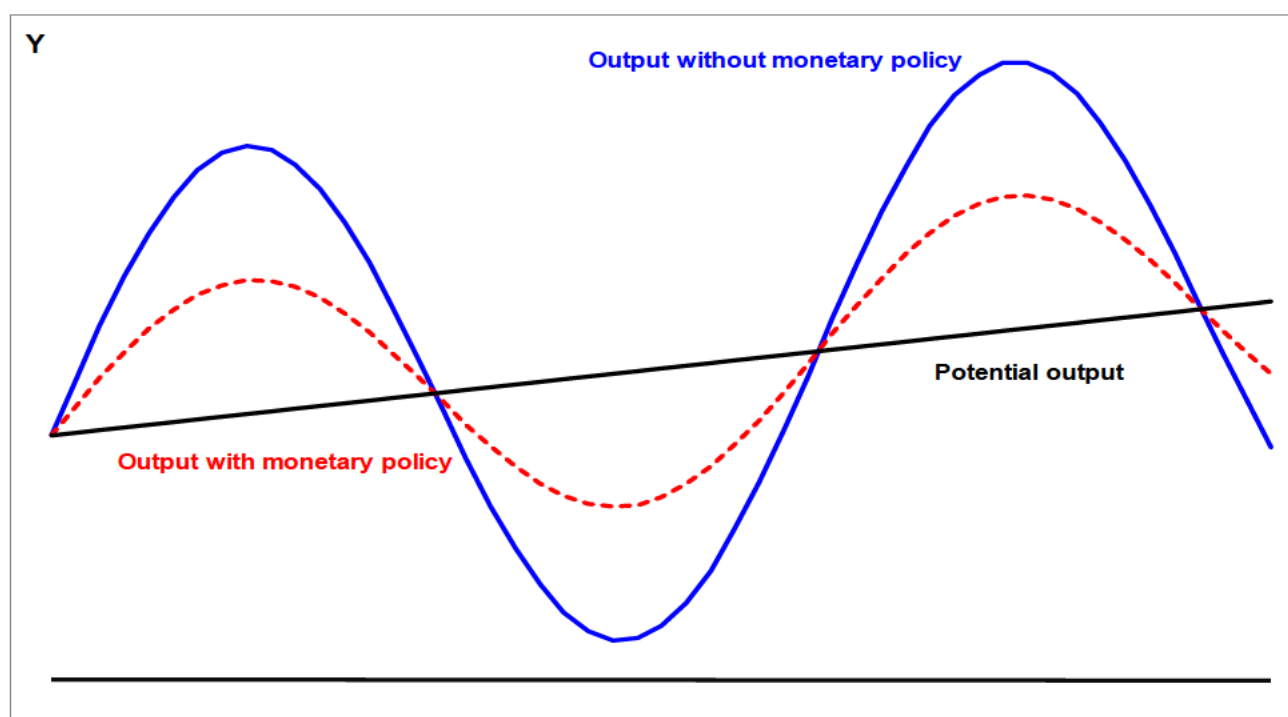
Conventional monetary policy manages temporary fluctuations in aggregate demand. Changes in the cost of borrowing lead households and businesses to pull forward or delay consumption and investment.

When short-term interest rates approach their effective lower bound, unconventional monetary policies or the use of fiscal policy may be called for. Mainstream economic thinking suggests discretionary tax cuts or spending increases are highly effective at supporting aggregate demand if monetary policy is constrained.

Australia is not currently in these circumstances but we are closer than we have been previously.

### Conventional monetary policy

Conventional monetary policy – changes in short-term policy interest rates that feed into the borrowing and lending rates in the economy – can bring forward or delay economic activity, reducing the amplitude of the business cycle (see figure below). Monetary policy is unlikely to effect the trend for potential output unless it is applied poorly, for example, policy that is kept too tight may lead to higher than necessary unemployment, with deteriorating skills for those unable to find work for long periods (hysteresis).



Reductions in the cash rate can affect the real economy through a number of channels, such as:

- Bringing forward private consumption and investment by reducing the returns to saving and increasing the disposable incomes of borrowers with variable interest rate contracts;
- Increasing wealth by raising the present value (price) of cash flows received from owning real and financial assets – in turn, this lowers firms' debt and equity costs of capital and increases the net present value of prospective investments; and
- Reducing the exchange rate due to the lower relative return available in domestic currency terms compared with other currencies, noting the outcome for the economy from exchange rate depreciation is not unambiguously positive, given it makes exports more competitive but increases the cost of imports to domestic firms and households.

## PROTECTED

Monetary policy has long and variable lags in its impacts on the economy as it may take some time for firms and households to respond to the changes in interest rates, asset prices and exchange rates, with the peak effect thought to be around 12 to 18 months after a policy change. However, when short-term policy interest rates reach their effective lower bound, it may be appropriate for the central bank to use unconventional policies instead.

### Unconventional monetary policy

Unconventional measures typically act to lower longer-term interest rates either through the direct purchase of securities (quantitative easing or QE) and extension of low cost loans to banks (funding-for-lending), or indirectly by managing expectations as to the length of time short-term rates will be maintained at extremely low levels (forward guidance).

#### Quantitative easing

QE refers to the large scale purchase of bonds and other financial assets in order to lower the yields on those assets and thereby directly reduce the long-term borrowing costs of firms and households. QE likely has a stronger impact through the asset price channel because it explicitly takes safe assets out of circulation, putting pressure on investors to move out the credit risk spectrum into riskier securities. This, in turn, lowers the funding costs for riskier entities and activities.

- In countries that have undertaken QE, the securities purchased have included government bonds and mortgage-backed securities, but have even extended to equity market exchanged-traded funds in the case of Japan.
- While it is not close to being an immediate consideration, were the RBA to look at undertaking QE, the type(s) of securities purchased would need careful assessment, given the Australian economy is heavily reliant on bank financing rather than financing via securities markets. This may point to other unconventional policies being more appropriate to our circumstances, such as funding-for-lending.

#### Funding-for-lending

Funding-for-lending involves the central bank extending low cost loans to commercial banks where they can demonstrate they are, in turn, making loans for productive investments – typically non-mortgage, business lending. For example, the European Central Bank's Targeted Long-Term Refinance Operations lend to banks at rates as low as -0.40 per cent where they make loans facilitating business investment.

#### Forward guidance

Forward guidance involves statements about the (typically distant) conditions under which monetary policy would be tightened in the future, with the hope that more explicit management of interest rate expectations will put downward pressure on long-term interest rates.

- Forward guidance is said to be *Odyssean* when the central bank binds itself to not raising interest rates before a certain point in time – for example, the European Central Bank is currently stating that it will not raise rates until the end of 2019 at the earliest – or when it binds itself to certain macroeconomic outcomes – for example, following the financial crisis, the US Federal Reserve announced it would not raise rates until unemployment had fallen below 6.5 per cent.
- Forward guidance is said to be *Delphic* when it provides a more nuanced articulation about the circumstances in which policy would be tightened. This is commonplace in the communications of most central banks in recent years and, in this sense, is not strictly unconventional.

The main problem with forward guidance, particularly of the Odyssean kind, is that it requires markets, firms and households to believe the central bank's statements are credible. But as circumstances change, this credibility can quickly disappear leading to an earlier-than-desired tightening in financial conditions.

## PROTECTED

*Other policies*

Other measures straddle the definition of conventional versus unconventional policy. Negative policy interest rates, which are often termed unconventional policy due to being seen as quite novel, at least until recently, are really an extension of conventional policy into negative territory. More recently, exchange rate intervention has come to be seen as a less conventional policy, but it has a long history of application, particularly through past periods of fixed and managed exchange rates – it is less relevant today, given the floating exchange rate regime and the development of deep and liquid hedging markets where firms can mitigate their exchange rate exposures.

Unconventional monetary policies are worthy of consideration when conventional space has been eroded, but they are somewhat less direct, can have larger wealth effects through asset prices and can be difficult to unwind. As such, fiscal policy can play a greater role when monetary policy is constrained.





## Negative Policy Rates and the Effective Lower Bound

Central banks lower their policy interest rates to pull forward demand and stimulate economic activity. By convention, interest rates are typically changed in 25 basis point increments (or multiples thereof). In a mechanical sense, the stimulus from reductions in interest rates made in 25 basis point increments becomes ever more powerful at lower *absolute* levels of interest rates as they constitute a greater *relative* reduction in the interest burdens of borrowers. But this diminishes when interest rates reach the effective lower bound – thought to be at interest rates close to or just below zero. While interest rates are low in Australia, the RBA has room to ease policy before reaching the lower bound and having to contemplate unconventional monetary policy measures.

### The effective lower bound

As policy interest rates are reduced and potentially become negative, at some point the return to savers is so low that it is more attractive to store liquid savings in physical cash rather than as bank deposits. Below this rate, further interest rate reductions become ineffective because banks cannot maintain their deposit funding and therefore cannot pass on interest rate cuts to the lending rates they charge their borrowers.

- In theory, the effective lower bound could be several percentage points below zero, reflecting the trade-off between the costs savers incur in securely storing large amounts of physical cash compared with the negative nominal return they would receive on bank deposits.
- In practice, central banks that have set negative policy interest rates have halted prior to reaching the point where hoarding physical cash became prevalent, largely because commercial banks have been reluctant to pass on negative interest rates to depositors.

In response to and following the global financial crisis, a number of central banks have pursued negative policy rates including Switzerland, Japan, Sweden, Denmark, and the European Central Bank, with Swiss rates currently the lowest at -0.75 per cent.

### Efficacy of negative interest rates

In some sense, shifts to negative policy rates are a continuation of shifts to low, positive rates in terms of their effect on aggregate demand and the channels by which they operate: encouraging borrowing for investment and private consumption, boosting asset values, and lowering exchange rates. International evidence, while mixed, indicates negative policy rates largely operate as desired through these channels with a few caveats.

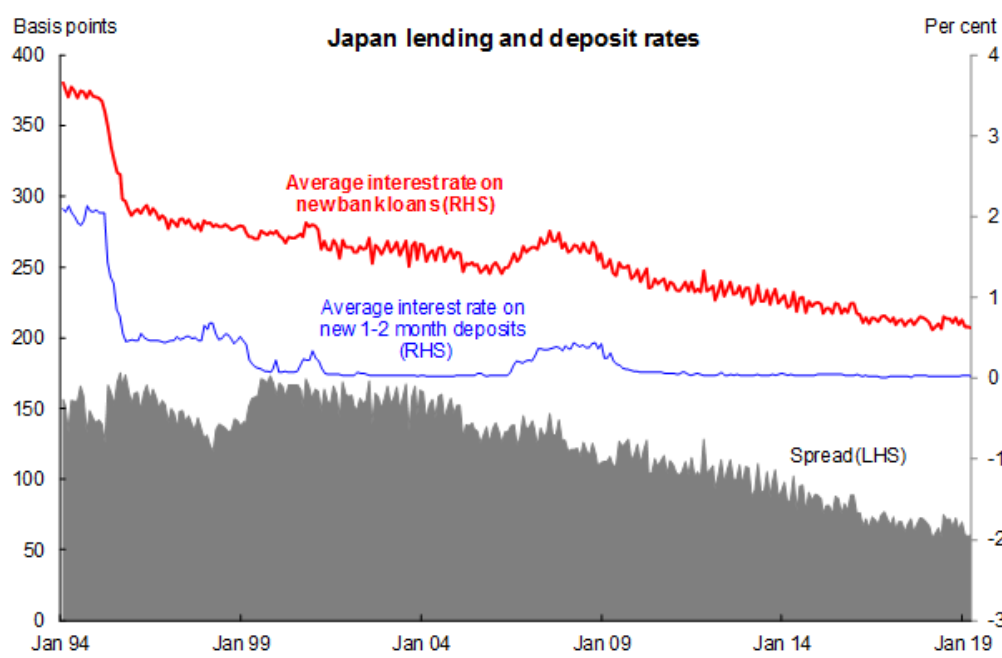
Concerns have been raised that negative policy interest rates could pose potential risks to the financial and real economy distinct from positive rates because of reduced bank profitability, and pressures to take excessive risk for those who have fixed nominal liabilities or fixed nominal asset return objectives, such as pension funds and insurers. In addition, negative policy interest rates may not be well understood, particularly at a retail level, which may prove counterproductive.

### *Squeezed banking profitability*

Negative policy rates pose a question for how much of the change commercial banks pass onto their lending and borrowing customers, and the impact this will have on their net interest margins (lending rate less deposit rates).

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- Depositors likely have a limited tolerance for negative interest rates before substituting their deposits for cash. But even at higher interest rates, banks profit from paying lower or no rates on at-call deposits which are a significant component of their funding. This profit gets squeezed as lending rates decline relative to this zero-interest source of funds. This can be seen in the figure below of the reduced interest margins of Japanese banks, noting that these impacts began at low rates even before the policy rate became negative in 2016.
- Commercial depositors have higher costs saving physical cash, and so may be more willing to receive negative deposit rates than retail depositors. Banks with a high share of retail deposits in their funding mix, such as Australian banks, will likely face greater pressure on their profits.
- Some countries have experimented with tiering reserves held by the banking system with the central bank to reduce these effects. In particular, where central banks have undertaken quantitative easing (QE), reserves held by commercial banks with the central bank expand markedly. Tiering quarantines the majority of these bank reserves from the negative interest rate. But to some extent this lessens the rationale for having a negative policy rate at all.

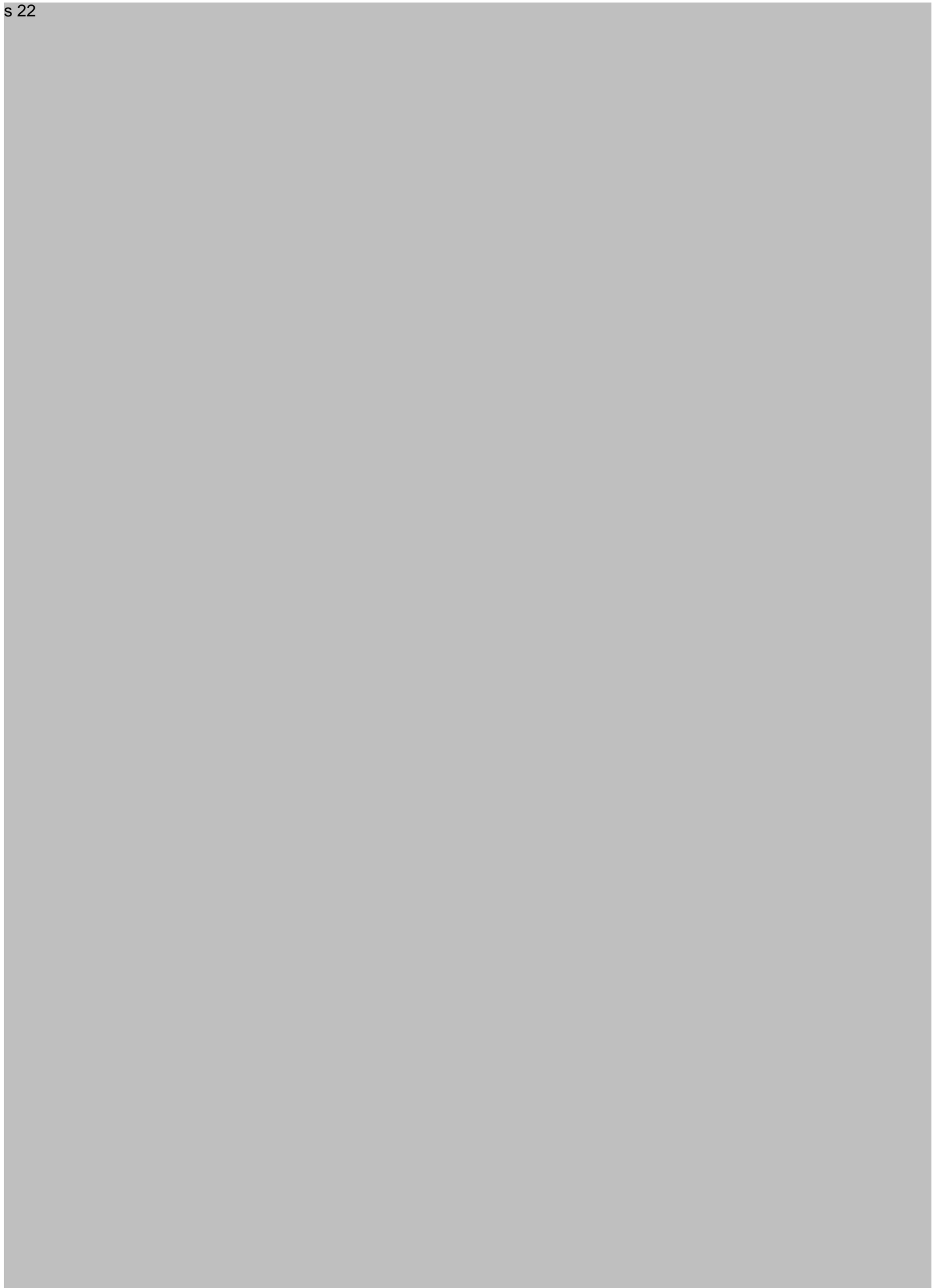


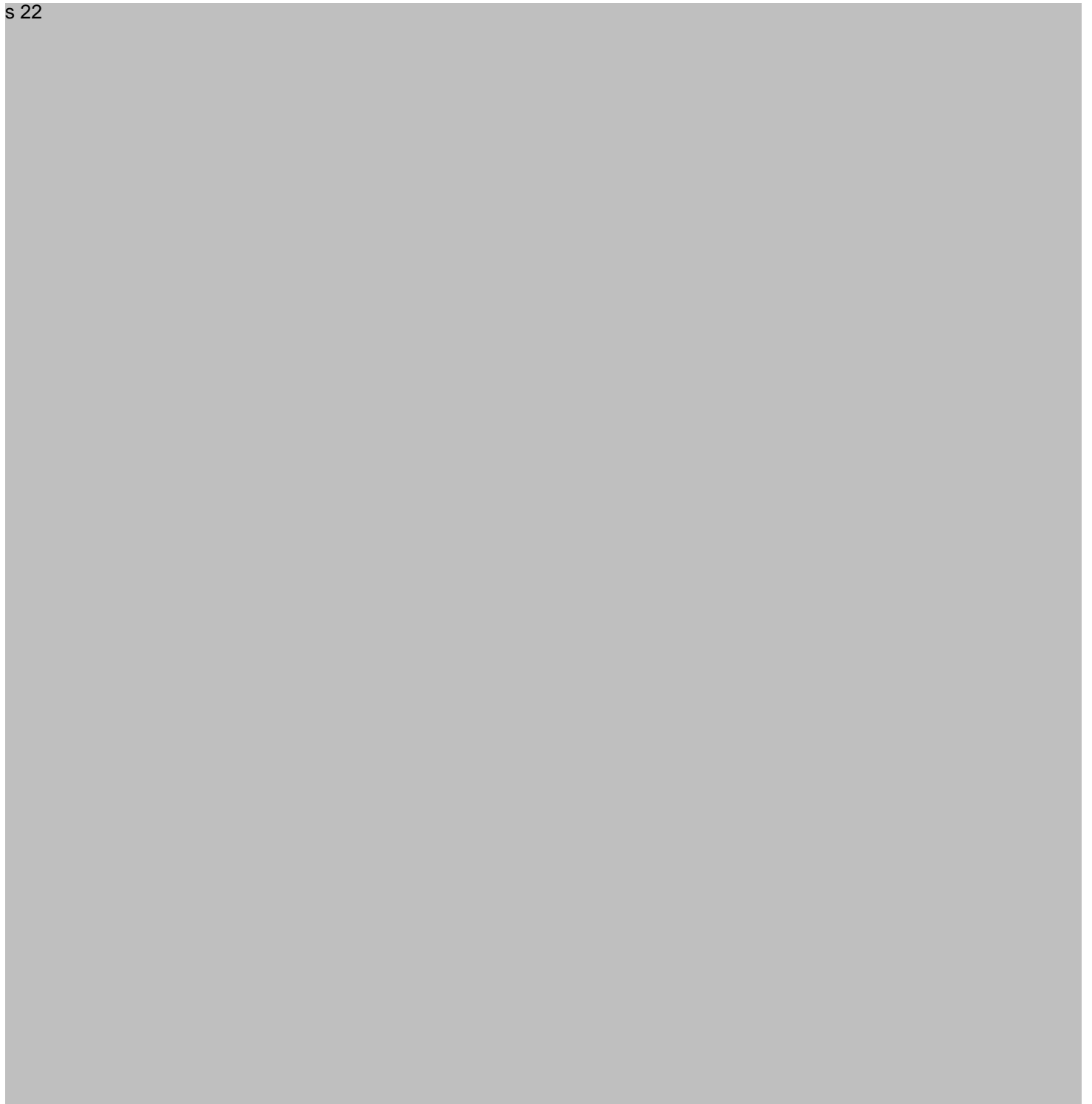
### *Pension Funds and Insurers*

When interest rates are low or negative, pension funds and life insurers are likely to face increased difficulties in meeting fixed liabilities (the payout of pensions and life insurance claims) as available returns decline.

### **International Experience**

In countries where central banks have implemented negative policy rates there is evidence of a normal transmission of monetary easing through interest rate and exchange rate channels, but there is also some evidence of reduced bank profitability and excessive asset price growth. For example, in Switzerland, a country with a similar reliance on retail depositors like Australia, the effect of negative rates has been more muted by pressures on the profitability of the banking sector.





A lower natural rate of interest implies less conventional monetary policy space and suggests that unconventional monetary policy may become more normal. Or alternatively, it may be that fiscal policy is called on to have more of a demand management focus.

- A lower natural rate of interest increases the likelihood of hitting the effective lower nominal interest rate bound for setting conventional policy rates. For example, a nominal natural rate around 3.5 per cent (real rate of 1 per cent, with inflation of 2.5 per cent) would not support the RBA's 4.25 per cent policy response to the global financial crisis.

Ensuring that Australia's inflation is consistently within the 2 to 3 per cent target range and inflation expectations anchored around 2.5 per cent would raise the nominal natural rate and allow more conventional monetary policy space over time.

# Unconventional Monetary Policy

- The three unconventional tools can be used in combination or independently
  - Negative Policy Rates
  - Quantitative Easing
  - Forward guidance
- RBA continues to emphasises QE as an option for a 'worst case' scenario where all major central banks are back at zero.
- The Bank is working on technical aspects of QE as a contingency. Stated publicly that purchasing government bonds the most likely option.