Guy Debelle: Twenty-five years of inflation targeting in Australia

Address by Mr Guy Debelle, Deputy Governor of the Reserve Bank of Australia, at the RBA Conference 2018, Sydney, 12 April 2018.

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This draws on a number of pieces I have written on inflation targeting over the past two decades, both at the RBA and the IMF. Thanks to Claudia Seibold for her assistance with the data.

Introduction

It has been 25 years since Australia adopted an inflation-targeting regime as the framework for monetary policy. At the time of adoption, inflation targeting was in its infancy. New Zealand had announced its inflation target in 1989, followed by Canada and Sweden. The inflation-targeting framework was untested and there was little in the way of academic analysis to provide guidance about the general design and operational principles. Practice was very much ahead of theory.

Now 25 years later, inflation targeting is widely used as the framework for monetary policy. While there are differences in some of the features across countries, the similarities are more pervasive than the differences. And generally, the features of inflation-targeting frameworks have tended to converge over time.

It is interesting to firstly examine how the inflation-targeting framework in Australia has evolved over the 25 years. Secondly, it is also timely to reassess the appropriateness of the regime. The first is the main task of my paper, the second is the task of the conference collectively.

In terms of the first, the main point I will make is that the Australian framework has not changed much over the past 25 years. The flexible nature of the framework, which was there at its inception, has proven to be resilient to the quite substantial changes in the macroeconomic environment that have taken place since. This is in contrast to some other countries that have moved from an initially rigid definition (which may well have been appropriate at their inception) toward something more flexible. The framework in Australia was adaptable from the start, which caused some issues in convincing some people of the seriousness with which the Reserve Bank was adopting an appropriate monetary framework.

While the specification of the regime has not materially changed, one thing that has changed is the degree of confidence that the regime might actually work. Australia, like other countries, came to inflation targeting after trying a number of alternative approaches to monetary policy. These approaches had not delivered either the desired price stability nor acceptable macroeconomic outcomes. Inflation targeting was the next attempt to try and better achieve these outcomes. There was no guarantee of success. Now, after 25 years, there is considerably greater confidence that the regime can contribute to sound macroeconomic outcomes in terms of both inflation and growth. The proof of the pudding has been in the eating. There is greater confidence and understanding about the framework from the public, from the political process, from financial markets and from the policymakers themselves.

There is also now a large academic literature supporting inflation targeting and examining and advising on various questions about the appropriate design and operation of the framework. That has validated many of the decisions taken by policymakers in setting up their inflation-targeting frameworks, but has also questioned some features of the framework.

One noteworthy change in the inflation-targeting framework in Australia (and elsewhere) is communication. The content and scope of the communication has increased considerably over 25 years. I will spend some time outlining these changes and the motivation for them.

As I said, the second question about the appropriateness of the regime is very much the theme of this conference. What, if any, changes to the framework might be worth considering? In the final section I will raise some questions that will be considered by later speakers at the conference and provide some brief observations on them.

When Glenn Stevens and I wrote in 1995 about the motivations for the (then) new inflation-targeting framework in Australia, we said: ‘if, some years hence, we can look back and observe that the average rate of inflation has a “2” in front of the decimal place, that will be regarded as a success’.[1] We are now quite some years hence and we can look back and observe that the average rate of inflation has a “2” in front of the decimal place.

How did the regime come about?

Unlike a number of inflation-targeting countries, the adoption of an inflation-targeting framework in Australia was evolutionary rather than revolutionary.[2] It was not accompanied by a change to the central bank’s legislation as was the case in New Zealand. Nor did it result from a rapid departure from an exchange rate regime as in the UK and Sweden. But, like those other cases, it reflected the recognition that previous monetary frameworks had not been successful in delivering either price stability in the form of low inflation, nor desirable macroeconomic outcomes in terms of sustainable full employment.

The inflation target in Australia was outlined in a number of speeches by the then Reserve Bank Governor Bernie Fraser in 1993 and 1994.[3] It was a low-key launch, in part reflecting the political climate of the time. As Steve Grenville and Ian Macfarlane noted, it was in the context of locking in the low inflation that had occurred in the aftermath of the early 1990s recession.

The target was the operational interpretation of the goals of monetary policy set out in the Reserve Bank of Australia’s founding legislation in 1959, namely:

- the stability of the currency of Australia
- the maintenance of full employment in Australia; and
- the economic prosperity and welfare of the people of Australia.

The stability of the currency goal reflects the fact the legislation was written when fixed exchange rates were the norm. It has been interpreted as preserving the purchasing power of the currency and hence is consistent with the maintenance of low and stable inflation.

As noted, the inflation target was first adopted by the Reserve Bank in 1993. It was verbally endorsed by the government of the day. But it was not formally endorsed by the government until 1996, when the first Statement on the Conduct of Monetary Policy was signed jointly by the incoming government and the new Reserve Bank Governor, Ian Macfarlane. The political support for the inflation target has been bi-partisan. The Statement has been renewed at the start of the term of each of the subsequent two Governors. It has also been endorsed with each change of government.

The Reserve Bank Act 1959 states that monetary policy has both nominal and real objectives. Consistent with that, the Statement on the Conduct of Monetary Policy makes it clear that the inflation-targeting framework recognises both nominal and real objectives. The flexibility of the target in terms of specifying that the inflation goal will be achieved over the cycle (subsequently adjusted to be ‘in the medium term’) is the feature that recognises the dual mandate. To maintain full employment requires that the economy be on a sustainable path. Thus the trajectory of economic growth matters, as does the presence of low inflation and financial stability.

In the case of demand shocks, there is not a material conflict between the real and nominal objectives, as the monetary response is effectively the same. That said, the flexibility of the target potentially allows for greater inflation variability to achieve lower variability in the real economy. However, the experience of other inflation-targeting central banks suggests that this difference is not substantial in practice.

In the case of supply shocks, where the monetary response to achieve the real and nominal objectives is likely to be in conflict in the short term, the medium-term horizon of the inflation target in Australia allows for a greater weight to be placed on output stabilisation and a more gradual return of the inflation rate to target, than with a strict inflation target. Again, the practice of most central banks over the past two decades has tended to evolve towards the sort of flexibility explicitly recognised in the Australian target, notwithstanding the lexicographic ranking of inflation and output objectives in the specification of some other inflation targets.[4]

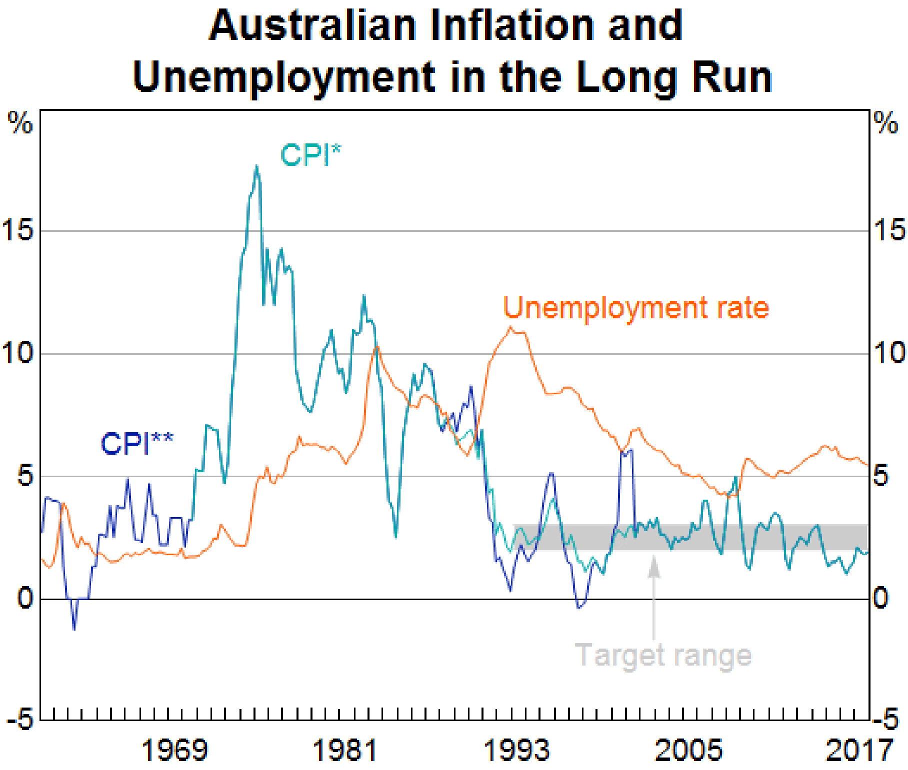
The Statement has not undergone much change since 1996. The current formulation is: 'the appropriate target for monetary policy in Australia is to achieve an inflation rate of 2–3 per cent, on average, over time.' Beyond some drafting changes that simply reflect the passage of time, the most substantive change has been the articulation of the financial stability objective of the Reserve Bank, which I will return to later. In terms of the description of the inflation target itself, the only change has been the objective from keeping 'underlying inflation between 2 and 3 per cent, on average, over the cycle' to keeping 'consumer price inflation between 2 and 3 per cent, on average, over time'. I regard this as purely a presentational change without any operational consequences.[5]

As I noted in a speech at the Bank of England[6] last year, inflation targeting and central bank independence are sometimes conflated given their similar birth dates in a number of countries. In large part, this is because both were a response to the inflation experience of the 1970s and 1980s. In Australia, just as the inflation target was evolutionary rather than revolutionary, so too, greater central bank independence also evolved through time rather than there being a distinct break from past practice. As Ian Macfarlane stated: 'the Reserve Bank, by virtue of its Act in 1959, was always given a high degree of general independence as an institution. The fact that it had been unable to exercise this independence in monetary policy for much of the post-war period was due to a practical impediment – it did not possess the instruments of monetary policy.' As these impediments were removed, the Reserve Bank was able to become more independent in its setting of monetary policy. Thus while the formal recognition of this independence was not completely visible until the first Statement on Monetary Policy in 1996, the practical independence had been there some time before that.

The inflation target in practice

How has the inflation target in Australia actually delivered in practice?

Graph 1



* Year-ended; excludes interest charges prior to the September quarter 1998; adjusted for the tax changes of 1999-2000

** Year-ended

Sources: ABS; RBA

Table 1: Selected Australian Indicators(a),(b)

Per cent

	Real GDP growth		Unemployment rate		Headline CPI inflation		Underlying inflation	
	Annual average	Standard deviation	Annual average	Standard deviation	Annual average	Standard deviation	Annual average	Standard deviation
1973–1993	2.8	1.2	6.9	2.2	8.8	1.2	8.4	1.1
1993–2017	3.2	0.6	6.3	1.6	2.5	0.4	2.6	0.2
2007–2017	2.5	0.4	5.4	0.6	2.3	0.4	2.5	0.2

(a) Quarterly data in the table are for the 20 years to Q1 1993; the 24.5 years to Q4 2017; and the 10 years to Q4 2017. Both price measures exclude tax changes in 1999–2000 and interest charges before the September quarter 1998. Underlying inflation is calculated using the Treasury Underlying Rate of Inflation in the 1973–1993 period and trimmed mean inflation for subsequent periods. Standard deviations are calculated from quarterly growth rates for the GDP and price series, and from the quarter-average unemployment rate.

(b) Geometric averages are presented for annual average GDP growth and inflation figures.

Sources: ABS; RBA

The inflation target can be thought of as a ‘thick point’.[7] This doesn’t mean that inflation with a 2 in front of it implies a zone of policy inaction. It simply acknowledges that inflation will obviously vary through time and that there is probably not much to be gained from being too precise about the appropriate inflation rate, whilst also recognising that the specification of the inflation target plays an important role in anchoring inflation expectations. It would appear that the latter goal has been achieved because the inflation expectations of the public have generally been consistent with the target.Graph 1 shows the outcomes for inflation and unemployment (as well as the cash rate, the instrument of monetary policy) and Table 1 summarises the macroeconomic outcomes since the early 1970s. It updates a similar table in Stevens (2016). The table shows that the average inflation rate over the inflation-targeting period has been 2.5 per cent. So the inflation target has been achieved over its period of operation.

At times, the inflation rate has been above the band, at times it has been below the band (though none of these deviations have been that persistent). This also illustrates the flexibility of the framework, which I will discuss in more detail in the next section. Of note, as is apparent in the graph, the inflation outcomes in the past decade have been at the lower end of the distribution of outcomes over the period. That is, as in other countries, inflation in Australia has been lower in the post-crisis period than in the decade preceding it. I will return to this point later in discussing some of the current challenges.

While the average inflation rate has been consistent with the target, the real economic outcomes have also been good. The average unemployment rate in the most recent decade is lower than the one in the decade preceding it, which in turn was lower than the one prior to that.

Clearly, these outcomes are also a function of the macroeconomic environment, and cannot be solely attributable to the inflation target. Part of the first period of inflation targeting was the NICE[8] decade and macroeconomic outcomes in the late 1990s and early 2000s were better in many countries, regardless of whether they had a (formal) inflation target or not. That said, many of the early adopters of inflation targets had continued to experience sub-par economic outcomes in the 1980s, particularly in terms of high inflation, when other countries had been able to achieve successful disinflations.

But it is important to note that the period for which the inflation-targeting framework has been in place has not been that benign. Most obviously, it has included the Asian crisis and the global financial crisis, as well as one of the largest rises (and falls) in the terms of trade in Australia's economic history – an event that has been the undoing of the Australian economy a number of times in its history. Moreover, to paraphrase some words from Glenn Stevens in his final speech as Governor: 'had anyone [in 1993] accurately forecast all the international events and simultaneously predicted that things would turn out in Australia as they have, they would not have been believed. But here we are.'[9]

The variability in global output has been higher in recent years, but by contrast in Australia it has been lower. At the same time, the table shows variability of inflation has been lower in the inflation-targeting period than in the period prior to that.

When inflation targeting was in its infancy, there was a lot of research in central banks examining the trade-off between output and inflation variability and assessing the ability of different policy rules to achieve different points on that trade-off.[10] This work followed on from that of John Taylor, along with Dale Henderson and Warwick McKibbin. The inflation target has been associated with the inflation/output variability curve in Australia shifting in, notwithstanding the volatility of the world more generally. As Glenn noted, one significant contributor to the lower output volatility in Australia has been the avoidance of a large downturn. But the avoidance of a large downturn is in part a function of the avoidance of an inflation breakout, which in turn, I would argue can be attributed, to a reasonable extent, to the operation of monetary policy under the inflation target.

Hence, when we look back over the past 25 years: the inflation target has been achieved; real growth has been robust; average unemployment has declined through time; and nominal and real variability has been lower. So, I think it is reasonable to argue that the inflation-targeting framework in Australia does seem to have played some part in contributing to the improved outcomes.

Flexibility in practice

I will use four episodes over the past 25 years to illustrate some different features of the operation of the inflation target in Australia, in particular illustrating the flexibility of the target in practice, as well as its forward-looking nature.[11] The first episode is the first tightening cycle with the inflation-targeting framework in 1994/95; the second, the response to the Asian crisis a few years later. The third episode is the introduction of the Goods and Services Tax (GST) in 2000 where the price level was boosted by 3 per cent overnight. The fourth episode is the period around the onset of the global financial crisis in 2007–08.

1994/95

By the middle of 1994, inflation pressures were building as economic growth was accelerating. The unemployment rate had declined by 3 percentage points in two years and wage pressures were evident.

There were doubts about whether the Australian inflation-targeting regime was sufficiently serious enough to be able to curtail these burgeoning inflation pressures. Indeed there were doubts about whether we even really had an inflation-targeting framework. One manifestation of this was that the Bank of England was organising a conference on the nascent area of inflation targeting and wasn't sure whether Australia should be invited or not. Graciously they did end up including us and invited Glenn Stevens and me to talk about the Australian model alongside the stricter frameworks of New Zealand and Canada.[12]

The flexible specification of the inflation target in Australia was seen as a vulnerability. It didn't have the electric fence of the more hard-edged inflation targets in some other countries. The 'over the cycle' language was too 'fuzzy'. Reflecting such concerns, bond yields had risen quite significantly in 1994 in anticipation of a material increase in inflation.

But inflation was still at its post-recession lows of 2 per cent when the Bank increased the cash rate by 275 basis points in three moves over the second half of 1994. This pre-emptive tightening was assessed to be necessary to curtail the Bank's forecast that inflation would rise. It is noteworthy that the tightening occurred with inflation still only 2 per cent. Financial markets had anticipated that significantly more tightening would be required, reflecting their lack of faith in the new framework. Subsequently, inflation did actually rise to slightly above 3 per cent. The flexibility of the target allowed the avoidance of an unnecessary cost to the real economy of trying to cap the rise in inflation to below 3 per cent, consistent with the dual mandate.

In 1996, as demand pressures were easing, the Bank's forecast was for inflation to decline. The stance of policy was eased, even though inflation was still above 3 per cent. The flexibility of the target, and its forward-looking focus, allowed the assessment of whether the inflation target was at risk in the medium term sense to determine the appropriate policy response.

That episode went a long way to enhancing the credibility of the framework with wage and price setters as well as with financial markets. It also increased the confidence within the Bank that the inflation-targeting framework would be successful in achieving the Bank's legislated goals.

The Asian crisis and exchange rate shocks

At the onset of the Asian crisis, the Australian economy was growing at around trend rates, with domestic demand beginning to accelerate, and underlying inflation at 1.6 per cent. Monetary policy had been eased over the prior year or so in anticipation of the decline in inflation that subsequently occurred. Thus the Asian crisis hit the Australian economy at a time when it was in reasonable shape with the stance of monetary policy already relatively expansionary.

Exports to east Asia accounted for around one-third of Australia's exports at the time. In the year following the onset of the crisis, Australia's exports to the region declined by nearly 20 per cent, directly subtracting around 1 percentage point from aggregate growth. Thus the decline in output in the east Asian region represented a significant negative demand shock to the Australian economy. Australia's terms of trade also fell sharply as commodity prices declined, further exacerbating the decline in export demand.

In the event, inflation in Australia rose by less than was forecast, in part because of the decline in the pass-through of the exchange rate depreciation, as well as a greater-than-expected disinflationary impulse from the Asian region that put downward pressure on import prices.

If policy had been set to ensure that inflation did not rise above 3 per cent, the necessary rise in interest rates would have exacerbated the contractionary shock to foreign demand. With the benefit of hindsight, given the lower-than-expected inflation outcomes, this would have resulted in a significant undershooting of the inflation target.

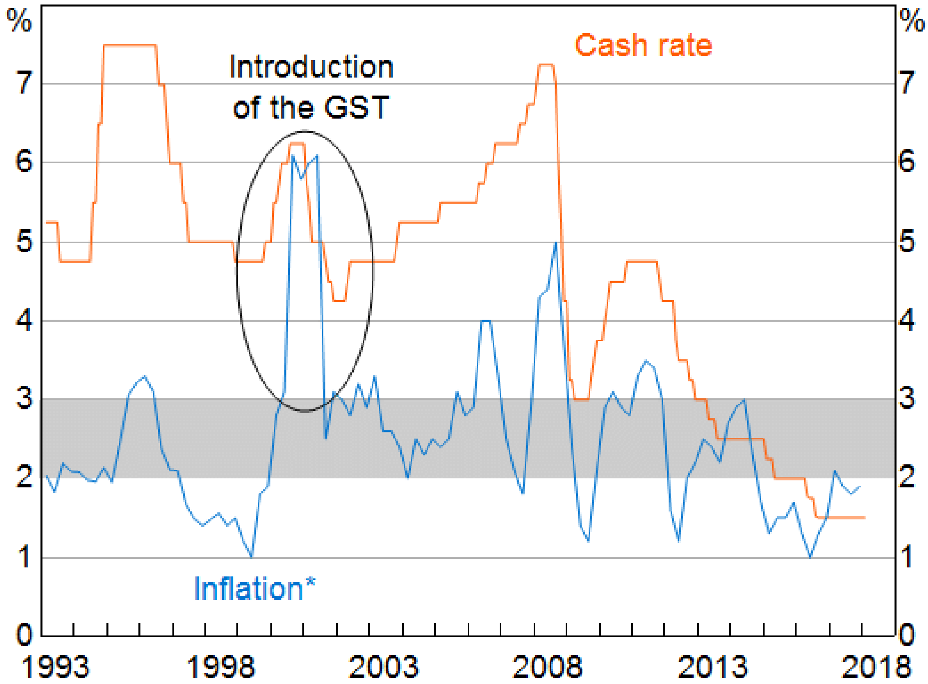
The flexible inflation target served as a useful framework to think about the Asian crisis. Strong consideration was given to the goal of output stabilisation because the inflation target in the medium term was not felt to be in jeopardy. In addition, the policy credibility that had built up since the adoption of the inflation-targeting regime also allowed the Reserve Bank greater flexibility in its policy response.

Gst 2000

On 1 July 2000, a 10 per cent goods and services tax was introduced. As a result, the price level as measured by the CPI increased by 3 per cent overnight. Hence inflation as measured by the CPI was boosted, in a year-ended sense, by 3 percentage points for the next 12 months. The increase in the price level was fully anticipated by the public and financial markets.

Graph 2

Inflation and Monetary Policy



* Treasury underlying inflation prior to the September quarter 1998; thereafter, year-ended CPI inflation

Sources: ABS; RBA

The Bank did not seek to offset the effect of the GST on the price level. Its assumption was that the boost to the price level would be once-off, and that the (by now well-enhanced) credibility of the inflation target would ensure that medium-term inflation expectations would remain well anchored. The Bank communicated that this was its assessment well in advance of the introduction of the GST to help condition expectations.

Again, the specification of the regime allowed the Bank the flexibility to look through the increase in the price level. It is worth noting that such flexibility would be more problematic under a price level targeting regime, or even a nominal income target. With a strict price level target, the effect of the GST in boosting the price level would have to be unwound over some period of time, notwithstanding that households were compensated for the change by income tax cuts.

In the event, the credibility of the target and the Bank's strategy was demonstrated. Inflation expectations remained anchored. Nearly all of the public discussion at the time focused on the inflation rate net of the GST effect. While policy was tightened around that time, it reflected standard sources of price pressure such as strong growth, a rise in oil prices and a depreciating exchange rate, not the effect of the price level shock.

While the mid 1990s episode went a long way to building the credibility of the framework, the GST episode confirmed that the framework was well entrenched in wage and price-setting behaviour in the Australian economy.

2007/08

From around 2006, it became clear that inflation pressures were again growing in the Australian economy. The Bank's forecasts for inflation were revised upwards in late 2007 and into 2008. Monetary policy was tightened to contain the rise in inflation as the Australian economy was overheating. Inflation reached as high as 5 per cent.

But as the events in the global economy turned south sharply, the Bank was able to change the settings of monetary policy quickly and rapidly, even with inflation still high. As the facts changed and the outlook changed, in this case quite dramatically, the Bank changed its assessment about the appropriate setting of policy. The fact that inflation was still high as these events unfolded did not constrain the decision to reduce the cash rate. Again, the flexibility and forward-looking nature of the framework together with its recognition of both the real, as well as the nominal goals, of monetary policy provided the necessary scope for action.[13]

So throughout its 25 years, the specification of the framework has allowed the Bank to focus on the medium-term outlook for inflation and not be unnecessarily constrained by any current level of the inflation rate. That seems obviously appropriate behaviour now, and reflects the decision-making process in all inflation-targeting frameworks today. But it was not obvious that this was the appropriate approach to monetary policy back at the inception of inflation targeting. While the confidence in being able to use the flexibility in the framework has undoubtedly increased, the willingness to use it has always been there. You will note that I have not included the current cycle of monetary policy in this assessment. That is still to play out and I will leave it to a later iteration of this conference to conduct a post-mortem.

Communication

While the flexible operational approach to inflation targeting has been present throughout, the communication by the Bank has changed quite substantially.

Prior to the introduction of the inflation target, the principal vehicle for the Bank's economic commentary was the Annual Report and the RBA Bulletin. This commentary often ran to no more than a few pages. There were speeches on macroeconomic issues by the Governor and Deputy Governor. Changes in the stance of monetary policy had been announced since 1990 (which was quite innovative at the time), but were generally a one line statement announcing the decision to change the cash rate. That was the extent of the public communication. There was not much information to understand the central bank's general approach to monetary policy or the central bank's reaction function. Financial markets had to employ large teams of analysts to divine the central bank's intentions.

The advent of the inflation-targeting framework saw communication increase, though it should be noted that this was a worldwide phenomenon and not confined to inflation-targeting central banks. Why was there such an increase in communication? One reason that I have stated before is that the inflation-targeting central banks did not have a good track record of monetary policymaking. So there was a need to build that track record. A track record requires a track and inflation targeting provided that track. But then you also need to make it clear to people how you are progressing along that track and that is where the communication is important.

Given the relatively poor starting point, a high level of communication and transparency was necessary to build credibility as quickly as possible, to enhance the effectiveness of monetary policy and to help anchor inflation expectations. Mervyn King described this as 'trust building by talk'.[14] That was very much the goal of communication when inflation targeting was in its infancy.

Similarly, communication was a mechanism to deliver accountability. As I noted earlier, inflation targeting often went hand in hand with greater central bank independence. The quid pro quo for greater independence was greater accountability. In Australia's case, the need for accountability, and communication as one mechanism to deliver that accountability, was reflected in the first Statement on the Conduct of Monetary Policy, which stated that 'it is important the Bank report on how it sees developments in the economy, currently and in prospect, affecting expected inflation outcomes'. It noted that this would include the Statements on Monetary Policy, public addresses and required semiannual appearances of the Governor before the parliament.

Today, the extent and nature of communication have increased still further. The Statement on Monetary Policy is a comprehensive document detailing the assessment of the current conjuncture, the Bank's outlook for the economy, the risks and uncertainties around that outlook, and an explanation of the Board's assessment of the monetary policy settings. The scope and content of these documents have grown materially over the past 25 years.

All monetary policy decisions are accompanied by a statement explaining the basis of the decision (whether the stance is change or not). Minutes of the Board's decision-making meeting are published two weeks later.[15] The number and frequency of speeches by the Governor and Deputy Governor, as well as other senior Bank staff, have increased. The Financial Stability Review is published twice each year providing the Bank's assessment of those issues. There is a website which makes this material, as well as other material describing the monetary policy framework, readily available to the public. There is an extensive business liaison program and recently an increase in focus on public education about the Bank's role.

So the volume of communication and overall transparency have increased materially.

In considering the changed nature of the communication, it is important to ask two questions: what is the objective of the communication, and to whom are we communicating?

One of the critical roles of communication is a vehicle for accountability. That communication is directed to the parliament and the public, to whom the Bank is accountable. It is also important that the public and parliament have a good understanding of the inflation-targeting framework to enhance understanding as to why policy decisions are being taken. They may not always agree with them, but it is important that they can understand the rationale behind them.

Communication can help anchor inflation expectations, which in turn helps enhance the effectiveness of the regime. There is strong evidence that anchoring of inflation expectations has been enhanced over the past 25 years.[16]

It is also important the central bank's reaction function is understood. That is helpful for the effective and timely transmission of monetary policy. It helps ensure that inadvertent monetary policy surprises don't occur, which serves to enhance the overall credibility of the regime. This communication is important for businesses and households in their decision-making. On the basis of their outlook for the economy, they can have confidence in how the central bank is likely to react and what that would imply for their borrowing costs. An understanding of the reaction function is also important for financial markets participants in setting financial market prices that form an important part of the transmission mechanism of monetary policy actions.

The effectiveness of communication or transparency is sometimes measured by interest rate surprises. While this might be appropriate in some cases, sometimes the surprise happens through a previous signal by the central bank. In my view, the surprise should be primarily confined to data or event surprises. That is, with a well-understood reaction function, the vast bulk of surprises should come from unexpected developments, not unexpected actions by the central bank.

The amount and content of communication has been one of the most substantive changes over the past 25 years. That has, in my opinion, been clearly beneficial for the accountability of the Reserve Bank, as well as the effective functioning of the inflation-targeting framework. That said, it is always worth checking that the increased communication is delivering signal rather than noise. That is, the quality of the message is more important than the quantity.

Open issues

I have argued that the inflation target has delivered macroeconomic outcomes that have been beneficial for the Australian economy. I think a strong case can be made that it has contributed materially to better economic outcomes than the monetary frameworks that preceded it. I have also noted that the framework in Australia has not changed much over the 25 years of its operation, with the notable exception of communication.

So does that mean that the current configuration of the inflation target is the most appropriate or that even that is the most appropriate framework for monetary policy? What changes could be contemplated? Those questions are going to be addressed in other papers at this conference. But let me raise some here and discuss issues worth considering around each of them.

The first is the role of financial stability in an inflation-targeting framework. The Reserve Bank research conference last year considered this issue at some length.[17] As I said earlier, financial stability is now articulated in the Statement on the Conduct of Monetary Policy. I talked about this issue at the Bank of England[18] last year and Ben Broadbent is addressing it at this conference. One question that arises is how the financial stability goal interacts with the inflation target. Is it a separate goal that sets up potential trade-offs or is it aligned with the inflation-targeting goal? In the latter case, a potential reconciliation is the time horizon. When it materialises, financial instability is likely to be detrimental to inflation and unemployment/output: the global recession of 2008 and the subsequent slow recovery in a number of economies bears testament to the potential costs of financial instability (although here in Australia we didn't experience this to as great an extent). So over some time horizon, potentially quite long, the inflation target and financial stability are aligned. But translating this into monetary policy implications over a shorter time horizon is a large challenge, which still seems to me to be far from resolved.

What about alternative regimes? Price level targeting is one that has been considered in some countries, including Canada, and has been proposed in the academic literature.[19] One argument for a price level target is that it delivers predictability of the price level over a long horizon. It is not clear to me that this is something that is much valued by society. By revealed preference, the absence of long-term indexed contracts suggests that the benefits are not perceived to be high. I struggle to think of what contracts require such a degree of certainty. To me the benefits mostly derive from having inflation at a sufficiently low level that it doesn't affect decisions. That supports an inflation target rather than a price level target. One important difference is that an inflation target allows bygones to be bygones, whereas a price level target does not. In a world where there are costs to disinflation (and particularly deflation), the likely small gains from the full predictability of the price level that comes with a price level target are not likely to offset the costs of occasional disinflations following positive price level shocks. Another challenge is how fast the price level should be returned to its target level. This presents both a communication and operational challenge as the speed is likely to vary with the size of the deviation.

While the argument at the moment is that a price level target allows the central bank to let the economy grow more strongly after a period of unexpectedly low inflation, again I do not think that practically this will deliver better outcomes than a flexible inflation target. That is an empirical question in the end which is worth testing.

The appropriate level of the inflation target is currently being debated in some parts of the world, including the US. The argument for a higher target rate of inflation is that it might reduce the risk of hitting the zero lower bound because a higher inflation rate would result in a higher nominal interest rate structure. In thinking about this, we should ask the question as to whether what we have seen is the realisation of a tail event in the historical distribution of interest rates (for a given level of the real interest rate).? While this event has now lasted quite a long time, if you thought it was a tail event, then you would expect the nominal rate structure to revert back to its historical mean at some point. If it is a tail event, and the world has just been unlucky enough to have experienced a realisation of that tail event, then there would not obviously be a need to raise the inflation target. We also need to question whether the real interest rate structure has shifted lower permanently, because of permanently lower trend growth say, which would also shift down the nominal rate structure and increase the likelihood of hitting the zero lower bound.

Also, as with price level targeting, in thinking about this question, it needs to be taken into account that it is highly beneficial to have the inflation target at a level where it doesn't materially enter into economic decision-making. Two to three per cent seems to achieve that. We know that some number higher than a 2–3 per cent rate of inflation will materially enter decision-making, because we have had plenty of experience of higher rates of inflation that demonstrates that. How much higher though, we don't really exactly know.

Another consideration in answering the question of whether the inflation target is at the right level is the range of policy instruments in the tool kit. Over the past decade, this tool kit has expanded in a number of central banks. For example, we now know that the zero lower bound is not at zero. Asset purchases have been utilised and these have included sovereign paper but also assets issued by the private sector. An assessment of the effectiveness of these instruments is still a work in progress. We also need to think about whether they are part of the standard monetary policy tool kit or whether they should only be broken out in case of emergency.

Nominal income targeting is another alternative regime to inflation targeting. I am not convinced that flexible inflation targeting of the sort practiced in Australia is significantly different from nominal income targeting in most states of the world. I also think that there are some quite significant communication challenges with nominal income targeting. Firstly, nominal income is probably more difficult to explain to people than inflation. Secondly, as a very practical matter, nominal income is subject to quite substantial revisions, which poses difficulties both operationally and again in communicating with the public.

Finally, one criticism of inflation targeting more generally is that central banks are fighting the last war. The fact that for a number of years now, inflation globally has been stubbornly low is not obviously the signal to declare victory over inflation and move on. Indeed, the declaration of victory may well be the signal that hostilities are about to resume and that inflation will shift up again. Moreover, even if victory can be declared that doesn't mean you should go off to fight another war in another place without securing the peace. Inflation targeting can help secure the peace.

Conclusion

Today, inflation targeting is now the default framework for monetary policy. This is stark contrast to the situation 25 years ago, when inflation targeting was greeted with a large degree of scepticism. At its heart, inflation targeting is a simply expressed acknowledgement of what monetary policy can achieve and what it can't. The flexible version of inflation targeting that has been present in Australia since its inception was regarded as an outlier but now we have seen most other regimes evolve in that direction, either through explicit changes to the regime or in practice. The dual mandate of the Reserve Bank of Australia is embodied in the flexible expression of the target.

Over the past 25 years, there have not really been material changes in the specification of the inflation target in Australia. The extent and content of the communication has increased, in line with the general trend across all central banks. This has helped to enhance the understanding of the public of what the Reserve Bank is aiming to achieve and thereby helped the effectiveness of monetary policy.

The inflation target has made a material contribution to the very satisfactory macroeconomic outcomes that the Australian economy has enjoyed over the past 25 years. Inflation has been consistent with target. The unemployment rate on average has been lower and less variable than in earlier periods. This has gone a long way to fulfilling the mandate of the Reserve Bank of contributing to the welfare and prosperity of the Australian people.

But it is important to continue to question whether the framework remains the right framework going forward and whether there are enhancements that could be made to it. There is now a much greater community to draw on to help answer those questions, both from central banks and from academia, in contrast to the situation 25 years ago when inflation targeting was a new frontier.

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1 Stevens G and G Debelle (1995), 'Monetary Policy Goals for Inflation in Australia', in A Haldane (ed), Targeting Inflation: a conference of central banks on the use of inflation targets organised by the Bank of England, Proceedings of a Conference, Bank of England, London, pp 81–100.

2 For detailed accounts of the conception of inflation targeting in Australia, those present at its birth are the best source: Grenville S (1997), 'The Evolution of Monetary Policy: From Money Targets to Inflation Targets', in P Lowe (ed), Monetary Policy and Inflation Targeting, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 125–158; Macfarlane I (1998), 'Australian Monetary Policy in the Last Quarter of the Twentieth Century', Shann Memorial Lecture, University of Western Australia, Perth, 15 September; Stevens G (2003), 'Inflation Targeting: A Decade of Australian Experience ', Address to South Australian Centre for Economic Studies April 2003 Economic Briefing, Adelaide, 10 April.

3 Fraser B (1993), 'Some Aspects of Monetary Policy', RBA Bulletin, April, pp 1–7. Fraser B (1994), ' Managing the Recovery', RBA Bulletin, April, pp 20–28.

4 For example, the Bank of England Act 1998 states that the objectives of the Bank of England shall be (a) to maintain price stability, and (b) subject to that, to support the economic policy of Her Majesty's Government, including its objectives for growth and employment. See Kuttner K (2004), 'A Snapshot of Inflation Targeting in its Adolescence', in C Kent and S Guttman (eds), The Future of Inflation Targeting, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 6–42.

5 The change from underlying inflation in large part reflected the change in the measurement of the CPI to exclude mortgage interest rates.

6 Debelle G (2017), 'Central Bank Independence in Retrospect', Address at Bank of England Independence: 20 Years On Conference, London, 28 September.

7 Stevens and Debelle (1995) op cit.

8 Non-Inflationary Continuous Expansion.

9 Stevens G (2016), 'An Accounting', Address to the Anika Foundation Luncheon, Sydney, 10 August.

10 Stevens G and G Debelle (1995), op cit, is an example of this. See also De Brouwer G and J O'Regan (1997), 'Evaluating Simple Monetary-policy Rules for Australia', in P Lowe (ed), Monetary Policy and Inflation Targeting, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 244–276.

11 Debelle G (2009), 'The Australian Experience with Inflation Targeting ', Speech at Banco Central do Brasil XI Annual Seminar on Inflation Targeting, Rio de Janeiro, 15 May.

12 Haldane A (ed) (1995), Targeting Inflation: a conference of central banks on the use of inflation targets organised by the Bank of England, Proceedings of a Conference, Bank of England, London.

13 In this instance, most central banks responded in a similarly flexible way. In large part, I would argue this reflects the convergence to more flexible frameworks by this time.

14 King M (1997), 'Changes in UK Monetary Policy: Rules and Discretion in Practice', Journal of Monetary Economics, 39(1), pp 81–97.

15 The RBA's accountability is collective rather than individual so the minutes represent the collective view of the Board rather than conveying any individual's views. The Board as a whole is accountable, in large part reflecting its composition where the majority of members are business people rather than practising economists. Individual accountability in the RBA's case may compromise the ability of the business members of the Board to

take decisions in the national interest rather than their sectoral interest (Stevens G (2007), 'Central Bank Communication', Address to the Sydney Institute, 11 December).

[16] This is very evident in consensus forecasts and surveys of union inflation expectations, inter alia.

[17] Hambur J and J Simon (eds) (2017), Monetary Policy and Financial Stability in a World of Low Interest Rates, Proceedings of a Conference, Reserve Bank of Australia, Sydney.

[18] Debelle (2017), op cit.

[19] Ball L, N Gregory Mankiw and R Ricardo (2005), 'Monetary Policy for Inattentive Economies', Journal of Monetary Economics, Elsevier, 52(4), pp 703–725, May.