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# Monetary policy objectives – price stability and macro stabilisation

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This article introduces the Reserve Bank’s price stability and maximum sustainable employment objectives in the context of:

- The historical development of monetary policy objectives
- Theoretical and empirical developments that have influenced objectives
- The origin of dual mandates in Australia, the United States and New Zealand
- The costs of inflation and the benefits of macroeconomic (employment) stabilisation.

## 1 Introduction

As of 2018, the Reserve Bank of New Zealand has a dual mandate for monetary policy focused on targeting price stability and supporting maximum sustainable employment. In this article, we discuss the Bank’s policy objectives in a broader historical context, illustrating how the aims and objectives of monetary policy have varied over time in response to pressing societal issues.

The emphasis of this *Bulletin* article is on the objectives of monetary policy. Monetary objectives are one component of a wider set of legislated, economic objectives determined by government. Notwithstanding central bank independence, there has often been significant interplay between monetary objectives and the macro objectives set for fiscal policy. Monetary policy objectives have also fluctuated between two orientations. First, providing a stable unit of account and predictable monetary framework to facilitate private transactions. Second, proactively using monetary policy to shape the allocation of real resources to improve welfare. Inflation targeting represents a middle ground between these two orientations.

In sections 2 and 3 of this article, we discuss the history of central bank objectives leading up to the development of dual mandates. The key message from these sections is that monetary policy objectives have evolved over time, reflecting different societal needs, evolving empirical experience and theoretical insights. In section 4, we outline why price stability and macroeconomic stabilisation are common objectives for monetary authorities and discuss the interplay between monetary objectives and theoretical insights over time. Section 5 concludes.

## 2 Monetary policy objectives prior to World War II

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### 2.1 *The role of early central banks*

Since the inception of central banks, monetary policy objectives have been intertwined with the provision of currency – notes and coins – and with the stability of the financial institutions that provide related forms of money (e.g. deposits). Other objectives – such as the need to finance government during wartime – have also been prominent at various times. Monetary policy objectives have evolved as major macroeconomic problems have arisen. Many central banks either did not exist or were private institutions until the 20<sup>th</sup> century, and 19<sup>th</sup> century central banks did not have public policy objectives as we now understand them.

The Sveriges Riksbank (Riksbank) and the Bank of England were the first central banks, established in 1668 and 1694, respectively. These early central banks had multiple objectives.

In Sweden's case, the Riksbank introduced paper money and was particularly concerned with ensuring that it retained a stable value. The Riksbank also made it easier for the Swedish Crown to borrow funds to finance wars when needed.

Similarly, the Bank of England was established to enable the British government to borrow from the private sector to finance one of many wars against France. The loans obtained from the private sector were secured against excise taxes. For many centuries, taxation systems were underdeveloped and governments often debased their coinage or expanded the supply of paper currency to fund public expenditure. Convertibility into gold was one mechanism to maintain the value of currency, but was periodically suspended during wartime.<sup>1</sup>

Conflict with France was an important influence on British monetary policy in the latter stages of the 18th century, and early 19th century. Convertibility of British notes into gold was suspended in 1797 – in the middle of the French Revolutionary Wars – in part prompted by a run on the Bank of England's gold reserves. This lack of convertibility continued throughout the Napoleonic wars.

The United Kingdom adopted the Gold Standard sometime between 1821 and 1844 to anchor expectations and reassure the public that the paper money on issue would not be debased. In setting interest rates, the Bank of England also played a role in managing the public debt. Flows of bullion were also used to intermediate international transactions – the balance of payments. These flows were considered part of a mechanism that would stabilise domestic economic activity and prices.

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1 As in the case of the Napoleonic wars for example.

With the introduction of the Gold Standard, central banks began to transition towards a stable and predictable approach to monetary policy. Rather than serving as a source of temporary financing to pursue foreign or civil wars, monetary policy was used to ensure that money remained a desirable medium for transacting.

Unlike countries that debased currencies to finance wars, Australia and New Zealand had an insufficient supply of money during Victorian times. In the absence of well-established commercial and public banks, money was in short supply in the Antipodean colonies, making it difficult to transact.<sup>2</sup> Coins issued from various jurisdictions were used as an ad hoc means of payment.

During the Gold Standard era, financial stability was a crucial element to ensure that convertibility into gold was maintained and that the financial system could facilitate private transactions. For example, in the United States, following the banking panic of 1907, the Federal Reserve System was established in 1913 to serve as a backstop to private financial banks, to provide liquidity, and to have monitoring powers to ascertain the financial position and creditworthiness of such institutions.

## 2.2 *The inter-war years*

The years between World Wars 1 and 2 prompted a shift towards more activist government policy in determining monetary and credit conditions. In this respect, views against private finance hardened in favour of greater emphasis on the role of the state.<sup>3</sup>

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2 The first trading bank in New Zealand was established in Petone in 1840. Banking received an additional fillip when gold was found in central Otago in 1861.

3 In Australia, for instance, a report by the Royal Commission on Monetary and Banking Systems in 1936, proposed that the power to “expand or contract credit...should be in the hands of a national credit authority” and not banks “whose principal motive for existence [was] the making of profits”.

During the Great Depression in the 1930s, high rates of unemployment made it abundantly clear that resources were not being fully utilised. Poverty was widespread, with many in the labour force unable to find work to support themselves. Public assistance and social welfare systems were developed in the 1930s because private social assistance and social security networks could not cope with the scale of unemployment and hardship. Views about the role of the state in resource allocation also evolved in conjunction with the rise of socialism.

Macroeconomics began to develop as an independent field of study following the Great Depression. Empirical macroeconomics was bolstered by the production of aggregate macroeconomic data in the 1930s and 1940s and by efforts to harmonise national accounts undertaken on behalf of the United Nations and, later, the European Economic Community. In principle, this new data could inform and guide macroeconomic policies.

John Maynard Keynes played a prominent role in the development of macroeconomics, and its post-war evolution. In his book *The General Theory of Employment, Interest, and Money* (1936), Keynes’ sought to explain why market-based systems could lead to an under-utilisation of resources, and to identify public policies – fiscal and monetary policies – that could be used to stabilise the macro-economy. Keynes was of the view that “[t]he outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes.”<sup>4</sup>

In the framework of Keynes’ *General Theory*, fiscal policy assumed primary importance as a mechanism to stimulate and stabilise aggregate demand with monetary policy playing a lesser role.

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4 See Keynes (1936).

## 3 Post-war macro economic research and Policy

### 3.1 Inflation and unemployment

The activist approach for macroeconomic policy was incorporated into central bank mandates in several countries, including Australia and New Zealand. However, policy activism was controversial. Subsequent theoretical criticism from Monetarist and New Classical economists highlighted the possibility that the benefits of activist policy might be over-sold, and might simply lead to higher inflation.

The IS-LM model of Hicks (1937) became pre-eminent as a representation of the insights of Keynes' *General Theory*, through until the 1970s.<sup>5</sup> This model was used to explain how monetary and fiscal policy could be deployed to achieve full employment, given different kinds of shocks to the economy. However, the IS-LM model did not explain the origins of inflation. The model was static – discussing outcomes at single points in time – and not explicit about the dynamic evolution of the economy *through* time. This static framework was problematic because inflation is inherently a dynamic phenomenon as it measures the change in prices across time.

In the 1950s and 1960s, inflation in most countries was modest, so the IS-LM model's structure, and the absence of an inflation-mechanism, was not particularly problematic. Yet periodic episodes with heightened inflation prompted a debate about the origins of inflation.

Influentially, Phillips (1958) observed an empirical relationship between unemployment and nominal wage rate inflation. Samuelson and Solow (1960) later proposed a “modified Phillips curve for the U.S.” (figure 1). Their article suggested that policy-makers faced a macroeconomic ‘menu’ and that they could choose high-inflation and high-employment or low inflation and low employment. Tobin (1967) referred to this trade-off as a ‘cruel dilemma’, since it suggested that good outcomes for inflation and employment could not be achieved simultaneously.

**Figure 1**  
A stylised  
Phillips curve

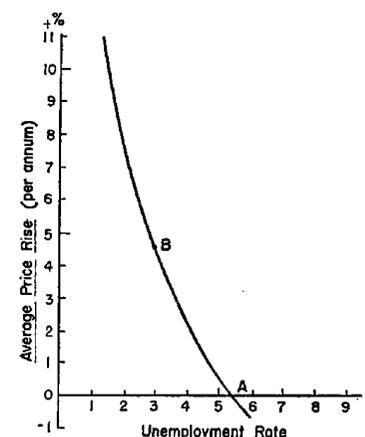


FIGURE 2  
MODIFIED PHILLIPS CURVE FOR U.S.  
This shows the menu of choice between different degrees of unemployment and price stability, as roughly estimated from last twenty-five years of American data.

Source: From Samuelson and Solow (1960).

This menu view was subject to theoretical and empirical challenge in the late 1960s and 1970s. Phelps (1968) and Friedman (1968) argued that the empirical correlation found by Phillips was unstable.

Friedman (1968) argued that monetary policy “cannot peg the rate of unemployment for more than very limited periods”. In contrast, he argued, the long run Phillips curve was in fact vertical that is,

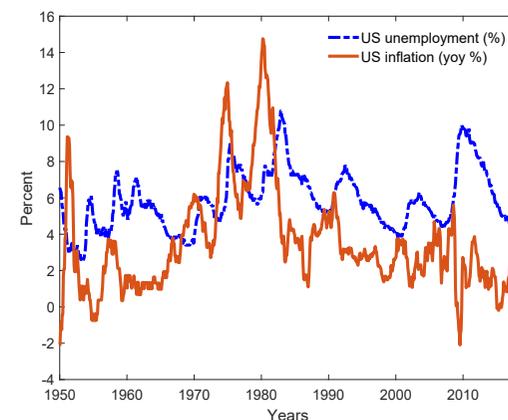
5 IS-LM: Investment-Savings-Liquidity-Money.

unemployment in the long run gravitates to its ‘natural’ rate, and this natural rate could be compatible with any level of inflation.<sup>6</sup> Although the natural rate of employment is largely determined by structural factors – demographics, the role of women in the labour force, etc. – the level of long-run inflation simply depends on the conduct of monetary policy.

Friedman was concerned that monetary policy could become a source of shocks, rather than a dampener of fluctuations. To offset this tendency, he argued for predictable and consistent policy rules that specified how policy instruments should be set given circumstances in the economy and in particular, for a consistent increase in the growth of money. Although the particular *money growth* rule suggested by Friedman never gained much popularity, the importance of predictable rules is now a centrepiece of monetary theory and policy.

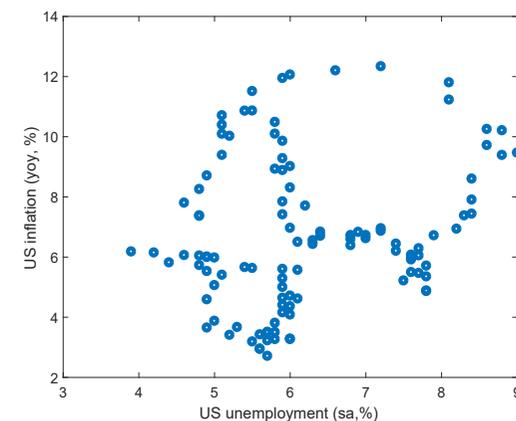
Friedman and Phelps’ theoretical arguments were also bolstered by the empirical experience of the 1970s. Rather than inflation and unemployment being inversely related to each other, as in the Phillips curve, inflation and unemployment increased in tandem (figures 2 and 3). Together, theory and empirics disputed conventional ‘Keynesian’ views about the effects of monetary policy and how such policy should be evaluated. Up until the 1970s, economists thought that simple econometric exercises could explain how changes in policy would affect the economy, but academic research in the 1970s highlighted that the effects of policy depend on people’s *expectations* of policy. This critical insight added further complexity to macro modelling and hence policy evaluations.

**Figure 2**  
United States  
unemployment  
and inflation



Source: RBNZ

**Figure 3**  
Scatterplot  
of 1970s  
inflation and  
unemployment



Source: RBNZ.

Note: The scatterplot of US unemployment in the 1970s shows positive co-movement between inflation and unemployment, in contrast to the inverse relationship found by Phillips (1958) with earlier data.

<sup>6</sup> The nature of work and labour participation has changed over the past decades and it is not clear that a simple employed-unemployed dichotomy remains an adequate characterisation of the labour market.

In the 1970s, economic models that described the macro economy using assumptions about the ‘micro behaviour’ of individual agents were developed. Early versions of these models suggested that activist policy would not be effective if individuals form expectations rationally, that is, consistently with the underlying structure of the economy.

Controversially, Sargent and Wallace (1975, 1976) argued that the impacts of short-run monetary policy in a then-conventional macro model were markedly different if expectations were rational. They showed that monetary policy might not even have transitory real effects unless the central bank was surprising firms and consumers. Research by Fischer (1977) and Taylor (1979) showed that predictable monetary policy could have short-run real effects even if policy actions are rationally anticipated. Indeed, modern monetary policy expressly focuses on influencing such expectations.

The relative importance of monetary policy for macroeconomic stabilisation has also been affected by changing perceptions of the efficacy of fiscal policy, primarily because of implementation lags. In a famous example, President John F. Kennedy proposed a tax cut in 1960, when the US economy was in recession, but the tax cut was only passed into law shortly after his death in 1964. By this point, the US economy was growing more than 5 percent per annum.

### 3.2 *Dual mandates*

Post-war macroeconomic policy objectives were firmly focused on macro-stabilisation with a greater emphasis on full employment.

Mandates for a number of central banks around the world were renewed reflecting this emphasis.<sup>7</sup> Macroeconomic policies aimed to ensure that

service personnel were absorbed back into the peacetime economy more effectively than had occurred following the Great War. The origins of World War II were linked to both reparations following World War I and the Great Depression, and forestalling such conflict was another major motivator for employment policies and reconstruction.

Employment objectives were an important feature of discussions about the architecture of the international financial system. In 1944, Allied and independent countries – including Australia, New Zealand, the United Kingdom, and the United States – established the Bretton Woods system of fixed exchange rates together with the World Bank and the International Monetary Fund.<sup>8</sup> The opening address by Henry Morgenthau, the Secretary of the US Treasury and president of the conference, made clear that the objective of the conference was to bring about an “expansion of production, *employment*, and trade”.<sup>9</sup>

A dual mandate of price stability and low unemployment was evident in the objectives assigned to the Reserve Bank of Australia (RBA) by the Reserve Bank Act 1959.<sup>10</sup> The RBA was to direct monetary and banking policy “to the greatest advantage of the people of Australia”, and the board of the Bank was to exercise the Bank’s powers to “best contribute to:

- (a) the stability of the currency of Australia;
- (b) the maintenance of full employment in Australia; and

<sup>7</sup> Graham and Smith (2012) discuss the evolution of the Reserve Bank of New Zealand’s objectives since 1934..

<sup>8</sup> Emphasis added. Public commitments to fixed exchange rates constrained the use of monetary policy to stabilise domestic macroeconomic conditions. Consequently, capital controls were instituted in many countries – including New Zealand – to extend the array of policy instruments that could be deployed to foster macroeconomic stability.

<sup>9</sup> See United Nations (1944, p 8).

<sup>10</sup> In 1959, the Reserve Bank of Australia was legislated to carry out central banking functions previously assigned to the Commonwealth Bank, which had operated as a body corporate..

(c) the economic prosperity and welfare of the people of Australia.”

These objectives were repeated verbatim from the Commonwealth Bank Act 1946, which was specified within a decade of Keynes’ *General Theory* and at the immediate conclusion of World War II.<sup>11</sup>

In the United States, the dual mandate of the Federal Reserve System was formally instituted in 1977. The *Federal Reserve Reform Act of 1977*, states the following:

*“The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy’s long run potential to increase production to promote effectively the goals of maximum employment, stable prices, and moderate long term interest rates”.*

The objectives in this 1977 Act are similar to those of the US Employment Act 1946, which was also concerned with the desirability of using public policy to support employment and other macroeconomic objectives, including price stability (Steelman, 2011).

Central banking objectives evolved further in the 1980s. The high inflation of the 1970s, and the theoretical explanations for high inflation developed in the early 1980s, set the stage for New Zealand’s current monetary policy regime – inflation targeting.<sup>12</sup> The experience of the 1970s generated strong distaste for high inflation rates, which were regarded as a pressing macroeconomic issue that needed to be resolved with public

policy. This evolution in objectives is another example where monetary policy was directed towards a ‘pressing policy issue of the day’.<sup>13</sup>

Practical experience, in the United States and elsewhere, showed that conventional monetary policy could restore and maintain low rates of inflation. The former Chairman of the Federal Reserve, Paul Volcker, was instrumental in lowering US inflation in the early 1980s, and thereafter it was clear that direct controls on wages and prices or tax policies to influence price adjustments – so-called ‘incomes policies’ – were not necessary to achieve price stability.<sup>14</sup> New Zealand nevertheless experimented with such policies from 1982-84, instituting a wage and price freeze. However, inflation reverted to high levels once restrictions were removed.

In the 1980s, an important objective for monetary economics was to explain why inflation had become so high in the 1970s. One strand of the monetary policy literature argued that the government was innately predisposed to have an inflationary bias; it would ‘cheat’ on ex ante commitments to maintain stable monetary policy to boost economic activity in the short term. Rational private agents would anticipate such cheating, and the upshot would be higher inflation with little tangible, real gain. Several solutions were proposed for this problem, chief amongst them an independent central bank tasked with price stability. Walsh (1995) provided a solution that involved assigning a contract to the governor of the central bank with payoffs that depend on the realised rate of inflation. To some extent, Walsh’s research provided an ex post justification for New Zealand’s inflation targeting framework with a single decision-maker.

11 Schedvin (1992) discusses the history of the Reserve Bank of Australia in depth.

12 Wadsworth (2017) provides an international comparison of inflation-targeting frameworks.

13 Wood and Reddell (2014).

14 Buckle (2018) also points to the “practical experience” of the Bundesbank in using monetary policy to achieve “low inflation in post-war Germany”.

### 3.3 Inflation targeting

One conclusion from studies of optimal policy is that the objectives assigned to a central bank need not perfectly coincide with the preferences of the ‘representative agent’ of society. Rogoff (1985), for example, suggests appointing an inflation-averse (so-called ‘conservative’) central banker to offset a political bias in favour of expansionary policy which tends to result in inflation. Rogoff (1985) and Walsh (1995) both show that skewing the incentives or objectives of the central bank relative to the general populace’s preferences may enhance welfare.

Central banking objectives evolved further during the 1990s. Following the introduction of inflation targeting in New Zealand in 1990, most developed countries also adopted explicit inflation-targeting regimes.<sup>15</sup>

Once inflation stability was broadly achieved and expectations of continued low inflation became embedded in the public psyche, the emphasis gradually shifted towards ‘flexible inflation targeting’, with greater emphasis on secondary objectives, such as stabilisation of the real economy, exchange rate and interest rate stability, and financial stability.

In New Zealand, this shift towards flexible inflation targeting started in the mid-1990s, as the band for the inflation target was relaxed from 0-2 percent to 0-3 percent in 1996, and then shifted again to 1-3 percent in 2002. In 2012, the inflation target was retained at 1-3 percent but with a focus on a 2 percent target midpoint.<sup>16</sup>

15 See Irwin (2014).

16 See Buckle (2018) for an overview of the origins and evolution of New Zealand’s inflation targeting regime.

The Policy Target Agreements of the late 1990s and early 2000s also placed greater emphasis on secondary considerations. In the 1999 Policy Targets Agreement (PTA), for instance, the Bank was expected to “seek to avoid unnecessary instability in output, interest rates and the exchange rate”. And the 2012 PTA instructed the Bank to have “regard to the efficiency and soundness of the financial system” and to “monitor prices, including asset prices”.<sup>17</sup>

The Policy Targets Agreement of 2017 introduced maximum sustainable employment as a higher-order objective by the Minister of Finance. Later, an amendment to the Reserve Bank Act in 2018 gave maximum sustainable employment equal status as a primary objective with price stability, thereby formally giving monetary policy in New Zealand a dual-mandate.<sup>18,19</sup>

## 4 Policy Trade-offs

### 4.1 The costs of inflation

The economic and social costs of inflation have been subject to considerable academic debate. Barro and Gordon (1983) noted that “[a]lthough people generally regard inflation as very costly, economists have not presented very convincing arguments to explain these costs”. Through time, efforts have been made to resolve this inconsistency.

17 McDermott and Williams (2018)..

18 See Woodford (2003) for a discussion of the analytical basis for an inflation-targeting regime.

19 See Debortoli et al (2017) for a perspective on why a dual-mandate serves as an approximation for a social welfare function...

Prices are a central allocation mechanism in market economies. Distorting prices may thus have adverse effects for resource allocation and growth. Khan and Senhadji (2001) and Kremer, Bick, and Nautz (2013), amongst others, have examined threshold models to see if inflation rates above certain levels adversely affect long-term economic growth. For developed countries, they suggest that inflation rates above 2-3 percent adversely affects growth, lending support to the inflation targets of many central banks.<sup>20, 21</sup>

In a market economy, inflation is distortionary if it affects the relative prices that determine the allocation of goods and services and labour. The consequences of inflation include:

- Relative price distortions, which degrade welfare by
  - Distorting consumption and production of different varieties of goods, when the prices of some goods adjust more frequently than others.
  - Distorting labour effort, because of interactions with the nominal tax system.
  - Distorting capital allocations, e.g. people may invest in housing because the return on owner-occupied housing is not taxed.

- Arbitrary redistributions
  - Inflation reduces the purchasing power of people with fixed nominal incomes.
  - Variable/unanticipated inflation can arbitrarily raise or lower the real cost of borrowing: redistributing wealth between borrowers and lenders.
- Cognitive costs
  - Figuring out resource allocations may take more time and effort when inflation is higher.
- Menu costs
  - Businesses may incur costs from adjusting ‘menus’ more frequently. (Likely to be small, but Akerlof, Dickens, and Perry 1996 argue that small costs discouraging wage adjustment can magnify into macroeconomic significance.)
- Shoe leather costs
  - Inflation may create costs associated with managing money balances, though these are also likely to be small.

## 4.2 *The benefits of macroeconomic stabilisation*

The costs of macro volatility, and the benefits that arise from using monetary policy to stabilise the economy, are complex to evaluate. The welfare costs depend on the extent of volatility, people’s aversion to such volatility, their ability to access financial markets and/or accumulate

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20 For a survey of the literature, see Brook, Karagedikli, and Scrimgeour (2002).

21 For developing countries, thresholds are identified at much higher inflation rates.

savings to cope with volatility, and their preferences for smoothing consumption and work effort through time and circumstance. For example, volatile employment patterns may not matter to a person if they are exceptionally well-paid when working, enabling saving for periods when they are out of work. Lucas (1987) examined these issues in a representative agent model and concluded that the benefits of moderating business cycle fluctuations are small. Nevertheless, it seems clear that Lucas' conclusion does not accord with general public sentiment, and other researchers have examined reasons why the costs may be higher than Lucas estimates.<sup>22</sup>

The relative importance of macro stability and price stability is subject to debate. Svensson (2014) suggests that stabilising employment and inflation around their 'natural' or target rates should receive roughly equal prominence. The Federal Open Market Committee of the Federal Reserve issued a statement in 2012 noting that it follows a 'balanced approach' in promoting these dual inflation and employment objectives.<sup>23</sup>

## 5 Concluding remarks

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Historically, monetary policy objectives have been directed to the most pressing macroeconomic issues of the day, whether that be the provision of currency for transacting, war-financing, financial stability, exchange rate stability, unemployment/real-economy stabilisation, or more recently, stabilising inflation.

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22 See, for example, Atkeson and Phelan (1994) and Barlevy (2005), amongst others.

23 See FOMC (2018).

The origins of dual mandates are closely allied to high rates of unemployment such as those first experienced during the Great Depression and then again in the 1970s. We have also noted that there are likely to be limitations in monetary policy's ability to stabilise the unemployment rate. While monetary authorities can change interest rates, these are only one of many influences on the decisions of firms and consumers. There is no guarantee that firms and consumers will choose to respond to these price signals exactly as policy makers might intend, since other considerations may influence and can dominate private decision making, especially if there is uncertainty about the current economic environment and future prospects.

We also discussed the costs of inflation and the economic rationale for stabilisation policy. The welfare benefits of stabilising business cycles is somewhat controversial, though policy-makers' and politicians' revealed beliefs suggest that the benefits are higher than some academic research suggests. Nonetheless, in recent decades, monetary targets have converged on inflation rates of around 2 percent.

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