

Cambridge University Press

978-0-521-76818-4 - Twenty Years of Inflation Targeting: Lessons Learned and Future Prospects

Edited by David Cobham, Øyvind Eitrheim, Stefan Gerlach and Jan F. Qvigstad

Excerpt

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1 Introduction

*David Cobham, Øyvind Eitrheim, Stefan Gerlach
and Jan F. Qvigstad*

The first country to adopt inflation targeting (IT) in its formal definition was New Zealand, which first announced a consumer price index (CPI) inflation target in 1989 as part of its economic reform and restructuring effort. IT was therefore twenty years old by the time of the conference in Oslo at Norges Bank, Norway's central bank, in June 2009 at which the contributions in this volume were originally presented – a conference sponsored jointly by Norges Bank and the Institute for Monetary and Financial Stability (IMFS) of the Goethe University in Frankfurt. The anniversary seemed a good time for some deeper and longer reflection. In organising the conference and putting together this book, we therefore sought answers to a wide range of questions, from the nature and causes of the spread of IT through the degree of its success as a monetary policy strategy to the ways in which it is developing and may develop in the future.

Formal inflation targeting can be considered as involving (i) the prior announcement of a quantitative target for a specific measure of inflation; (ii) an emphasis by the central bank as policymaker on communicating both the reasons for the decisions it has taken and the type of decisions it is likely to take in the future, including in particular the publication of its inflation forecasts; and (iii) a high level of accountability for the central bank via the publication of information on its decisions and regular appearances before relevant public bodies. While many researchers in this area, and most of the contributors to this volume, regard the announcement of a target as a *sine qua non* for inflation targeting, some focus more on the operation of policy by central banks, and consider the Federal Reserve Board in the United States and the European Central Bank (ECB) of the European Union (EU), for example, as (informal or implicit) inflation targeters (ITers). However, these two banks have shown no inclination so far to announce the targets that would qualify them as formal or explicit inflation targeters under the conventional definition.

The opening remarks by Jan F. Qvigstad, deputy governor of Norges Bank, provide a brief Norwegian perspective on IT, with an illustration

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of the application of Norges Bank's five criteria for a good interest rate path. Athanasios Orphanides, governor of the Central Bank of Cyprus and member of the Governing Council of the ECB (and before that an economist at the Federal Reserve Board for nearly twenty years), offers some perceptive reflections on IT from an agnostic point of view.

Scott Roger's overview, which updates his earlier work with Mark Stone (2005), covers the introduction and spread of IT, the key features of its operation in different countries, its contribution to macroeconomic and inflation stability, and the challenges it faces in the future. He finds, for example, that IT countries have typically had larger improvements in macro-performance than non-IT countries, but have not ended up with better performance than non-ITers. On the other hand, ITers seem to be doing better than non-ITers in the financial crisis period (so far). Klaus Schmidt-Hebbel brings together a large amount of very recent work in this area, looking more closely at the reasons countries have adopted IT and at the effect on inflation of adopting IT. In terms of the latter, a range of different results have been found, depending on what countries ITers are compared with. However, there is evidence that industrial ITers have lower long-run inflation than industrial non-ITers. He also finds that ITers have improved the efficiency of their monetary policy, but remain less efficient than a control group of high-performing non-IT industrial countries.

Daniel L. Thornton takes a rather different tack in his examination of how monetary policymaking arrived at IT, with particular reference to the United States (which he considers an implicit ITer). He argues that the old (1950s to 1960s) proposition that monetary policy is ineffective, because the transmission mechanism is weak and obscure and the velocity of money is endogenous, has not in fact been refuted. As the result of various experiences, central bankers and others have become convinced that monetary policy matters, and now formulate policy on that basis, but the intellectual underpinnings remain weak. In addition, he warns against multiple objectives or dual mandates for central banks, and supports more openness by central banks about what they can and cannot achieve.

The chapter by Þórárinna G. Pétursson returns to the issue of the effect of IT adoption on macroperformance, but examines it from a different perspective. He focuses on the volatility rather than the level of inflation and sets out to identify the factors responsible for countries' different rates of success in reducing inflation volatility in a sample of forty-two developed and emerging market countries. His initial cross-section work highlights the roles of the volatility of the exchange rate risk premium, the exchange rate pass-through to inflation, and monetary policy predictability. He then introduces a dummy variable for the effect of

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adopting IT on inflation volatility, and it turns out to be significantly negative in a panel regression in which the three factors already mentioned remain significant.

Andrew Filardo and Hans Genberg investigate a very different sample: twelve Asia-Pacific countries, including both industrial and developing, large and small, from Australia via China and Hong Kong to Indonesia, of which six are formal ITers and the other six take inflation very seriously. They find that the macroeconomic performance of the two groups has been broadly similar, particularly in terms of inflation control and private sector inflation expectations. This leads them to suggest that, in their sample at least, there is no clear advantage for formal over informal IT: '[T]argeting inflation is important but there are many ways to skin that cat.' They also speculate briefly about the possibility of a central bank having multiple objectives with state-dependent priorities.

While the macroeconomic impact of IT is fundamental, a second major issue is that of the correct response of monetary policy to asset prices (which is also touched upon by Roger, Schmidt-Hebbel and others). Christopher Allsopp re-examines, and broadly reasserts, the conventional majority view that policy should not respond except after a bubble has burst. He argues that an important part of the contribution of IT is that it simplifies the assignment problem: the control of inflation is assigned to central banks as the single objective to be pursued with a single appropriate instrument – the policy interest rate. Ideas of responding pre-emptively to rises in asset prices, or 'leaning against the wind', risk diluting that clarity and losing the benefits it confers. At the same time, he calls for more emphasis on improved financial regulation and on understanding and dealing with the global imbalances that underlie the 'savings glut' of recent years.

Charles Goodhart, Carolina Osorio and Dimitrios Tsomocos present an emphatically non-DSGE (dynamic stochastic general equilibrium) model, with heterogeneous households and banks, securitisation, endogenous default, an essential role for money, and incomplete financial markets. This allows them to analyse the impact of different policy responses in the context of a financial crisis. The key finding is that the policy interest rate is a superior instrument to changes in money supply. They also emphasise the need for better financial regulation, and for house prices to be included in the price index that the central bank targets.

George Evans and Seppo Honkapohja also deal with the issue of the appropriate policy instrument in a crisis or liquidity trap situation, but they model the private sector's ability to learn to make accurate expectations. They analyse an infinite-horizon learning – as opposed to an

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Euler equation learning – economy in which agents need to forecast variables such as output, inflation, interest rates and taxes. In their model, a large pessimistic shock to expectations can drive the economy into a highly undesirable deflation trap. Aggressive monetary easing on its own is not sufficient to rescue the economy if the expectations shock is large. However, aggressive monetary easing coupled with expansionary fiscal policy when required eliminates the possibility of a deflationary spiral and ensures global stability.

Anke Weber also uses learning models, but with a different focus, to address empirically the development of expectations in a group of EU countries. She finds that expectations can be reasonably modelled as reflecting adaptive learning behaviour, and identifies some interesting but plausible contrasts between the learning behaviour of households and expert forecasters (the former learn more slowly) and between high- and low-inflation countries (households in high-inflation countries update their information sets more frequently than those in low-inflation countries). She also finds that the inflation expectations of professional forecasters broadly converge on the ECB's definition of price stability (under but close to 2 per cent), but that this is not true of households: German households underestimate the ECB's target while Spanish households overestimate it.

The next two chapters examine professional forecasters' expectations of inflation in IT as opposed to non-IT regimes. Morris and Shin (2002) raised the possibility that increased transparency could be destabilising if forecasters put too much weight on information published by the central bank (as opposed to their private sources of information), because this makes the economy too sensitive to common forecast errors. Stephen Cecchetti and Craig Hakkio study the impact of inflation targeting on the dispersion of inflation forecasts (as collected by Consensus Economics). Broadly, they find no clear evidence that (greater transparency of policy under) IT reduces that dispersion, which means that the Morris and Shin concern is not of practical importance. Christopher Crowe focuses on individual forecasters (using the same data source). He finds that IT improves individual forecasters' forecasts, and does so by more for those with initially poorer forecasts but with no loss for those with already good forecasts. However, he also finds that forecasters' rationality may be adversely affected by IT, as they tend to overweight the central bank's published information, and this enables him to reconcile his findings with those of Cecchetti and Hakkio.

Magnus Andersson and Boris Hofmann investigate one of the most recent (and contested) innovations in IT: the publication by IT central banks of their own forecasts of the policy interest rate. It has been

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argued that such publication could improve central banks' ability to manage expectations and so facilitate the transmission of monetary policy. Andersson and Hofmann test this by comparing ITers that do and do not publish own interest rate paths, across countries and across time. Their findings suggest that the publication of an interest rate path may not significantly improve the short-term predictability of future monetary policy or the anchoring of long-term inflation expectations, but that it may enhance central banks' leverage on the medium-term structure of interest rates.

Ida Wolden Bache, James Mitchell, Francesco Ravazzolo and Shaun P. Vahey discuss, and recommend, a new technique for central bank forecasting under IT. They propose that forecasters should take a leaf out of the book of meteorologists by using 'ensemble modelling', in which uncertainties about model specifications (e.g. initial conditions, parameters and boundary conditions) are explicitly accounted for by constructing ensemble predictive densities from a large number of component models. This allows the modeller to explore a range of uncertainties, and the resulting ensemble 'integrates out' these uncertainties using time-varying weights on the components. The authors illustrate this technique using Norwegian data, first for alternative measures of inflation and then for DSGE models forecasting inflation.

We also publish here five shorter pieces that are revised versions of oral presentations at the conference. Charles Goodhart spoke at the conference dinner about the effects of the crisis and of quantitative easing on the autonomy of central banks. He argues that the experiences of the last two years have reopened the previously closed issue of central bank independence, with unpredictable consequences.

The conference also included a panel discussion on the future of inflation targeting, in which the panel speakers were asked to focus on two questions. First, did inflation targets play any role in setting the stage for the current crisis? Second, does inflation targeting need to be modified as a consequence of the crisis (and, if so, how)? Their contributions, revised in the light of the discussion, are included here. Spencer Dale broadly adheres to the conventional view that monetary policy should not respond to asset prices, but argues for additional financial regulatory instruments in order to minimise bubbles. Hans Genberg argues that the correct response to the crisis is to improve the monetary framework, and, in particular, that there is scope within inflation targeting for the central bank to be more 'sensitive' to concerns other than inflation, and to operate a policy of 'leaning against the wind' (LATW) of asset price movements. Lars Heikensten suggests that some element of LATW would have moderated, but not prevented, the crisis; and that in the future central banks should,

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cautiously and judiciously, include some element of LATW within their inflation-targeting procedures. Finally, Sushil Wadhvani criticises the prevailing consensus against LATW, which, he argues, would have mitigated the crisis; he also suggests that observers are now exaggerating the crisis-precluding capacity of the new financial regulatory measures (time-varying capital requirements) that are being discussed, in which case, he argues, LATW will remain a necessary policy for ITers.

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2 Welcome remarks: a Norwegian perspective

Jan F. Qvigstad

Dear conference participants, it is a great pleasure for me to welcome all of you to the Sixth Norges Bank Monetary Policy Conference. Norges Bank and the Institute for Monetary and Financial Stability are privileged to host this conference, which has attracted the interest of such a distinguished group of international experts.

Given that we are going to talk about inflation targeting, I will take this opportunity to set the stage by summarising the Norwegian experience. Since the beginning of the 1980s there has been a broad international consensus that monetary policy must be geared towards price stability. This paradigm shift also reached Norway, but not until the end of that decade.

The starting point for us in Norway was a high and variable inflation rate of around 8 to 9 per cent combined with frequent devaluations. In the period from 1976 to 1986 the government carried out no fewer than ten de facto devaluations of the krone. The devaluation in 1986 would become the last in the series, however. The government recognised that the repeated devaluations were ineffective; confidence had been lost, and inflation had soared without a fall in unemployment. There was a broad political agreement that Norway should follow the rest of the world.

In the first phase of the new era (see Figure 2.1) Norway pursued a fixed exchange rate against European currencies with no devaluations. In practice, we tried to borrow credibility and anchor expectations via linkage to low-inflation countries. The crisis in the European Monetary System (EMS) in autumn 1992 changed the situation, as we had to let the krone float.

In the second phase we no longer operated a formal fixed exchange rate system, but in the following years monetary policy was still oriented towards maintaining a stable exchange rate at all times. We also used this phase to learn and prepare for inflation targeting, and received valuable assistance from international academics and other central banks. In 1998,

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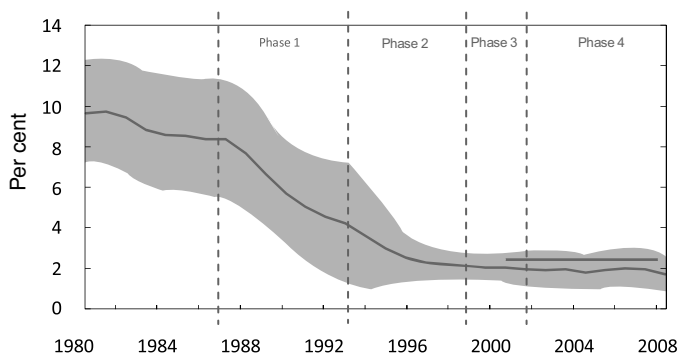
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Figure 2.1 Inflation in Norway

Notes: Moving ten-year average and variation in CPI.*Sources:* Statistics Norway and Norges Bank.

however, we faced the dilemma that the interest rate that was needed to stabilise the exchange rate was different from the interest rate needed to stabilise the economy. In August Norges Bank shifted its policy to one of setting the interest rate with a view to keeping inflation low and stable over time.

In the following period – the third phase – Norges Bank gave greater weight to influencing inflation developments as a prerequisite for a more stable krone exchange rate over time. These developments led to the formalisation of the inflation target in March 2001, a good eleven years after New Zealand began implementing its inflation-targeting policy, ten years after Canada, nine years after the United Kingdom and eight years after Sweden.

The fourth phase indicates that the paradigm shift has been successful. We have managed to move from high and variable to low and stable inflation.

The question that arises, though, is this: how should we then set the interest rate under inflation targeting? Norges Bank has developed the following set of criteria for a good interest rate path (see Qvigstad 2006 and Holmsen *et al.* 2008 for more detailed descriptions of the criteria and how they are used).

- (1) Inflation close to the target in the medium term.
- (2) A reasonable balance between the path for inflation and the path for capacity utilisation.
- (3) Robustness.
- (4) Gradualism and consistency.
- (5) Cross-checks: simple policy rules.

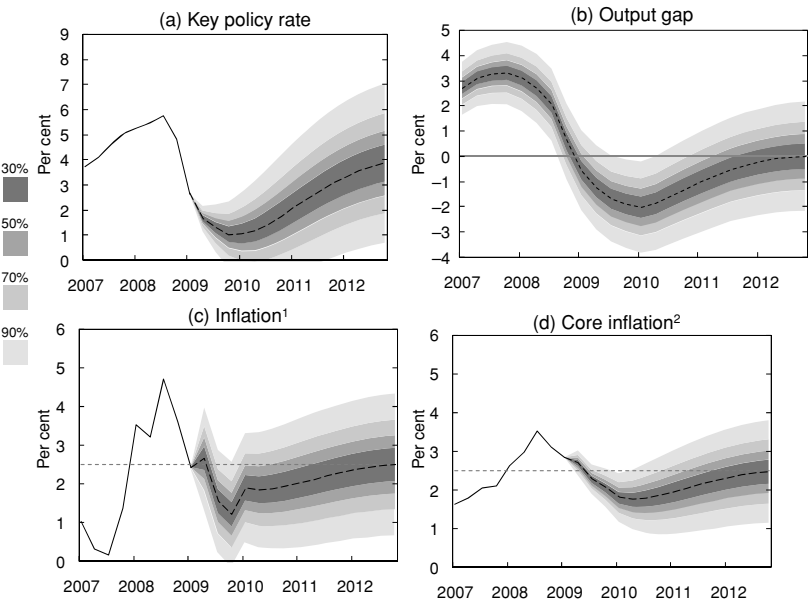


Figure 2.2 Baseline scenario in *Monetary Policy Report 1/09*

Notes:

¹ CPI.

² CPI adjusted for tax changes and excluding temporary changes in energy prices.

Sources: Statistics Norway and Norges Bank.

It was Lars Svensson, currently the deputy governor of the Sveriges Riksbank, the central bank of Sweden, who inspired us to develop these criteria. He said that we needed to find an interest path that ‘looks good’. The criteria serve the purpose both of communicating the reasoning behind the interest rate path to the public and of providing an agenda for the board’s discussion. The criteria are not equal, however. The first one has priority.

Let me give a simple analytical illustration of how these criteria may be used, by using the forecasts from Norges Bank’s *Monetary Policy Report 1/09* (MPR 1/09) as an example (see Figure 2.2). With this interest rate path, we expected inflation to reach the inflation target of 2.5 per cent in what we considered to be the ‘medium term’. Thus, the first criterion was satisfied. However, there are many possible interest rate paths that may cause inflation to reach the target in the medium term. Which path should we take? Is there a trade-off between flexibility and credibility? How long can the horizon for achieving the target be without jeopardising credibility?

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The second criterion states that there should be a reasonable balance between inflation and capacity utilisation (measured by the output gap). By visual inspection of the forecasts for inflation and the output gap in Figure 2.2, it seems that a somewhat more expansionary interest rate path would contribute to both a smaller inflation gap and a smaller output gap.

According to standard theory, the policy response to a negative demand shock is easy: you should lower the interest rate to offset the shock. If we compute optimal policy in our core model, based on a loss function with only the inflation gap and the output gap as arguments and disregarding the zero lower bound, the outcome would be an optimal interest rate that is highly negative. Of course, the lower bound on the interest rate cannot be disregarded, but the policy implication is clear nonetheless: the interest rate should be set as low as possible. Is it that easy, though? Should we try to neutralise demand shocks?

A policy aiming to neutralise the recent negative demand shocks would be very aggressive and would be in conflict with criterion 4, which says that ‘interest rate adjustments should normally be gradual and consistent with the central bank’s previous response pattern’. If we include ‘interest rate smoothing’ in the loss function, we get a more gradual interest rate path, as illustrated by the dashed lines in Figure 2.3. This projection implies that the interest rate should reach a lower level of about 0.5 per cent, which is perhaps close to the lower bound in practice. All the same, criteria 1, 2 and 4 imply a somewhat lower interest rate path than what we ended up with in the last report. Then again, though, is gradualism a good thing? What is the case for ‘interest rate smoothing’?

The way we assess economic developments and the economic mechanisms may be wrong. Criterion 3 says that the interest rate path should also result in acceptable developments in inflation and output under alternative, but not unrealistic, assumptions about the economy. I will not go deeply into the issue of robustness, but let me briefly mention two aspects. First, from a robust control perspective, one could imagine a worst-case scenario involving a severe international economic meltdown. The policy implication of such a worst case is to react with more aggressive interest rate cuts. On the other hand, uncertainty about the effects of an expansionary monetary policy points towards a more cautious policy – that is, higher interest rates. There are therefore arguments for both higher interest rates and lower interest rates. What is a robust strategy in the current situation? We welcome advice from academia on how to organise the arguments in a systematic way.

A more practical approach to model uncertainty is to cross-check the path with simple policy rules, such as the Taylor rule. In addition to the standard Taylor rule, we usually consider a version with an additional