

Evolution of price level targeting and inflation targeting

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Received 2008-04-02

Abstract

This paper puts together the origins and the development of price level targeting in Sweden and the inflation targeting in New Zealand. It highlights the common and dissimilar characteristics of the two monetary regimes, the two interpretations of “price stability”. Solid historical evidence shows that either inflation stabilization or – contrary to the conventional wisdom of our era – price stabilization can be a feasible goal of monetary policy.

Keywords

monetary policy · inflation targeting · price level targeting

1 Introduction

In our days there is a consensus that the task of the monetary policy is to create a safe environment where the price system, so the economy can work effectively. The Bretton Woods Agreement established in 1944 was an attempt to create such an international monetary system where one tried to combine long-term price stability of the gold standard and the short-term flexibility of regimes based on fiat money. Since paper money issuing did not comply with consistent rules concerning the fix exchange rate regime and the long-term dollar-gold exchange rate, the regime collapsed after experiencing intense crisis between 1969 and 1973.¹ Inflation perceived during the two decades after the fall of the agreement was high and volatile even in the developed countries, too. This period is characterized by seeking adequate nominal anchor, and no “universal” one was found.

Inflation targeting as a monetary regime has been named since 1989. In this year, the legislative body of New Zealand approved the bill to restructure the fundamentals in the operation of the central bank, whose core concept has spread around the world since. In this regime, the main task of the monetary authorities is to keep inflation at a pre-set value or within a band. On the model of New Zealand, countries implementing such a regime in the early 1990s (Canada, United Kingdom, Australia, Sweden, Finland, Spain) have been enjoying low-level inflation with adequate economic growth, and this can be told about developing countries taking up the regime later on (Israel, the Czech Republic, Poland, Korea). Experience fostered several supportive studies which make the prime role of inflation targeting regime almost unquestionable, at least for the economy of developed countries.² The other side of the coin is that during the same period, a general decrease in inflation was perceived worldwide. The empirical research of Dueker and Fischer (2006) [5] claims that it is hard to separate whether positive results have come

¹Black and Gavin (1990)[4]

²Leiderman and Svensson (1995)[11] and Bernanke et al. (1999) [13] analyze the experience of developed countries, while Mishkin (2003) [13] focuses on transition countries. Amato and Gerlach (2002)[1] find that with appropriate modifications inflation targeting is an adequate choice for developing countries.

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from inflation targeting or from the general sinking of inflation.

Although inflation targeting declares endeavoring to maintain “price stability”, in reality, it does not maintain that on a long run. Focusing on low inflation does not mean price stability by itself, since inflation shocks build into the price level, and their correction does not happen. Here it would be more precise to use the expression “inflation stability”. If inflation has already been pinned down to a permanent low level, the desire for such an alternative regime would be palpable that can really finish off the long-term uncertainty of the price level. However, according to “conventional wisdom”, the consequence of price level stabilization is the higher volatility of inflation and the output gap. This statement has been queried by Svensson (1999)[17], Vestin (2006)[18], and others in the recent years. The basic idea is that a price level target serves as a firm nominal anchor, as it provides substantial information on the current stance of the monetary policy and clearly signs the long-run goal, which can form the expectations of the private sector such a way that the variability of the inflation falls, causing higher social welfare compared to the one under inflation targeting. There is just one example in history to price level targeting, and it happened during the 1930s in Sweden with an experiment to target consumer price index.³ In the decades after the turn of the 19th and the 20th century, sticking to price level targeting was not an odd opinion at all – a multitude of scientific studies stood behind it. At the time this new course of research studies was reaffirmed by the multiplying problems of the quasi-fixed international exchange rate system which had worked well previously but started to lose effectiveness after World War I, and the spreading crisis emerging thereof.

Our aim is to take a retrospective look in history at the events of the two milestones in economic history and economic theory, and compare the two regimes, their dissimilarities and common features, deducting general conclusions.⁴

The Swedish price level targeting⁵

The Swedish minister of finance declared on September 27, 1931 that the country would break off from the gold standard regime, and set the preservation of the purchasing power of the Swedish krona as its primary goal. This declaration has various antecedents. Due to World War I and the Great Depression, there was a decade-long deflationary pressure. Between 1921 and 1931, consumer prices fell by approximately 30 percent in Sweden, while wholesale prices fell by the same rate only in the last three years of this period. Unemployment rate that had been a stable 10 to 12 percent since 1923 started to rise sharply – it was 17.2 percent in 1931. Since the Bank of England suspended

³Ohlin (1933) [14] used the expression “experiment” first, in order to emphasize the novelty of the program.

⁴Guender and Oh (2006) [9] made a similar comparison, however our findings differ in several points. Moreover we draw conclusions related to the future.

⁵In this chapter we take study of Berg and Jonung (1999) [2] as a basis, which gives the comprehensive evaluation of the Swedish price level targeting.

the availability of exchange the British pound to gold in order to prevent gold outflow, on September 19, 1931, there was a speculative attack against the Swedish krona which was pegged to the pound. The gold standard, which worked perfectly before the war, was shaken to its basis, and Swedish economic leaders had to find an alternative solution as quick as possible.

The thought of price stabilization first appeared in the study of Wicksell (1936) [19].⁶ His concept is that the central bank can use its instruments to make the interest rates of the commercial banks compared to the “natural” interest rate move, hence it can influence the price level. The natural interest rate means that expected real return which would clean the credit market in an economy having no inflation or deflation and working at its highest effectiveness.⁷ The problem with this process is that there is no clear-cut information on natural interest rate. Wicksell claims that it is enough to take a look at prices. If they rise, then commercial interest rates would be too low compared to the natural rate – if they fall, then they are too high. When Sweden decided to leave the gold standard system behind on September 26, 1931, Cassel, the famous “wicksellian” economist of the era recommended the government introduce price level target as the new nominal anchor.⁸ There was no long-lasting counselling or preparation – the September 27 announcement of the new goal of monetary policy was just a one-sentence declaration.⁹ The circumstances of the change are not only the imprint of the crisis, but it also reflects the effect and opinion-forming influence of the economists of that era.¹⁰ The other reason there was no major preparation is that the solution was considered to be temporary, during the stumble of the gold standard regime, as this was thought to be temporary, too.

The parliament of Sweden approved the five-point monetary program on price level in May 1932. During the period following the change, implementing the idea of price level targeting into practice was carried out not without problems. A certain amount of time had to pass till decision makers could leave old pattern behind. After the break-off from the gold standard, the Riksbank kept on raising the discount rate despite the worldwide perceived general deflation, because they were concerned about

⁶ First publishing was in 1898, in English it was translated long after in 1936. Later Irving Fisher (1920) [7] argued for the stabilization of the purchasing power of the money, too.

⁷Wicksell’s cumulative process is this: if the central bank set the interest rate lower than the “natural” interest rate (marginal productivity of capital) with given expectations, there would be excess demand for credit, so thus the quantity of money would increase, too. As supply can react with lag, rising price level makes the return of the capital even appealing, further amplifying the borrowing and the demand. This process keeps until interest rate rises and equals to the return of the capital.

⁸Before the implementation of the regime there was an alternative possibility. Davidson’s idea was to lower price level proportionally with the growing of productivity, but this solution raised lots of methodology problems.

⁹Berg and Jonung (1999) p.529 [2]

¹⁰In the process of the implementation and the continuous reform of the regime advices of Cassel, Heckscher and Davidson were always considered by the government.

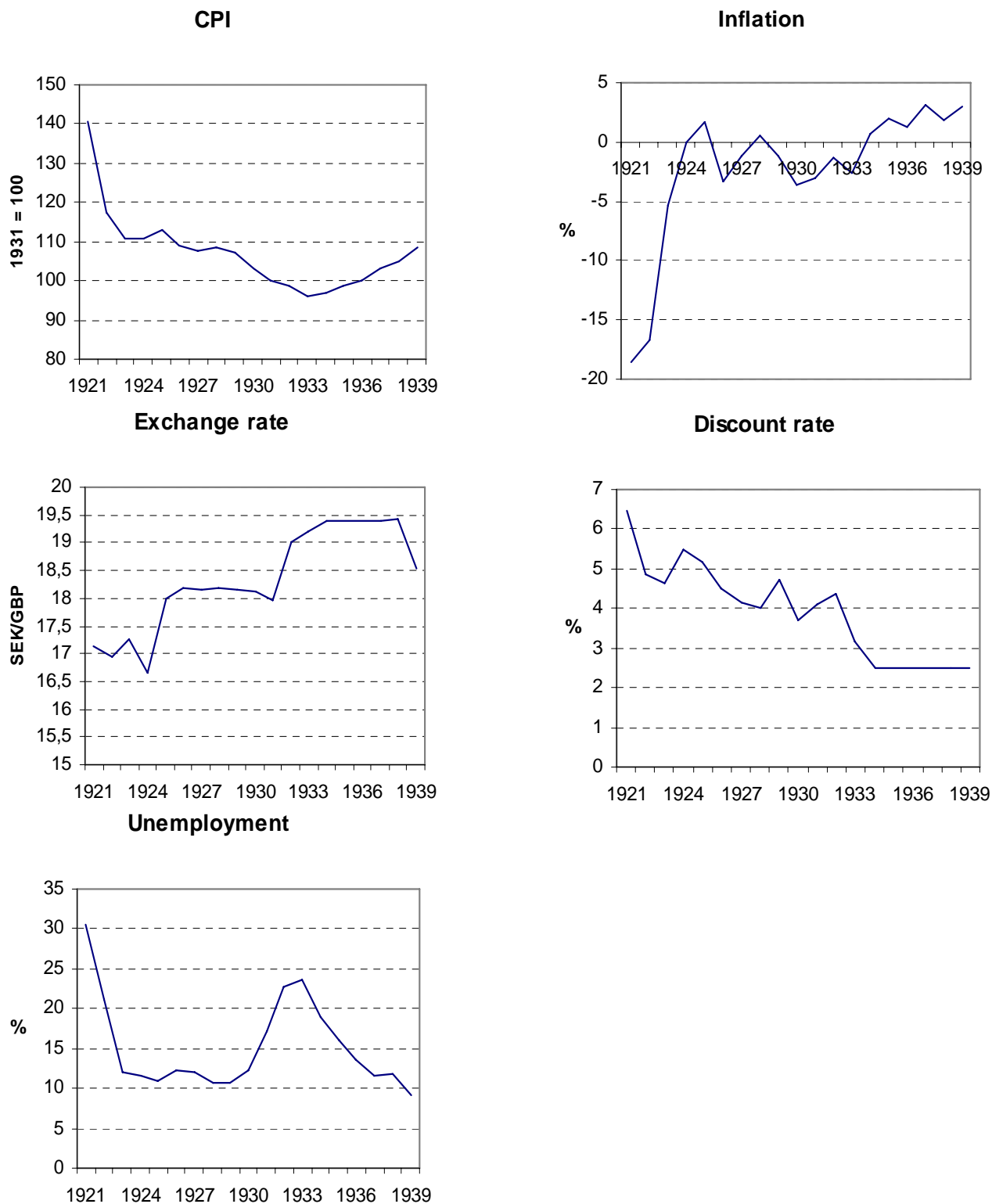


Fig. 1. Main economic indicators of Sweden, 1921-1939¹¹

the spin-up of inflation. The concern about price rise was based on the thought that before the withdrawal from the gold standard, the rise of inflation originating from the outflow of gold, then from the break-off of the krona from the British pound was considered more persistent and of a higher scale than deflationary pressure. Raising of the discount rate from 6 to 8 percent in September 1931 was unnecessary – it was adjusted to 6 percent at the end of the year, and was set gradually to 3 percent

in the next year. In a crisis situation, such monetary restriction could have severe consequences, but it is likely that external factors had the major role in the depression. This is supported by those two facts that the downturn was more moderate in Sweden when compared to other countries, and that the largest drop was observed in the export sector of the country.

¹¹Source of data: CPI, inflation: Statistiska centralbyran, exchange rate, discount rate: <http://www.historicalstatistics.org>,

Withdrawing from the gold standard and the use of price level targeting contributed the enduring rise of the Swedish economy from 1933.¹² Up to 1937, consumer price index was managed within a band of 3 percent compared to the base price index of September 1931, and apart from one price shock, no major volatility was shown before World War 2. It should be emphasized that the explicitly non-targeted wholesale price of 1937 was at the level of 1928. After the speculative attack and before the enactment of the price level targeting, significant fluctuation of the pound/krona exchange rate could be seen. By the year 1934, this volatility came to calm, which means that the Riksbank could achieve its dual explicit-implicit goal, the stabilization of price and exchange rate in the following four years. Besides, it contributed to the boost of the economy: from 1933 onward, the rise in industrial production meant a 10-percent drop in the unemployment rate, which fell to the level perceived in the 1920s (see Fig. 1).

There are more than one reason for stopping the experiment. Despite success, it was apparent that conflict may rise between the stability of the krona pegged to the British pound and keeping the price level target in certain situations, when one of them has to be given priority. At the beginning of 1937, British price level rose. In spite of Cassel and Heckscher's advice, the central bank of Sweden opted for the stabilization of the exchange rate, but this meant a permanent pressure on the consumer price index, which inevitably and permanently crossed the upper boundary of the target band. As the activist Keynesian approach gained wider acceptance, the Riksbank was given an additional task in 1937, namely the assignment of higher cooperation with the fiscal policy in order to reduce unemployment. The main supporters of this idea were Ohlin and Myrdahl, two well-known economists of the Stockholm School who promoted the necessity of anti-cyclical intervention.¹³ Monetary program became a complex economic program by then. This was coup de grace to price level targeting, since the neoclassic theory that formed its base has positioned itself on the other pole in the question of role of government.

2 The evolution of inflation targeting in New Zealand¹⁴

On December 20, 1989, the parliament of New Zealand voted unanimously on the new central bank bill, the so-called Reserve

unemployment:

<http://www.library.northwestern.edu/govinfo/collections/league/stat.html>

¹² It is not a coincidence that Fisher (1934) [8] and Lindahl (1937) [12] thought, the Swedish experiment is only the first step of the evolution of a new price targeting international monetary system, which will change the then fixed exchange rate system.

¹³ In his evaluation of 1933 Ohlin [14] admitted the merits of price level targeting in reining the deflationary spiral, but he emphasized the importance of stabilization of the unemployment first.

¹⁴We based this chapter on the writings of Evans et al. (1996) [6], Reddel (1999) [15] and Sherwin (1999) [16], which give detailed portrays of the New Zealandian economic reform and the development of inflation targeting.

Bank Act, which inured on February 1, 1990.¹⁵ This was the first time that a monetary regime declaring formal inflation targeting came to existence. This has been a brand new concept since the dissolution of the Bretton Woods system characterized by an international environment of high and volatile inflation, where central banks rather emphasized intermediate targets (exchange rate, monetary aggregate) that were to be achieved via lower risk, and they did not even think of influencing the final goal "directly".

The road to the act that restructured monetary policy took almost five years to complete, and formed an organic part of the reform process to restructure the economy. Searching for options was forced by a staggering economy. During the decade following the oil crisis, the scampered and volatile inflation coupled with rising interest rates, which worsened the outlook of economic growth. Depreciation of New Zealand dollar enlarged the further foreign indebtedness of the country. When a new "crisis-managing" government entered office after elections in 1984, its first order of business was to issue deregulation on the money market: restrictions on interest rates were abolished in days¹⁶, and restrictions to currency conversion were pulled down by March 1985, which meant that the New Zealand dollar has become free floating. In the new situation provided by the reforms, the central bank of New Zealand (Reserve Bank of New Zealand, RBNZ) tried to target the so-called Primary Liquidity.¹⁷ It became obvious in a rather short period of time that it cannot fulfill the role of a nominal anchor, because it remained very volatile, and that the movement of interest and exchange rate could not be allayed. The quest for solution went on - the government began to think about targeting the nominal GDP. In the subsequent two years, it became clear that the targets are extremely far from the realized values.

In mid-1986, minister of finance Roger Douglas called upon a meeting with the officers of the central bank and the Treasury. During the dispute of 1987-88, two key demands concerning the future operation of the central bank were envisioned: first of all, the central bank shall have *autonomy*, which makes it independent of political intrusions, and second of all, it shall be *accountable*, which ensures its full commitment to achieving the ultimate goals. Total operational independence was put forward by the central bank, while accountability fixed in the job contract of the central bank's governor was suggested by the Treasury's¹⁸ specialists.

Although inflation fell by a high degree and became of single digit (9 percent) in 1988, Douglas was concerned of stuck

¹⁵Reserve Bank of New Zealand Act, Public Act No. 157.

¹⁶On 27 June, 1984 was the first bond tender, where the government financed its borrowing requirement at market-determined interest rates.

¹⁷Narrow monetary aggregate, consist of the balances banks held in their accounts at the Reserve Bank and holdings of those securities which can be sold back to the Reserve Bank on demand.

¹⁸The Treasury founded in 1840. At that time it only managed the daily finances of the government, since then it became the leader economic and financial consultant institution of the government.

of the expectations, hence he expressed the government's expectation of a 0 to 1 percent inflation target band in a television interview and via other means of communication.¹⁹ The opinion of the central bank concerning fast disinflation was not the unambiguous, because they claimed that "the gains likely to accrue from the use of inflation targets are limited and the cost, although unknown, of a continued tight monetary policy stance over the next year or two potentially high."²⁰ In spite of that, it was announced in June of the very same year that "price stability" may be achieved by the end of 1990 as the final goal, which was defined as a 0 to 2 percent change in the consumer price index.

The first Policy Target Agreement (PTA) which was agreed upon by the minister of finance and the governor of the central bank on March 2, 1990 set the obligations of the governor of the central bank in order to achieve the inflation target set by the government, and in this connection the governor's half-year statement. Should the central bank be unable to achieve them, the governor of the central bank could be removed from office as prescribed by the agreement. In exceptional cases, like terms of trade shock, the rise of an indirect tax, which means exogenous price shocks not related to the operations of the central bank, deviation from the previously set inflation target can be done with impunity, but the new target path has to be agreed upon. This clearly shows that such a monetary strategy requires constant follow-up in both the instruments used and the target set. In order to increase transparency, the so-called Settlement Cash Balance, a narrow reserve aggregate was discarded on March 7, 1997, which – just like the Primary Liquidity before – failed to conduct monetary conditions properly, and the Official Cash Rate, a benchmark to overnight central bank interest rate has been introduced as the main instrument and the policy rate, too since March 17, 1999. In practice, the operation of the regime accompanied with the shift of emphasis on goals, as it is shown by the 1996 amendment of the PTA, which sets the maintenance of price stability as the main task of the monetary policy, which "can make its maximum contribution to sustainable economic growth, employment and development opportunities within the New Zealand economy".²¹ The new courses appear explicitly in the 1999 PTA, which says that "*In pursuing its price stability objective, the Bank shall implement monetary policy in a sustainable, consistent and transparent manner and shall seek to avoid unnecessary instability in output, interest rates and the exchange rate.*"²² After the successful disinflation, these secondary goals started to move into the foreground. It is no surprise that with built-up credibility the counter-actions to mitigate a potential shock as soon as possible were and are used less frequently, and gradual approach is emphasized.

¹⁹ Reddell (1999) [15] p. 67.

²⁰ Price Stability and Inflation Targets, RBNZ Memorandum to the Minister of Finance (No 2536, 2537), 1988 July

²¹ <http://www.rbnz.govt.nz/monpol/pta/0040554.html>

²² <http://www.rbnz.govt.nz/news/1999/0092613.html>

The paradigm shift in economy management put the economy of New Zealand on a track towards enduring growth, combined with stable and low inflation. In the period of 1994–2006, average economic growth was 2.93 percent, and the average consumer price index rise was 2.17 percent.²³ It can be told that the new monetary policy frame resulted in a lower and much more stable inflation than in the 15 years preceding the reform, which was largely due to the higher calculability of the policy of the central bank. After the successful disinflation, trust in the central bank rose among the public, and the accumulated credibility contributed largely to the advantageous economic tendencies of the latest era (see Fig. 2).

3 Similar and different aspects of the two regimes

We could see that both monetary regimes meant a paradigm shift when compared to the previous era – they were of pioneer style. The Swedish experiment proved that in spite of negative external effects, depression can be turned around by price level stabilization, while the New Zealandian reform played an unquestionable role in regaining the credibility of the monetary policy via independence, transparency and the elaboration of the novel accountability mechanism. The two strategies show decisive difference in the circumstances of implementation, the depth of codification, the instruments used, the transparency, but they have similar aspects, too.

The circumstances of implementation differ for a reason. In the case of Sweden, immediate action was needed which did not and could not mean the immediate institutional restructure of the regime. In New Zealand, adverse economic environment was not worldwide but country-dependent. There was no such double squeeze, therefore, there was longer time to elaborate a new and comprehensive strategy and to restructure the operational environment of the RBNZ. In Sweden, nobody thought – at least at the beginning – such a deep institutional reform, since the break-off from the gold standard, thus operating an alternative price level strategy was thought to be temporary. The operation of the monetary policy was set in a five-point program by the Swedish parliament in 1932.²⁴

On the other hand, we have to point at the fact that the theoretical basis of the two regimes was quite different. In the decades preceding the introduction of the Swedish price level targeting, well-founded theories proved the stabilization of the price level, even under the guardianship of famous economists of the era, while in the case of New Zealand, such literature did not exist beside those emphasizing the importance of topic time inconsistency. In this period, many central banks worked as the long arm of the ministry of finance – this was the case in New Zealand, too. The innovation of inflation targeting was actually carried out by practical experts via iterative method – theoret-

²³ Average of yearly data. Resource of yearly data: World Bank, <http://devdata.worldbank.org/query/default.htm>

²⁴ In 1933 it was amended with a sixth point, which confirmed the full instrument independence of the Riksbank.

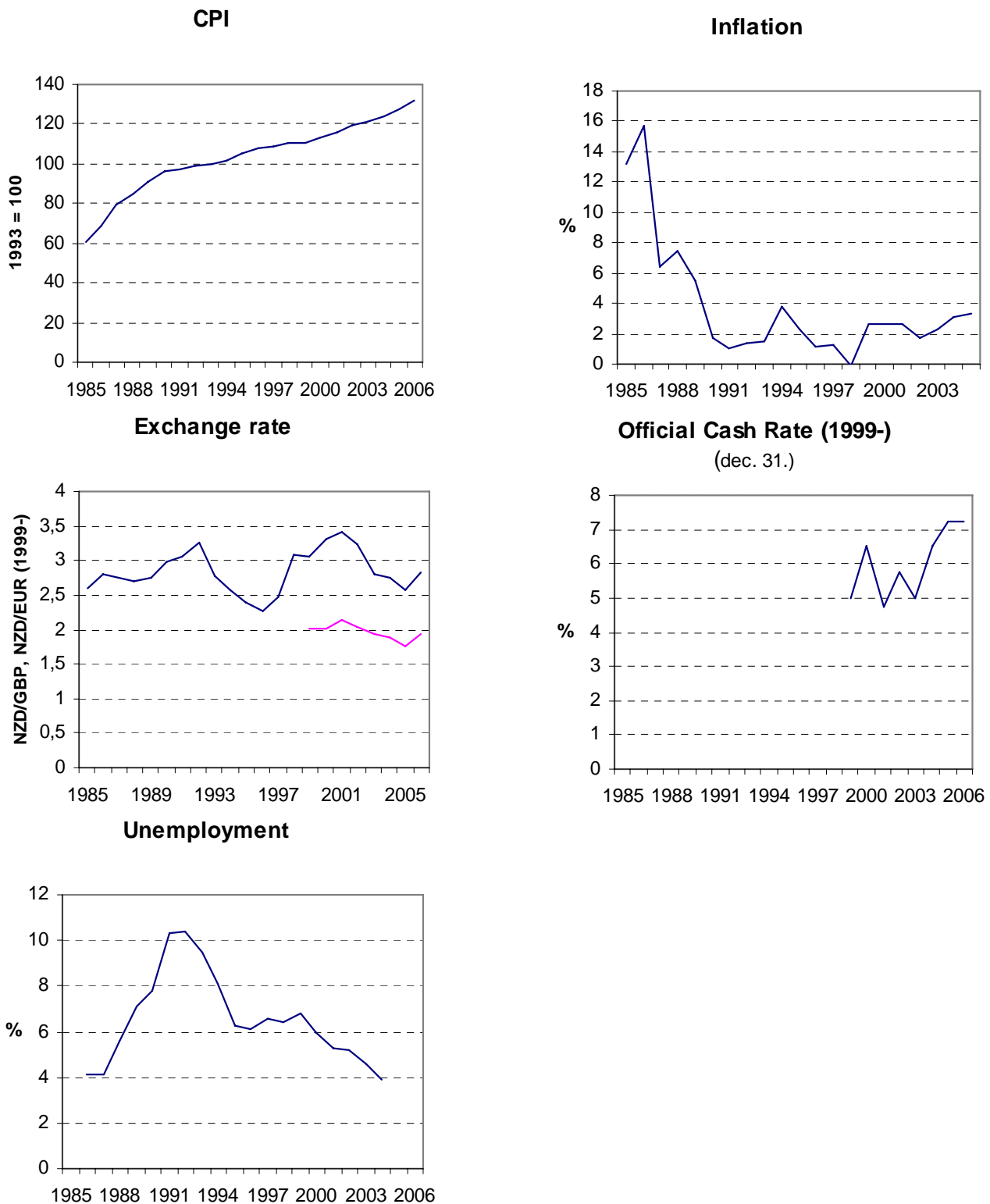


Fig. 2. Main economic indicators of New Zealand, 1985-2006²⁶

ical approach was performed much later, in the mid 1990s, by the pioneer studies of the Swedish Lars Svensson in the foreground.²⁵ One may hit an ironic tone to claim that supportive scientific studies appeared by increasing numbers after the regime has been already successful.

²⁵ From that point it is not a surprise that in 2000 Svensson was requested as an independent and prominent expert for a comprehensive evaluation of the monetary system of New Zealand.

²⁶Source of data: CPI, inflation, unemployment: World Bank,

Getting the message across and the popularization of the new regimes were leading aspects in both cases, since they held the key to success. In Sweden, the major performance evaluations of 1933 and 1937 by the ministry of finance, and the declaration and newspaper articles of Cassel, Heckscher and partially Davidson made the price level targeting theory known, while in the case of New Zealand, information was spread via the channel

Official Cash Rate, exchange rates: Reserve Bank of New Zealand.

of the central bank communication which is the main pillar of inflation targeting. In the latter case, the credibility of the central bank had to be built from nothing due to the lack of popular and authentic supporters, which can be felt clearly that they could influence the markets only after showing some sorts of result for a while. Another form of difference is that forecasts and their public release have formed a vital part among the means of the general and so the New Zealandian inflation targeting regime, while such a system could not be seen in Swedish price stabilization. Such characteristic is not the result of a free choice for sure, since econometric methods that could have been used to create exact forecasts calculating with interdependent effects did not exist in the 1930s.

Both central banks had no goal independence but had instrument independence, although the applied instruments were different. The Swedish regime resulted in the stabilization of the discount rate in accordance with Wicksell's theory, and they also highly emphasized exchange rate stability. Monetary aggregates had no role in communication, and they were not targeted either.²⁷ Au contraire, the RNBZ refrained itself from foreign exchange market intervention, and used a quasi monetary targeting in the first period of its operation; later on, due to its low effectiveness, instruments were simplified to interest rate policy and the communication of the inflation target which is easier to comprehend by markets. No instrument constrains remained in the regime; every instrument was subordinated to the achievement of the ultimate goal. It seems natural that the scope of goals to be achieved kept on widening as positive results were perceived. When it was not about deflation in Sweden or inflation in New Zealand that darkened the horizon for the economy management, other aspects were brought to the highlights: unemployment and the stimulation of the economy in Sweden, or smoothing the path of the interest rates and the exchange rate in New Zealand. Whereas, this process disrupted the coherence of the regime in Sweden, the priority of goals has never been questioned in New Zealand. There are no such complementary goals in inflation targeting that can be seen in the practice of the Swedish price level targeting, which could, in certain cases, confront the ultimate goal, as it happened in Sweden in 1937 and later.

4 Summary

Inflation targeting having debuted in New Zealand and having gained wider acceptance in the 1990s helped developed countries, and later on, more and more developing countries to take a stable disinflation process, and – which is even more important – they could keep inflation at a permanent low level. The worldwide perceived reduction in the tendency of price index growth has raised the question again, what one could gain via *real* price stability? Uncertainty around the value of the price level that keeps on growing along the time horizon of the forecast is char-

acteristic for all the monetary regimes of our era. The Swedish “episode” of the 1930s was the only proof in history for a price level that can be planned, and this is likely to remain this way in the near future.²⁸ A paradigm shift is almost always done after a crisis.

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²⁷Keleher (1991) [10]

²⁸ Only Bank of Canada deals with this possibility in serious manner.