

Did Credibility Make Disinflation Less Costly?

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Group project. Collaborator names and student identifiers are omitted from this public copy.

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Introduction

This report analyses New Zealand's adoption of formal inflation targeting from 1989 to 1992, the first regime of this kind implemented by a central bank. The episode represents a change in the central bank's preference for inflation stabilisation, making it a useful case for analysing how institutional credibility affects the macroeconomic costs of disinflation. According to expectations-augmented Phillips curve models, reducing inflation typically requires weaker output and higher unemployment, although credible policy may reduce these costs by lowering inflation expectations more quickly. Using data on inflation, inflation expectations, unemployment, output growth, and interest rates, this report evaluates whether New Zealand's experience was consistent with these theoretical predictions.

Background

New Zealand experienced high and volatile inflation rates for many years in the 1970s and 1980s, often in double digits. Most importantly, high inflation had become entrenched as an expectation. Wage and price setters took this into account when making decisions, and it became self-perpetuating. In conventional Phillips-curve terms, the economy was held in a high-inflation equilibrium.

The regime change was in two stages. The Reserve Bank of New Zealand Act 1989 granted the central bank operational independence and established price stability as its primary legal mandate. The 1990 Policy Targets Agreement explicitly set a numerical target of 0-2% inflation. Both together represented an explicit, observable change in the central bank's loss function, making it increasingly inflation averse, and by making the statement in public binding, it increased the bank's credibility.

This led to a change in the systematic behaviour of monetary policy and, perhaps, in the inflationary expectations of the private sector. The key issue, however, is not whether inflation would decline, but how costly the disinflation process would be in terms of unemployment and lost output. If the Phillips curve is backward looking, disinflation costs more in a recession. If the Phillips curve is credible and expectations-based, the cost is much smaller if private agents have faith in the new regime. New Zealand thus provides a real-life experiment to examine whether the credibility of institutions can reduce the cost of disinflation, which is what the rest of this report explores, with data on inflation, unemployment, and output.

Course model

The relevant framework combines a central bank loss function with the expectations-augmented Phillips curve. The Reserve Bank of New Zealand Act 1989 and the 1990 Policy Targets Agreement represented a shift in the central bank's preferences towards inflation stabilisation. In the standard loss-function framework, the central bank minimises deviations of inflation from target alongside deviations of output from potential:

$$L = (\pi - \pi^*)^2 + \lambda(y - y^*)^2$$

where π is inflation, π^* is the inflation target, and $y - y^*$ is the output gap. A lower relative tolerance for inflation implies tighter monetary policy and greater willingness to accept short-run output losses to achieve price stability[1].

Inflation dynamics can then be explained using the expectations-augmented Phillips curve:

$$\pi_t = \pi_t^e + \kappa(y_t - y_t^*) + u_t$$

where inflation depends partly on expected inflation and the output gap. If expectations are backward-looking,

reducing inflation requires a sustained period of weak output and higher unemployment. However, if the new monetary-policy regime is credible, inflation expectations may adjust more rapidly, reducing inflation persistence and lowering the sacrifice ratio associated with disinflation. The model therefore predicts falling inflation and expectations, alongside temporary weakness in output and employment during the transition period.

Data evidence

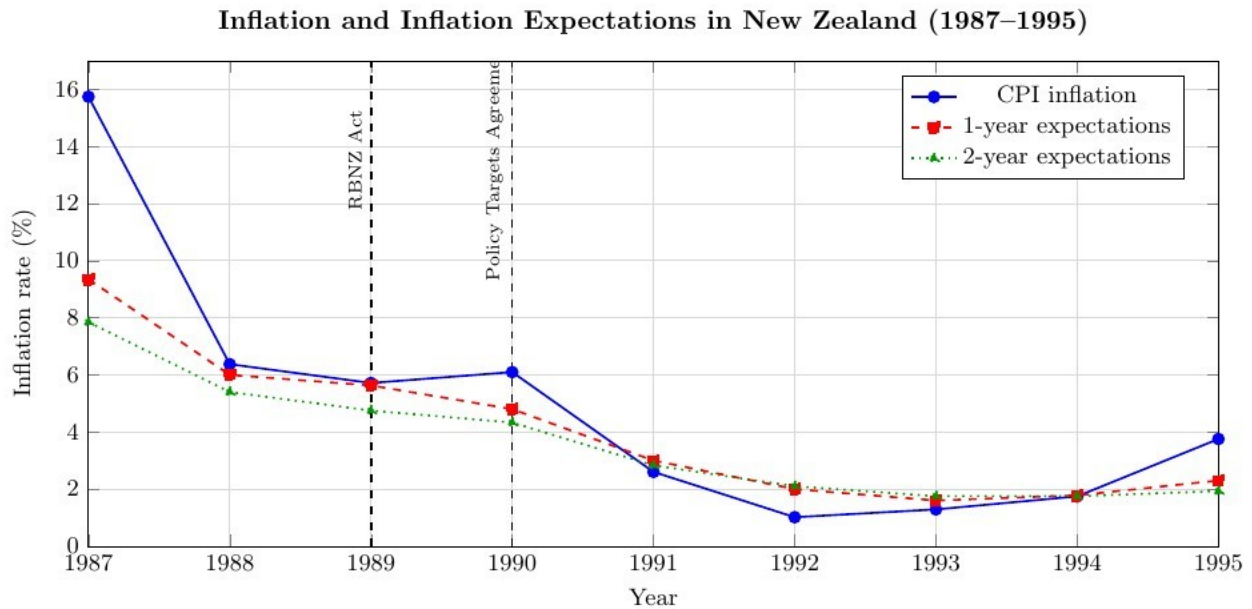


Figure 1: Actual CPI inflation and one-year and two-year-ahead inflation expectations in New Zealand around the introduction of inflation targeting.[2][3]

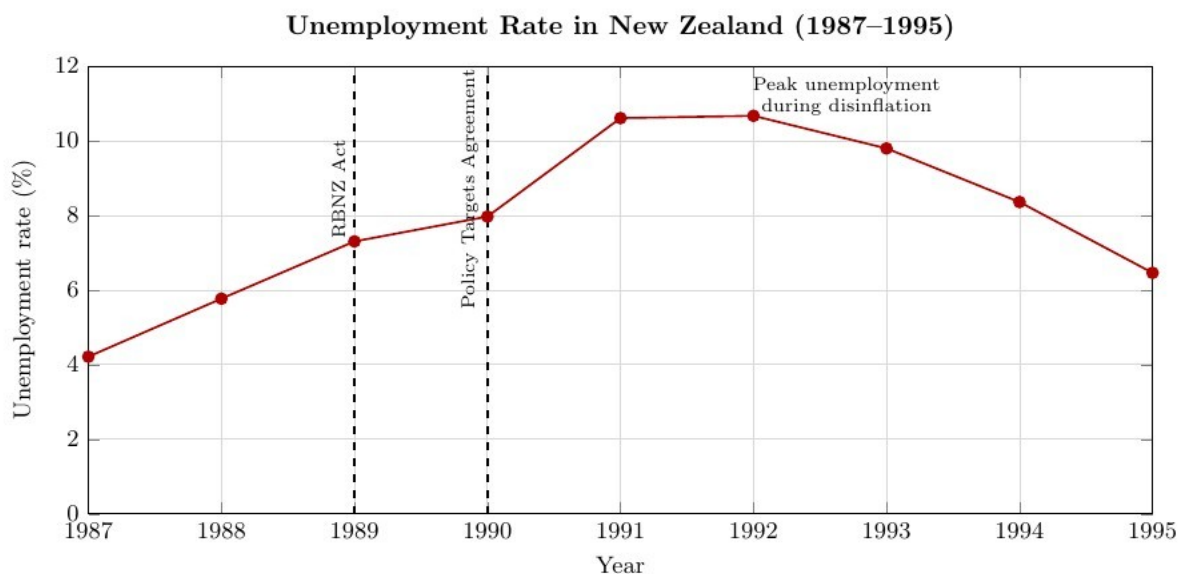


Figure 2: Unemployment rate in New Zealand between 1987 and 1995. The vertical dashed lines mark the 1989 Reserve Bank Act and the 1990 Policy Targets Agreement.[4]

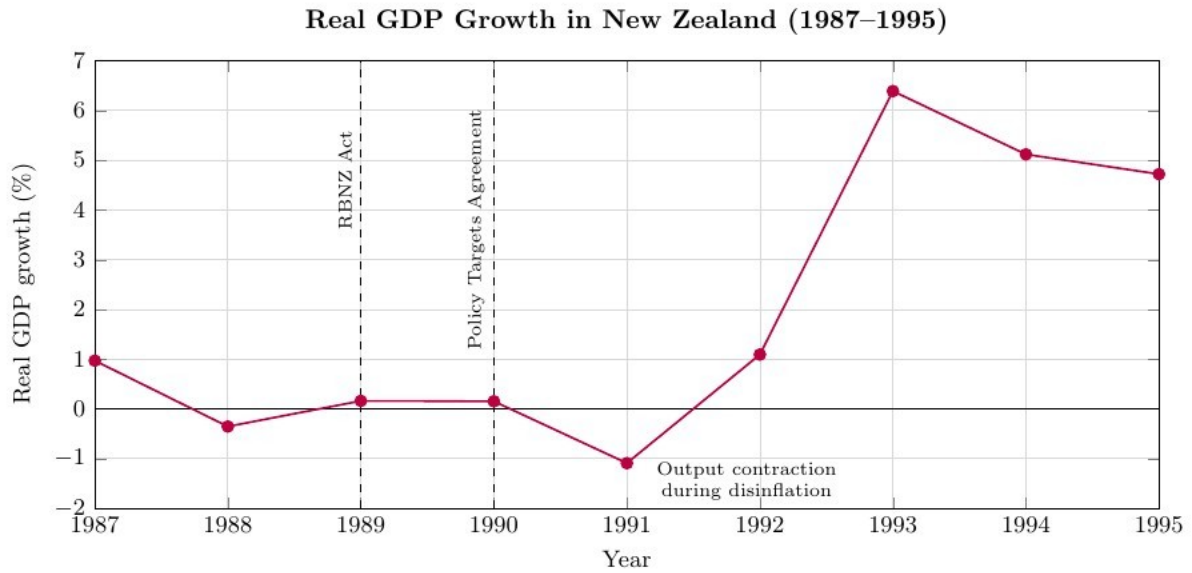


Figure 3: Real GDP growth in New Zealand between 1987 and 1995. The horizontal line marks zero growth, while the vertical dashed lines indicate the 1989 Reserve Bank Act and the 1990 Policy Targets Agreement.[5]

Table 1: Macroeconomic performance in New Zealand surrounding the adoption of inflation targeting.

Period	Inflation (%) [2]	2-Year Inflation Expectations (%) [3]	Unemployment (%) [4]	Real GDP Growth (%) [5]	Interest Rate (%) [6]
1987–1989	9.28	6.00	5.76	0.26	16.68
1990–1992	3.23	3.08	9.75	0.05	10.20
1993–1995	2.26	1.81	8.21	5.41	7.36

The data suggests that New Zealand’s adoption of inflation targeting was followed by a clear and sustained fall in inflation. As shown in Figure 1, both actual inflation and inflation expectations declined significantly after the Reserve Bank of New Zealand Act 1989 and the 1990 Policy Targets Agreement. CPI inflation fell from high levels in the late 1980s to close to 1% by 1992, while one-year and two-year inflation expectations also moved steadily towards the target range. This is important because the expectations-augmented Phillips curve suggests that inflation persistence depends heavily on private-sector expectations. The evidence therefore indicates that the reforms affected not only current inflation, but also expectations about future monetary policy.

However, the disinflation process came at a cost. Figures 2 and 3 show that unemployment rose sharply during the transition period, while GDP growth weakened and briefly became negative in 1991. This is consistent with the sacrifice-ratio framework, where lower inflation is achieved through weaker output and labour-market conditions. Between 1987–1989 and 1990–1992, average inflation fell from 9.28% to 3.23%, while unemployment increased from 5.76% to 9.75% as seen in table 1.

However, the later recovery suggests that the new monetary-policy regime successfully reduced inflation persistence. Between 1993 and 1995, inflation remained relatively low while GDP growth recovered and unemployment gradually declined. This suggests that the economy did not simply return to its previous high-inflation equilibrium once activity recovered, supporting the view that the reforms improved the credibility of monetary policy and helped anchor inflation expectations.

Discussion

Overall, the data is broadly consistent with the course model, yet there are some relevant points to highlight. The Phillips curve and sacrifice-ratio framework predict that reducing inflation usually requires a period of economic slack when expectations adjust slowly, and this pattern is visible in New Zealand's experience. Inflation fell sharply, while unemployment increased and GDP growth weakened. The economy therefore appears to have faced a real short-run cost during the disinflation process. In this sense, the model explains the main direction of the evidence, suggesting that tighter anti-inflation policy helped reduce inflation, but this was accompanied by lower activity and higher unemployment. Interest rates remained relatively high during the early transition period, supporting the interpretation that monetary conditions were still tight enough to weaken demand and slow economic activity, even though average short-term rates declined as inflation came down.

The more important point, however, is that New Zealand's experience suggests that credibility played a central role in the adjustment process. If expectations had remained fully backward-looking, inflation would probably have been more persistent, and the central bank may have required a deeper or longer recession to bring it down. Instead, both actual inflation and expected inflation declined relatively quickly. This suggests that the institutional change mattered because it altered private-sector beliefs about the future conduct of monetary policy. The central bank was reducing aggregate demand while also changing how firms, workers, and markets formed expectations about future inflation. In this sense, the reforms affected both the demand side of the economy and the expectations formation process.

This helps explain the apparent tension in the evidence. On one hand, the rise in unemployment confirms the sacrifice-ratio logic. New Zealand did not achieve disinflation without real economic costs. On the other hand, the fall in expected inflation suggests that the new regime gained credibility, which may have reduced inflation persistence and made the low-inflation outcome more sustainable. The recovery after 1992 supports this interpretation. GDP growth strengthened while inflation remained relatively low, meaning that the economy did not return to its previous high-inflation pattern once activity recovered. This is particularly important because it suggests that inflation expectations became more firmly anchored around the new policy regime.

However, the broader context should also be considered. New Zealand was undergoing wider structural reforms during the same period, and the economy may have been affected by external conditions and domestic adjustment beyond monetary policy alone. These factors could have contributed to the increase in unemployment and the weakness in GDP growth, meaning that the full real cost should not be attributed strictly to inflation targeting. Financial liberalisation and labour-market reforms in the late 1980s and early 1990s may also have affected employment and output independently of monetary policy. Nevertheless, the timing and direction of the evidence remain strongly consistent with the model. The central bank became more inflation-focused, inflation and expectations declined, and the economy experienced a temporary but significant real cost before stabilising under a more credible low-inflation regime.

Conclusion

New Zealand's 1989–1992 disinflation supports the expectations-augmented Phillips curve while also showing the importance of institutional credibility. The sacrifice ratio was significant, average unemployment rose from 5.76% to 9.75% and GDP contracted by 1.09% in 1991, confirming that a shift in the central bank's loss function produces real short-run costs when wages and prices adjust slowly.

However, inflation measures have eased from 6.00% to 3.08% over the last two years reflecting a change in the private sector's inflation expectations as a result of the RBNZ Act 1989 and the 1990 Policy Targets Agreement. The critical test is the recovery in 1993–1995 when growth averaged 5.41% and inflation remained firmly at 2.26%,

meaning that the economy did not re-establish its previous high inflation equilibrium.

However, attribution should be cautious as parallel labour-market deregulation and financial liberalisation probably increased both the transitional costs and the subsequent recovery. This implies credible commitment as necessary but not sufficient for low cost disinflation

References

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Appendix

Raw Data

Table 2: Inflation Data (1987–1995)
Source: World Bank

Year	Inflation, consumer prices (annual %)
1987	15.74
1988	6.38
1989	5.72
1990	6.10
1991	2.60
1992	1.01
1993	1.29
1994	1.75
1995	3.75

Table 3: Inflation Expectations Data (1987–1995)
Source: Reserve Bank of New Zealand

Period	Annual CPI Growth B1. 1 year out (%)	Annual CPI Growth B2. 2 years out (%)
Sep 1987	9.80	8.30
Dec 1987	8.90	7.40
Mar 1988	7.70	6.70
Jun 1988	6.60	5.60
Sep 1988	4.90	4.60
Dec 1988	4.80	4.70
Mar 1989	4.80	4.90
Jun 1989	6.00	4.70
Sep 1989	6.20	4.60
Dec 1989	5.50	4.80
Mar 1990	4.90	4.40
Jun 1990	4.40	4.00
Sep 1990	4.70	4.40
Dec 1990	5.20	4.50
Mar 1991	4.20	3.70
Jun 1991	3.00	2.70
Sep 1991	2.50	2.50
Dec 1991	2.30	2.40
Mar 1992	2.20	2.20
Jun 1992	2.30	2.20
Sep 1992	1.80	2.10
Dec 1992	1.70	1.90
Mar 1993	1.80	1.90
Jun 1993	1.50	1.70
Sep 1993	1.50	1.70
Dec 1993	1.60	1.70
Mar 1994	1.40	1.70
Jun 1994	1.40	1.60
Sep 1994	1.80	1.70
Dec 1994	2.50	2.00
Mar 1995	2.80	2.10
Jun 1995	2.60	1.90
Sep 1995	2.00	1.80
Dec 1995	1.80	1.90

Table 4: Unemployment Data (1987–1995)
Source: World Bank

Year	Unemployment, total (% of total labor force)
1987	4.214
1988	5.770
1989	7.305
1990	7.971
1991	10.611
1992	10.673
1993	9.799
1994	8.361
1995	6.462

Table 5: Real GDP Growth Data (1987–1995)
Source: World Bank

Year	GDP Growth (annual %)
1987	0.9708
1988	-0.3537
1989	0.1614
1990	0.1531
1991	-1.0908
1992	1.0938
1993	6.3915
1994	5.1192
1995	4.7221

Table 6: Short-Term Interest Rate Data (1987–1995)
Source: FRED

Date	Value
01/01/1987	23.51
01/02/1987	25.23
01/03/1987	26.06
01/04/1987	26.35
01/05/1987	22.51
01/06/1987	19.22
01/07/1987	18.46
01/08/1987	18.10
01/09/1987	19.09
01/10/1987	19.77
01/11/1987	18.21
01/12/1987	16.81
01/01/1988	16.97
01/02/1988	16.76
01/03/1988	15.99
01/04/1988	15.90
01/05/1988	16.21
01/06/1988	15.86
01/07/1988	14.99
01/08/1988	14.50
01/09/1988	14.42
01/10/1988	14.26
01/11/1988	14.34
01/12/1988	14.51
01/01/1989	13.80
01/02/1989	13.40
01/03/1989	13.32
01/04/1989	13.34
01/05/1989	13.49
01/06/1989	13.52
01/07/1989	13.40
01/08/1989	12.98
01/09/1989	13.42
01/10/1989	13.85
01/11/1989	13.88
01/12/1989	14.07
01/01/1990	13.90
01/02/1990	13.83
01/03/1990	13.69
01/04/1990	13.59
01/05/1990	13.48

Date	Value
01/06/1990	13.82
01/07/1990	13.74
01/08/1990	14.49
01/09/1990	14.63
01/10/1990	14.53
01/11/1990	13.98
01/12/1990	13.03
01/01/1991	12.37
01/02/1991	11.95
01/03/1991	11.95
01/04/1991	11.35
01/05/1991	10.08
01/06/1991	9.85
01/07/1991	9.65
01/08/1991	9.44
01/09/1991	8.90
01/10/1991	8.04
01/11/1991	8.18
01/12/1991	7.83
01/01/1992	7.43
01/02/1992	7.48
01/03/1992	7.34
01/04/1992	7.07
01/05/1992	6.83
01/06/1992	6.77
01/07/1992	6.18
01/08/1992	6.14
01/09/1992	6.26
01/10/1992	6.23
01/11/1992	6.16
01/12/1992	6.87
01/01/1993	7.87
01/02/1993	7.53
01/03/1993	7.24
01/04/1993	7.15
01/05/1993	6.58
01/06/1993	6.42
01/07/1993	5.70
01/08/1993	5.62
01/09/1993	5.30
01/10/1993	5.45
01/11/1993	5.85
01/12/1993	5.25

Date	Value
01/01/1994	4.66
01/02/1994	4.64
01/03/1994	5.43
01/04/1994	6.39
01/05/1994	5.99
01/06/1994	6.07
01/07/1994	7.08
01/08/1994	7.06
01/09/1994	7.49
01/10/1994	8.01
01/11/1994	8.47
01/12/1994	9.53
01/01/1995	9.29
01/02/1995	9.37
01/03/1995	9.42
01/04/1995	9.23
01/05/1995	9.10
01/06/1995	9.04
01/07/1995	8.84
01/08/1995	9.03
01/09/1995	9.22
01/10/1995	8.69
01/11/1995	8.31
01/12/1995	8.56