The Genesis and Performance of Swiss Monetary Targeting

by

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1. Introduction

This panel is devoted to a discussion of the influence of the SOMC and monetarism in the United Kingdom and Europe. I am very grateful to the organizers for inviting me to this conference. As a former official of the Swiss National Bank (SNB), Switzerland's central bank, I will add a Swiss perspective to the conference. Monetarism certainly influenced the policy strategy of the SNB. Moreover, Karl Brunner, one of the founders of the SOMC, though not an official advisor to the SNB, maintained close relations with the central bank's research staff and made his mark on Swiss monetary policy in indirect ways.

2. Adoption of a Money Stock Target

In January 1973, Swiss authorities decided, reluctantly, to adopt a floating exchange rate after they had been firm supporters of the gold standard for a long time. With hindsight, the shift to floating was a major turning point in Swiss monetary policy.[1] It allowed the SNB to gain full control of the money supply and to direct monetary policy at domestic objectives, with price stability serving as the overriding goal.

The SNB at first did not fully realize that floating created a new environment for monetary policy. Its approach remained business as usual. During the period of fixed exchange rates, it had relied on regulatory measures such as restrictions on capital inflows and credit controls as instrument for fighting inflation. It did not occur to the SNB's Governing Board that floating had opened the opportunity for achieving price stability through strict control of the money supply. In July 1974, the banks, which despised credit controls, pointed out to the Board that they considered credit controls to be "superfluous" since "the SNB had gotten a grip on the money supply".[2] The Board in turn decided to charge the SNB's economists with studying this issue. Although the Board agreed that strict control of the money supply was a viable alternative, it was concerned that abolishing credit controls would lead to a sharp increase in interest rates.[3] Despite reservations about lifting credit controls, SNB Chair Fritz Leutwiler became increasingly convinced that management of the money supply was the key to fighting inflation. He cited a study by the German Council of Economic

[1] On this point, see Baltensperger and Kugler (2017), Bernholz (2007), Peytrignet (2007) and Rich (2007).
[2] SNB, *Minutes of the Governing Board*, 11 July 1974, p. 950, henceforth cited as *MG* 11/07/1974, 950, translation mine. The SNB Board meets weekly. There is a curfew of 30 years on disclosing the Board minutes to the public.
[3] *MG* 19/09/1974, 1333.

Experts (a body of academics advising the German government), recommending that the money supply be increased in line with real growth of the economy and an inflation rate the central bank considered to be unavoidable.[4] In the meantime, the SNB staff, comprising economists trained or influenced by Karl Brunner, worked out a proposal for a policy approach based on targets for the money supply. Since Leutwiler realized that such an approach would have to be rooted in economic analysis, he decided to establish a research department, which was to play a key role in in the conception and implementation of Swiss monetary policy. [5] Furthermore, Leutwiler was aware that in a democratic country an independent central bank, such as the SNB, could not but explain its policy decisions and actions to the public. For this reason, he also set up a media office. The Board in turn began to hold regular press conferences, with the first one taking place in November 1974.[6]

The Board discussed the possibility of setting monetary targets for the first time in October 1974, based on a report by the staff.[7] After subsequent discussions, it announced a growth target for the money stock M1 for 1975 at the beginning of that year.[8] Credit controls were abolished a few months later since they were no longer needed.

3. Setting the Targets and Managing the Money Supply

From 1976 to 1978, the SNB continued to fix annual targets for M1. In 1979 it abstained from setting a monetary target, for reasons to be discussed below. In 1980 it switched to an annual growth target for the monetary base (money created by the SNB consisting of currency in the hands of the public and reserves of the banks held at the SNB), a practice it continued to pursue in the period from 1981 to 1990 (Rich, 2007, p. 291). At the end of 1990, it adopted a medium-term approach by setting growth paths for the monetary base for five-year periods. At the end of 1999, it abandoned monetary targeting altogether and shifted to an approach based solely on inflation forecasts.

In principle, the SNB adopted the prescription offered by Milton Frieman and strove to expand the money supply by accommodating potential growth in real GDP, estimated to be slightly less than two percent per year, and consumer price inflation of 0-1 percent, the SNB's inflation target (in its official announcements, the SNB was somewhat opaque in quantifying precisely its inflation target). The trend annual expansion in the monetary base required for

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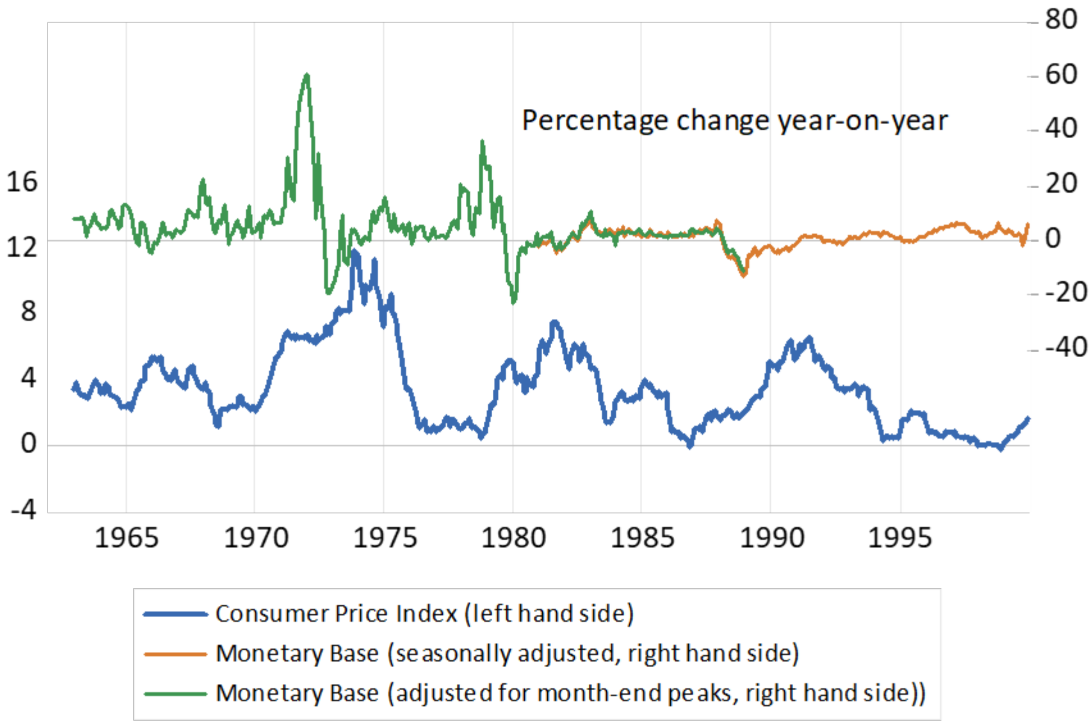
[4] *MG* 26/09/1974, 1363-64.
[5] Karl Brunner taught at the University of Bern in addition to holding a professorship in the U.S. For more detail, see Bernholz (2007, pp. 174-75). I joined the research department in 1977.
[6] *MG* 14/11/1974, 1729-31.
[7] *MG* 31/10/1974, 1578.
[8] *MG* 05/12/1974, 1913-15; 09/01/1975, 68-69.

meeting these objectives was initially estimated to be 2-3 percent (unitary income elasticity of monetary base). However, this turned out to be too high and the SNB gradually reduced the required trend growth in the monetary base to less than 2 percent in the 1980s and 1990s (Rich, 2007, pp. 304-05).[9]

Chart 1: Consumer Prices and Monetary Base

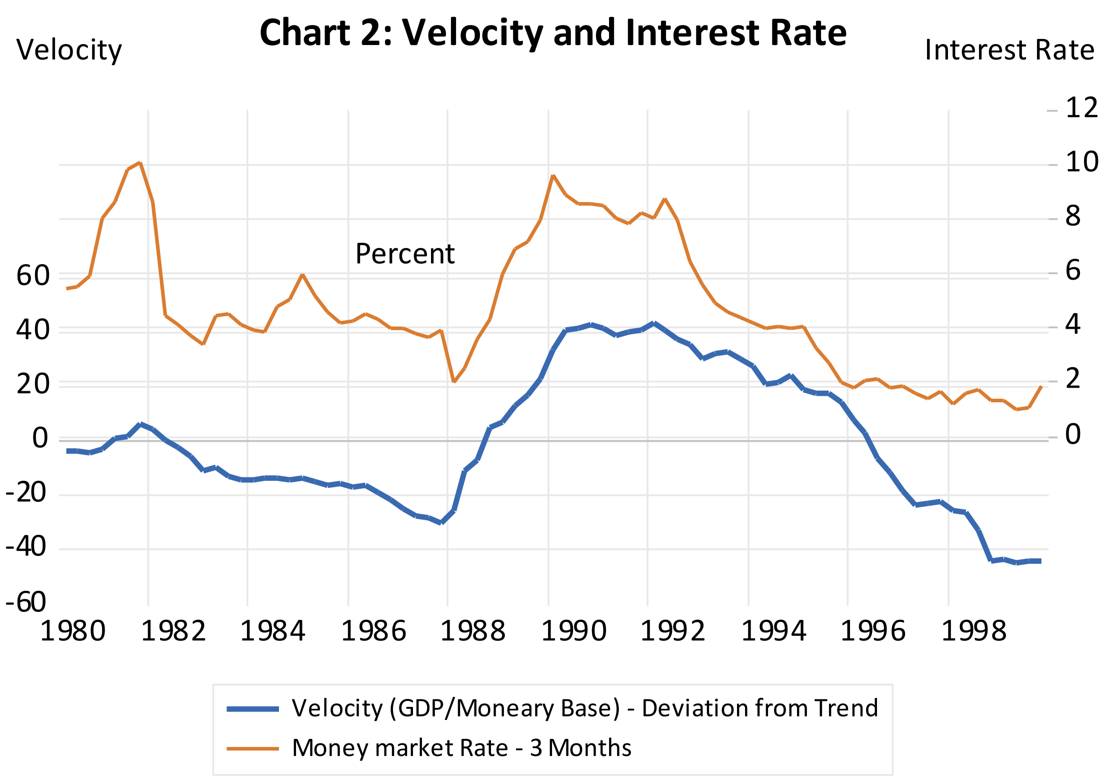


In contrast to calculating the required trend growth in the monetary base, there was no set procedure for fixing the annual targets. The SNB aimed at reducing annual growth in the monetary base and M1 gradually from 6 percent in 1975 to 2 percent in 1990. In practice, the slowdown in base-money growth was less gradual than indicated by the targets, for reasons to be discussed below. However, from about 1983 onwards, the SNB largely succeeded in steadying the expansion in the monetary base (Chart 1). After considerable experimentation, the SNB at the end of 1982 adopted a procedure for determining the annual monetary targets, which it continued to follow in the subsequent years.[10] It started out by forecasting real GDP growth and consumer price inflation in the subsequent year. From these forecasts and its estimated money demand function, it calculated the activity-induced change in money

[9] In the 1990s even 1 percent would have been sufficient. The SNB underestimated the effect of innovations in the payments system on the demand for bank notes.
[10] See the proposal of the research staff on the target for 1983 and the Board discussion. This was the first time I wrote the proposal (*MG* 02/12/1982, 1073-83).

demand, i.e., the change in demand for base money prompted by the estimated change in real GDP and the price level. In an inflationary environment, it was likely that the expected activity-induced increase in base-money demand was higher than the 2-3 percent consistent with price stability in the longer run. Therefore, the SNB had to decide how quickly it endeavored to reduce base-money growth to the desired long-run path. If it set a target below the expected increase in activity-induced money demand, interest rates had to rise to maintain equilibrium in the market for base money. The boost in interest rates was required to curb real growth and to push inflation down to the desired level.[11]

The then available econometric evidence suggests that both the demand for base money and M1 were negatively related to interest rates. In the case of the monetary base, it was mostly the demand for large-denomination bank notes, serving mainly as a store of value, that was responsible for the sensitivity to interest rates. The interest-sensitivity of the demand for base money implies a positive relationship between the income velocity of that aggregate and interest rates. Chart 2 shows that there was a positive relationship between the deviations in the base-money velocity from its trend growth and the 3-month interest rate in the Swiss-franc money market.



[11] In setting the target the SNB assumed that the increase in interest rates would begin to affect economic activity only after a year.

Relying on monetary targets provided an important advantage over a policy approach based solely on inflation forecasts. As indicated above, to set the monetary target, the SNB required forecasts for real growth and inflation one year ahead. Had it relied on inflation forecasts alone, it could not have helped predicting price movements three years ahead, as it is doing now, due to the long lags in the effects of monetary policy. The then available forecasting models did not yield sensible results for the longer run because, for obvious reasons, they were estimated largely from data derived from the period of fixed exchange rates. Generating one-year-ahead forecasts was easier because the SNB could draw on a variety of sources for that purpose.[12]

Tight control of money allowed the SNB to reduce inflation to low levels. Chart 1 shows that the SNB managed to stabilize growth in the monetary base slightly above zero from the early 1980s onwards. Even though Swiss inflation was lower than in most other countries, the SNB's performance was less than stellar. The same chart reveals that inflation accelerated again temporarily in the late 1970s and 1980s. Why did the SNB allow inflation to rise despite its commitment to monetary targeting? Several problems arose from the SNB's targeting approach.

4. Excessive Movements in the Exchange Rate

After the switch to floating, the rise in the Swiss franc exchange rate both in nominal and real terms did not come as a surprise (Chart 3) since the currency had been strongly undervalued. However, in the summer of 1978 the exchange rate reached heights that could no longer be explained by fundamentals. To avert a catastrophic slump in the export sector, the SNB was forced to act. It set a floor underneath the Swiss-franc price of the Deutsche mark and intervened heavily on the foreign exchange market. As a result, the monetary base exploded again (Chart 1). The SNB abandoned temporarily its money stock target and abstained from setting such a target for 1979. At the end of 1979, it decided to return to monetary targeting. It should be noted that the adoption of a temporary exchange-rate floor was not regarded as a breach of its commitment to price stability. After announcing its monetarist strategy at the end of 1974, the SNB had already emphasized that its target was *contingent* on various unexpected developments, in particular, excessive movements in the exchange rate.

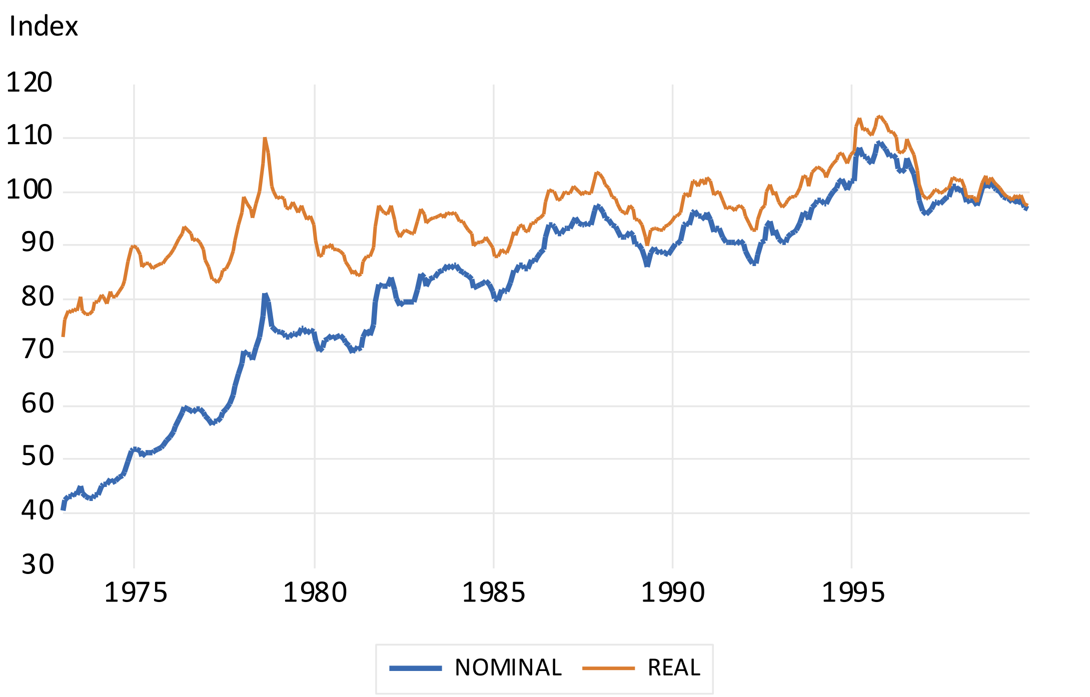
Despite the return to monetary targeting, the expansionary stance in the late 1970s led to a renewed increase in inflation. Various observers (Schiltknecht, 1994; Baltenperger and Kugler, 2017; Kugler and Rich, 2002) have argued that the SNB was too tardy in removing

[12] See Rich (2007, p. 292) for a table comparing the SNB's forecasts with the actual outcomes.

the monetary overhang created by its interventions. As a matter of fact, the economics staff pleaded for a speedier return to monetary normality than the Board.[13] The latter insisted on a cautious procedure because of concerns about a return of the troubles in the foreign exchange market. In my view, the overly cautious approach to removing the monetary overhang was not the only factor explaining the return of inflation as I show in the following Section.

After the return to monetary targeting, the authorities gradually eliminated all the restrictions on capital inflows from abroad that had been inherited from the fixed-exchange rate period and maintained to curb the Swiss-franc appreciation. Interestingly, the shift to market-based policy instruments was reflected in the length of the SNB's Board minutes. While in the 1960s and 1970s the length of the minutes typically amounted to about 2000 pages per year, that number fell to less than 1000 pages in the 1980s.

Chart 3: Nominal and Real Effective Exchange Rate of Swiss Franc



5. Steady Money Growth not an Optimum Strategy

For the years 1980 and 1981, the SNB set a target for base-money growth of 4 percent each. With hindsight, these targets were likely to be too high. Inflation had fallen to nearly zero but was rising again, while economic activity was recovering. Inflation continued to accelerate throughout 1980 and 1981. Considering the dire inflation outlook, the Board, following the

[13] *MG* 01/03/1979, 247-50; 21/06/1979, 643-46; 30/08/1979, 876-77; 22/11/1979, 1214.

advice of the research department, tightened monetary policy at the beginning of 1981 and allowed base-money growth to drop below 4 percent, turning slightly negative for the whole year.[14] The Board probably would have been more successful in curbing inflation had it aimed at lower or even zero base-money growth already in 1980. However, this would have been incompatible with its professed aim of reducing money growth gradually. For 1982 the Board set a target of 3 percent, which it was largely to achieve (the research department proposed an even higher target of 4 percent).[15]

The episode of 1980/81 revealed a fundamental problem of monetary targeting. Steady money growth was not a sufficiently effective buffer against cyclical and other shocks to inflation. The reason lay in the interest sensitivity of the targeted aggregate. In principle, in a cyclical expansion the activity-induced demand for money rose more quickly than the supply, as determined by the target. As a result, interest rates rose and mitigated the cyclical expansion. In the Swiss case, the interest movements triggered by steady money growth were not strong enough to soften the impact on inflation of a cyclical expansion in economic activity.[16]

This drawback of a policy of steady money growth prompted the SNB to switch to a medium-term approach at the end of 1990. Although that approach was quite successful, it created several new problems for the SNB.[17] A multi-year target was more difficult to communicate to the public than its annual analogue. Furthermore, and more importantly, the SNB at first did not realize that it had lost a key advantage of annual targets after it had adopted the multi-year approach. If economic circumstances called for major deviations from the multi-year target line, the SNB was all at sea in trying to determine the size of such deviations. No matter how the SNB looked at the problem, it could not help relying on inflation forecasts with a horizon of more than one year to determine its policy course. Thus, the multi-year strategy involved of strong dose of inflation targeting although money continued to play an important role. In my view, these considerations were mainly responsible for the SNB's decision at the end of 1999 to abandon monetary targeting and to shift to an approach based on three-year inflation forecasts and an inflation objective of 0-2 percent. Another reason was instabilities in the demand for base money appearing toward the end of

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[14] *MG* 07/05/1981, 566-70; 30/07/1981, 948-50.
[15] *MG* 03/12/81, 1513-30.
[16] Ben Friedman (1977) had already pointed to this problem.
[17] See Rich (2007, pp. 313-23), Peytrignet (2007, pp. 245-54), and Baltensperger and Kugler (2017, pp. 116-19) for detailed discussions.

the 1990s. Despite the shift in strategy, the SNB emphasized that money continued to serve as an important indicator for properly gauging monetary policy.[18]

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[18] Since I was involved both in developing the multi-year targeting approach and the subsequent policy based on three-year inflation forecasts, this paragraph embraces a good dose of self-criticism.