Philipp Hildebrand: Risk management

Introductory remarks by Mr Philipp Hildebrand, Member of the Governing Board of the Swiss National Bank, at the end-of-year media news conference, Zurich, 14 December 2006.

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As I have reported at a number of recent media conferences, the SNB has updated its investment policies for foreign exchange reserves over the past few years. I would like to take this opportunity to look back, once again, at our motives for these adjustments and to outline the context of conflicting objectives within which the investment policy of a central bank operates. I would like to devote special attention to risk management, which performs a key function in investment policy at the SNB.

Looking at the current structure of our foreign exchange reserves, it is evident that we have moved a certain distance from the traditional structure of central bank portfolios. Traditional portfolios consisted almost exclusively of short-term government bonds in USD as well as, possibly, EUR or JPY. By contrast, we at the SNB have gradually diversified our currency risks over the past few years, have lengthened the maturities of our investments and invested in additional bond categories and in shares.

As a result of these adjustments, we are probably one of the most innovative central banks in the area of investments nowadays. However, I would like to stress the fact that we have never pursued innovation for its own sake. The adjustments are our response to a challenge that all central banks with a significant level of currency reserves will probably have to face, sooner or later. The challenge is to safeguard the protective function of currency reserves while simultaneously making use of their earnings potential. In simple terms, what is needed is first, to *structure* the reserves in a way that ensures their availability when overcoming any kind of monetary crisis, and second, to *invest* them in a way that ensures they will generate the highest possible returns. Returns must be generated, if only for the simple reason that earnings are needed to finance the necessary growth in currency reserves. Furthermore, we owe it to the public to manage our currency reserves in a professional manner.

The protective function of our currency reserves is fundamental. It is a direct corollary of the SNB mandate, in which monetary policy takes precedence over investment policy at all times. However, without questioning the primacy of monetary policy, there was still some leeway for greater management efficiency, particularly in the area of foreign exchange reserves. We have now exhausted a large portion of this room for manoeuvre. The first development that allowed us to take these steps was the 1997 revision of the National Bank Act. When the new Act came into force in 2004 the final statutory barriers with regard to permissible investment instruments were entirely removed.

However, in investment, as in all walks of life, the old adage applies: "There is no free lunch". Generally speaking, the better the earnings prospects, the higher the risk of losses. Certainly, the improved currency diversification was an extremely low-cost lunch for the SNB. Nevertheless, the introduction of additional investment classes and instruments, together with more active management of investments, brought new risks as well. Consequently, we have extended and enlarged our risk management activities in recent years, alongside the changes in our investment policies.

We now run a comprehensive risk management operation which is based on best-practice methods in the finance industry while also taking account of the special requirements of a central bank. We attach great importance to nurturing an appropriate risk culture, including ongoing identification, measurement, evaluation, limitation and monitoring of risks as well as timely, comprehensive reporting allowing for regular risk assessment and control. A key aspect is the fact that our risk management reports independently to the Governing Board and the Bank Council Risk Committee. This is also important because all operational functions in the area of investment policy are concentrated in *one* department for reasons of efficiency.

One of the special risks for a central bank is the fact that investment policies must not conflict with monetary policies. The liquidity requirements of monetary policy as well as the ability of investments to withstand crises are key parameters for investment strategy. Also, since we are unable to predict the timing of interventions or the volume of currency reserves that will be needed, we cannot resort to asset-liability approaches in our strategy definition process. Technically speaking, this means we cannot determine an optimal commitment period for our investments. In point of fact, our investment horizon is usually relatively long-term, although it can be abruptly shortened in the event of a crisis. Finally, we also pay special attention to reputation risks when engaging in specific investments. One of the SNB's most important assets is its good reputation and its credibility. Damage to its reputation could also have a negative impact on monetary policy. Consequently, in cases of doubt, we avoid investment classes and instruments that may be expected to have a damaging impact on our reputation. We are also very risk-conscious when it comes to potential conflicts of interest. For instance, all staff engaged in practical investment activities are shielded from confidential monetary policy information.

Effective risk management requires that all relevant risks be identified and assessed regularly, in a manner that is as unbiased as possible. Experience has shown that technical failure is seldom at the root of serious losses. The greatest losses result from a lack of risk consciousness, from a total failure even to recognise significant sources of risk. This danger exists when risk assessment is restricted *exclusively* to easily measurable quantitative risk variables, excluding areas such as processes or legal risks, which are referred to as 'operational risks'. For this reason, we also include operational risks in our assessment.

However, while pursuing this broader route, we certainly do not neglect the regular quantitative measures for assessing financial investment risks. No single key figure, taken alone, is capable of providing a comprehensive picture of the risks involved. Therefore, our risk assessment is based on a range of key figures developed to measure risk, each of which has its own justification along with certain limitations.

In order to evaluate the overall risk of our investments, we use the value at risk method (VaR). Additional risk analyses are also necessary because of the method-related limitations of VaR (it provides no information about possible extreme losses; moreover it tends to underestimate the risk of large losses, particularly in times of low volatilities). We therefore conduct a number of additional stress and scenario analyses. For all of these risk calculations we take account of the SNB's tendency towards a long-term investment horizon. The methods used to assess and limit the risks linked to our active management of investments include the 'tracking error' method. This shows us the extent to which our actual investments deviate from the given benchmarks.

Our Risk Management unit has a complete and up-to-date picture of all investment positions. This is based on a dedicated IT solution which aggregates all positions from different supplier systems on a daily basis and evaluates them according to different criteria. This permits any critical developments to be identified in good time.

Within the bounds set by monetary policy, we work to achieve the greatest possible diversification of financial risks and to attain adequate compensation for the risks we enter into. In other words, we always assess the risks in conjunction with the expected benefit. One example of a poorly compensated risk, from the point of view of a Swiss franc investor, is the USD currency risk on bonds. Our experience has been that expected earnings on bonds in other currencies, such as euros or sterling, are comparable, while currency risks are significantly lower. Consequently, and also because another important reserve currency was available in the form of the euro, we have substantially reduced our share of USD investments over the past few years. Along with the expansion in the range of permissible bond classes and the addition of shares, the risk/return profile of our foreign exchange reserves has improved substantially. This has helped to ensure that results on foreign exchange reserves have remained positive for the past ten years. Naturally, part of the background to this development has been the favourable interest rate environment that has prevailed since the mid-1990s.

Our analysis of the overall risk for all investments shows that the traditional risk factors such as the gold price and the dollar exchange rate continue to dominate. Gold poses the most substantial contribution to risk. By way of illustration: The gold price in terms of Swiss francs has fluctuated by over 10% in about half of the years that have elapsed since 1980. In terms of the SNB's annual result, this means that gold can be expected to contribute more than +/- CHF 3 billion to the result every second year. By comparison, the fluctuations in the value of foreign exchange reserves are more moderate.

The National Bank holds 1,290 tonnes of gold reserves. This means that, as the price of gold changes, the composition of the currency reserves changes in value terms – as does the risk profile of the currency reserves. In other words, a sizeable advance in the price of gold led to a substantial increase in the share of gold and thus also a significant rise in the risk that earnings would fluctuate. At the same time, our gold reserves represent a very special asset which, from a historical point of view, is likely to provide a crucial protective function in periods of extreme crisis.

What conclusions can we draw from these considerations? The 2004 revision of the National Bank Act gave the SNB more leeway in its investment policy. Since then, we have made use of this leeway within the bounds set by monetary policy, at least with respect to foreign exchange reserves. An essential prerequisite was – and remains – a risk management operation which is committed to best-practice methods and takes full account of the special features of a central bank in its considerations. The requirements of monetary policy will continue to have a strong impact on SNB investment policy in the future. The room for further improvements in the risk/return ratio is limited. As a result of their function, the currency reserves encompass large financial risks, while the comparable returns are relatively low. Compensation for the gold price risk and the dollar exchange rate risk, in particular, is relatively poor. It is therefore inevitable that tighter bounds will be set on SNB profit distribution, once the existing distribution reserve has been exhausted.