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Challenges posed by the growth in the SNB's foreign exchange reserves

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Ladies and Gentlemen,

It is my pleasure to welcome you here today at our traditional Money Market Event, which takes place every year here in Geneva (cf. slide 1). This occasion is particularly important for me, as it is the first time that I have the opportunity to meet you in such a setting.

Since our previous Money Market Event last November, the situation on financial markets has continued to be a cause for concern to the Swiss National Bank (SNB). To mention but a few of the main factors: financial market uncertainty is still high, the global economic outlook has worsened considerably, and the situation on bond markets in peripheral Europe is still highly uncertain.

Against this background, central banks have adopted a number of measures to address the challenges they face. These measures have increased the size of their balance sheets significantly. In Switzerland, the SNB has seen its foreign exchange reserves grow substantially. Managing these reserves is currently a major challenge, and has become the subject of much scrutiny by both the media and SNB watchers.

Today, I would like to focus on this challenge by analysing the context in which the SNB manages its foreign exchange reserves. While a number of problems are shared by both the SNB and other large investors, there are certain features that are specific to a central bank; I will return to these in a moment.

My presentation is structured as follows: First, I will outline the latest developments in the SNB's foreign exchange reserves. Second, I will describe the principles underlying the management of these reserves. Third, I will comment on the current allocation of reserves, based on the results for the third quarter of 2012, which have just been published. I will conclude by setting out the main challenges facing the SNB in the management of its foreign exchange reserves.

Substantial growth of foreign exchange reserves since the start of the crisis

A first key observation is that the SNB's balance sheet has grown significantly since the onset of the crisis (cf. slide 2). It is currently around four times its pre-crisis level, at nearly

CHF 500 billion, with foreign exchange reserves amounting to nearly 70% of GDP. Such a sizeable expansion is by no means unique; other central banks have also seen their balance sheets grow considerably.

However, the SNB stands out because of the very rapid expansion in its foreign exchange reserves (cf. slide 3). It is important to note that this growth results directly from the SNB's monetary policy, and not from any investment choices. This expansion reflects the policy adopted by the SNB to combat the rapid and excessive appreciation of the Swiss franc. A number of measures were taken in 2009 and 2010 to counter this appreciation, and these have left their mark on the SNB's balance sheet. The most important of the recent measures was the introduction of a minimum exchange rate of CHF 1.20 against the euro on 6 September 2011. This exceptional measure was designed to mitigate the risk of deflation that threatens the Swiss economy. We are convinced that this policy is effective, and we shall continue to pursue it with the utmost determination.

Note also that even the role of foreign exchange reserves has changed since the onset of the financial crisis. Until 2008, the aim of foreign exchange reserves was to ensure that the SNB was able to implement its monetary policy unhindered and at all times. At that time, foreign exchange market intervention was virtually non-existent, and discussion focused more on whether to hold foreign exchange reserves or not. Today, given the level of foreign exchange reserves, this question is less pertinent. Instead, the SNB has had to adjust its policy on foreign exchange reserve management, in order to take account of the large amounts involved since 2008. For this purpose, it has amended its investment instructions, and I would like to briefly describe these to you now.

The main principles of foreign exchange reserve management at the SNB

Currently, the management of foreign exchange reserves is enshrined in the National Bank Act (arts. 5, 30, 42 and 46), and defined in detail in the internal instructions drawn up in 2004 and revised in 2008.

These instructions are available on our website. Contrary to received wisdom, the SNB is as transparent as possible about the principles surrounding the management of its foreign exchange reserves. Thus, in contrast to other central banks, it publishes quarterly data on its foreign exchange reserves, broken down according to currency and asset class.

The basic principles of foreign exchange reserve management are very clear; let me just quickly run through them (cf. slide 4).

First principle: **Primacy of monetary policy over foreign exchange reserve management**. Concretely, changes in foreign exchange reserves result from monetary policy decisions. The level of these reserves is a variable upon which reserve management policy has no influence. Once this framework has been established, the management of foreign exchange reserves takes place independently from monetary policy. However, the SNB does need to make sure that its investments do not give rise to any conflict of interest with the objectives of monetary policy, or indeed of the SNB as regards financial stability. So, for example, we do not invest in Swiss financials, so as to avoid a conflict between the management of foreign exchange reserves and the SNB's mandate to contribute to financial stability in Switzerland. As a general rule, the SNB does not invest in Swiss corporate equities.

Second principle: **The criteria governing the management of foreign exchange reserves are primarily the security of investments and their liquidity**. **Return is also a factor**. Secure and liquid assets are key, because the SNB must always be able to implement its monetary policy, and hence must have rapid access to its foreign exchange reserves, should the need arise. The need for secure assets means that a large proportion of our investments are in government bonds; the need for liquidity means that we invest in the world's most liquid assets and currencies.

Finally, the third principle is this: **The SNB takes care to ensure that its investments do not disrupt the markets**. We are aware that the huge amounts we have under management could impact significantly on market prices. To prevent this kind of problem, we control the volumes we place on the markets, so as to avoid having any perceptible market impact. Thus, with such a large volume to invest, there is a fairly long period of transition before the desired allocation is achieved. We are sometimes obliged to hold liquidity on our accounts at other central banks for a while, until it can be invested in line with our investment strategy.

A number of players are involved in implementing the investment strategy. I am not planning to go into too much detail about the investment process today. Briefly, the Governing Board decides on the main investment principles, as well as the strategy. The Asset Management unit then implements this strategy, monitored by the Risk Management unit. Risk Management is also tasked with reporting regularly to the Governing Board and the Bank Council, which oversees the entire process. This multiplicity of players involved in foreign exchange reserve management, as well as the division of responsibilities, enable conflicts of interest to be reduced as far as possible, and allow effective control of the actual management of reserves.

How do these guidelines translate into foreign exchange reserve allocation in practice?

Last week, we published the data on the allocation of our foreign exchange reserves for the third quarter of 2012. I would like to take you through those data, and highlight the main areas which may have given rise to discussion.

This is the breakdown of foreign exchange reserves by currency (cf. slide 5). As you can see, the euro is our principal investment currency, and its share in our investments has remained largely unchanged for the past number of years. If we take quarterly data as a basis, we can see that this share has fluctuated between 45% and 65%. These fluctuations come about because of the time it takes us to reallocate our portfolio following large inflows of new foreign exchange reserves. These amounts are then gradually diversified across other currencies in order to restore the original allocation.

Currently, 48% of foreign exchange reserves are held in euro-denominated assets; however, the Asset Management unit also invests in other currencies, above all the US dollar, which accounts for 28% of assets under management, as well as the yen, the pound sterling and the Canadian dollar, which together account for 20%. The SNB also invests in other, minor currencies. It generally chooses major international currencies with a liquid market. Exchange rate risk is inherent in the SNB's investment policy. It is important to note that the SNB cannot hedge against exchange rate risk without neutralising the impact of monetary policy, given that each hedging operation is, in effect, a purchase of Swiss francs against other currencies. **Thus, the main tool in managing exchange rate risk is the most**

optimal diversification possible. Faced with the strong growth in foreign exchange reserves, the need for diversification has therefore taken on even greater significance. Since 2010, we have extended the list of investment currencies to include five new currencies. These are: the Australian and Singapore dollars, the Swedish krona, the Danish krone and the Korean won.

As a general rule, **the SNB is constantly assessing ways to improve the diversification of its investments**. I would like to stress that we actively analyse and monitor new asset classes and different currencies in both advanced and developing economies, in order to reduce our risk concentration over time.

Here are the foreign exchange reserves broken down by asset class (cf. slide 6). As you can see, the vast majority of reserves are invested in bonds (issued by governments, public sector entities, foreign companies and supranational organisations) or placed with other central banks. **This represents around 88% of investments**, which further underlines the prime importance of security and liquidity in the management of our assets. The proportion of equities has varied over the years. Currently, they amount to 12%, the highest level since 2004, when investment in equities was first allowed following a change in the legal framework governing SNB investments.

For bonds, the SNB uses a combination of major bond indices as benchmarks. The SNB's portfolio can deviate from these indices for tactical reasons, but always within a clearly defined range. Using such deviations, the SNB's portfolio managers can exploit market inefficiencies in order to improve returns. Moreover, this bond management method allows the SNB's portfolio managers to retain a direct link with the main market players – a link which is essential for gathering first-hand market intelligence that might be of use for the SNB's activities. At present, 96% of our bond investments are in assets rated AAA or AA, or are placed with other central banks and international organisations.

Since 2004, the SNB has also invested in foreign equities. This asset class allows us to increase the return on our foreign exchange reserves. **Equities are managed entirely passively.** Our asset managers ensure that our equities portfolio corresponds to that of the main international benchmarks. These benchmarks are based on a combination of different equity indices, and are implemented passively by the SNB. It is important to note that the management of the SNB's assets is largely performed in-house. Contracts with external asset managers cover only a small proportion of these activities, and are essentially used for benchmarking the performance of our Asset Management unit.

In addition to bonds and equities, the SNB occasionally invests in derivatives such as futures or interest rate swaps. Derivatives are used if the underlying instrument meets the SNB selection criteria, and if the market for that derivative is more liquid or less costly than the market for the underlying asset, or if derivatives enable us to better manage risk.

Finally, here we can see the returns achieved on our portfolio since 1999; these figures are also published on our website (cf. slide 7). As you can see from the last column, the annual return on investment in local currency terms has always been positive. If returns in Swiss francs are sometimes negative, this is solely due to changes in the exchange rate of the local currencies against the Swiss franc, as shown in the two preceding columns. Exchange rate risk is thus the main determinant of total return on investment.

The chart we are looking at now provides a further illustration of the dominant role played by exchange rates in our portfolio (cf. slide 8). It shows the factors driving changes in our foreign exchange reserves. As you can see, exchange rate movements are the main cause of changes in our foreign exchange reserves. Returns in local currency play only a secondary role. As I pointed out earlier, diversification is the only way for the SNB to mitigate the impact of foreign exchange fluctuations. Hedging would mean diluting the effectiveness of monetary policy, because purchasing protection against exchange rate movements would effectively cancel out the impact of monetary policy on the Swiss franc exchange rate.

The challenges ahead

To finish, I would now like talk about some of the challenges the SNB is always faced with in the management of foreign exchange reserves (cf. slide 9).

First challenge: **Ensuring that our resources, methods and structures guarantee the effective management of our portfolio**. I have already emphasised that the complexity and risk associated with the management of our investments have recently increased significantly. This has required a corresponding increase in our management team headcount. I am confident that we now have enough staff for both the Asset Management and the Risk Management units to meet the challenge. We are also prepared to continue developing our structures should the need arise. As regards governance, we have ensured a strict separation between asset management and risk management, by transferring the Risk Management unit to another department of the SNB. Our asset managers' performance is constantly benchmarked against the relevant markets. For some portfolios, performance is also benchmarked against that of our external asset managers.

Second challenge: **Achieving optimal portfolio diversification**. The SNB has to manage a large volume of foreign exchange reserves. So it needs to find fairly large markets to absorb these volumes, while retaining a high level of liquidity, which narrows the range of available assets considerably. It therefore places particular emphasis on researching new investment opportunities, whether these be equities, currencies or markets. Hence, for example, the recent introduction of new currencies or the inclusion of additional countries, in order to better achieve a satisfactory degree of diversification.

Third challenge: **Investing our portfolio without influencing the markets**. The rapid growth of our reserves required us to invest and reinvest large amounts. Amounts of this magnitude can have an impact on the stock, bond or money markets. This is why the SNB operates on the major markets and does not invest in niche markets. Moreover, to ensure that our investments do not destabilise the markets, we place amounts which they can easily absorb. This implies that any diversification after a large inflow of foreign exchange reserves must be gradual. We are also engaged in active discussion with our partners, the central banks of the countries where we invest, and we are pursuing an information policy in this area that is as transparent as possible.

Fourth challenge: **Maintaining an optimal proportion of equities in our portfolio**. Despite the recent significant inflow of foreign exchange reserves, we have increased the proportion of equities, and it now stands at nearly 12%. Many observers of the SNB's activities have expressed a desire that this proportion be larger. Yet such an increase is not without risk. While the inclusion of equities in a portfolio can reduce the risk profile as a result of the diversification effect, this is only true up to a certain level. We estimate this level of equities to be between zero and 5% of the portfolio. While a higher share would naturally translate into a higher return on the portfolio, it would also mean incurring greater risk. Any increase in the proportion of equities must therefore be analysed from two vantage points: return and risk. Additional risk can run contrary to the criterion of security that the SNB applies to its investments.

Let me now turn to the fifth and last challenge: **Managing exchange rate risk**. The return on foreign exchange reserves essentially fluctuates in line with changes in local currency returns versus Swiss franc returns. This exposure to exchange rate risk is the result of the SNB's monetary policy. It thus forms, so to speak, part the DNA of a central bank's activities in a small open economy such as ours. Eliminating this risk would go against monetary policy, which remains the SNB's priority. We therefore have to live with this risk and try to reduce it without getting rid of it completely. To this end, the Governing Board pursues a strategy of maximum diversification across the currencies at its disposal. It is important to remember that the SNB's activities must primarily be measured against the effectiveness of its monetary policy as well as the financial return on its investments.

Conclusion

To conclude, let me reiterate two points that have come up several times during my remarks.

First: While the SNB is a global investor, it is also a special investor and rather far removed from the classical definition that applies in the private sector. Its investments are the direct result of its monetary policy. That policy continues to have priority over purely profit considerations in financial terms. The SNB must also meet specific requirements when selecting investments; return is obviously a factor, but it also needs to take risk and market liquidity into consideration. Finally, it must invest a significant volume of funds without disturbing the markets. This can prove difficult, and requires transitional periods in order to achieve the desired allocation.

Second: The SNB tries to pursue the most efficient investment strategy possible. The fact that several central banks inform themselves about and are inspired by our experiences goes to show that we are sometimes an example for them. In so doing, the SNB also tries to be as transparent as possible, thereby meeting its duty to inform the public. The investment strategy is largely made public, and we are one of the few central banks to publish its results on a quarterly basis.

Ladies and Gentlemen, I have now come to the end of my remarks. I would like to thank you for your kind attention, and I would be happy to answer any questions you might have.

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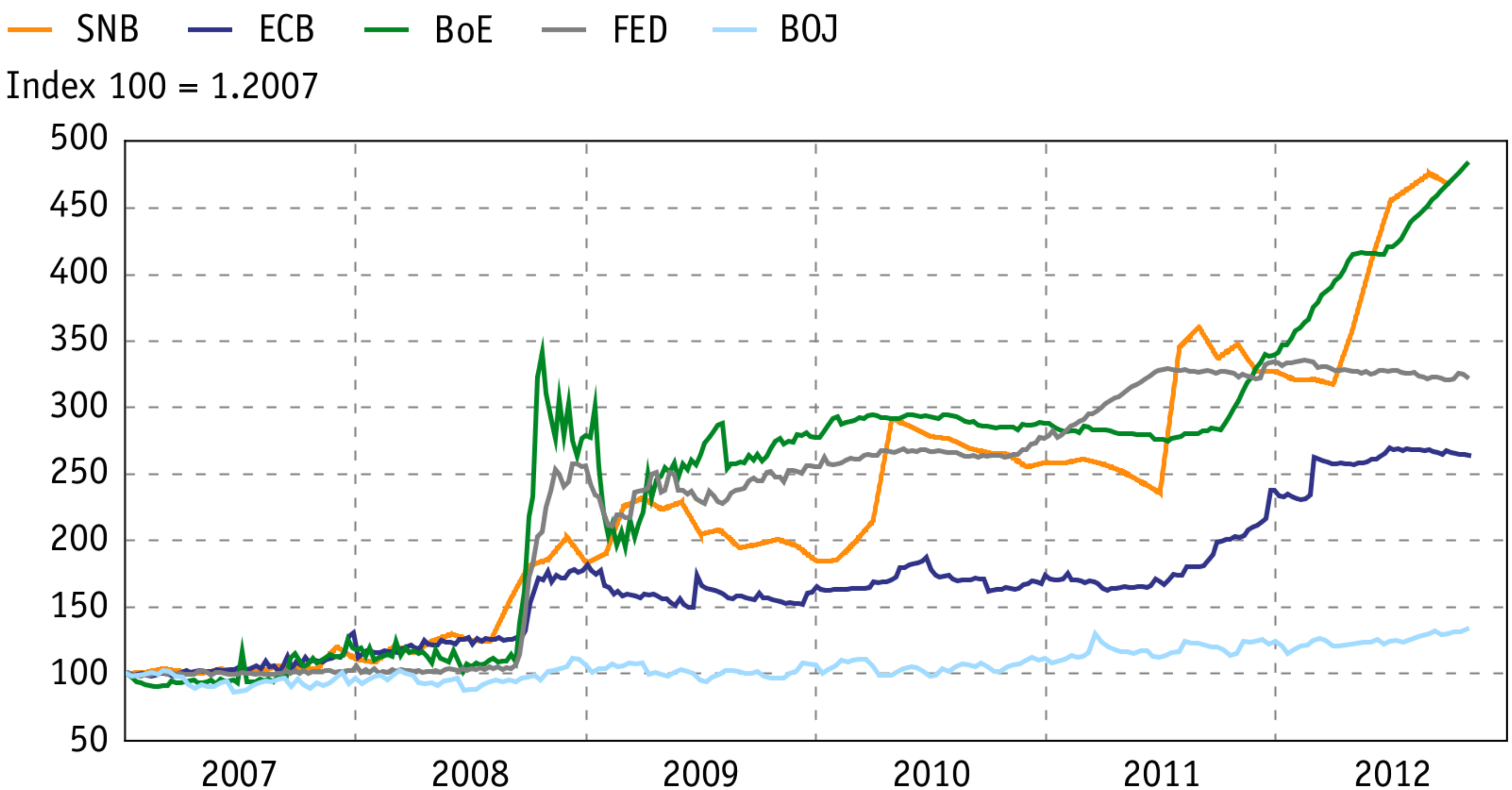
Growth of SNB's balance sheet

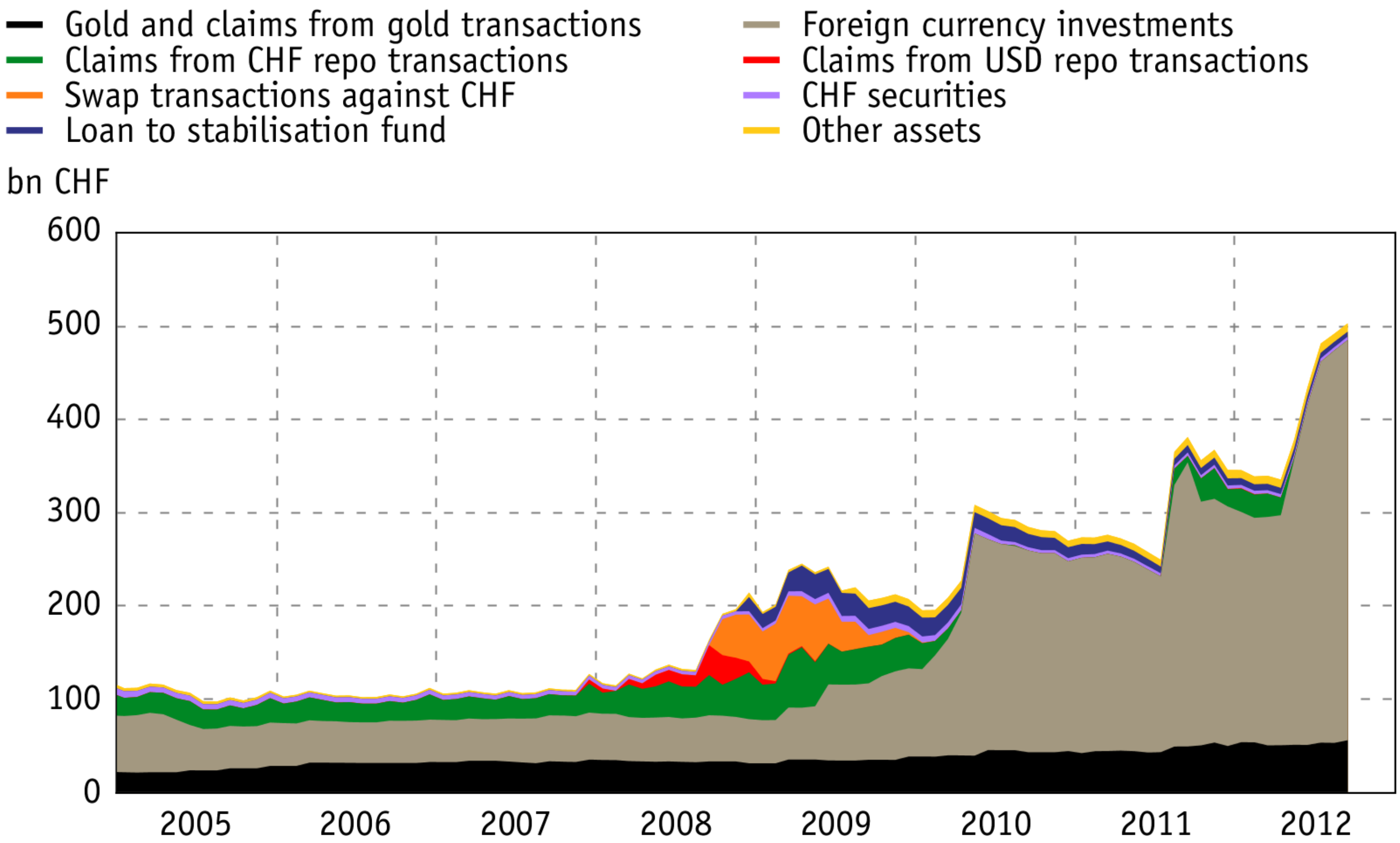
Central banks' total assets



Source: SNB, BoE, FED & Bloomberg

SNB's assets

Assets of the SNB

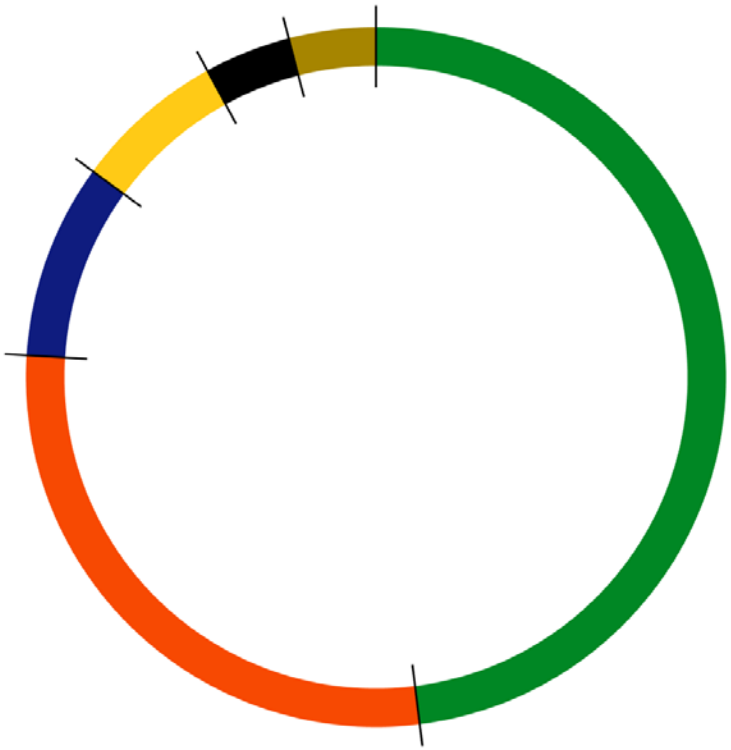


Source: SNB

Management principles

- Primacy of monetary policy over foreign exchange reserve management
- Management of foreign exchange reserves according to security, liquidity & return criteria
- No impact on markets

Foreign exchange reserves by currency



Currency allocation
in %

EUR, 48

USD, 28

JPY, 9

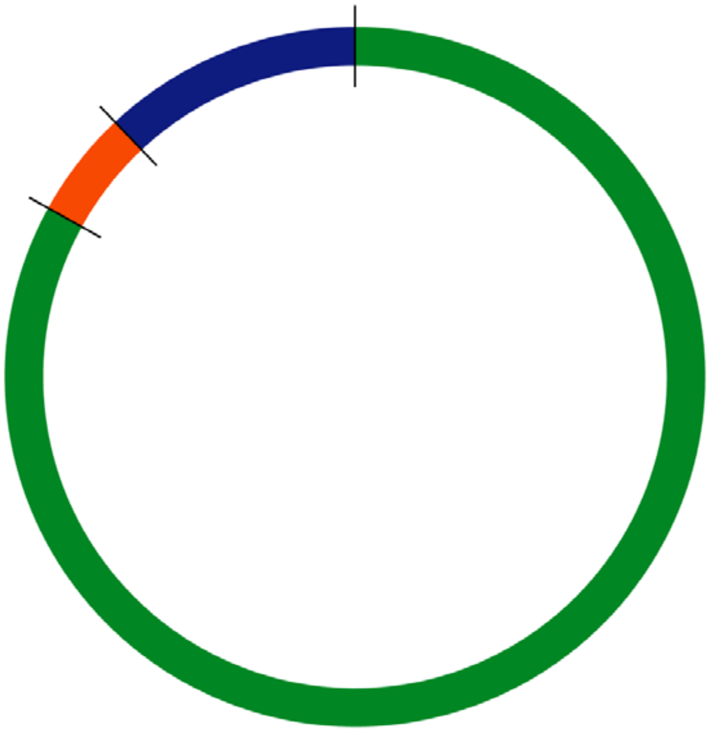
GBP, 7

CAD, 4

Others, 4

Source: SNB

Foreign exchange reserves by asset class



Asset classes
in %

Government bonds, 83

Other bonds, 5

Equities, 12

Source: SNB

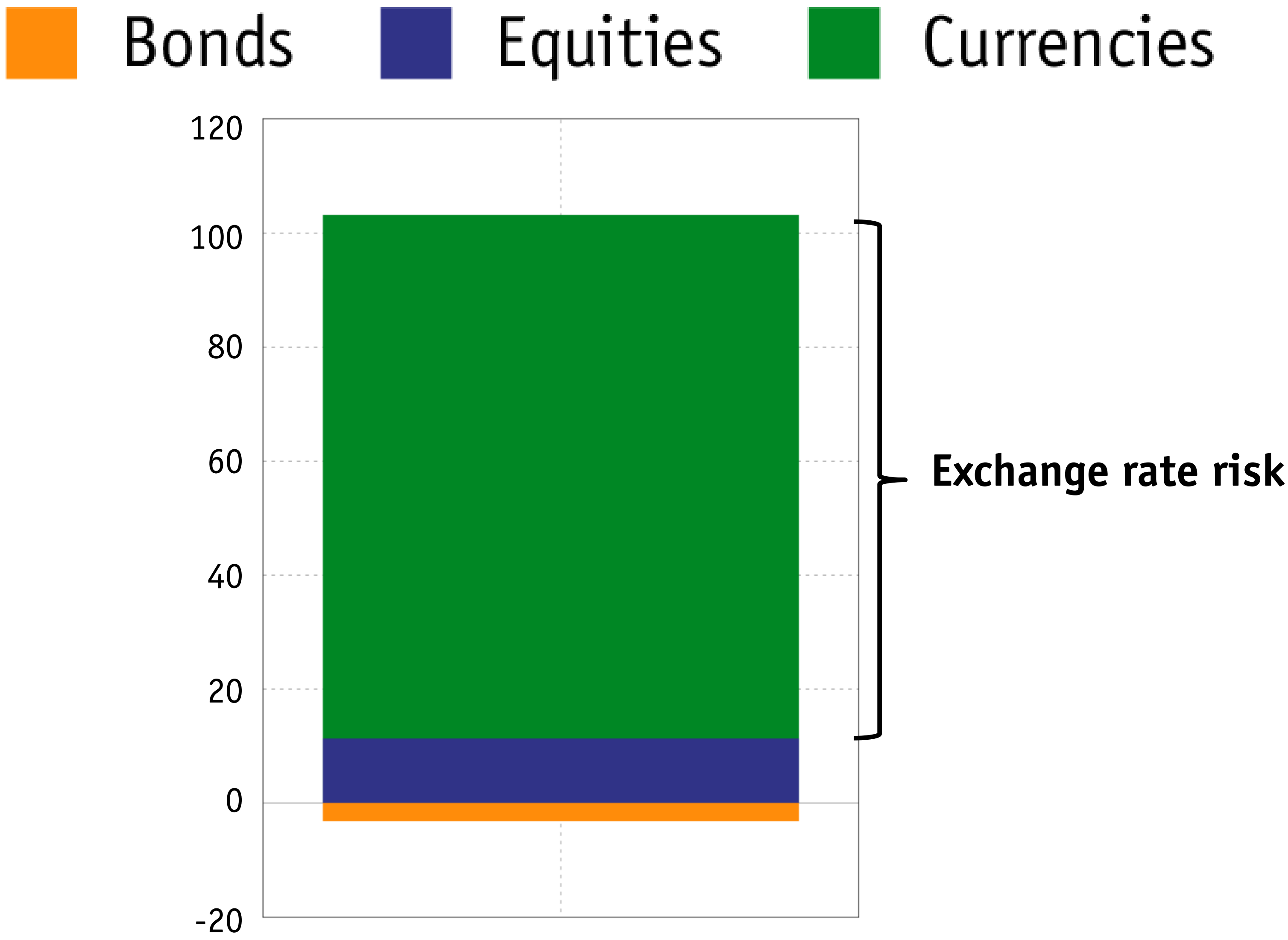
Returns from foreign exchange reserves

	Foreign exchange reserves		
	Total in CHF	Currency return	Local currency return
1999	**9.7%**	9.2%	0.4%
2000	**5.8%**	-2.0%	8.0%
2001	**5.2%**	-1.2%	6.4%
2002	**0.5%**	-9.1%	10.5%
2003	**3.0%**	-0.4%	3.4%
2004	**2.3%**	-3.2%	5.7%
2005	**10.8%**	5.2%	5.5%
2006	**1.9%**	-1.1%	3.0%
2007	**3.0%**	-1.3%	4.4%
2008	**-8.7%**	-8.9%	0.3%
2009	**4.7%**	0.4%	4.4%
2010	**-10.1%**	-13.4%	3.8%
2011	**3.1%**	-0.8%	4.0%
2012 / 1st quarter (1)	**-0.9%**	-2.6%	1.7%
2012 / 2nd quarter (1)	**2.9%**	2.4%	0.5%
2012 / 3rd quarter (1)	**1.5%**	0.2%	1.4%

(1) Values are not annualised.

Source: SNB

Foreign exchange reserve fluctuations



Source: SNB

Challenges

- Ensuring that foreign exchange reserves management is up-to-date
- Optimal portfolio diversification
- Investing without impacting on the markets
- Maintaining an optimal share of equities
- Managing exchange rate risk