

**Embargo**

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**Investment policy in times of high foreign exchange reserves**  
Money Market Event

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Member of the Governing Board\*

Swiss National Bank

Zurich, 31 March 2016

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\* The speaker would like to thank Dirk Faltin and Marco Huwiler for their support in drafting this speech. She also extends thanks to Sophie Faber, Peter Kuster, Sandro Streit, Jonas Stulz and Martin Weder for helpful comments, to the SNB Language Services, and to Adrian Avdyli for preparing the data.

Welcome to the SNB's traditional Money Market Event in Zurich. I am delighted that so many of you have responded to our invitation. A year ago, you were welcomed here by Fritz Zurbrügg, my colleague in the Governing Board and predecessor as the Head of Department III. It was only a few weeks after the minimum exchange rate had been discontinued, and monetary policy was the hottest topic in town.

This year, I will focus on the Swiss National Bank's investment policy. In the past few years, the SNB has become a big asset manager. Consequently, I want to look at two questions today. First, what are the reasons for the significant increase in our foreign currency investments? Second, how does the SNB handle these foreign currency investments? However, I can't leave monetary policy out completely. I will thus comment on our current monetary policy at the end of my speech.

### **Balance sheet expands due to measures against strong Swiss franc**

In the past few years, the SNB's balance sheet total has risen sharply. Since the onset of the global financial crisis in 2008, it has multiplied by a factor of six. At the end of last year, it came to around CHF 640 billion, or almost exactly the value added by the Swiss economy in 2015. The growth in the balance sheet total is attributable to a rise in Swiss franc liquidity and an expansion of our foreign currency investments.

This brings me to my first question: how did the increase in foreign currency investments come about? The short answer is that it is the result of monetary policy measures which the SNB takes to maintain appropriate monetary conditions in Switzerland. Thus, foreign exchange market interventions, which the SNB has been using to counter the appreciation of the Swiss franc since spring 2009, have led to the increase in foreign currency investments and, in turn, the SNB's balance sheet total. Thus a high level of foreign currency investments is not an objective in itself. On the contrary. It forms an integral part of monetary policy.

As observers of our monetary policy, you will be familiar with the reasons why we are active in foreign exchange markets. In the wake of the crisis which encompassed global markets eight years ago, demand for safe investments, including Swiss francs, rose rapidly. At the end of 2008, this led to a first significant appreciation in the Swiss franc. The SNB took a series of measures to increase liquidity in the banking system and prevent a further strengthening of the Swiss franc against the euro, including, from spring 2009, interventions in the foreign exchange market.

A certain stabilisation of the Swiss franc exchange rate took place in 2009. **Slide 1** shows that, at the time, the exchange rate was about CHF 1.50 against the euro. As you know, this situation did not last. In spring 2010, tensions on the financial markets increased rapidly again as a result of the debt crisis in Greece, and this was followed by another global flight into safe investments. In this environment, the Swiss franc came under substantial upward pressure against all major currencies, even reaching parity against the euro for a brief period in summer 2011. In this extreme situation, the SNB introduced the minimum exchange rate of CHF 1.20 against the euro at the beginning of September 2011, enforcing it consistently by

means of foreign currency purchases. For more than three years, the minimum exchange rate proved its value as an exceptional and temporary instrument to counter a broad-based and extreme Swiss franc strength. It stabilised the situation and gave the Swiss economy time to adjust.

However, in 2014, exchange rate conditions began to shift once again. Expectations that the US central bank would soon lift interest rates had been increasing since mid-2014. The European Central Bank, meanwhile, indicated towards the end of the year that further extensive monetary policy easing measures would be necessary in the euro area. Against this background, the US dollar began to appreciate and the euro came under strong downward pressure. Because of the minimum exchange rate, the Swiss franc also depreciated against the US dollar. This caused pressure on the minimum exchange rate against the euro to rise very substantially and made increasingly large interventions necessary. Instead of broad-based Swiss franc strength, we were faced – to an ever greater degree – with pronounced euro weakness.

In this fundamentally changed environment, the minimum exchange rate was no longer sustainable. Had the SNB attempted to maintain the minimum exchange rate, it would have lost control of its balance sheet and, with it, monetary conditions in Switzerland, because of the increasing magnitude of the interventions. Consequently, on 15 January 2015, the SNB discontinued the minimum exchange rate. To cushion the upward pressure, the SNB simultaneously lowered the interest rate on sight deposits to  $-0.75\%$ . It also stressed that it was willing to intervene in the foreign exchange market as necessary.

These were no empty words, as can be seen from our foreign currency purchases, which amounted to more than CHF 86 billion last year. A large portion of these occurred during the period immediately before and after the discontinuation of the minimum exchange rate. The Swiss franc initially shot up after the discontinuation, but then stabilised. Since May 2015, it has weakened again slightly. More recently, the Swiss franc exchange rate to the euro was about 10% above what it had been shortly before the discontinuation of the minimum exchange rate. Our willingness to intervene in the foreign exchange market as necessary was – and remains – an important element in countering the excessive strength of the Swiss franc and the associated negative impact on both the economy and price stability in Switzerland.

How are our foreign currency purchases and the Swiss franc exchange rate related to the expansion of the SNB balance sheet? I will explain this using the financial account and current account. The current account covers, first and foremost, goods and services trade with other countries and cross-border income flows. For half a century, the Swiss current account has regularly shown a surplus.<sup>1</sup> There are two main reasons for this structural surplus. First, Switzerland is a net exporter; it produces more goods and services than are demanded in the

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<sup>1</sup> Jordan, Thomas. 2013. *Reconciling Switzerland's minimum exchange rate and current account surplus*, speech held at the Peterson Institute for International Economics, Washington D.C., 8 October 2013.

domestic market. Second, the Swiss hold substantial assets abroad, upon which they earn interest and dividend income.

Earnings from foreign trade as well as interest and dividend income from foreign assets are generated abroad and are usually reinvested abroad. These investments are recorded under capital exports by the private sector in the financial account and are shown as red bars in **slide 2**. Until 2007, private sector capital exports made up almost the entire financial account.

This changed fundamentally after the beginning of the global financial crisis in 2008. Uncertainty increased noticeably. Swiss companies were no longer investing their earnings from export business abroad to the same extent, and were instead increasingly repatriating them. Moreover, a growing number of investors, including institutional investors and private banks, sought the security of Switzerland. Consequently, demand for Swiss francs rose rapidly so that the Swiss franc, at times, was overvalued to an extreme degree.

To counter the strength of the Swiss franc, the SNB began purchasing foreign currency against Swiss francs in the foreign exchange market. In statistical terms, this meant it was exporting capital, with the result that public sector capital exports increased. This can be seen from the blue bars in the chart. Without these interventions, the Swiss franc would have appreciated even more, with correspondingly negative consequences for the economy and for price stability in Switzerland. This also means that, with its foreign currency purchases, the SNB has, for some time now, taken onto its own balance sheet the currency risk which the private sector is no longer willing to bear.

When we purchase foreign currency against Swiss francs, it is shown on the assets side of the balance sheet as the most important element in the foreign currency investments item. In **slide 3**, it is denoted by the light blue area.<sup>2</sup> Our foreign currency purchases also lead to an increase in Swiss franc liquidity, i.e. a rise in the monetary base, which is reflected on the liabilities side of the balance sheet in the bank sight deposits item. In the chart this can be seen as a red area.

Thus, the SNB's foreign exchange reserves do not represent equity, or 'true' assets since they are offset by liabilities. They have come about through money creation as part of measures required for monetary policy purposes. Consequently, they should be at the disposal of monetary policy at all times. For instance, when capital flows normalise sustainably, we can assume that the SNB balance sheet total can be reduced again in the long term.

However, the level of SNB foreign currency investments will remain high for as long as required by monetary policy. If necessary and reasonable from a monetary policy point of view and if the benefits exceed the costs, the SNB will further expand its balance sheet in future and accept the associated risks.

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<sup>2</sup> Foreign exchange reserves consist of foreign currency investments minus repo transactions conducted for investment policy purposes and other foreign currency liabilities.

## Modern and professional asset management at the SNB

This brings me to my second question: how does the SNB handle its foreign currency investments? The short answer is that the SNB manages its foreign currency investments professionally and cost effectively. The SNB began to set up its modern asset management structure relatively early. Since the revision of the National Bank Act in 2004, hardly any legal constraints have been set on the SNB's leeway for investment. The SNB uses this leeway to achieve the optimum possible portfolio structure. Corporate bonds, for instance, were already introduced as an asset class in 2004, and equities in 2005.

With the marked expansion of the balance sheet in the past few years, diversification has become increasingly important. In this respect, the SNB goes further than is common practice for central banks. For reasons of diversification, it is constantly evaluating new asset classes, currencies and investment opportunities in both advanced economies and emerging markets. Last year, for instance, the SNB expanded its investment universe to take in both Chinese government bonds and emerging market corporate equities.

The SNB's investment and risk control process is constructed using principles similar to those applied by large institutional asset managers. As you will see in **slide 4**, it can be split up into roughly five steps – investment policy, investment strategy, definition of guidelines and benchmarks, implementation (including tactical allocation of assets and portfolio management), and risk control.

The SNB's investment policy provides the framework for the management of assets and defines the overriding investment objectives. It sets out the requirements with regard to the security and liquidity of the investments and also defines the eligible currencies, asset classes, instruments and borrowers. On this foundation, the investment policy establishes a long-term allocation for the foreign exchange reserves.

Based on this long-term allocation, the Governing Board determines a specific investment strategy. This sets out the allocation of individual asset classes over the next year and defines the freedom of action at operational level. A valuation assessment of the individual asset classes is also taken into account in the investment strategy. Depending upon the assessment, this allows for certain deviations from the long-term allocation with regard to currency allocation, equity share or bond duration.

In the third step, prior to the investment strategy implementation, the Risk Management unit sets out the necessary investment guidelines, limits and benchmarks. It also defines the permissible margin of deviation from the investment strategy at the tactical level. These parameters are very important for the fourth step, implementation of the investment strategy. Decisions on tactical allocation are made by an internal investment committee which makes periodic adjustments of given variables such as currency shares, maturity and shares of different asset classes to changes in market conditions, within the strategic range.

The majority of investments are managed by internal portfolio managers, but external asset managers also play an important role. These external managers are used to obtain efficient

access to certain asset classes or for benchmarking against internal portfolio management. These benchmarks have always shown that the SNB's portfolio management achieves good results in the long term and works cost effectively.

The investment process is concluded with the fifth step, risk control. The risk control function checks compliance with guidelines and limits, and conducts a performance measurement. Furthermore, the relevant financial risks are identified, assessed and monitored on a daily basis. In addition, regular sensitivity analyses and stress tests are conducted and the results are reported to the Governing Board and the Bank Council's Risk Committee. Organisationally, the investment process and risk control are separated from one another to the greatest possible extent. In this way, we ensure effective risk control.

### **Monetary policy takes precedence over investment policy**

It is true that the structure of the SNB's investment and risk processes is similar to that of large commercial asset managers. And yet there are also enormous differences. After all, the SNB is a central bank; for us, monetary policy objectives always take precedence over investment policy. When investing our foreign exchange reserves, we base our decisions on the criteria of security, liquidity and return. The weightings given to these criteria are derived from the monetary policy function of the foreign exchange reserves. Ensuring room for manoeuvre in the implementation of monetary policy requires, in particular, a high weighting for the liquidity criterion. As is common practice for a central bank, we invest a substantial share of our foreign exchange reserves in very liquid and highly rated foreign government bonds. As you will see in **slide 5**, the share of these investments amounted to more than 70% at the end of 2015.

The SNB has a very long investment horizon. In view of this, the criterion of security is taken into account by structuring investments so that at least the real value is preserved over the long term. Thus, after liquidity and security, the criterion of return is also taken into consideration. In order to improve the long-term risk/return profile, certain interest rate, equity, credit and liquidity risks are intentionally entered into, based on the associated risk premia. These risks are spread as widely as possible by diversifying the investments. For instance, government bonds in the main currencies are supplemented by additional asset classes including corporate bonds and equities. In particular, the share of equities, which currently amounts to 18%, increases the expected return in our portfolio.

### **Challenges when investing high foreign exchange reserves**

The SNB is one of the world's major investors. At the end of 2015, our foreign exchange reserves amounted to around CHF 560 billion. The management of large foreign currency investments comes with its own set of challenges. I would like to focus on three of these challenges in particular, and explain briefly how we address them: first, the widening of fluctuations in absolute investment returns; second, non-financial aspects, which have become

much more important in our globally diversified equity portfolio; and third, liquidity conditions, which have deteriorated in some markets.

The size of the SNB's foreign exchange reserves means that investment returns, in absolute terms, can fluctuate sharply from year to year. This has been particularly evident in recent years: in 2015, the SNB reported an annual loss of over CHF 23 billion. In 2014, it had recorded a profit of more than CHF 38 billion.

A look at the breakdown of investment performance shows clearly that the volatility in our investment returns is mainly the result of exchange rate fluctuations. This is illustrated by **slide 6**. The red bars show that, when converted to domestic currency, investment returns have always been positive over the last 15 years. By contrast, the foreign currency contribution – which is denoted by the blue bars – has mostly been negative. In individual years, the strong appreciation of the Swiss franc has even led to the total return in Swiss francs being negative. This is denoted in the chart by the yellow triangles.

**Slide 7** shows that, over the last 35 years, currency risk has accounted for more than 80% of the total risk in our portfolio. We cannot hedge against currency risk, since this would increase the upward pressure on the Swiss franc. Hedging would thus undermine our monetary policy objectives. We must accept currency risk as an inherent component of our foreign exchange reserves. Gains or losses in the double-digit billions could thus also occur in the future. It is therefore all the more important to set aside sufficient reserves in the years in which we record a profit.

The second challenge relates to equity investments. The SNB's equity portfolio currently amounts to some CHF 100 billion. This comparatively high equity share gives rise to questions on ethics and corporate governance – as it does for other investors. The SNB takes its responsibility as a large equity investor very seriously. It tries to avoid conflicts of interest where possible and has devoted particular attention to questions such as exclusion criteria and the exercise of voting rights, introducing corresponding regulations.

In its equity investments, the SNB adopts a passive approach. This means, in particular, that we do not actively engage in equity selection. Otherwise, we could rapidly find ourselves with large corporate shareholdings which, owing to the size of our foreign exchange reserves, might be misconstrued as a strategic participation by the SNB. Our approach ensures that our holdings in individual companies remain as small as possible.

We do not invest in equities of international mid-cap and large-cap banks and bank-like institutions in advanced economies. In addition, the SNB does not purchase equities in companies which produce internationally banned weapons, seriously violate fundamental human rights or systematically cause severe environmental damage.

Last year, the SNB exercised its voting rights at annual general meetings for the first time, focusing on mid-cap and large-cap companies in the euro area. When casting its vote, the SNB confines itself to aspects of good corporate governance. When voting and excluding individual equities, the SNB works together with external proxies.

That brings me to the third challenge – market liquidity. In some markets, liquidity conditions have deteriorated. Yet it is difficult to gauge how liquid the various financial markets really are, because there is no single measure that can fully capture all aspects of market liquidity. For example, we are seeing a worsening of liquidity conditions in corporate bond markets. The blue curve in **slide 8**, for instance, shows that trading volumes at traditional market-makers in the US have more than halved since 2007, whereas the market has grown considerably over the same period.

However, both for market participants and as regards financial stability, it is not only the level of market liquidity but also its resilience that is important. In recent years, we have repeatedly seen how market liquidity can fall sharply in times of stress.<sup>3</sup>

There have, in particular, been a few days on which – for no apparent reason – there was a sudden surge in volatility. This was the case in October 2014 in the US, when ten-year yields dropped by 37 basis points in a single day. Japanese government bonds experienced something similar a few weeks ago, falling by 26 basis points in one day. The two charts in **slide 9** use histograms to illustrate how unusual the price movements were on these days. They show the observed intraday frequency of certain fluctuations in yield on US or Japanese government bonds for the period since 2001. Fluctuations of the magnitude described here are extremely rare events. Such episodes prompted fears that market distortions of this kind could recur at any time.

What do these changes in market liquidity mean for the SNB? At the operational portfolio management level, we are affected by the deterioration in corporate bond liquidity. The greatest difficulty stems from the fact that trading is increasingly focused on a comparatively small section of the corporate bonds outstanding. This has meant that large purchases or sales are more difficult, and more expensive, than before the financial crisis.

This, in turn, has necessitated some adjustments in the way corporate bond portfolios are managed. The SNB is now more active in the primary sales market than before, and has also expanded its counterparty base. In addition, depending on the liquidity situation, transactions are having to be split into smaller tranches. Overall, therefore, the management of corporate bond portfolios has become more complex and more demanding.

By contrast, the markets for highly rated government bonds continue to be very liquid. Short-term price fluctuations do not place any limitations on the management of the government bonds in our portfolio. As I have already mentioned, we have a very long investment horizon. We hold our investments for at least one full economic cycle and we are not obliged to sell, even in periods of stress. In contrast to, say, investment funds, we are not faced with the prospect of investors demanding the return of their shares when market turbulence sets in, and forcing a quick asset sale.

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<sup>3</sup> IMF. 2015. Market Liquidity – Resilient or Fleeting? *Global Financial Stability Report*, October 2015.



On the contrary, when volatility increases, our investment activity can exert a certain stabilising influence on prices in these markets. This is due to rebalancing: when large price declines in individual asset classes cause their share within our portfolio to fall substantially below the strategic weighting for that asset class, we purchase assets in order to re-establish the desired share.

## **Foreign exchange reserve investment and monetary policy in a low interest rate environment**

In addition to the specific challenges posed by investing high foreign exchange reserves, there are also challenges that affect virtually all investors. I am thinking first and foremost of the globally low interest rate environment. As **slide 10** shows, the market volume of negative-yielding government bonds has risen substantially since 2014. It now amounts to around USD 7 trillion, representing nearly 25% of the global market.<sup>4</sup>

Today's environment of low, or even negative, interest rates has historical antecedents. Since as far back as the 1980s, we have been observing a decline in the level of interest rates, as we can see from **slide 11**.<sup>5</sup> This decline in interest rates is due to a number of structural factors, such as demographic changes and lower productivity growth. Moreover, the low interest rate environment, which has been particularly pronounced for some years now, is part of the fallout from the global financial and economic crisis. Driven by supply and demand, high savings and weak global investment activity put additional downward pressure on interest rates. Moreover, monetary policy measures – taken by central banks to combat the financial crisis and the low inflation level – have themselves contributed to the decline in interest rates, and continue to do so.

This is also true of the measures taken by the SNB. After all, we cannot remain untouched by international developments. Interest rates in Switzerland have traditionally been lower than abroad. This is due to Switzerland's status as a safe haven: investors are willing to accept comparatively low yield in return for more security. During the financial crisis, the decline in interest rates abroad was generally more marked than in Switzerland. The interest rate differential to other countries narrowed and the Swiss franc became even more attractive.

Negative interest helps to restore the interest rate differential between Switzerland and other countries, by making investments in Swiss francs less attractive and thereby reducing the pressure on the Swiss franc exchange rate. We are aware that the costs associated with negative interest are not inconsiderable. Yet without negative interest, the Swiss franc would be even stronger, which would weigh even more heavily on the economy. The SNB is thus faced with difficult trade-offs when making its monetary policy decisions. I am convinced

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<sup>4</sup> Figures refer to the World Sovereign Bond Index from Bank of America Merrill Lynch. The index contains over 2,000 government bonds with residual maturities of at least one year and minimum requirements on the size of individual issues.

<sup>5</sup> The G7 nominal interest rate is derived from the nominal GDP-weighted yields on ten-year government bonds of the following countries: the US, Japan, Germany, the UK, France, Italy and Canada.

that, under the circumstances, the SNB's monetary policy is currently the approach that best serves Switzerland's overall interests in the long term.

At our most recent quarterly monetary policy assessment, we therefore decided to maintain our expansionary monetary policy. The interest rate on sight deposits at the SNB is unchanged at  $-0.75\%$ . At the same time, the SNB will remain active in the foreign exchange market, in order to influence exchange rate developments where necessary. Despite a slight depreciation, the Swiss franc is still significantly overvalued and this is reflected in economic activity. Last year, the Swiss economy only recorded year-on-year growth of just under  $1\%$ . For this year, we expect growth of between  $1\%$  and  $1.5\%$ . Uncertainty is high, however, and conditions remain difficult.

Last year, inflation was very low, at  $-1.1\%$ , due in large part to the slump in oil prices and the appreciation of the Swiss franc following the discontinuation of the minimum exchange rate. The impact of both variables is temporary. For this year, we expect an inflation rate of  $-0.8\%$ . In the SNB's view, it is essential that, in the medium term, inflation returns to the range compatible with price stability. And, according to our current inflation forecast, that is what will happen. As you can see from **slide 12**, we are expecting that, given an unchanged three-month Libor of  $-0.75\%$ , the inflation rate will return to positive territory next year.

This brings me to the end of my speech. I would like to thank you for your attention, and hand over to my colleague Dewet Moser. He will be discussing the challenges for monetary policy implementation in turbulent times.

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# Investment policy in times of high foreign exchange reserves

Andréa M. Maechler

Member of the Governing Board of the Swiss National Bank

Money Market Event

Zurich, 31 March 2016

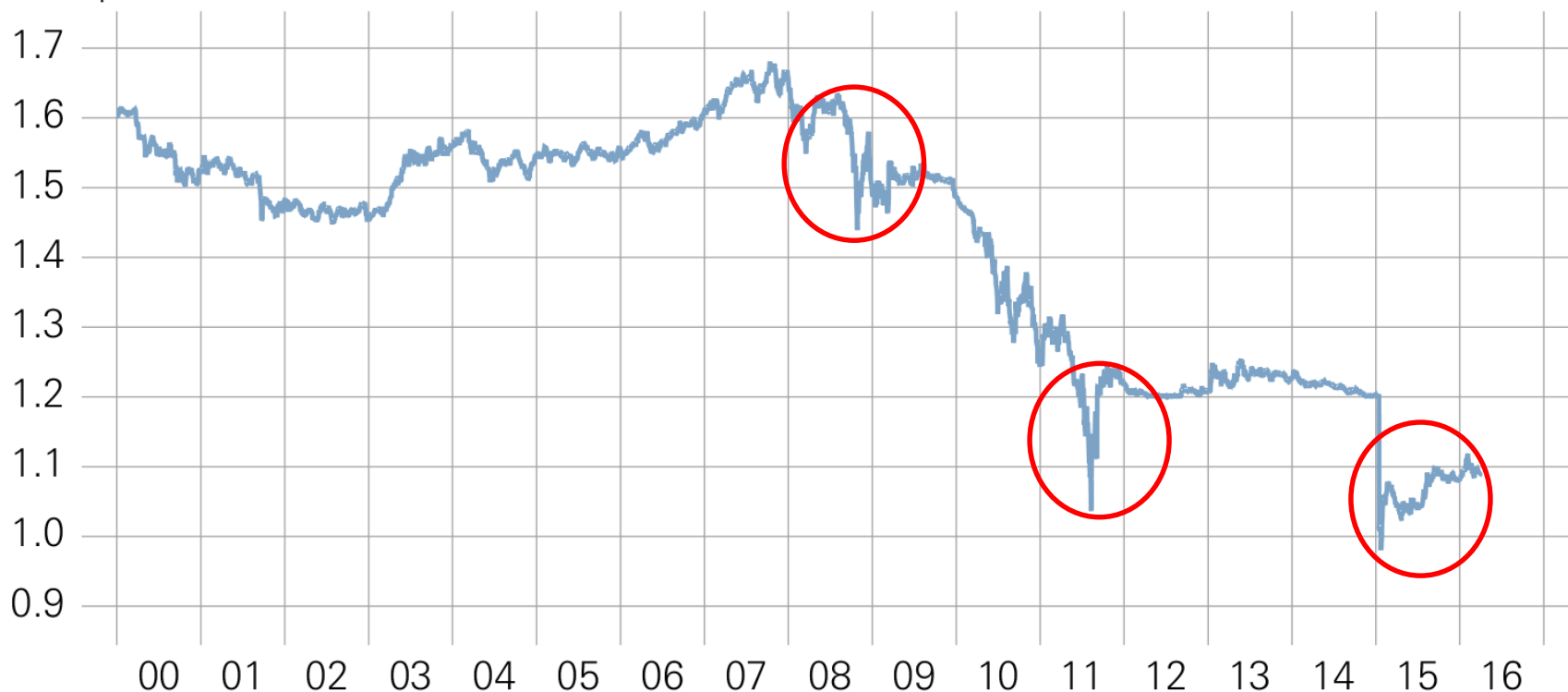
SCHWEIZERISCHE NATIONALBANK  
BANQUE NATIONALE SUISSE  
BANCA NAZIONALE SVIZZERA  
BANCA NAZIUNALA SVIZRA  
SWISS NATIONAL BANK



# Monetary policy focus on strong appreciation of Swiss franc since onset of financial crisis

## EURCHF EXCHANGE RATE

CHF per EUR

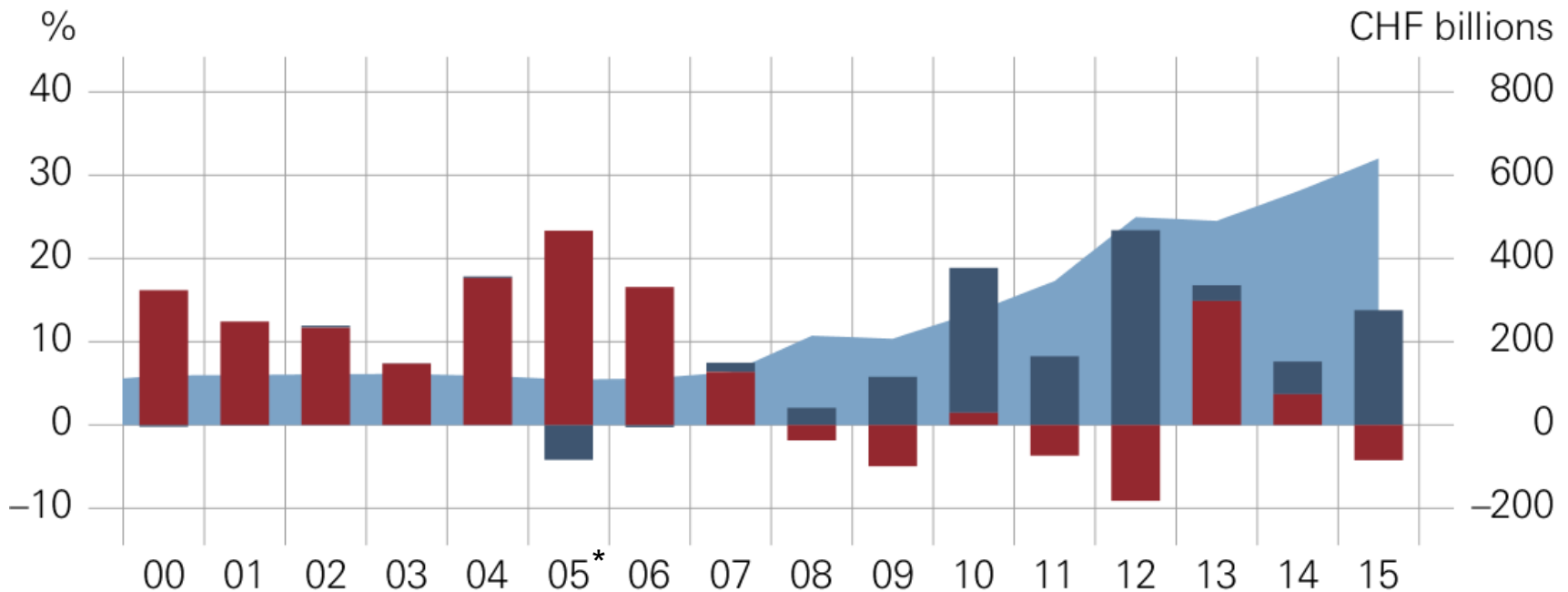


Sources: Bloomberg, SNB

# Public sector capital flows show that the SNB has taken on risks from the private sector

## PUBLIC AND PRIVATE CAPITAL FLOWS

Net and in percent of annual GDP



■ Net private capital flows  
 ■ Net public capital flows

■ Total assets of the SNB (rhs)

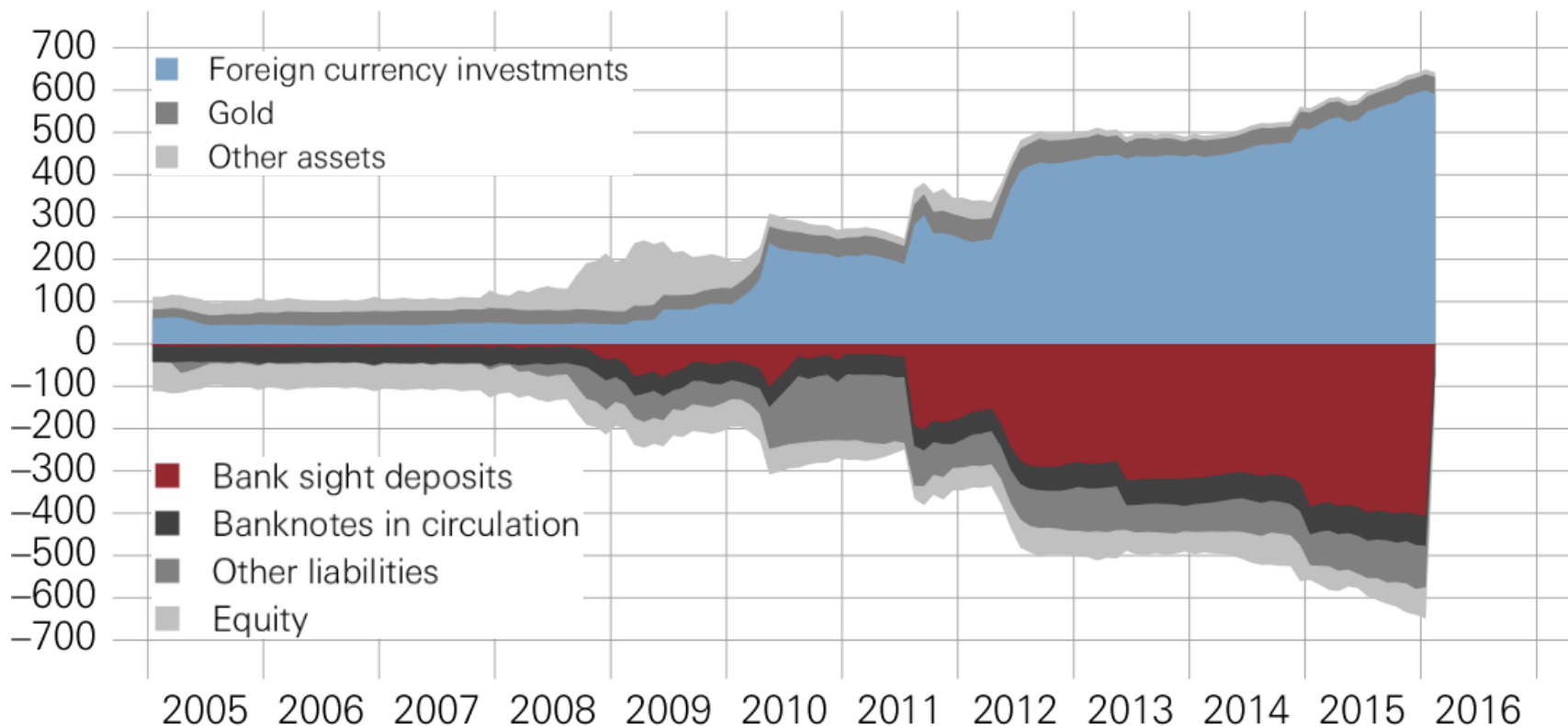
\* In 2005, the proceeds from the SNB's gold sales were distributed to the Confederation and the cantons. This led to a reduction in currency reserves.

Source: SNB

# Strong growth in the SNB's balance sheet as a direct result of monetary policy

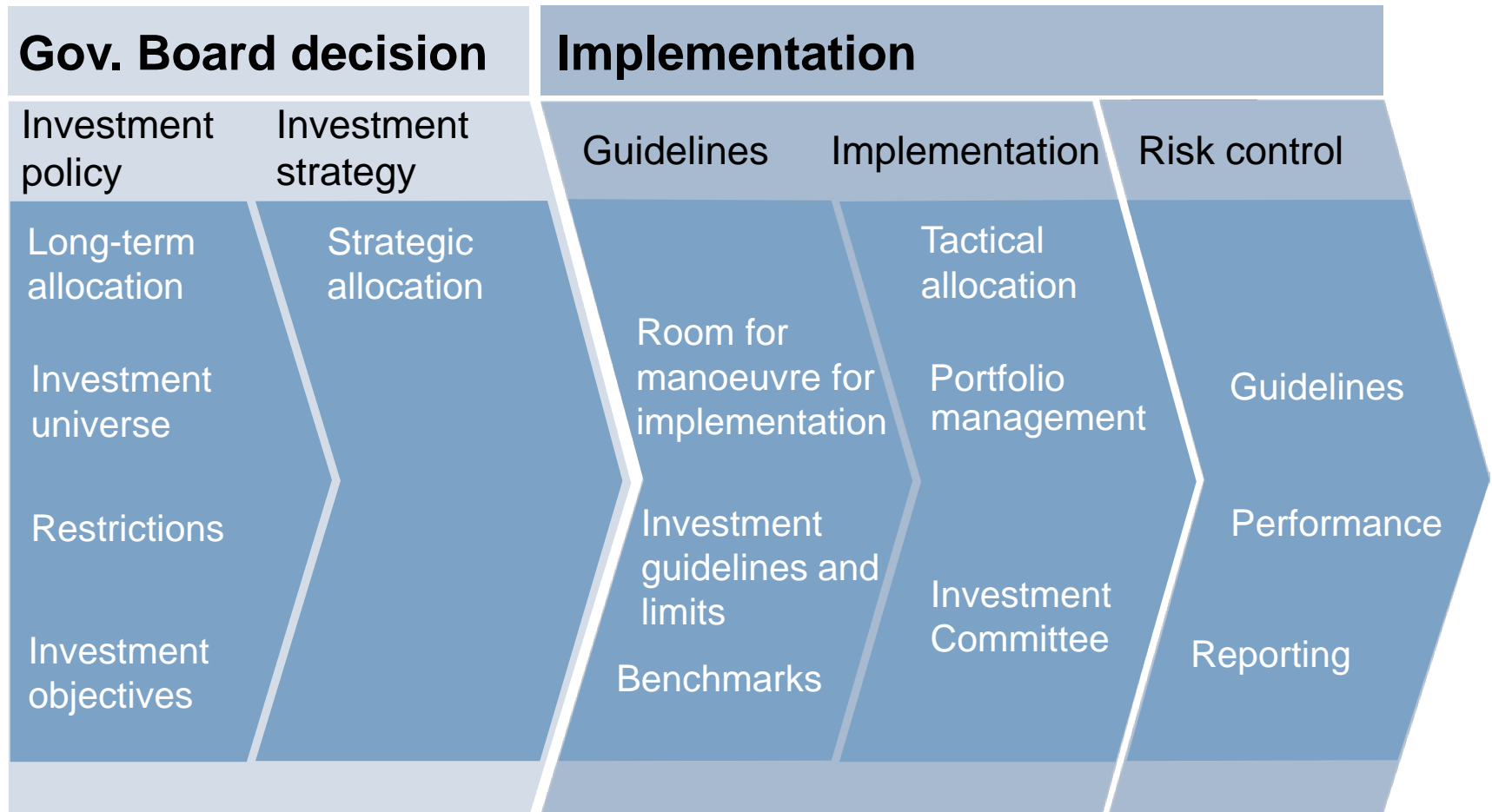
## BALANCE SHEET DEVELOPMENT

CHF billions



Source: SNB

# The SNB's modern and professional asset management

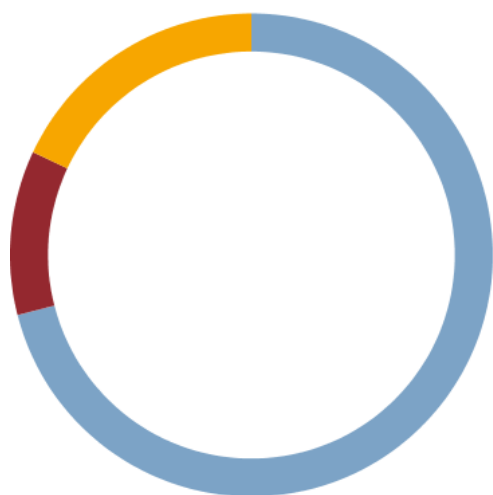


Source: SNB

# The SNB's investments are considerably more diversified than at other central banks

## FX RESERVES: ASSET CLASSES

As at 31.12.2015

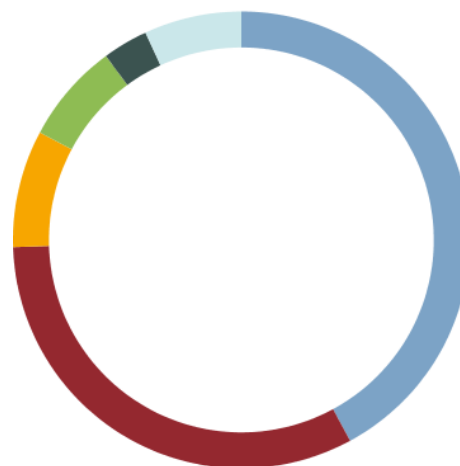


- Government bonds\*, 71%
- Other bonds, 11%
- Equities, 18%

\*including deposits at central banks and BIS

## FX RESERVES: CURRENCY ALLOCATION

As at 31.12.2015



- EUR, 42%
- USD, 32%
- JPY, 8%
- GBP, 7%
- CAD, 3%
- Other, 7%

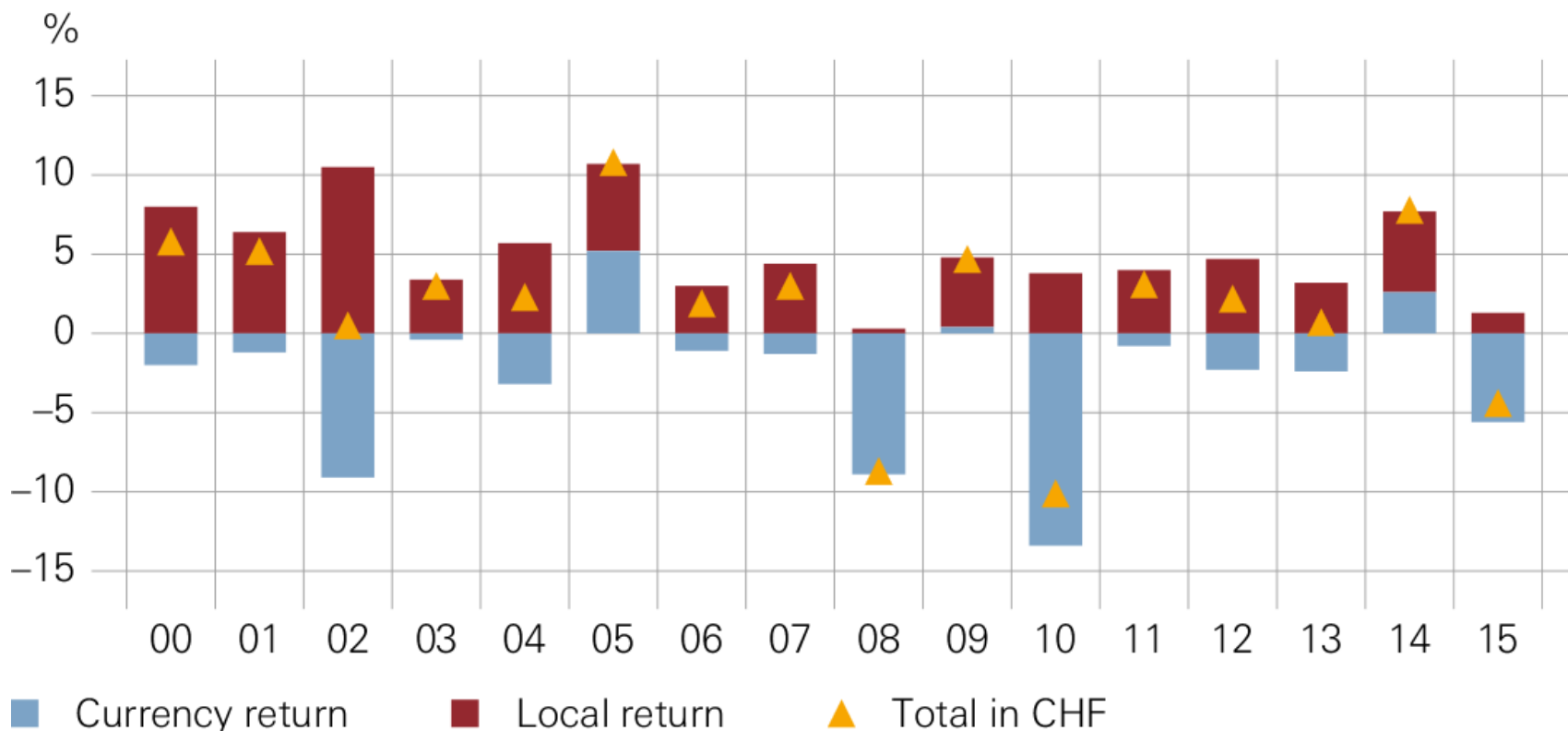
Source: SNB



# Due to high level of foreign exchange reserves, gains or losses running in the billions are possible

## RETURN ON FOREIGN EXCHANGE RESERVES

As at 31.12.2015

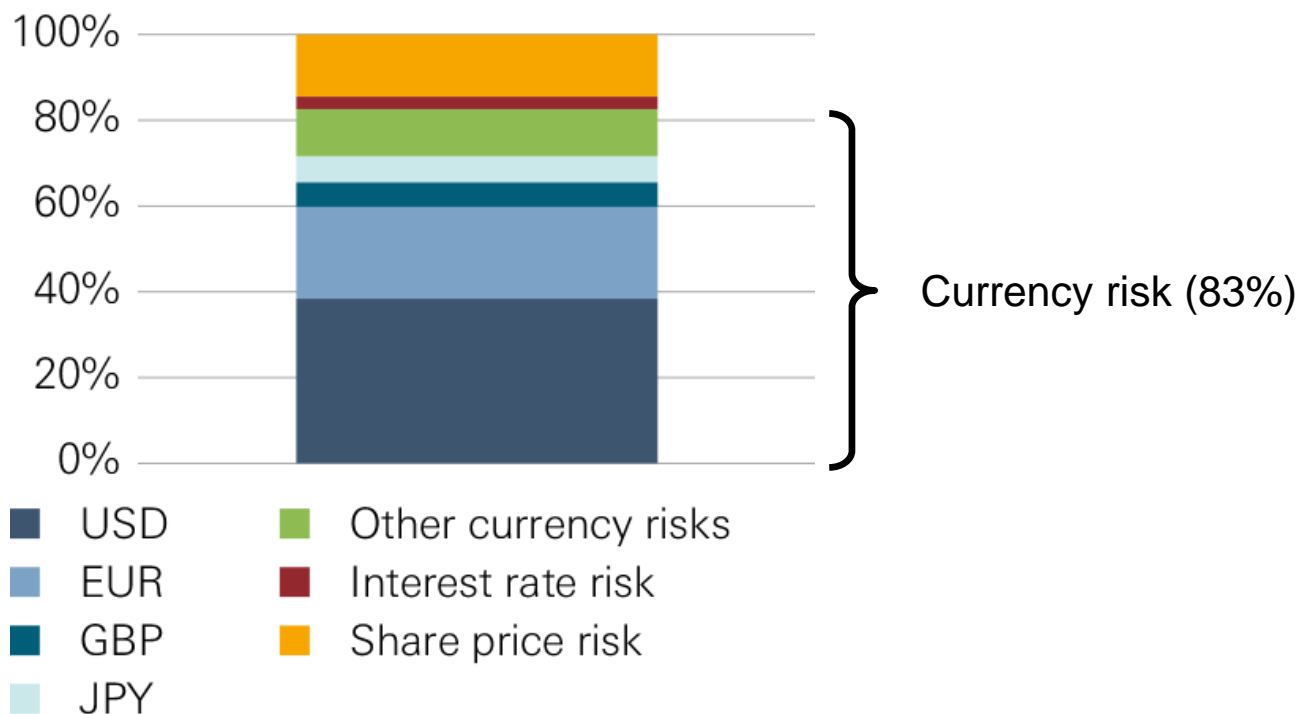


Source: SNB

# Exchange rate fluctuations by far the greatest risk for the SNB's investment performance

## RISK DECOMPOSITION OF FX RESERVES

1980–2015

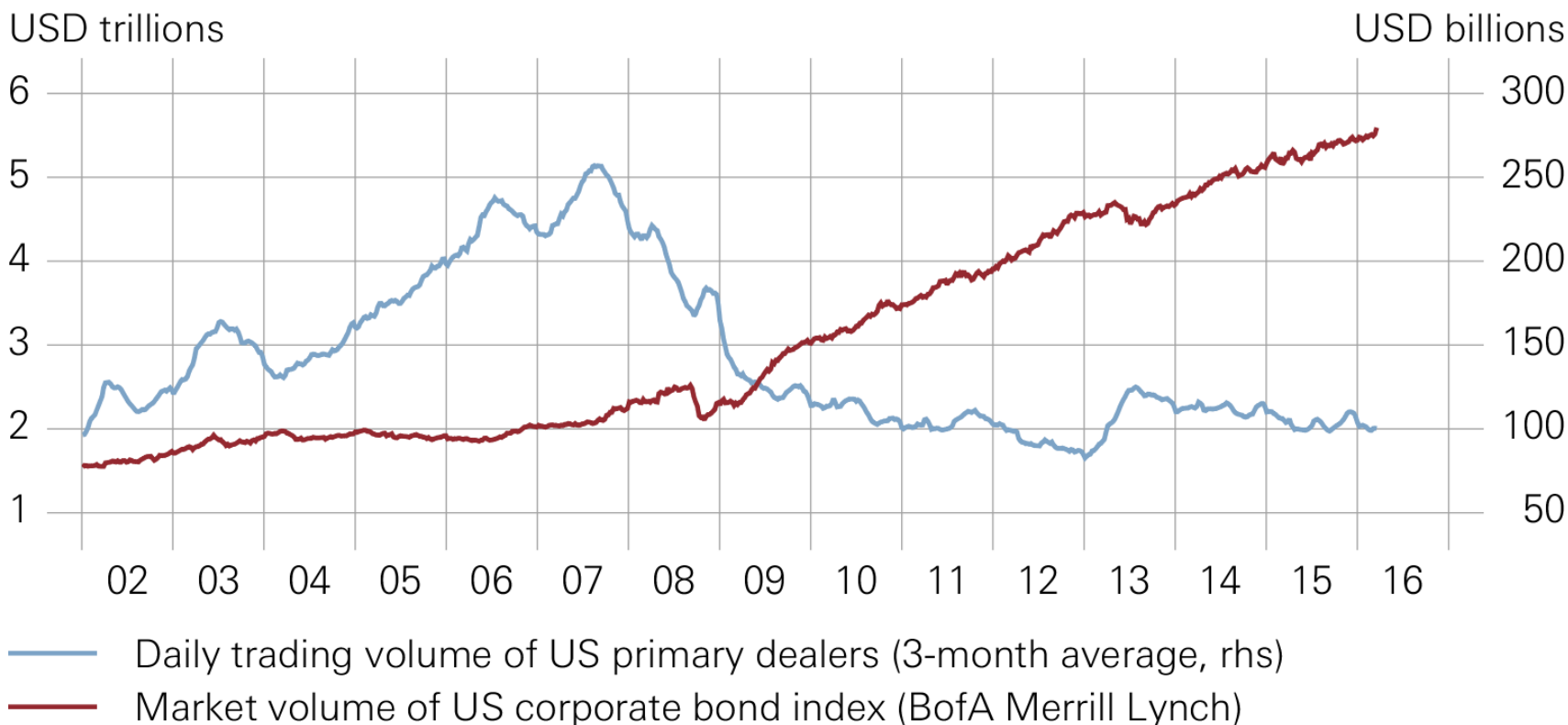


Source: SNB

# Corporate bond market liquidity has fallen sharply

## MARKET DEVELOPMENTS FOR US CORPORATE BONDS

Growing market volume but declining trading volume

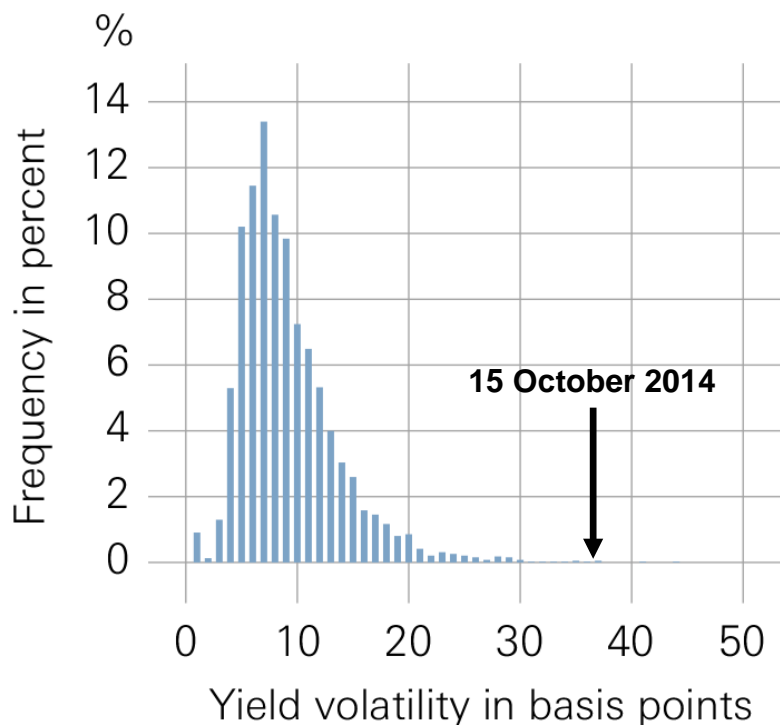


Sources: BAML, Bloomberg, FRBNY, SNB

# High volatility even in some of the major government bond markets

## US GOVERNMENT BOND

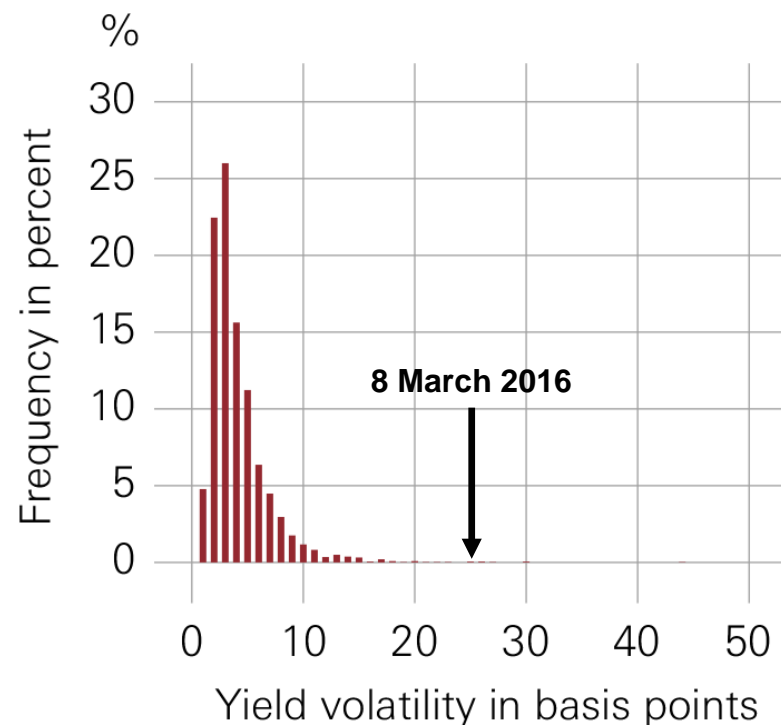
Yield volatility, 2001–2016



■ 10-year government bond

## JAPANESE GOVERNMENT BOND

Yield volatility, 2001–2016



■ 30-year government bond

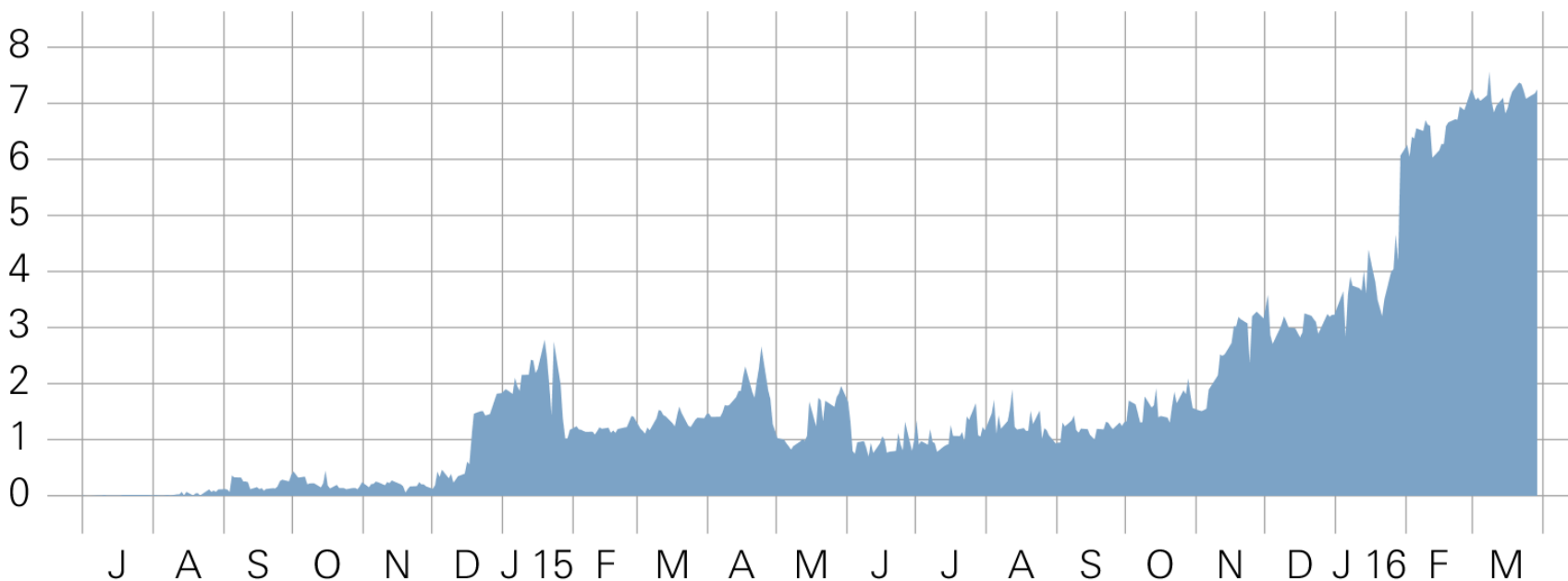
Sources: Bloomberg, SNB

# Negative yields are a widespread phenomenon

## MARKET VOLUME OF GOVERNMENT BONDS WITH NEGATIVE YIELD

Based on Bank of America Merrill Lynch World Sovereign Bond Index\*

USD trillions

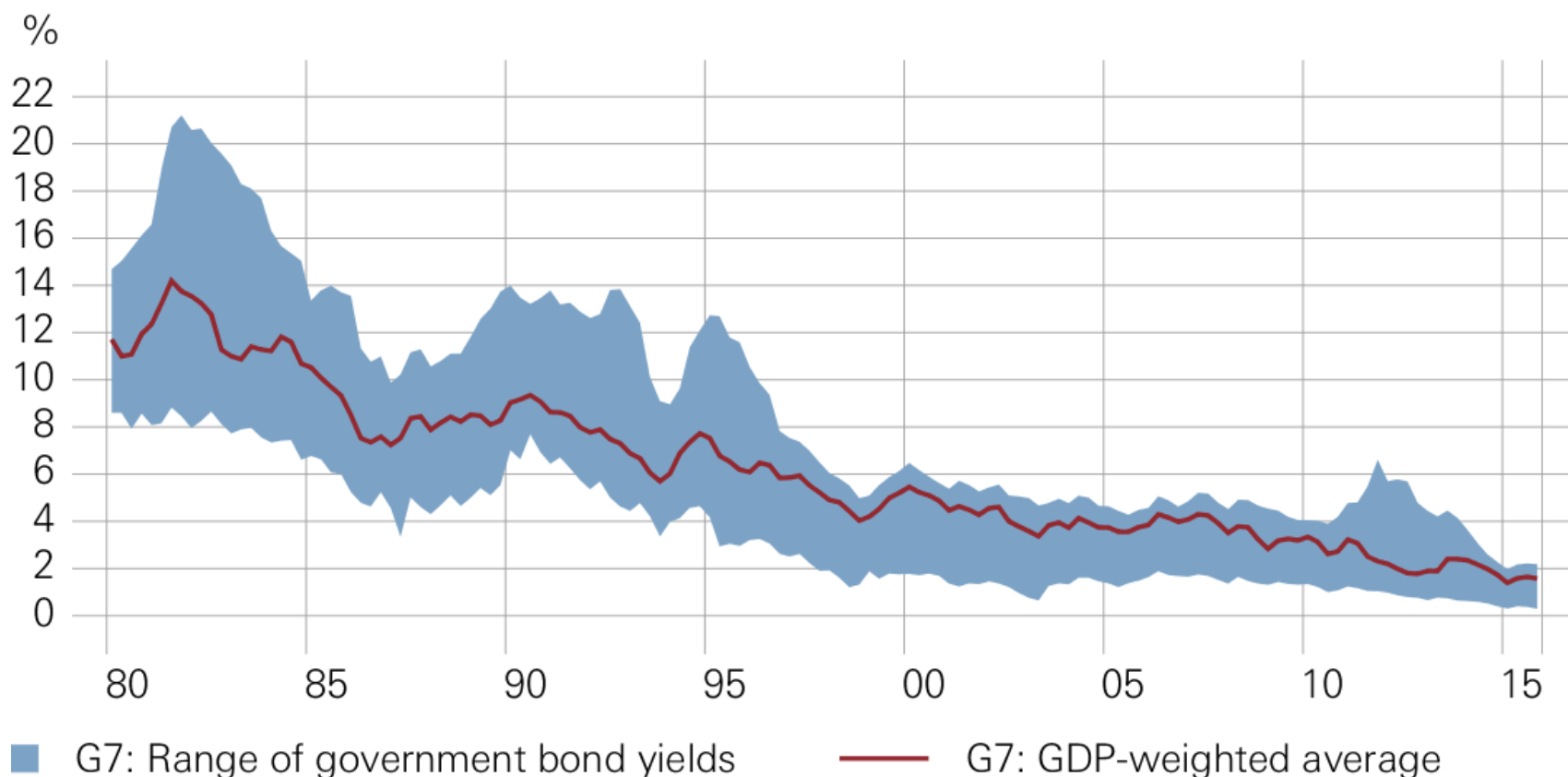


\* The index contains more than 2,000 government bonds with residual maturities of at least one year.

Sources: BAML, BIS, Bloomberg, SNB

# Decline in long-term yields due to structural reasons

## 10-YEAR GOVERNMENT BOND YIELDS

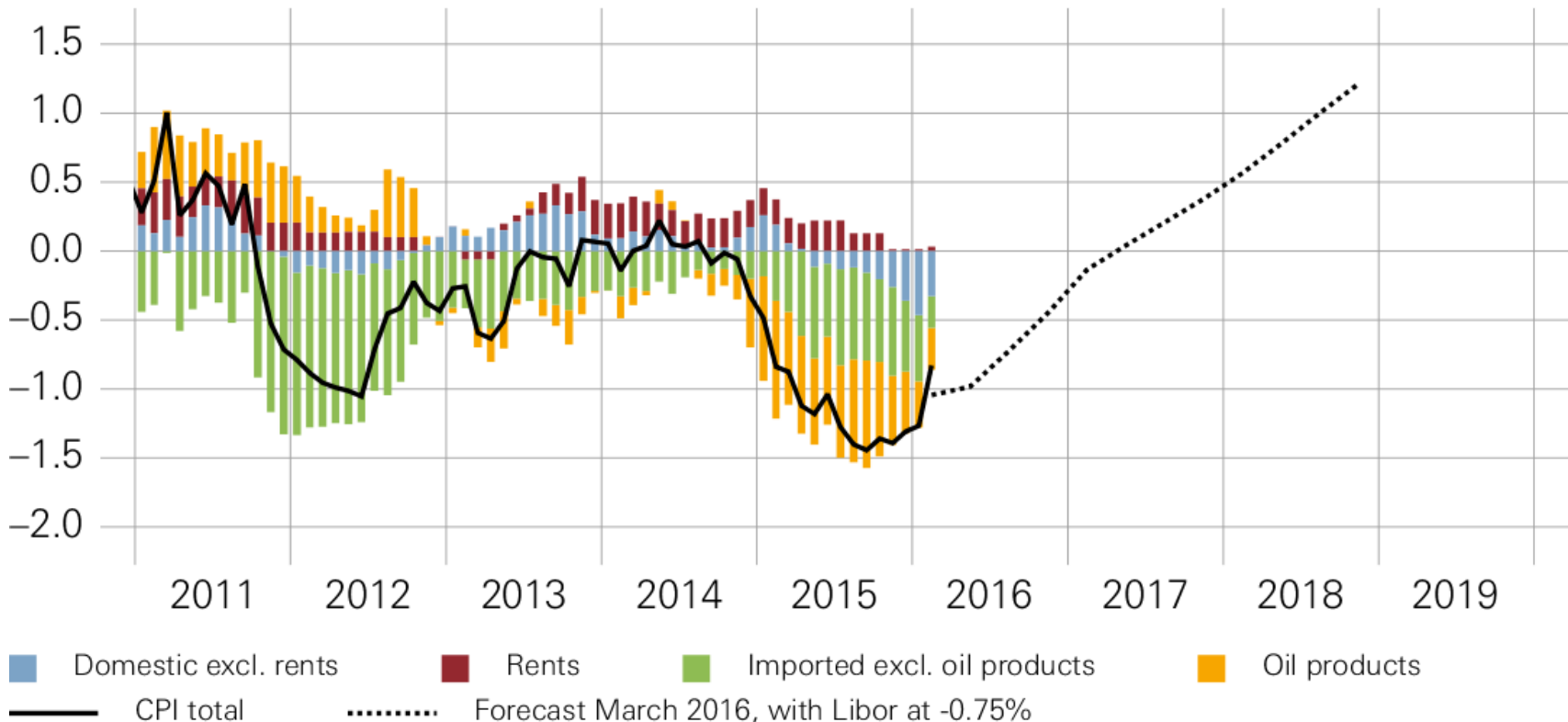


Sources: OECD, IMF, SNB

# Price stability ensured in the medium term according to current inflation forecast

## CONTRIBUTIONS TO CPI INFLATION AND CONDITIONAL FORECAST

Year-on-year change in percent



Sources: SFSO, SNB

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# Thank you for your attention!

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