

**Speech**

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## **The SNB's investment policy and its distinctive features**

### Money Market Event

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Swiss National Bank

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Ladies and gentlemen

A warm welcome to this year's Money Market Event in Zurich. I am delighted that once again so many of you have taken up our invitation. Today I shall be talking about the Swiss National Bank's investment policy, a topic I already explored at last year's event here in Zurich.

I'd like to start by saying a few words about the SNB's monetary policy. A week ago, at our latest monetary policy assessment, we announced that we would maintain our expansionary monetary policy. Indicators suggest that the outlook for the global economy will continue to improve. The outlook for Switzerland's economy in 2017 is also cautiously optimistic, however considerable risks remain. Political uncertainty dominates at present, notably with respect to the future course of economic policy in the US, various elections in Europe, and the complex Brexit negotiations.

In this uncertain environment, our monetary policy is geared to stabilising price developments and supporting economic activity. Our monetary policy is based on two elements: the negative interest rate and our willingness to intervene in the foreign exchange market as necessary. The interest rate of  $-0.75\%$  has enabled us to partially restore the original interest rate differential to the euro area. You can see this in **chart 1**. This renders Swiss franc investments less attractive. The policy of intervening in the foreign exchange market as necessary allows us to counter increased upward pressure, especially in phases of exceptional demand for the Swiss franc.

Typically, periods of heightened uncertainty prompt strong inflows into the Swiss franc, which is particularly sought after as a safe investment. In the period since the global financial crisis – most notably following the initial onset of the Greek crisis in 2010 and during the euro area debt crisis in 2012 – such inflows were especially pronounced. The year 2016 was also fraught with uncertainty. In **chart 2**, the red line shows the development of an indicator used to measure economic policy uncertainty. It is based on an analysis of keywords on the economy, politics and uncertainty in various press articles. The indicator shows that economic policy uncertainty has risen substantially in the past year, particularly in Europe. Under these conditions, domestic and foreign investors again behaved cautiously, seeking out investments in Swiss francs, which they see as a safe haven. Furthermore, both private and institutional investors conducted transactions to hedge the currency risk against the Swiss franc. These two factors reinforced upward pressure on the franc.

In order to counter an undesired tightening of monetary conditions, the SNB intervened in the foreign exchange market in 2016. As I am sure you are aware, the SNB published its 2016 accountability report for parliament today. This document details the scale of our foreign currency purchases in the year under review. We purchased some CHF 67 billion in foreign currency in 2016, compared to CHF 86 billion in 2015.

Overall, our monetary policy measures have been effective in this challenging environment. The real – that is to say, inflation-adjusted – external value of the Swiss franc has stabilised

since mid-2015. This also holds true for periods of heightened market volatility of the kind witnessed in the wake of the UK's referendum on EU membership last June. This can be seen in **chart 3**, which shows the Swiss franc exchange rate against a basket of currencies of our main trading partners. Yet considerable challenges remain. According to our new exchange rate index, which replicates the competitive and trading relationships of the Swiss economy in a comprehensive and up-to-date way, the Swiss franc is still significantly overvalued.

Ultimately, our monetary policy has helped inflation in Switzerland to regain traction. Over the past two years, inflation has been distinctly negative most of the time. Based on our conditional inflation forecast, we are expecting inflation of 0.3% for this year and 0.4% for 2018. Our monetary policy has also supported the moderate recovery in economic growth. We are anticipating growth of roughly 1.5% for the current year. Having said this, the momentum we are seeing is not yet broad-based. Large sections of the export industry as well as areas of the economy that face import competition continue to suffer due to the overvaluation of the Swiss franc.

As a consequence of our monetary policy, our foreign exchange reserves have now risen to over CHF 650 billion. This is illustrated in **chart 4**. The increase is directly connected with our efforts to fulfil our mandate. The management of our foreign exchange reserves is likewise linked to monetary policy, to which it is always subordinate. The three criteria we use in managing our investments – security, liquidity and return – are a function of this relationship. What does this mean in practice? This question brings me to the main part of my speech: the SNB's investment policy.

### **SNB: a professional investor – with distinctive features**

The SNB pursues a professional investment process similar to that of a large institutional asset manager.

However, there are two distinctive features which mark out the SNB from other investors, both institutions and central banks. First, we report in a safe-haven currency, the Swiss franc. The fact that the franc is a particularly sought-after investment vehicle during periods of international crisis causes it to appreciate. This sets us apart from central banks whose currencies are not regarded as safe havens. Second, for monetary policy reasons, we are unable to hedge our foreign exchange reserves, which are wholly invested abroad. This sets us apart from institutional investors. These distinctive features affect our risk/return profile and thus our asset allocation. Now let's take a closer look at the reasons why.

### **What differentiates the SNB from other central banks?**

Central banks usually compile their accounts in their local currency and invest 100% of their foreign exchange reserves abroad. However, the exchange rate risk associated with these investments cannot be hedged. We too use our local currency as our unit of account – annual

result, risk and return are all reported in Swiss francs. And the franc also happens to be an exceptionally strong currency. This defining characteristic has two consequences.

On the one hand, we are able to hold a larger share of risk assets than other central banks. Thanks to the resilience of the Swiss franc, we are not forced to sell our riskier investments – *in extremis* at rock-bottom prices – to support our currency. This gives us a somewhat longer investment horizon. Thus, we are in a position to maintain a relatively high equity exposure compared with other central banks – currently 20%.

On the other hand, the diversification effect of risk assets is less pronounced at the SNB since the price of such investments typically falls in the event of market turbulence, while the Swiss franc appreciates. The SNB is therefore subjected to a double loss in the short term, first on risk assets, and second on foreign currency. In short, if we raise our equity exposure, volatility increases too; or, to put it another way, enhanced returns have a ‘price’, and that price is higher volatility.

Let me illustrate this using the SNB portfolio. **Chart 5** depicts the annualised average return and average volatility of the SNB’s portfolio for various equity exposures based on monthly data since 1998 – once in Swiss francs and once in an emerging market currency. The use of an emerging market currency is purely for illustration purposes, to highlight the difference between reporting in a safe-haven currency compared with a non-safe-haven currency. The dots on each bond/equity combination correspond to the equity exposures which, starting at 0% on the left, rise in increments of 10%, to 100% at the right-hand end of the curve. The equity exposures corresponding to the bond/equity allocation in the current SNB portfolio are shaded red.

The difference in the diversification effect depending on the reporting currency – as shown here by the bend in the curves – is immediately obvious. Just to remind you, the more pronounced the bend in the curve, the greater the diversification effect. Where the Swiss franc is the reporting currency, each increase in equity exposure – from, say, 0% to 10% – is accompanied by an immediate increase in volatility. From the SNB’s perspective, enhanced returns, achieved through raising equity exposure, necessarily entail increased volatility. If, for example, we use an emerging market currency instead, volatility could be reduced even if the equity exposure were increased to 40%.

I would like to emphasise, however, that we see the criterion of security as a comprehensive concept that cannot be reduced to a single risk indicator or to the absence of credit risk. In aggregate, for the SNB too, there are good reasons to invest in equities. Fundamentally, their attraction for us lies in their high market liquidity. Furthermore, our analysis shows that equities enhance the probability of the SNB being able to preserve the real value of its foreign exchange reserves. Moreover, the inclusion of equities, and I’ll come back to this, has a positive impact on other risk measures such as the maximum 12-month loss.

The chart reveals another interesting feature, namely that the reporting currency also influences the level of returns. Hence, average return calculated in a currency other than the Swiss franc would be significantly higher. And yes – you’ve guessed it – the reason for this difference is the Swiss franc’s appreciation in recent years. If the Swiss franc were to depreciate, however, this picture could change.

## **What differentiates the SNB from other institutional investors?**

One significant fact differentiates the SNB from other large institutional investors: it is a central bank. The SNB’s investment policy is subordinated to the primacy of monetary policy. This means that we cannot eliminate the biggest risk to our foreign exchange reserves: currency risk. Why? Because in seeking to hedge our exchange rate risk, we would generate demand for Swiss francs and thereby contribute to upward pressure on the currency – the very process we are trying to combat with our monetary policy.

As you can see in **chart 6**, it is therefore chiefly exchange rate fluctuations that affect the SNB’s investment performance. Currency risk accounts for 85% of the total risk to which SNB investments are exposed. In a typical Swiss pension fund’s investment portfolio, however, this share is just 36%. Broad diversification is thus crucial for us. But our scope for diversification differs from that of a regular institutional investor, such as a pension fund.

We have a higher bond share than a pension fund. Our high bond weighting is guided by monetary policy considerations, where the option to sell rapidly with minimum market impact is very important.

Bonds also have a stronger diversification effect for us. This is again attributable to the safe-haven status of the Swiss franc. Bond yields and the external value of the Swiss franc are often negatively correlated. In other words, what we gain from a fall in yields helps to offset the appreciation effect of the Swiss franc. Although we invest 80% of our foreign exchange reserves in bonds, this does not result in higher total risk. By contrast, in the case of the pension fund, which has a bond share of only 37%, the interest rate risk increases total risk. However, owing to the fact that unhedged currency risks dominate overall, the SNB’s total volatility remains higher than that of the pension fund (7.3% p.a. compared with 4.5% p.a.).

Although we have gradually increased our equity exposure to improve our risk/return profile in recent years, our equity exposure is still much lower than that of other institutional investors.

After this *tour d’horizon* of the distinctive features of the SNB’s investment policy, the question now is, how have we dealt with them?

## **The SNB – a pioneer among central banks in risk/return optimisation**

For 20 years, the SNB has, within the framework of its monetary policy mandate, been using the investment policy latitude available to it to optimise its risk/return profile. Unlike other central banks, we benefit in this regard from an institutional framework which facilitates a broad investment spectrum.

Two ground-breaking legislative changes paved the way for the modern investment policy we operate today. In 1997, the residual maturity limit of one year for foreign exchange reserves, which had applied until then, was removed. Return immediately became strategically important as an investment criterion. With the new National Bank Act in 2004, the SNB's room for manoeuvre in investment matters was considerably expanded. At the same time, investment policy became a core part of the SNB's mandate.

Over the years, we have consistently been in the vanguard of central banks seeking to pioneer new approaches to the investment process and extend the range of instruments deployed. The SNB was one of the first central banks to work with external asset management companies (1978), build up independent portfolio management operations (1984), establish an independent risk management function (1997) and invest some of its foreign exchange reserves in equities and corporate bonds (2004).

Have our diversification efforts paid off? Let's take a look at the modifications made to the SNB's portfolio over the last 20 years and assess their impact on the risk/return profile (**cf. chart 7**). For the sake of comparability, my presentation of the impact of our diversification measures assumes that the SNB's portfolio had the respective allocation over the entire period from January 1998 to January 2017. The years cited refer to the years in which a change to the portfolio allocation was made.

The first dot in the risk/return diagram shows the average return and volatility of the SNB's portfolio with the allocation that applied until the end of 1997. The average return would have been over 1% and average volatility almost 9%.

At that time, a maturity limit of 12 months applied to foreign currency investments; this requirement defined the composition of the portfolio. The SNB invested in the most liquid money markets: 80% of foreign exchange reserves were thus invested in US Treasury bills, and 15% and 5% respectively were invested in German and Japanese money market instruments. The average duration was 0.5 years. The removal of the maturity limit following the revision of the law in 1997 allowed the SNB to hold bonds from across the full maturity spectrum. It also opened the door to investments in currencies other than the US dollar, the German mark and the Japanese yen. Accordingly, we began taking on the pound sterling and the Canadian dollar as reserve currencies, as well as the Danish krone, and extended duration from 0.5 to 4 years.

Let me show you the impact of adding the reserve currencies and extending duration separately. I'll start with the currency effect. The new dot shows the average return and volatility of the SNB portfolio since 1998, where the foreign exchange reserves are no longer concentrated in investments in US dollars, but are more broadly diversified. Duration is initially left at 0.5 years. The diversification effect of adding the new currencies is clearly visible. While there is virtually no change in the average return, average volatility decreases by 2.5 percentage points. In other words, adding the currencies did not improve return appreciably, but it did significantly reduce risk.

If we now also increase duration from 0.5 to 4 years, we arrive at the next dot on the chart. Average return rises substantially; average risk, on the other hand, remains more or less unchanged.

Following the legislative change in 2004, we extended the investment universe and moved into corporate bonds and equities. The addition of equities in particular had a marked effect, with average return and average volatility increasing.

We now see that the investment in inflation-protected bonds (TIPS) beginning in 2006 led to a slight deterioration of the risk/return profile – average return fell and average volatility increased slightly. This is principally due to the non-inflationary environment in recent years.

Once we had expanded the investment universe to include the Korean won in 2012 and the Chinese renminbi in 2015, as well as investments in small cap and emerging market equities in 2013 and 2015 respectively, average returns increased again – albeit in the context of higher volatility.

The chart does not show the full picture, however. From a risk/return perspective, the current portfolio is certainly better than that of 1997 – average return is significantly higher and average volatility is significantly lower. But how does today's portfolio compare with that of 2004? And is the current portfolio allocation also superior to that of 2004 in terms of diversification? There are no clear-cut answers here. While today's portfolio generates a higher return, volatility – as you can clearly see – has also increased.

But the volatility used here is not the only measure of risk. To show you another angle, I have plotted the SNB's portfolio modifications over the last 20 years again – this time in a form that compares maximum 12-month losses for the years in question (**cf. chart 8**). The steady decrease in the maximum 12-month loss is clear to see. From a risk perspective, the current allocation of the SNB's portfolio is undoubtedly a significant improvement on 2004.

To summarise: First, experience shows that the greatest diversification effect is achieved by adding a new investment currency. Second, increasing the duration of the portfolio has very little impact on risk – indeed it may even reduce it in some circumstances. Overall, we may conclude that the SNB has improved its risk/return profile continuously in recent years – even

in the context of significant balance sheet expansion. This has been possible thanks to diversification, which has proved its worth.

Although an expanding balance sheet does not make the process of diversification any easier, we will not be curtailing our efforts on this front. We are constantly assessing and optimising the instruments we have at our disposal to fulfil our statutory mandate. Today, I have surveyed the ongoing refinements we have made to our investment policy in recent years. Notwithstanding these improvements, the international environment and unique conditions in which we are operating remain challenging. We will continue to do everything in our power to respond appropriately to changing conditions.

On that note, I'd like to thank you for your attention and hand over to my colleague. In his speech, Dewet Moser will explain key aspects of the financial market transactions we conduct to implement our investment policy and outline how the SNB deals with the associated challenges.



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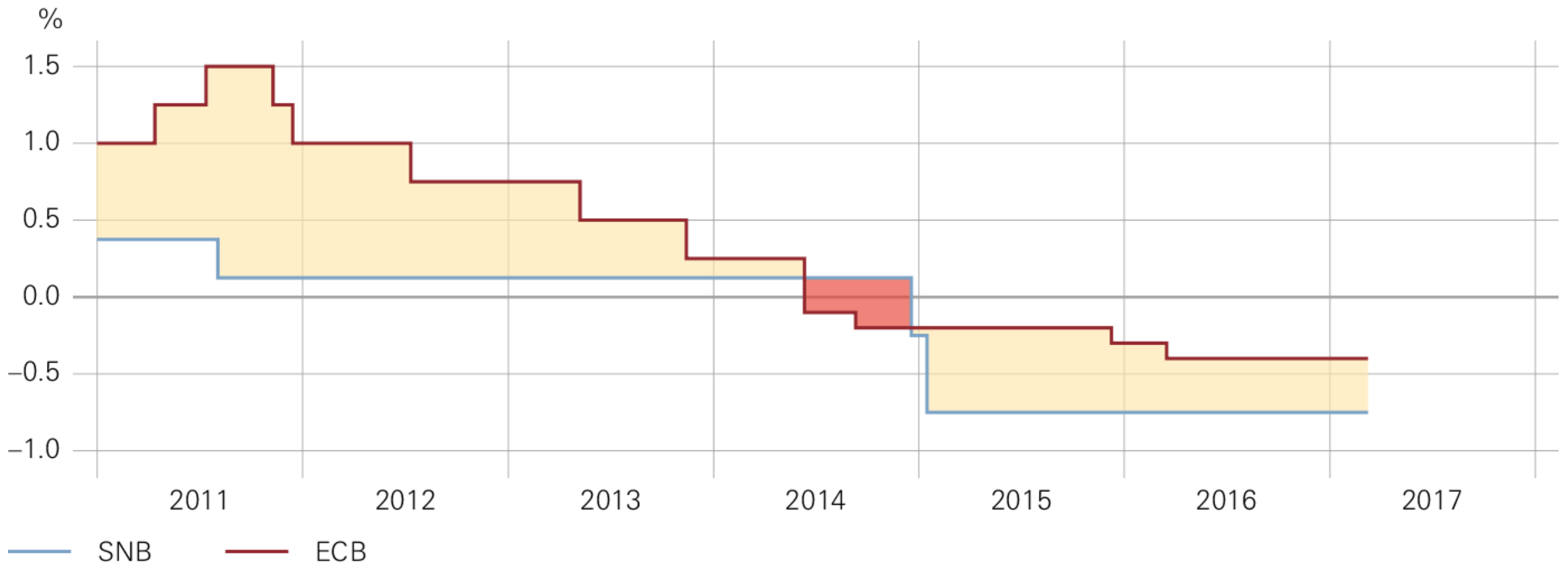
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# Negative interest has partially restored original interest rate differential with other currencies

## POLICY RATES

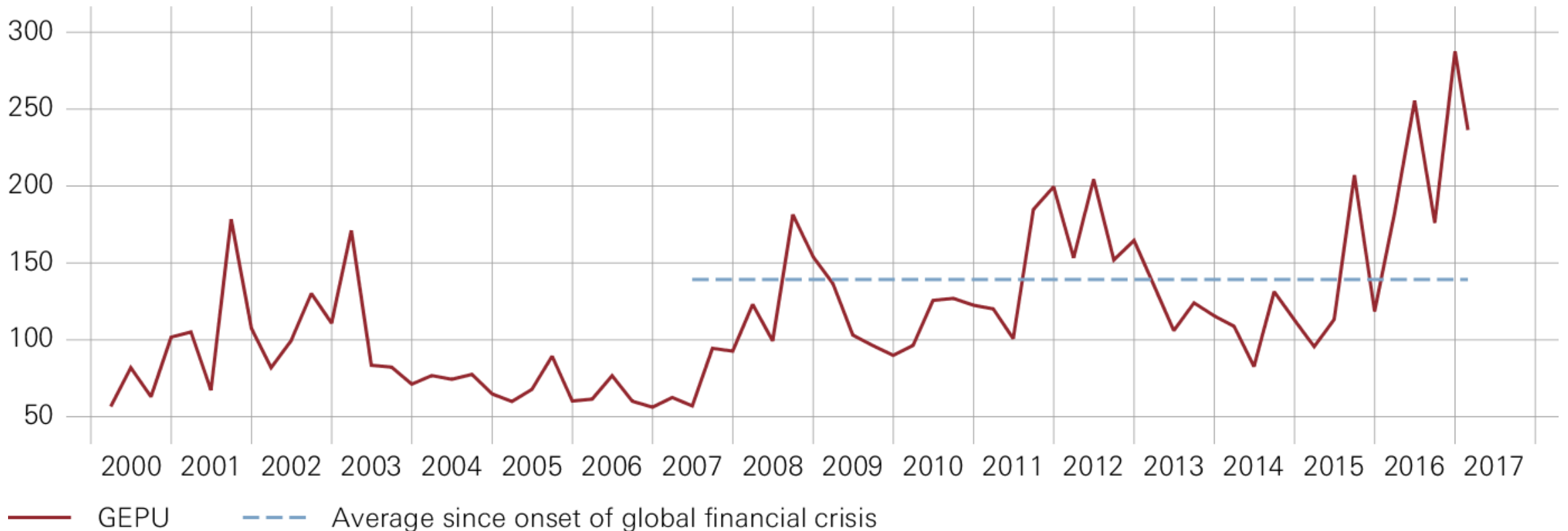


Sources: Bloomberg, SNB

# Economic policy uncertainty increased substantially in 2016

## GLOBAL ECONOMIC POLICY UNCERTAINTY INDEX (GEPU)

Index; long-term average = 100

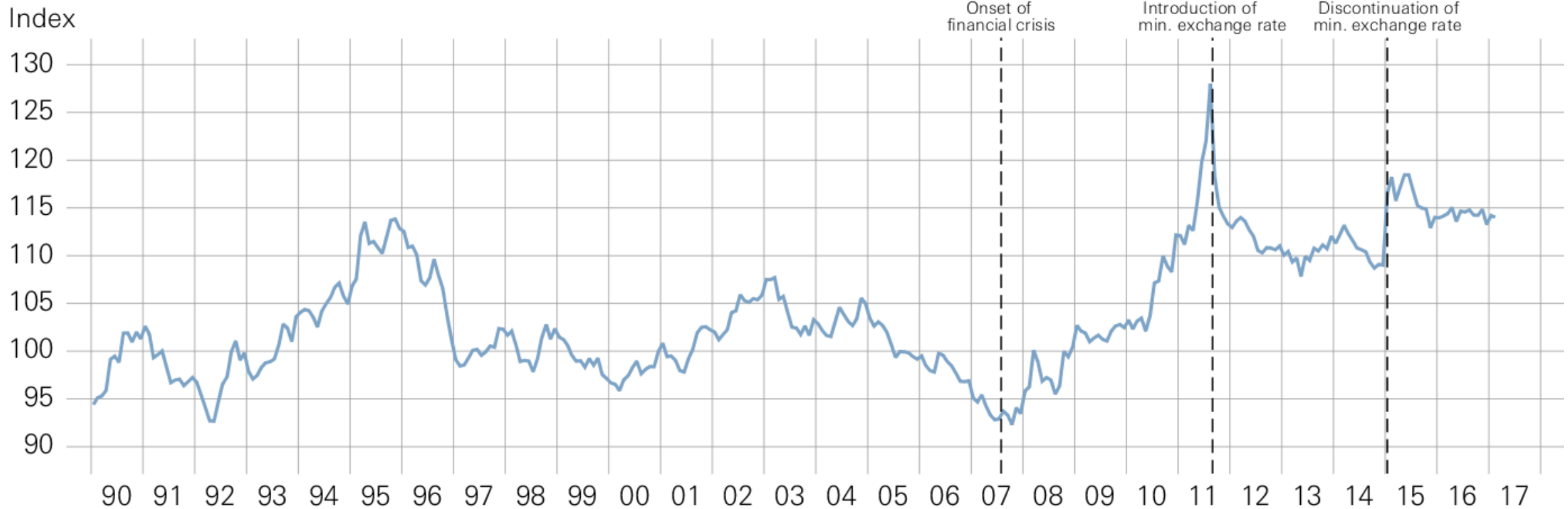


Sources: Bloomberg, policyuncertainty.com, SNB

# Swiss franc still significantly overvalued

## CHF REAL EFFECTIVE EXCHANGE RATE

Real index, CPI-based (December 2000 = 100)

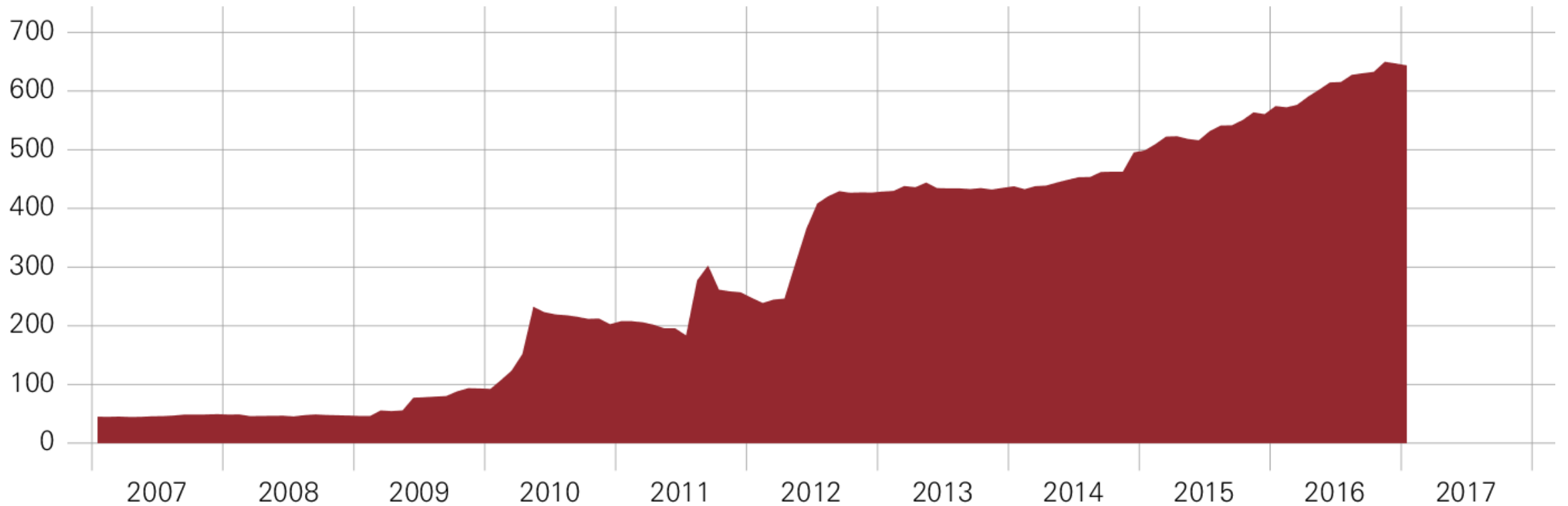


Source: SNB

# Growth in foreign exchange reserves is a result of monetary policy

## FOREIGN EXCHANGE RESERVES

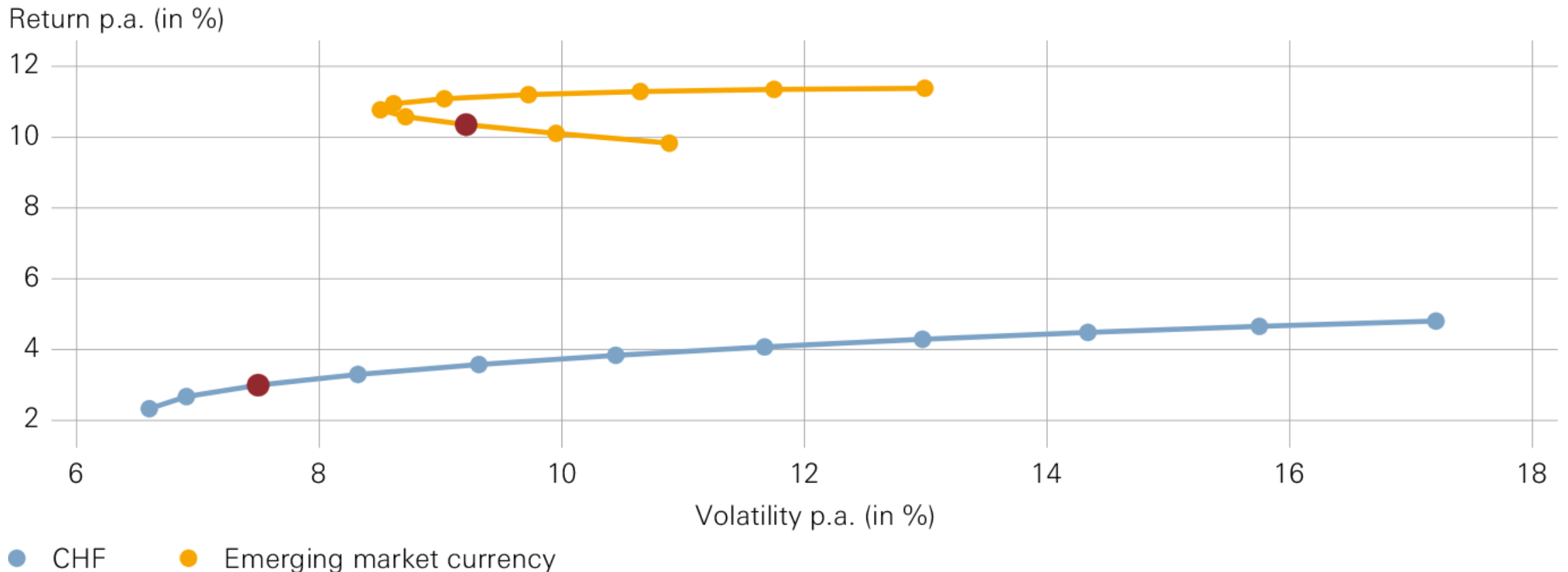
CHF bn



Source: SNB

# Particular impact of reporting in Swiss francs: smaller diversification effect of equities and low returns

## HISTORICAL AVERAGE RETURN AND VOLATILITY (MONTHLY DATA SINCE 1998)

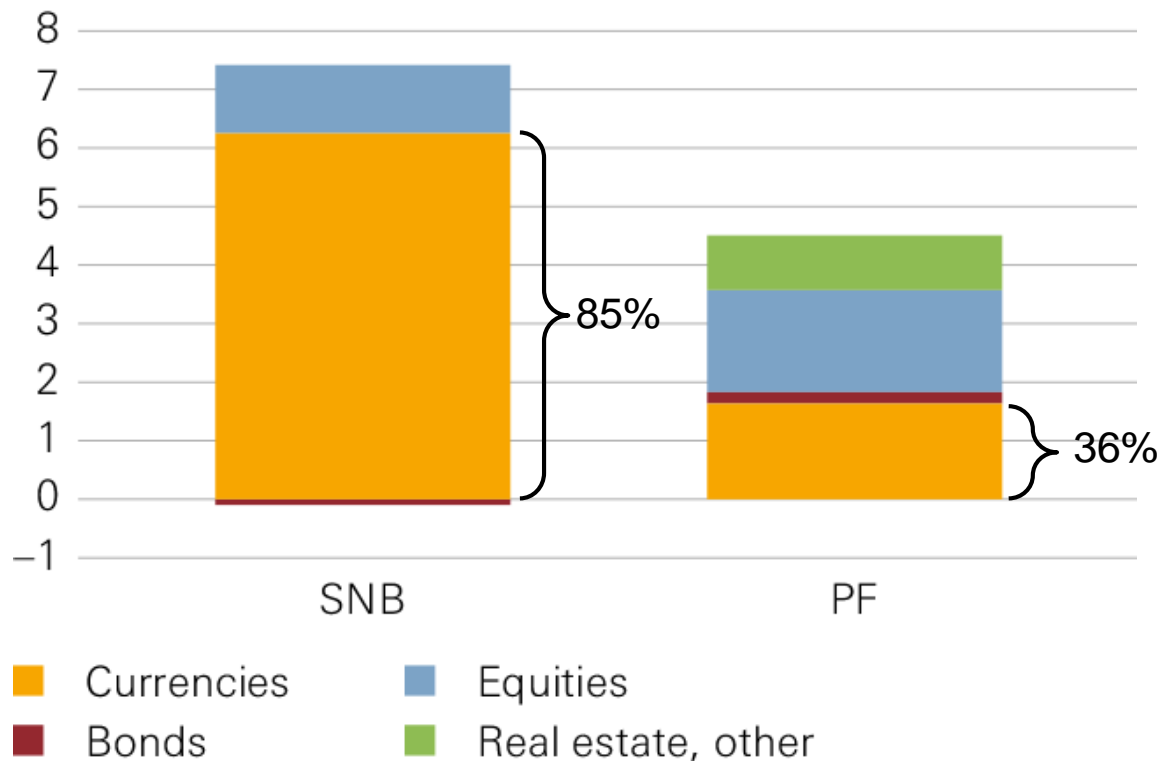


Sources: Datastream, SNB

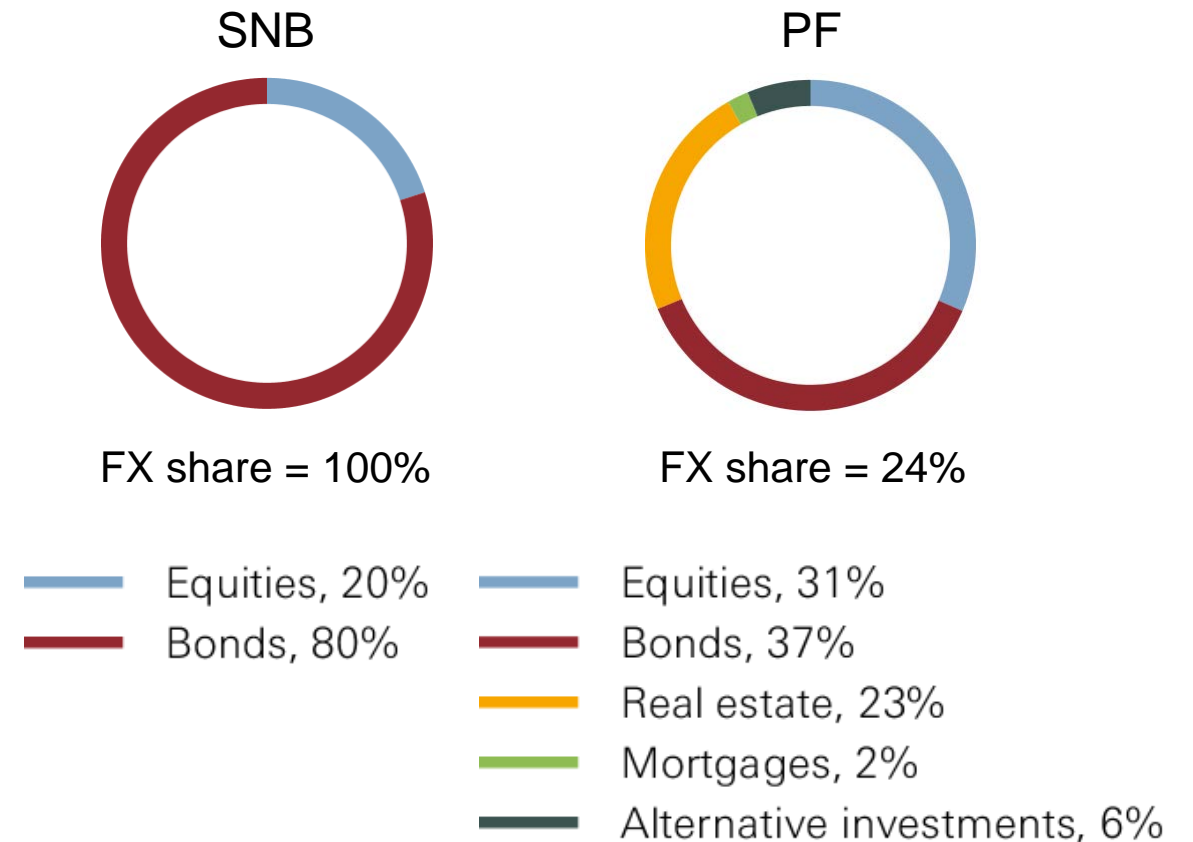
# Particular impact of not hedging currency risks: FX risks dominate

## RISK DECOMPOSITION

Volatility p.a. (in %)



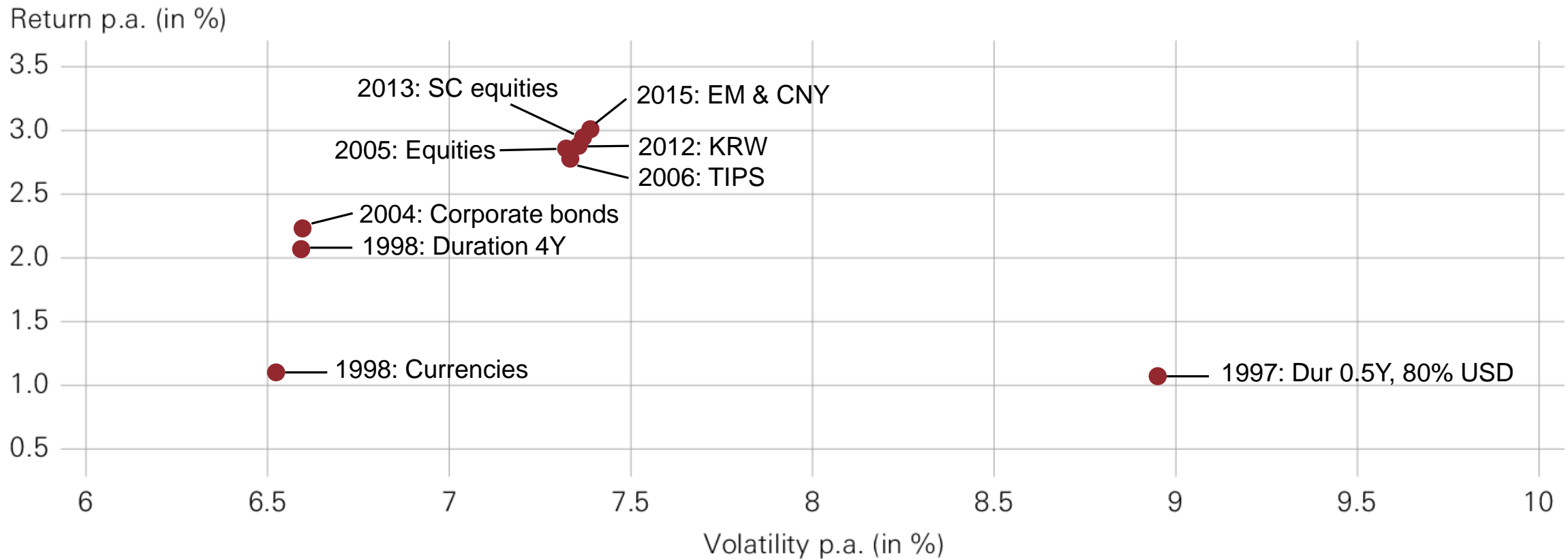
## PORTFOLIO ALLOCATION



Sources: CS Pension Fund Index Q4 2016, Datastream, SNB

# Continuous optimisation of risk/return profile over last 20 years

## HISTORICAL AVERAGE RETURN AND VOLATILITY (MONTHLY DATA SINCE 1998)

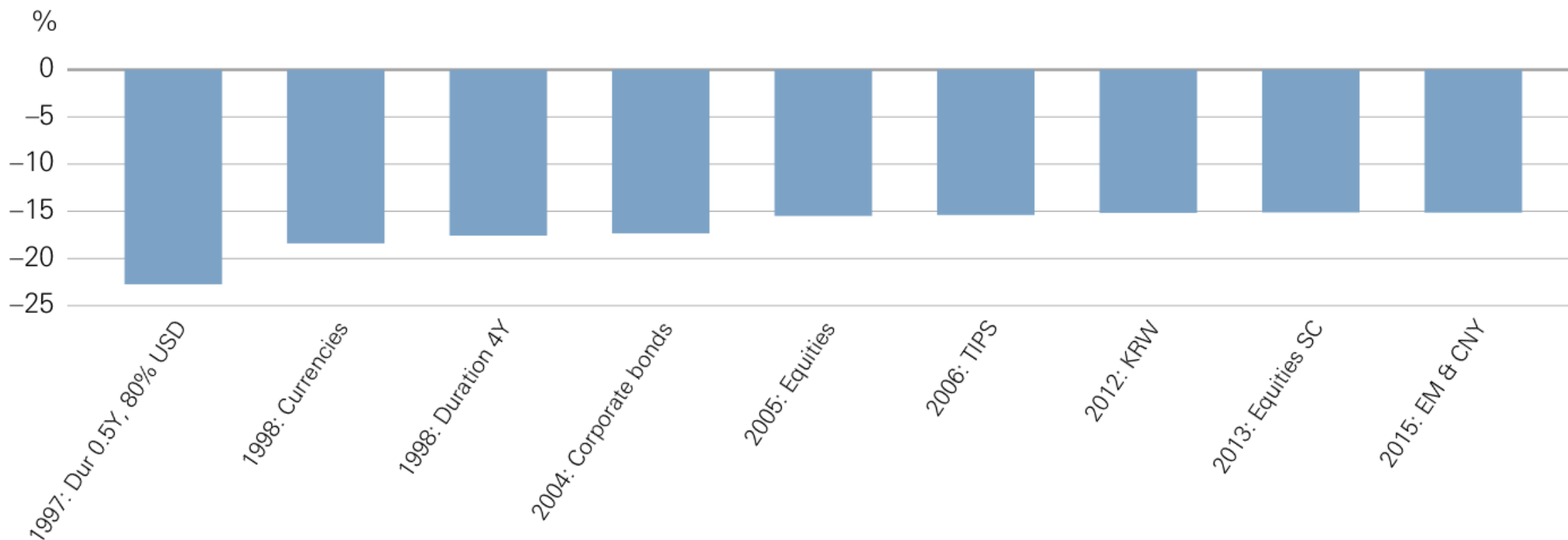


Sources: Datastream, SNB



# Diversification has proved its worth

## MAXIMUM 12-MONTH LOSS (MONTHLY DATA SINCE 1998)



Sources: Datastream, SNB

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# Thank you for your attention

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