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Speech

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Monetary policy using negative interest rates: a status report

Vereinigung Basler Ökonomen

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Ladies and gentlemen

In January 2015, the Swiss National Bank discontinued the minimum interest rate against the euro, and at the same time lowered the interest rate on banks' sight deposits held at the SNB to –0.75%. Today – almost two years later – not only short-term interest rates, but yields on 10-year and even longer-dated Confederation bonds, are negative. Some corporate bonds in Swiss francs are now also negative yielding.

Many people consider negative interest rates to be unnatural. Paying interest on credit balances seems to violate the logic and laws of economics. Savers worry about their capital, banks about their profitability and pension funds about meeting their obligations. There are also doubts about whether the SNB's negative interest rate policy is having the desired effect. Negative interest rates are certainly unusual. They are uncharted territory and represent a major challenge for many players in the economy, particularly investors.

The SNB takes these concerns very seriously. In my speech today, I would like to explain our negative interest rate policy. I will start by clarifying that there are two reasons for the low or even negative interest rates in many countries. First, the global equilibrium interest rate has fallen over recent decades. Second, since the financial crisis, monetary policy worldwide has been expansionary as a result of low inflation and weak economic recovery.

For Switzerland, a country with generally low interest rates, these two factors – a long-term decline in the equilibrium interest rate and expansionary monetary policies around the world – have made the negative interest rate necessary in order to ensure appropriate monetary conditions. As a small open economy, we cannot decouple ourselves from a global environment of low interest rates.

In the second part of my speech I will look at whether the negative interest rate policy is fundamentally effective. As this status report will show, the laws of economics do not change significantly when interest rates turn negative. As far as the mechanism of monetary policy is concerned, there is therefore no reason why the policy rate should not be reduced below the zero lower bound in the case of a country like Switzerland. On the contrary: without negative interest rates, the Swiss franc would have appreciated even more strongly, growth would have collapsed, accompanied by even lower inflation, and unemployment would have risen.

Nevertheless, phases of low or negative interest rates also present monetary policy challenges and have economic side-effects, which must not be ignored and which I would like to address in the third part of my speech. I will stress that expansionary monetary policy is no panacea for growth in advanced economies. Only structural reforms and adjustments in the real economy can create the conditions for a sustained recovery – and thus for a normalisation of monetary policy. Expansionary monetary policy can make these necessary adjustments easier, but it cannot replace them and must not delay them.

Before talking about the mechanism of negative interest rates in Switzerland, I would first like to examine the international environment and explain why global interest rates today are so low.

Low rates as a global phenomenon

The current very low interest rate level is the result of a global secular trend. Interest rates have not just been declining since the outbreak of the financial crisis, they have been falling steadily in recent decades. Chart 1 shows that nominal yields on government bonds with a remaining maturity of ten years in Switzerland, Germany and the US are more than 6 percentage points lower today than they were back in 1990.

Nominal interest rates are currently at a record low worldwide. But it is important to distinguish between nominal interest rates and real interest rates, which are ultimately relevant for most economic decisions. I should perhaps mention here for the sake of completeness that, put simply, real interest rates are nominal interest rates less inflation.[1] Chart 2 shows long-term real interest rates in Switzerland, Germany and the US, calculated as the difference between the nominal yield on 10-year government bonds and the observed inflation rate. I should emphasise two points: First, while real interest rates in Switzerland are currently negative, a historical comparison shows that this is by no means a new phenomenon. For example, real interest rates in Switzerland were also negative in the 1990s. Second, real interest rates have fallen on a global basis over the last 20 years.

I shall now turn to an economic concept that plays a key role in the current monetary policy debate, namely the equilibrium real interest rate. The equilibrium real interest rate is not directly observable and is determined by fundamentals such as time preferences and the age structure of a society, which define the supply of savings and the demand for investment. The SNB controls a short-term nominal interest rate. By contrast, it has only an indirect and temporary influence on long-term real interest rates, which drive investment decisions. Long-term real interest rates are primarily determined by saving and investment decisions and hence by market forces.

If the central bank wishes to stimulate the economy and increase inflation, it cuts the policy rate. Since inflation does not react immediately, real interest rates temporarily fall below the equilibrium rate. This leads – again temporarily – to higher growth and more inflation. If, on the other hand, the central bank wishes to curb inflation, it increases its policy rate. I deliberately used the word ‘temporarily’ because if monetary policy were to target real interest rates below the equilibrium rate on a sustained basis, inflation would go on rising but this policy would not result in higher real growth in the long term. On the contrary, uncertainty about the path of inflation would reduce growth potential. This is one of the reasons why central banks are tasked with ensuring price stability. For this mandate to be fulfilled, the policy rate must be set such that, at the desired inflation rate, the real interest rate corresponds with the equilibrium rate in the medium term.

It is likely that the real equilibrium interest rate is lower today than in the past. The case for this hypothesis is supported by the fact that real interest rates have been falling globally for a

[1] In fact, there are several possible definitions. The ‘ex ante’ real interest rate is the nominal interest rate less expected inflation. The ‘ex post’ real interest rate is the nominal interest rate less the effective inflation rate.

considerable time because, it is argued, people are investing less and simultaneously displaying a greater propensity to save. The propensity to save is increasing due to population ageing. This demographic trend can be measured using the old age dependency ratio, which measures the ratio of people over 64 to the working age population. An ‘older’ population has a higher old age dependency ratio. Chart 3 shows that the old age dependency ratio in Switzerland, as in many other countries, is rising. Pensioners live off their savings. And an ageing population needs to save more today in order to be able to finance a specific level of consumption in the future. Another cause of the increased supply of savings is the integration of China into global financial markets. Savings in China are high as a result of its ageing society and its rudimentary state pension system. In the current economic situation, uncertainty regarding the future development of the economy in certain parts of the world may also have pushed up the supply of savings.

While the propensity to save has increased, the willingness to invest may also have fallen. On the one hand, this may once again reflect heightened uncertainty over future economic conditions. On the other, expectations of lower productivity growth might also be playing a role. Furthermore, industrial economies are being transformed into service economies, with potentially lower capital needs.

All these factors have resulted in a relatively low real equilibrium interest rate today – across the world, and thus also in Switzerland. Moreover, global monetary policy is expansionary due to undesirably low inflation and subdued economic growth in the wake of the financial crisis. The long-term downward trend in interest rates globally and expansionary monetary policy occasioned by cyclical factors have therefore combined to produce historically low interest rates.

Transmission channels of negative interest rates in Switzerland

Irrespective of the equilibrium rate, questions arise regarding the transmission mechanism of monetary policy below the zero lower bound. Specifically, how does monetary policy using negative interest rates effect a rise in inflation?

As you will probably remember from your student days, monetary policy usually operates through a variety of transmission channels. For a small open economy like Switzerland, the exchange rate channel is the most important. Lower interest rates, other things being equal, make the Swiss franc less attractive as an investment currency. The franc loses value, which makes Swiss goods cheaper abroad, and leads to a rise in net exports. This in turn raises GDP and inflation in Switzerland. Depreciation of the Swiss franc also has a direct impact on inflation because import prices rise.

A reduction in interest rates also operates via the credit channel. Put simply, if the SNB reduces the short-term interest rate, longer-term market rates also fall. Loans become cheaper and this stimulates consumption and investment. These factors boost the economy and inflation rises.

Is the negative interest rate in Switzerland having the anticipated effect? Let me first look at transmission via the exchange rate channel. Historically, Switzerland has always had lower interest rates than most other countries, particularly euro area countries. The interest rate differential reflects not only lower average inflation in Switzerland compared to other countries, but also the country's political stability and credible monetary policy. Investors are prepared to hold Swiss franc investments at lower yields. Chart 4 plots policy rates in Switzerland and in the euro area. Since the outbreak of the financial crisis, the interest rate differential has become ever narrower. When the negative interest rate was introduced in the euro area in June 2014, the interest rate differential even turned negative.

Every subsequent monetary easing measure by the ECB added to the pressure on the Swiss franc, which at the time was subject to the minimum interest rate against the euro. Chart 5 shows the exchange rate of the euro against the Swiss franc (blue curve) and against the US dollar (red curve). In the second half of 2014, the value of the euro fell sharply against all major currencies. This meant that the minimum exchange rate was no longer sustainable. The volume of interventions that would have been required to defend the minimum exchange rate, even just temporarily, threatened to spiral out of control. This is why we adjusted our monetary policy in January 2015. The discontinuation of the minimum exchange rate caused the Swiss franc to appreciate, by an amount roughly equal to the gain in value that most other currencies had experienced against the euro in the preceding months.

Our monetary policy since then has been based on two elements: the negative interest rate of –0.75% on banks' sight deposits held at the SNB and our willingness to intervene in the foreign exchange market, as necessary. The negative interest rate in Switzerland has at least partially restored the original interest rate differential and thus reduced pressure on the Swiss franc. As Chart 6 shows, the real external value of the Swiss franc has been on a gradual downward trajectory since mid-2015. Even in times of increased market volatility, as in the aftermath of the British EU referendum in June this year, the Swiss franc has remained broadly stable against the euro and the US dollar. Without negative interest and our willingness to intervene, the Swiss franc would have appreciated, growth would have slowed, and inflation would have fallen further.

The impact of negative interest rates on the exchange rate is crucial for us because Switzerland is a small open economy and foreign trade is a very important factor in our economic performance. In 2015, exports contributed over 50% to GDP, while imports accounted for about 40%. Movements in the Swiss franc therefore have a big impact on domestic economic developments. The Swiss franc is still significantly overvalued and this represents a major challenge for many sectors. Imported goods and services also have a high weighting in the Swiss consumer price index basket. The appreciation of the Swiss franc since the financial crisis was therefore also directly reflected in the inflation rate. This has generally been negative over the last five years, as you can see in chart 7. The biggest contribution to low inflation, the red bars in the chart, comes from imported goods. Also, the fall in oil prices, the yellow bars, has contributed to low inflation. Thanks to the stabilisation of both the

exchange rate and oil prices, inflation has been climbing since the end of 2015, and we forecast that it should re-enter positive territory in the coming quarters.

Now let me turn to the credit channel. In a functioning transmission mechanism, you would expect to see a lower general interest rate level and rising credit volumes following an interest rate cut by the central bank. Did interest rates in Switzerland fall after the introduction of negative interest? And how have credit volumes and bond issuance changed?

Since the reduction in interest on banks' sight deposits held at the SNB to –0.75% in January 2015, yields on long-term Confederation bonds have fallen by more than half a percentage point, as chart 8 shows.[2] Interest rates on corporate bonds, the red curve in the chart, have also declined sharply. The financing costs of bond-issuing companies have thus fallen. The situation regarding interest rates for bank loans is rather different. As you can see in chart 9, initially they did not fall; indeed, they rose slightly. This seems surprising at first glance but is attributable to the fact that banks tried to offset a further decline in their interest margin with increased income from credit business.

Meanwhile, interest rates on mortgage loans are also lower than before the introduction of negative interest. Thus, we can conclude that taking a policy rate into negative territory has a similar effect, in terms of transmission to other interest rates, to cutting a policy rate in positive territory.

Although interest rates have fallen, no significant increase in credit growth has been observed over the last two years. The volume of bank loans to businesses and households has risen further, as you can see in chart 10, but credit growth has weakened. This slowdown in growth is particularly evident among loans to private, non-financial corporations. However, the picture is different for companies that are able to finance themselves via the capital market, as chart 11 shows. Domestic non-financial corporations have exploited the low capital market interest rates and issued more bonds since the introduction of the negative interest rate.

As a preliminary conclusion, we may state that the negative interest rate in Switzerland principally operates via the exchange rate channel. Together with our willingness to intervene in the foreign exchange markets, it has helped to ensure that the Swiss franc has not strengthened further despite heightened uncertainty, for example in the wake of the British EU referendum. Moreover, yields on government and corporate bonds have declined since the negative interest rate was introduced, as did mortgage rates, albeit to a lesser extent. Overall, financing costs for households and businesses are lower today than they were before the introduction of negative interest. Along with the rise in the volume of bonds issued, this is evidence that negative interest is also having some impact via the credit channel, even though growth in bank lending has not risen as would normally be expected.

[2] On 18 December 2014, the SNB decided to charge interest of –0.25% on sight deposits held by banks and other financial market participants at the SNB. With the discontinuation of the minimum exchange rate, the interest charge was lowered further to –0.75%.

Challenges posed by low interest rates

In Switzerland, therefore, negative interest rates have had the desired effect. Yet low interest rates also present a number of challenges and potential side-effects, which I would like to look at now.

One challenge is communication. At first glance, imposing a charge on deposits appears to turn the logic and laws of economics on their head. It seems unnatural to pay interest on deposits. Consequently, clear communication of monetary policy is especially important right now. In the earlier part of my presentation, I demonstrated that negative interest rates in Switzerland are the result of a decline in the equilibrium interest rate and the SNB's expansionary monetary policy – a policy rendered necessary by global conditions.

Negative interest also puts a strain directly on banks, and indirectly on pension funds and life insurance companies, which worry about their profitability and about meeting their obligations. As I have mentioned, the SNB takes these concerns very seriously. Yet the challenges now facing pension funds are not caused first and foremost by monetary policy. Rather, their problems stem from the fact that pension funds have to achieve returns that are nominally fixed and were set when the equilibrium interest rate was higher.

For banks, the negative interest rate undoubtedly represents a cost because they have to pay interest on their deposits at the SNB. However, the SNB grants a generous exemption threshold, which reduces the effective interest rate burden for the banking sector. These exemption thresholds give banks the freedom to decide whether – and to what extent – they should pass on negative interest to their customers.

From a financial stability perspective, it is not negative interest per se which poses a challenge, but rather the low level of interest rates more generally. It is conceivable that low interest rates will lead investors to take greater risks. This can result in imbalances developing on the real estate and mortgage markets. In Switzerland, a variety of measures have been implemented since 2012 – the countercyclical capital buffer for instance – with the aim of reducing the associated financial stability repercussions. Since then, the pace of growth on the real estate and mortgage markets has slackened somewhat, although mortgages continue to grow faster than GDP. The SNB therefore monitors the situation on these two markets continuously.

An environment of low interest rates also brings fundamental monetary policy challenges. One of these arises from the fact that it is possible to hold money in the form of cash. I have shown that the SNB's negative interest rate is an effective monetary policy tool. But how far can nominal interest rates actually fall? If the interest rate level declines further, at some point cash will become more attractive than sight deposits bearing negative interest. As the SNB has no intention of doing away with cash, this results in an effective lower bound for interest rates, which limits the scope for monetary policy action. This lower bound is below zero, because holding cash is expensive and risky. Thus, people are prepared to pay a certain amount to hold their money electronically. In Switzerland, the cost associated with the current

negative interest rate is clearly lower than the cost of holding cash. Consequently, demand for cash has not yet risen substantially. So the effective lower bound for interest rates has not yet been reached, but we know that it exists.

Another monetary policy challenge is the fact that the expansionary effects of low interest rates on consumption and investment can fade over time. As I have noted, following the introduction of negative interest, some banks increased their lending rates in order to offset falling interest margins. The longer the low interest rate environment persists, the greater the risk that distortions in the banking system will arise, hampering the transmission of the negative interest rate via the credit channel. In addition, low interest rates on savings deposits at banks, coupled with concerns over future pension payments, could induce households to save more in order to achieve a specific savings goal. As a result, consumption falls instead of rising, as one might normally expect in an environment of low interest rates. At the same time, the increase in savings causes the interest rate level to decline further. This effect is reinforced if households assume an increasingly long phase of low interest rates.

Despite these monetary policy challenges and potential side-effects, in Switzerland the negative interest rate is currently indispensable, owing to the overvaluation of the Swiss franc and the globally low level of interest rates. Nonetheless, the challenges and side-effects show clearly that we must aim for a normalisation of monetary policy over time. The question is, how can such a normalisation be effected?

Current monetary policy in an international context

To answer this question, I would like to place current monetary policy in an international context.

In addition to the SNB, virtually all major central banks are currently pursuing a monetary policy of low or negative interest rates. By dint of bold and decisive policies, central banks have managed to prevent the global financial crisis from turning into a second Great Depression. Yet, despite highly expansionary monetary policies around the world, many large advanced economies have not recovered as strongly as hoped. In Switzerland, the recovery has been relatively robust by international standards. Yet inflation in our country, as in many other countries, is still lower than we would like. So the past few years have shown clearly that an expansionary monetary policy is not a panacea for catalysing growth in the major advanced economies. Expansionary monetary policy is no substitute for necessary structural measures and it must not delay them.

Monetary policy influences the economy’s growth potential only insofar as price stability reduces uncertainty. Beyond this, it has no effect on economic growth in the longer term. For this reason, longer-term growth prospects can only be improved through structural measures. For instance, the promotion of education, research and development can increase productivity growth. Good economic conditions support growth: if entrenched labour market structures are dismantled, competition is encouraged, and contracts are reliably enforced, the economy

becomes more efficient. A pension system that is sustainable in the long term can allay people's fears about an uncertain income in their old age, and thereby avoid an excessive propensity to save.

If such reforms in the major world economies are successful in positively influencing expectations about future income and returns, then global demand for consumption and investment could rise today. In this way, structural reforms in the major economies can also contribute to a normalisation of the interest rate level and monetary policy worldwide – including in small open economies. In principle, structural measures that result in higher productivity growth, a lower propensity to save and a greater willingness to invest will increase the equilibrium interest rate. Absent a change in monetary policy, such an increase means that monetary conditions will become more expansionary. This would further encourage economic recovery and facilitate the implementation of these structural measures. The central banks could then gradually raise policy rates again, and the undesirable side-effects of low or negative interest rates would be contained.

Conclusion

To conclude, let me sum up my remarks in five core messages.

First, the low level of interest rates is a global, secular phenomenon. Real interest rates have fallen worldwide, and have been doing so steadily for the last 20 years. This suggests that the equilibrium real interest rate has declined. Underlying this are demographic trends and altered behaviour on the part of consumers and companies, which have resulted in a higher supply of savings and lower investment demand.

Second, although negative nominal rates are often perceived as unnatural, the laws of economics are not inverted once the zero lower bound is breached. In principle, taking a policy rate into negative territory has a similar effect to cutting a policy rate in positive territory. In Switzerland, the negative interest rate has its main impact via the exchange rate channel. Together with the SNB's willingness to intervene on the foreign exchange market as necessary, the negative interest rate policy has prevented further Swiss franc appreciation and has generally helped to reduce pressure on the currency.

Third, in an environment of low interest rates worldwide, the negative interest rate is necessary and appropriate for Switzerland. As a small open economy, Switzerland cannot decouple itself from the global low interest rate situation. What would have happened if the SNB had not introduced negative interest? The Swiss franc would have appreciated even more strongly, there would have been a slowdown in growth accompanied by even lower inflation, and unemployment would have risen.

Fourth, a phase of low interest rates, especially a prolonged one, can have undesirable side-effects, including the possibility of cash hoarding, which limits the scope for monetary policy action. There can also be undesirable consequences for financial stability, which should not be

underestimated. These challenges and side-effects will amplify, the longer interest rates remain low.

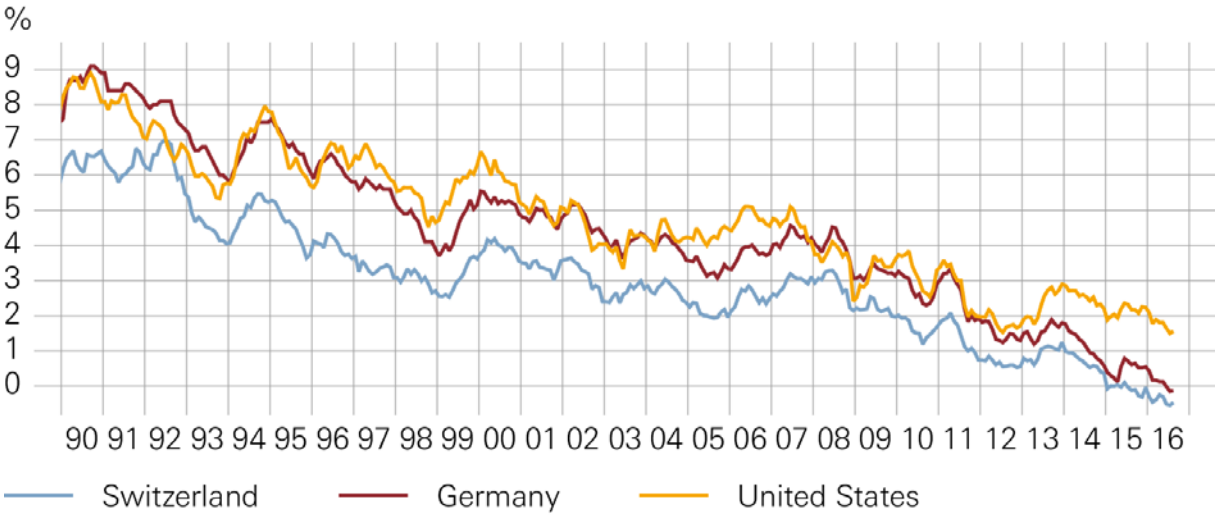
Fifth, against this backdrop I would like to emphasise that negative interest, or expansionary monetary policy in general, is no panacea. For a sustained economic recovery, adjustments in the real economy are necessary. Structural measures in the major economies can create the conditions for equilibrium interest rates worldwide to rise once more. This would also allow central banks to embark on a gradual process of normalisation, and the potential adverse effects of persistently low interest rates would be contained.

Thank you for your attention.

Chart 1

NOMINAL INTEREST RATES

10-year government bond yields

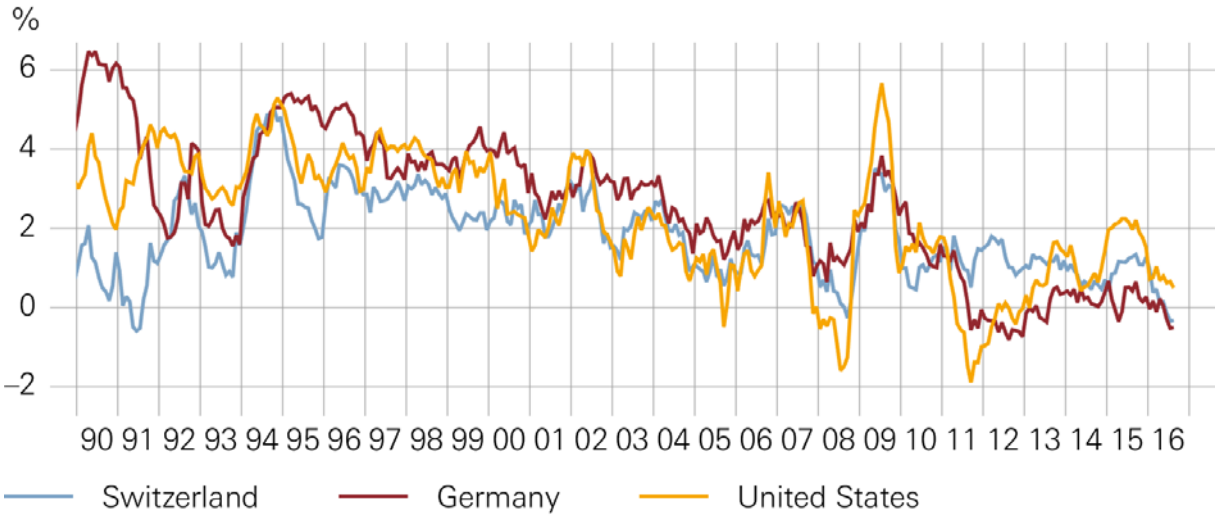


Source: OECD

Chart 2

REAL INTEREST RATES

10-year government bond yields less inflation

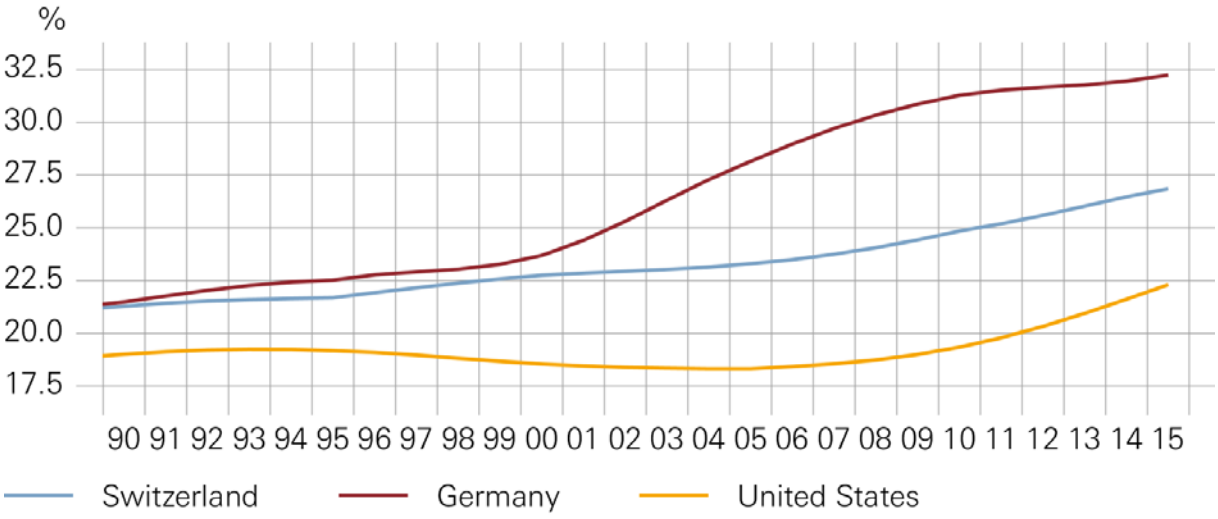


Source: OECD

Chart 3

OLD AGE DEPENDENCY RATIO

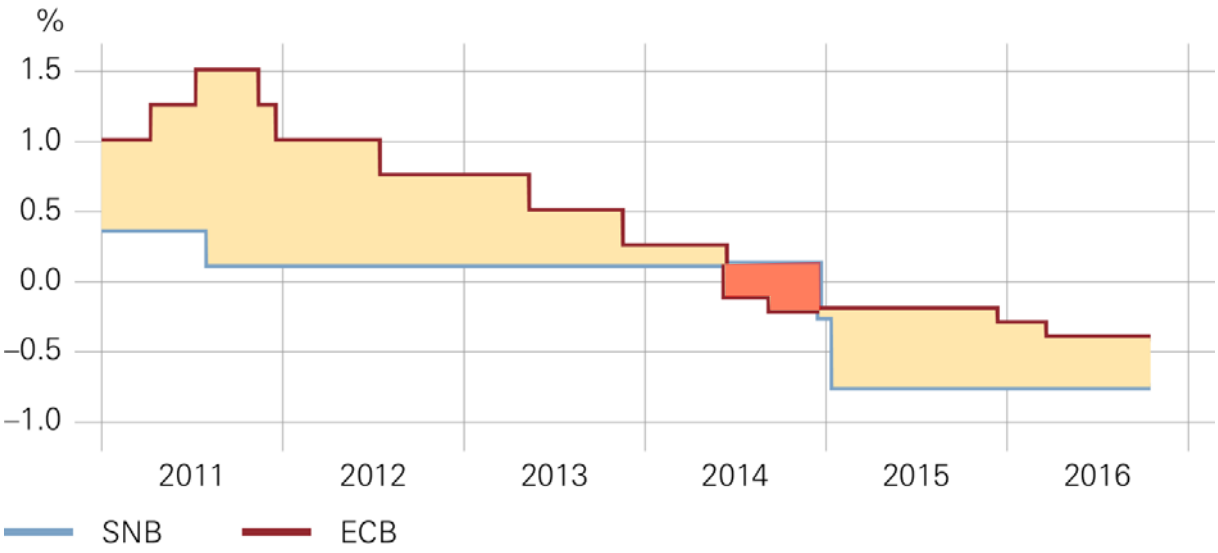
Ratio of people over 64 to the working age population (15-64 years old)



Source: World Bank WDI

Chart 4

POLICY RATES



Sources: Bloomberg, SNB

Chart 5

NOMINAL EXCHANGE RATES

CHF and USD per EUR

Sources: BIS, SNB

Chart 6

CHF REAL EFFECTIVE EXCHANGE RATE

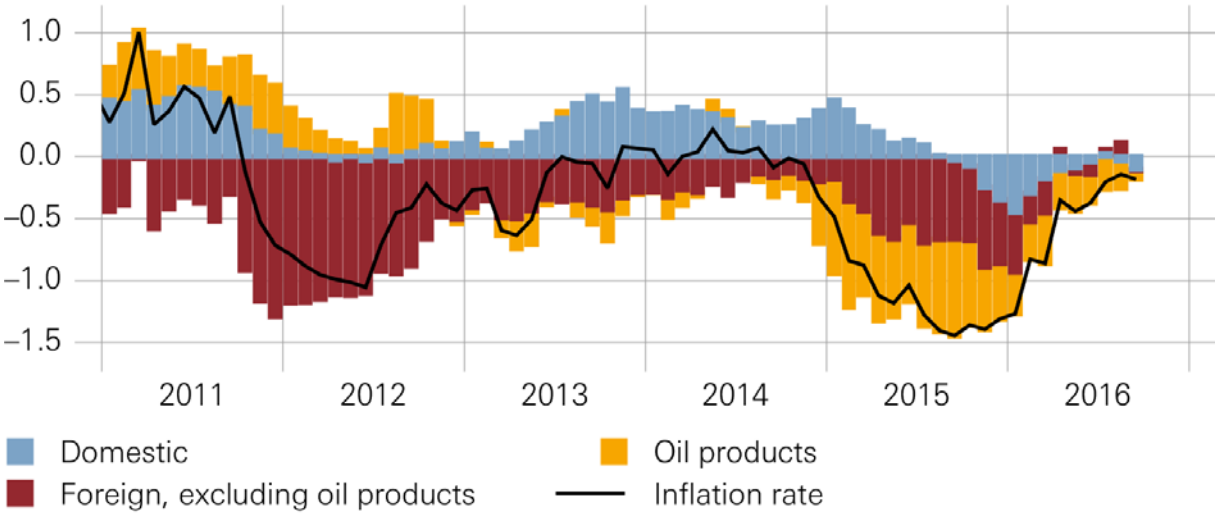
Export-weighted

Source: SNB

Chart 7

INFLATION AND COMPONENTS

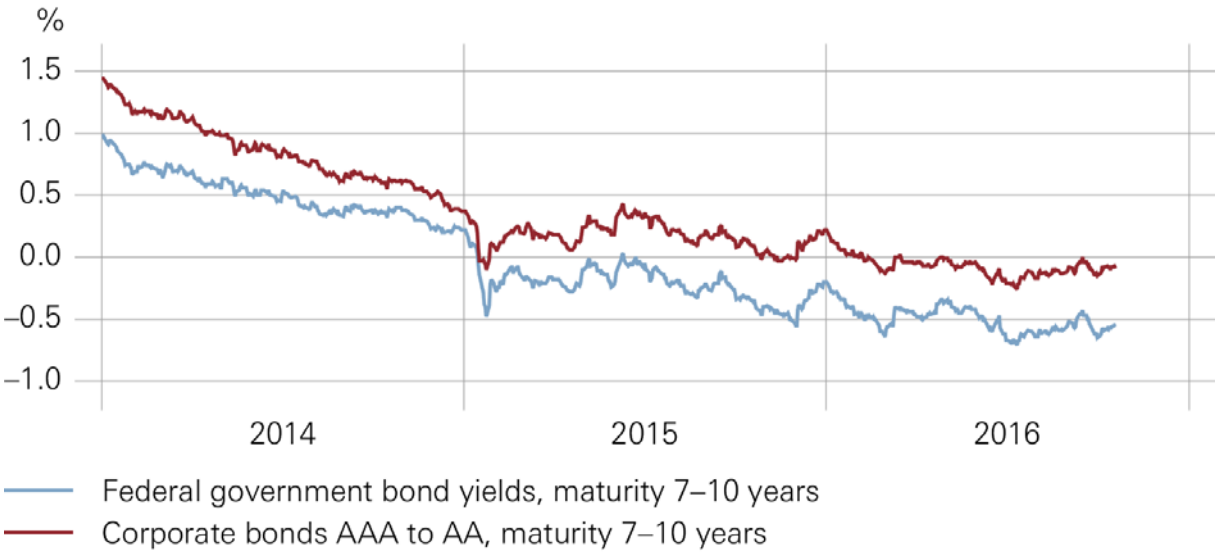
%, contribution of components in percentage points



Sources: SFSO, SNB

Chart 8

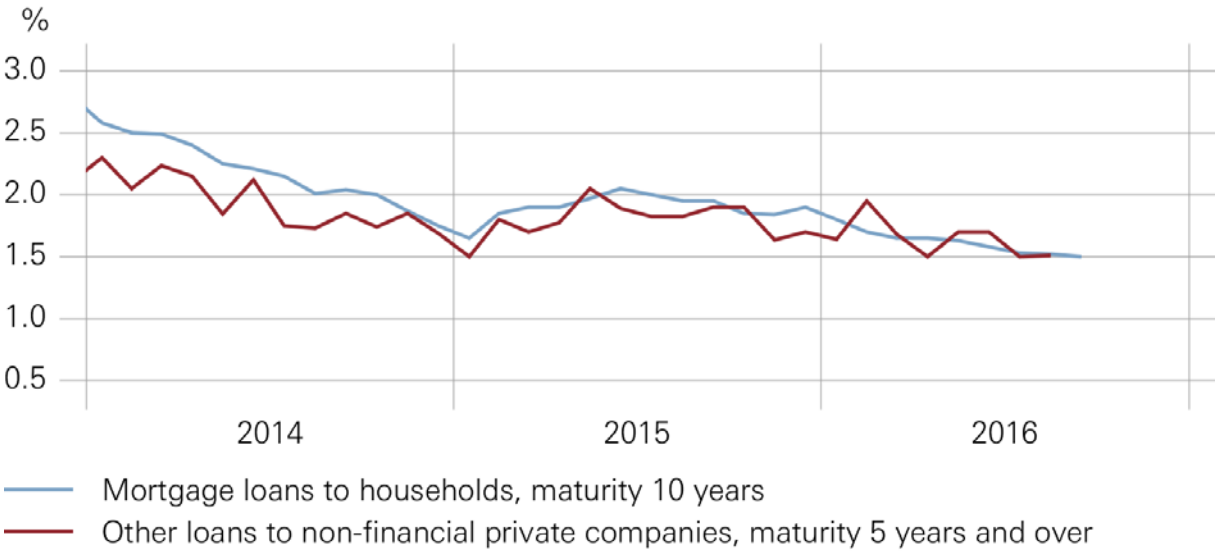
GOVERNMENT AND CORPORATE BOND YIELDS



Source: Thomson Reuters Datastream

Chart 9

CREDIT INTEREST RATES

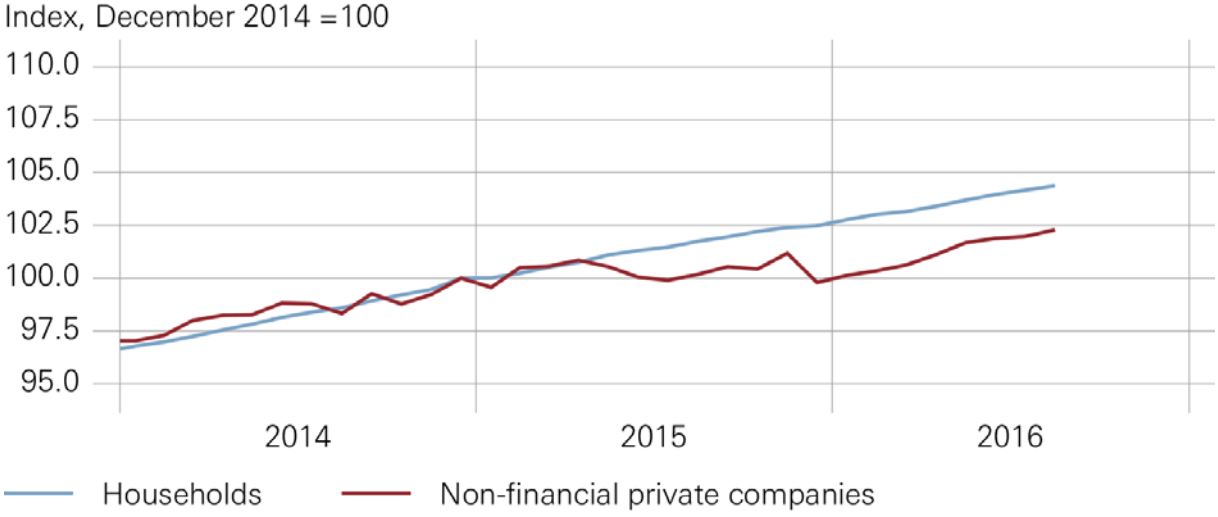


Source: Bloomberg, SNB

Chart 10

CREDIT VOLUMES ACROSS SECTORS

Mortgages and other loans

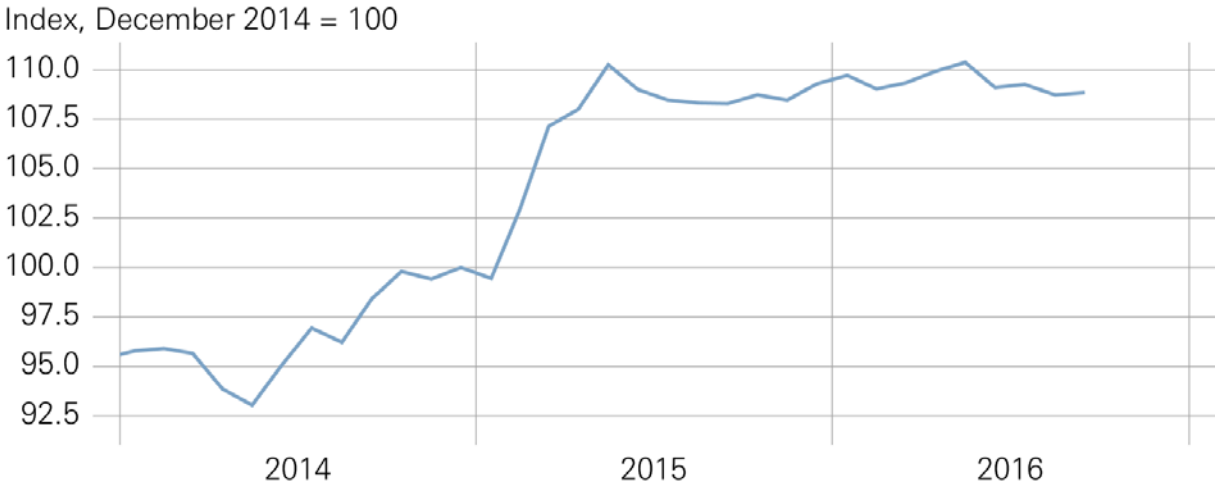


Source: SNB

Chart 11

CHF BONDS ISSUED BY NON-FINANCIAL COMPANIES

Market capitalisation, par values



Source: SIX