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**Credit, debt and growth**

Collegium generale, University of Berne

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Swiss National Bank

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Ladies and Gentlemen

Returning to one's alma mater is always a special occasion. It was 28 years ago that I completed my doctorate here at the University of Berne. Since then, my professional career has taken me to a variety of places, but there has always been one topic accompanying me on the way: the topic of debt. In my first job at the Federal Finance Administration at the end of the 1980s, I was charged with analysing the Latin American debt crisis. Then, at the end of the 1990s, working for the International Monetary Fund (IMF) in Washington D.C., the emphasis was on resolving the debt crisis in Asia. Back in Switzerland, my efforts went into implementing the debt brake at federal level. And even switching to the Swiss National Bank (SNB) in 2012 was no escape. The European debt crisis had a major impact on the Swiss franc exchange rate and on our monetary policy. In addition, we at the SNB are very carefully monitoring the risk to financial stability inherent in the rise of mortgage debt in Switzerland.

As you can see, the topic of the Collegium generale's lecture series has played a major role throughout my career. I was therefore very pleased to be invited to deliver a speech today on credit and debt. I'm deliberately using these terms in conjunction here. Because ultimately they refer to the same thing. They describe an agreement between two parties. One party, the creditor or lender, entrusts money or other goods to the second, the debtor or borrower, who promises to return the money or goods at a later stage. The borrower's financial debt represents an asset of the lender's.

And yet, although the terms refer to the same concept, the associations they generate go in opposite directions. In common speech, the word *debt* usually has a negative connotation. Debt sounds like something to be avoided. Whereas the word *credit* gives rise to positive associations. Credit opens up new possibilities and is a bedrock of growth.

The different way in which the two terms are perceived is also reflected in their etymology (cf. slide 2). *Debt* comes from the Latin *debitum*, from the verb *debere*, which means to owe something, or to have an obligation. The word thus has a moral overtone. *Credit* for its part goes back to the Latin words *credere*, meaning to believe or to trust, and *creditum*, referring to something entrusted in good faith.

So which is it? Are debt and credit – I will be using these terms to describe a single phenomenon in the following – something positive or negative? Over the next hour, I would like to pursue this question from an economist's perspective.

Let me save you the suspense and reveal the result of my reflections with an analogy. Sustainable lending is like maintaining a healthy, well-balanced diet. Food is one of the pillars of our life. In equal measure, lending is a pillar of a thriving economy. However, eating unhealthy food or eating too much produces only a short-lived sense of gratification and is likely to lead to health problems in the long run. These will then have to be battled with tedious diets or even medical treatment. In the same way, unhealthy or excessive lending can trigger crises. Far-reaching intervention by governments and central banks is then needed to bring the ensuing turmoil under control.

Ladies and gentlemen, this is what awaits you in today's speech (cf. slide 3): First, I want to explain why a thriving economy depends on loans just as much as we human beings depend on food. Next, I would like to discuss why time and again, throughout history, there have been cases of gluttony at the 'credit buffet', and why these can have far-reaching consequences. Finally, based on current developments on the Swiss credit market, I will show up ways in which such downsides can be kept in check without curtailing the advantages offered by the credit system. My main focus thereby will be on what central banks can and should do.

### **Why are loans useful from an economic perspective?**

Lending is one of the cornerstones of a successful economy based on the division of labour. This fact has been recognised since ancient times (cf. slide 5). As much as 5,000 years ago in Mesopotamia, seeds for crops were made available on loan, with repayment including interest due after harvest. Loans were also commonly used in ancient Greece and Rome.<sup>1</sup>

Lending in its present form dates back to the emergence of the 'modern' banking system in Europe in the late Middle Ages.<sup>2</sup> To this day, banks fulfil key functions in brokering loans. Without them, efficient large-scale lending as we know it would not be possible.<sup>3</sup> Most recently, alternative methods of credit provision have emerged thanks to digitalisation – P2P or crowd lending for example. Nevertheless, banks remain the mainstay of an effective credit system.

I will now explain why growth and prosperity would be significantly lower without an efficient credit system. To do so, I need to clarify the two basic functions of loans (cf. slide 6). First, loans enable borrowers to have future income at their disposal now. And second, loans allow creditors to make optimal use of their available capital.

#### **Loans enable borrowers to have future income at their disposal now**

Let me explain this in greater detail. Regarding function number one: Without loans, expenditure at any given time is limited to one's savings and one's current income. The possibility of taking out a loan expands this limit by adding anticipated future income to the resources available for spending. Why can this be a good idea? The somewhat banal answer is because making certain purchases or investments before having saved up the required amount can have a beneficial effect. Here are a few examples to show that this holds true from the point of view of companies, households and governments.

Let's start with the example of a start-up by a university of Berne graduate. This graduate has come up with a brilliant idea for a new product. To develop and produce it, she needs capital. She herself has no savings and it would take her decades to accumulate the required amount

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<sup>1</sup> Cf. Graeber (2011) and Grossman (2010) and the sources they cite.

<sup>2</sup> Cf. Grossman (2010) and Ferguson (2009).

<sup>3</sup> The focus hereby is on the monitoring of borrowers and on risk management.

on her own. Under these circumstances, she would probably give up on the idea. The possibility of obtaining credit radically changes the situation. A loan enables her to realise her idea within a short time and generate income with the sale of her product.<sup>4</sup>

The example shows how loans make it possible even for firms with little capital to make investments that will generate income in future. In the best case scenario, such investments also drive technological progress. Thus, loans do not only benefit the company concerned, but also contribute to raising an entire economy's productivity, growth potential and prosperity.<sup>5</sup>

Households, too, can harness future income for present-day benefits. The obvious example is a mortgage to buy a house. Let's take a specific case. A young family – we'll call them the Miller family – is expecting a child and so will soon need larger living quarters. They have found their dream house, but the money they have saved so far is not sufficient for them to buy it. Thanks to the possibility of taking out a mortgage, the Millers can nonetheless purchase the house of their choice and move in without further delay. The family will from then on be using part of their income to repay the loan, thereby reaping present benefit from their future earnings. In other words, they are putting their income to use at a time when they derive the greatest advantage from it, and in doing so they enhance their prosperity.<sup>6</sup>

Finally, borrowing can also make perfect sense for a government. Fiscal income and expenditure are not always in balance. During a recession, for instance, a state's income declines, whereas expenditure increases due to the activation of various countercyclical measures such as the provision of unemployment benefit. The result is a fiscal deficit. Governments can cover the deficit either by temporarily raising taxes or by reducing their spending. Neither of these measures are helpful in a recession. On the contrary, they would merely aggravate the recession. Borrowing money enables the government to bridge temporary gaps between income and expenditure without having to resort to higher taxation or short-term cuts in spending.

### **Lending enables creditors to make optimal use of their available capital**

As we have seen, borrowers can make optimal use of their income over time thanks to the credit system. From a lender's point of view, too, providing loans generates substantial benefit. This brings me to the second basic function of the credit system. The possibility of lending enables available capital to be invested as profitably as possible, and enhances the

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<sup>4</sup> In reality, private investors who buy shares in the company concerned play a role in the funding of start-ups that is at least as important as that of loans.

<sup>5</sup> Loans also allow companies to use future revenue to cover current expenses. Income from their business activities is not always available precisely at the time they need to purchase means of production or pay salaries. Instead of always aligning production and labour demand to their current income, they can avoid bottlenecks by means of operating or purchase loans. In this case, loans help stabilise production. This improves planning reliability both for companies and for their employees, which also has a positive impact on prosperity.

<sup>6</sup> If a household were to draw the entire income of a lifetime in a single instance, they would probably spend it fairly evenly year by year (according to the 'Life cycle theory of consumption', cf. Friedman (1957) as well as Modigliani and Brumberg (1954)). In other words, their consumption level would remain more or less steady throughout. In reality, income at certain stages of life does not suffice to cover this hypothetical consumption level. This is true mostly in younger years and in old age. Taking out a loan enables a household to overcome financial bottlenecks in certain phases of life and to make use of their income at a time when they derive the greatest benefit from it.

diversification of investment risk. For society as a whole, it means that accrued savings are made widely available and thus put to better use.

Let me give you an example. An entrepreneur is faced with the question of what use to make of his assets. There is no major purchase to be made at the moment. Neither is there a profitable project at his own company in the pipeline. Do you remember our university graduate with her brilliant idea for a product? The entrepreneur could lend her some of his assets against interest and so generate a return.<sup>7</sup> By extending a loan to the young graduate, he is also diversifying his investments. As the proverb has it, he is not putting all his eggs in one basket.

Overall, we can conclude that an effective credit system represents an essential basis for a thriving economy. It allows borrowers to put their income to the best-possible use over time. And it gives lenders the opportunity to invest their accrued assets in an optimal way. Individuals benefit from this mechanism, and so does the economy as a whole. As the examples show, the credit system can support prosperity and economic growth and enhance the growth potential.<sup>8</sup>

### **Under what circumstances is lending detrimental to an economy?**

Given all the positive aspects, the possibilities and opportunities linked with the credit system – why then the negative image associated with the notion of debt?

As mentioned at the beginning, the term ‘debt’ emphasises the borrower’s obligation to repay the loan in future. Each credit/debt relationship is therefore fraught with the risk that the borrower might incur financial difficulties and be unable to repay the loan. The cartoon here makes a tongue-in-cheek reference to this credit risk (cf. slide 8).

Naturally, credit risk is also inherent in the case of our university graduate’s start-up. There is a rule of thumb in the start-up scene that says only one in ten start-ups succeeds. If her product idea fails, our University of Berne graduate will lack the funds to repay her loan and interest.

And the Miller family’s mortgage loan is not exempt from credit risk, either. Payment difficulties could arise if, for example, a divorce or rising interest rates lead to an unexpected hike in current expenses, or if the family’s future income is reduced by unemployment or illness.

In such cases, borrowers will of course do all they can to avoid a default and first of all try to lower other expenses. This may mean cutting back on non-essential consumer spending or postponing maintenance work or investments. A default, after all, has far-reaching

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<sup>7</sup> In this simplified example, no mention is made of the risk/return considerations that naturally need to be made in such a case.

<sup>8</sup> This is also what the empirical literature suggests. An advanced financial system and access to efficient credit provision are closely linked to growth and a high level of prosperity (cf. Beck (2011) and Levine (2005)). It should be kept in mind that a modern financial system comprises further key elements besides the credit mechanism, in particular payment systems, market places for trading shares and bonds, and insurance business.

consequences. In the case of the start-up, it could possibly lead to insolvency. The Miller family for their part might be forced to sell the house in an emergency sale.

When borrowers face payment difficulties or default on their loan, this also causes problems for creditors. They will have to write off anticipated interest income and may even lose the money lent if the loan isn't secured by collateral. And even if the loan is secured – for instance by real estate – getting a good price for the collateral could prove difficult, depending on the circumstances.

### **Credit as a burden for an entire economy**

The examples show that an actual or impending default on a loan can represent a serious burden for the party concerned or even a personal tragedy. To a certain extent, this explains the negative connotations associated with debt. However, from a macroeconomic perspective, default by a single borrower does not usually pose a problem.

Unless the single borrower happens to be a massively indebted state or big bank. An impending default by such a player has a far-reaching impact on the economy as a whole, as witnessed in the recent financial crisis.

Debt also becomes a macroeconomic problem when a large number of economic agents help themselves too generously at the credit buffet table. Such phases of excess on the credit market usually end with a large number of borrowers encountering payment difficulties. For the rest of my presentation, I would like to concentrate on this type of debt crisis and on the costs involved.

Empirical literature indicates that recessions run particularly deep when they are connected with just such a debt crisis (cf. slide 9). Moreover, the subsequent economic recovery tends to be sluggish. This applies all the more when the debt crisis also hits the banking sector.<sup>9</sup>

Why is this so? In a debt crisis following a credit boom, not just a few, but a large number of households and companies face payment difficulties and have less income and assets at their disposal. Accordingly, they need to scale down consumer spending and investments over a relatively long period of time in order to service outstanding loans and reduce their excessive debt burden. In addition, such an environment usually leads to greater uncertainty, which also impacts on economic agents that are not directly confronted by payment difficulties. Under such circumstances, they, too, tend to show less appetite for consumer spending, investments and risk.<sup>10</sup>

Cutbacks in consumer spending and investments are even more pronounced when, at the same time, banks are busy cleaning up their balance sheets. They then become very restrained in

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<sup>9</sup> Cf. Boissay et al. (2016), Jorda et al. (2013), Reinhart and Reinhart (2010) and Taylor (2015).

<sup>10</sup> Cf. literature on debt overhang, e.g. Buttiglione et al. (2014) and Koo (2011).

their lending.<sup>11</sup> This can even affect fundamentally profitable investments and borrowers with a high credit rating.

All this places a burden on the economy not just during the acute phase of the crisis, but over a prolonged period. Lower investment also results in lower growth potential. Because less investment means less innovation, and less innovation leads to lower productivity growth.

To put it in a nutshell, and to come back to the analogy of food: When, during an upturn, economic agents have taken excessive helpings from the credit pot, they will, in the wake of a debt crisis, be forced on a necessary, but long and painful diet.

### **Why do so many economic agents take excessive risks at the same time?**

Thus, the correction of excesses on the credit market leads not just to economic downturns but also often to sustained loss of growth potential. For this reason, all economic agents should have a strong interest in avoiding any excesses which could end in a crisis.

Nevertheless, historical evidence shows that periods of excessive risk-taking by individuals, banks, companies or governments occur with quite alarming regularity. Why do we learn so little from experience?

Let me say from the outset, there is no one single reason for the repeated excesses on the credit market. A number of closely related factors all play a role. In the following, I will be looking in more detail at three of these factors (cf. slide 10). First, a favourable macroeconomic environment drives the supply and demand of loans. Second, the rational reaction of individual lenders and borrowers to the favourable environment can lead to a build-up of systemic risks. And, third, distorted expectations of economic agents also play a role.<sup>12</sup>

To illustrate these factors, I will use the example of the Swiss housing boom of the 1980s. Interestingly, analogous developments can be found in the lead-up to virtually every debt crisis.<sup>13</sup>

### **Economic upturn, low interest rates and rising asset prices**

Initially then, the macroeconomic environment plays a major role. Increased lending is often associated with an economic upturn.<sup>14</sup> A key variable here is the interest rate level: If current and anticipated rates are comparably low, loans tend to be taken out for projects which would not be profitable or not be financed at higher rates. Furthermore, lenders in such an

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<sup>11</sup> Uncertainty regarding the stability of individual banks can also result in banks no longer lending to one another, thereby mutually aggravating their difficulties and leading to even more restrictive lending practices.

<sup>12</sup> Other aspects based on rational considerations that I did not examine further here and which can also lead to excessive borrowing or lending are (misplaced) incentives of an institutional, regulatory and fiscal nature, and the emergence of innovative financial products.

<sup>13</sup> Cf. Kindleberger and Aliber (2005).

<sup>14</sup> Cf. Jorda et al. (2016).

environment often take higher risks in order to achieve return and growth targets despite the low interest rates.

Other key drivers for the increase in credit are movements in prices of assets such as shares and real estate. Rising prices for these assets and growing credit volume often go hand in hand and are mutually reinforcing. This applies to the real estate market in particular, since real estate is almost always part-financed by loans.

Two mechanisms are at work here: First, rising asset prices produce ‘wealth effects’ in households. Households become richer and thus more creditworthy. This has a positive impact on household demand for loans. At the same time, rising asset prices translate into higher-value collateral for households to use. This enables them to borrow larger amounts, which in turn leads to a further increase in asset prices.

Second, credit risk from the lender’s perspective falls with rising asset prices. During such periods, banks therefore tend to offer more loans and at more favourable rates.

Developments in Switzerland in the 1980s illustrate these aspects clearly. From 1983, the Swiss economy recorded dynamic growth over several years. This upturn was temporarily challenged by the slump on the global stock markets in autumn 1987.<sup>15</sup> Global central banks, including the SNB, reacted with a significant loosening of monetary policy that had a rapid stabilising effect. The economic upturn in Switzerland gained further momentum over the following quarters. The overall macroeconomic environment was therefore favourable. Real estate prices in this environment rose at an increasing pace between 1985 and 1990. The volume of outstanding mortgage loans also climbed sharply.

### Systemic risks

Back to the theory and to the second factor for excesses on the credit market. The previously described reactions of individual lenders or individual banks to the favourable environment contribute to the build-up of systemic risks (cf. slide 11). This means that from the individual’s perspective, the expansion in credit demand and supply in a favourable environment may well make perfect sense. But, even if all parties behave rationally from their own point of view, there is still the risk that overall an excessive level of debt will build up that is unsustainable in the long term. Why is this? Individual lenders fail to take into account that their behaviour has an impact on the ability of other market participants to bear debt. This applies, for example, when investors are increasingly exposed to the same risks and invest in the same markets.

For instance, let us assume that a large number of companies or households simultaneously take out loans to purchase real estate. This situation creates systemic risk because a negative surprise on the real estate market can lead to many of these investors incurring losses at the same time, forcing them to sell off their assets so that they can continue meeting their loan

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<sup>15</sup> On ‘Black Monday’, 19 October 1987, the Dow Jones index plunged by more than 20%. As a result, equity markets around the world came under heavy pressure.



commitments. This can generate a self-reinforcing spiral of falling real estate prices, more borrowers who can no longer service their debts, and thus greater pressure to sell.

### Distorted expectations

Moreover, the behaviour of economic agents during a credit boom is not always entirely rational. This brings us to the third factor that can contribute to excesses on the credit market – distorted expectations (cf. slide 12). A glance at the history of financial crises shows: The longer an economic upturn persists, and the higher asset prices rise at the same time, the more over-optimistic economic agents are about future growth. At the same time, the more they underestimate the risks they are taking in purchasing assets or in taking out or granting loans for this purpose. Alan Greenspan and Robert Shiller coined the phrase ‘irrational exuberance’ to describe situations when investors, in their enthusiasm, ignore the investment risks.<sup>16</sup>

What creates these distorted expectations?

Research in economic history and behavioural economics provides some explanations. The self-reinforcing dynamics between economic upturn, low interest rates, the rise in asset prices, and credit growth can induce market participants to feel justified in their optimism and their expectations of price developments. Government representatives, too, are often infected by this optimism. Who can predict the future? Perhaps there has indeed been a structural change in the economy. In other words: During an upturn, everyone finds ostensibly good reasons why a rise in asset prices and credit volume makes perfect sense and is fundamentally justified – despite historical experience to the contrary.<sup>17</sup>

The feeling that this time really is different is something that I experienced at first hand myself, when I lived and worked in Washington DC from 1998 to 2006. Local real estate prices during this period recorded average annual growth rates of some 15%. During our stay there, we kept asking ourselves as a family – should we rent or buy? Our answer was always the same: Rent, because these annual price increases cannot be sustainable. However, this argument became ever weaker with each new year of sharp price rises. Towards the end of our stay, we too were almost ready to switch camps to the adherents of fundamentally new economic principles in which real estate prices go in only one direction – up. But, as you all know, in 2006 the massive price correction set in after all.

As an example of the build-up of systemic risks and the excessive optimism of economic agents, I can again also refer back to the Swiss real estate boom in the second half of the 1980s (cf. slide 13). Strong growth and income prospects and favourable conditions in the mortgage market boosted demand for property. Real estate was increasingly purchased for

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<sup>16</sup> Shiller (2000).

<sup>17</sup> Reinhart and Rogoff (2009) coined the term ‘this time is different syndrome’ for such misguided expectations during the boom phase of the credit or financial cycle. Minsky’s financial instability hypothesis is also based on the idea of a self-reinforcing effect between the prices of assets and increasing speculation on continued capital gains during an economic upturn, which is additionally driven by borrowing (cf., e.g. Minsky (1992)). Keynes (1936) in turn coined the expression ‘animal spirits’ as an explanation for the excessively ‘naive’ optimism of investors. Here he described the phenomenon that a general feeling of confidence among economic agents is primarily caused by intuition and emotions rather than by mathematically/rationally based expectations.

investment purposes since it promised high returns through value appreciation. The higher demand in turn led to further rises in real estate prices. Accordingly, the value of collateral and thus owners' assets continued to grow, as expected. Against this background, banks for their part were more optimistic about credit risks as the number of loan defaults remained low thanks to rising property prices and favourable credit conditions. As both credit volume and real estate prices rose higher, economic agents felt vindicated in their optimism.

But if such a period of excessive optimism is followed by a downturn, the impact on these highly indebted agents is huge. The trend on the real estate market in Switzerland reversed in 1989 (cf. slide 14). Systemic risks materialised and considerable losses were registered. As investments were largely debt-financed, there was a flurry of loan defaults. Ultimately this led to banks in Switzerland having to write off more than 40 billion francs.<sup>18</sup> To cut a long story short, the Swiss economy slid into recession at the beginning of the 1990s, unemployment rose sharply to 5% and the economy subsequently recovered only very slowly (cf. slide 15).

Ladies and gentlemen, having shown you in the first part of my speech that loans are an essential basis for economic growth, I have now explained how excessive lending can seriously damage the economy. I have also outlined how a combination of rational behaviour and distorted expectations of borrowers and lenders can lead to harmful excesses in the credit market.

## **What role do central banks play in the credit cycle?**

But, you might say, the behaviour of borrowers and lenders, whether rational or based on distorted expectations, ultimately depends on interest rates. Only if interest rates are low, can such a dynamic develop. Interest rates in turn are strongly influenced by central banks.

In the last part of my speech I would like to address this argument, and discuss the question that has come back into focus since the financial crisis: What role do central banks play in the event of excesses and crises on the credit market?

The fundamental task of central banks like the SNB is to ensure price stability, while taking due account of economic developments (cf. slide 17). The main instrument they use for this are key or reference interest rates. If, for example, the inflation rate threatens to fall too low, key rates are lowered. This has a positive impact on price development via various channels.<sup>19</sup> One of these is loans: An interest rate cut reduces borrowing costs and creates incentives for expanding the credit supply. This encourages investments and consumer expenditure and ultimately has a positive effect on price development, too. With their interest rate decisions, central banks therefore consciously influence lending practice. If, for price stability reasons, interest rates have to be kept low for a prolonged period, it is possible that over time there

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<sup>18</sup> SFBC (1998).

<sup>19</sup> The literature distinguishes different channels through which monetary policy can impact on aggregate demand and thus inflation. Besides the credit channel, these include, in particular, the interest rate channel, exchange rate channel and asset price channel.

may be undesirable excesses in certain segments of the credit market. This poses a risk for financial stability.

When using the interest rate tool in such a situation, central banks can face a conflict of interest between the objectives of price stability and financial stability. On the one hand, they have to keep interest rates at an appropriate level in order to guarantee price stability. On the other hand, they have to closely monitor the impact of this policy on the credit cycle and financial stability. In the case of the SNB, contributing to the stability of the financial system is part of its statutory mandate.

Let me explain this point using the current situation in Switzerland.

Internationally, interest rates have followed a downward trend for many years and are currently at low levels.<sup>20</sup> In the case of Switzerland, this development caused the interest rate differential against other countries to narrow. Along with occasionally strong capital inflows during the financial crisis, this fall in the interest rate differential has led to substantial Swiss franc appreciation and a highly valued Swiss franc (cf. slide 18).

In order to ensure price stability in Switzerland and to create appropriate monetary policy conditions in this environment, the SNB has had to keep interest rates low for several years now (cf. slide 19). A higher interest rate level domestically would result in further appreciation of the Swiss franc. This would cause a slowdown of economic growth and put the prices of goods and services under pressure. If this downward pressure on prices were to continue for a prolonged period, price stability would be jeopardised. The low reference rate maintained by the SNB is therefore necessary from a monetary policy perspective in the context of the low interest rate environment worldwide and the strong Swiss franc.

At the same time, the persistently low interest rate environment presents risks to financial stability. This applies first and foremost to the real estate and mortgage markets. Like global interest rates, mortgage rates in Switzerland have been on a downward trend for some 25 years. Consequently, significant imbalances have built up on the real estate and mortgage markets.

This is evident when we look at the developments in both markets since 2000 (cf. slide 20). On an inflation-adjusted basis, prices for single-family houses have risen by more than 50% overall. The volume of outstanding mortgages has almost doubled over the same period. These strong rises on their own do not prove the build-up of imbalances – the increases can be partly explained by fundamentals such as solid population growth. Since 2000, this has amounted to approximately 18%. A growing population produces a demand for more housing. As land for building development is limited, this puts upward pressure on real estate prices. At the same time, demand for mortgage loans grows.<sup>21</sup>

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<sup>20</sup> Both structural and cyclical reasons can cause this downward trend, cf., e.g., Danthine (2013).

<sup>21</sup> Moreover, average real household income has risen by almost 15% since the turn of the millennium. This can also produce a rise in demand for more and/or better quality housing, with an associated increase in the demand for mortgage loans.

However, momentum on the mortgage and real estate markets has been considerably stronger in recent years than can be explained by such fundamental developments. The ratio between the volume of outstanding mortgage loans and nominal gross domestic product (GDP) since 2000 has risen from 110% to some 145% (cf. slide 21). Lending has thus grown significantly faster than income in recent years. At the same time, we can observe increasing risk appetite among banks in their lending business. This is because banks' income from interest rate differential business is suffering due to the low interest rates. By taking higher risks – in particular in mortgage lending – banks are able to counter this decline in income in the short term. Yet, this exacerbates their susceptibility to negative developments on the real estate and mortgage markets or to an unexpected sharp interest rate rise.

Given the potentially far-reaching negative effects of a debt crisis as outlined in the second part of this speech, it is clear why the SNB has been carefully monitoring these developments for some time and pointing out the associated risks.

### **Should central banks use interest rates to curb excesses on the credit market?**

But what should central banks do to counter excesses on the credit market? Should they raise interest rates, even if this would not be appropriate from the perspective of price stability and economic activity (cf. slide 22)?

There are three reasons for not doing so.

First, we have the rule postulated by Tinbergen in the 1950s (cf. slide 23), which states that for each economic policy target there needs to be a separate policy instrument.<sup>22</sup> This reduces potential conflicts of interest when using instruments and contributes to the efficient achievement of each individual target. The Tinbergen rule is also justified in our case. If central banks were to use the interest rate tool for the purposes of financial stability, they might have to accept departures from the objective of price stability. Such an approach, though, would call into question the credibility of the central bank's avowed pursuit of price stability. In the long term this would have a negative impact on trust in the central bank and limit its ability to ensure the goal of price stability.

Second, the crucial question is how effectively interest rate rises actually influence overheating in the credit market. I have already explained how the interest rate environment affects the behaviour of economic agents in the credit market. Higher interest rates, then, should have a dampening effect on credit growth. Yet various analyses indicate that it often takes a very sharp interest rate rise to significantly counteract excesses in the credit market. However, this would have an unwanted and severe dampening effect on the economy and lead to an undesirable deviation from the optimal course of inflation.<sup>23</sup>

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<sup>22</sup> Cf. Tinbergen (1956).

<sup>23</sup> Cf. Assenmacher and Gerlach (2008), Bean et al. (2010) and Svensson (2016).

Third, and connected with this, it is important to remember that interest rate rises affect the whole economy. Meanwhile, excesses often occur only in certain segments of the credit market.

For these reasons it seems more expedient to curb excesses in the credit market primarily with instruments other than the interest rate tool. Of course, this presupposes that effective alternative instruments are available.<sup>24</sup>

### **Macroprudential instruments**

The focus here is on macroprudential instruments (cf. slide 24). This term describes instruments which are aimed at avoiding the build-up of systemic stability risks and are intended to make the financial system as a whole more robust to negative shocks.

Macroprudential instruments have become more common since the global financial crisis.<sup>25</sup> The application of macroprudential measures in Switzerland is currently particularly important in view of the significant imbalances in the credit and real estate markets.

The emphasis in Switzerland is placed on the sectoral countercyclical capital buffer (CCyB) and on guidelines that address credit demand (cf. slide 25).

The sectoral CCyB obliges banks to hold more equity capital when imbalances build up on the mortgage market. The aim is twofold: First, banks with more equity are better equipped to absorb losses that can arise as a result of excessive lending growth. Second, costs for mortgage lending rise, counteracting the build-up of imbalances in this segment.

The buffer is called countercyclical because capital requirements increase when the mortgage market is on the rise. This dampens the upswing and strengthens the safety buffer of banks and of the financial system. The requirements are reduced in a downturn when banks have more capital available to absorb potential losses on loans. This mitigates the likelihood of systemic risk materialising and leading to a downwards spiral of emergency sales and loan defaults.

Acting on proposals by the SNB, the Federal Council activated the sectoral CCyB in 2013 and, in 2014, increased it to 2% of risk-weighted mortgage loans for residential property in Switzerland.

In addition to the sectoral CCyB, there are two measures in particular which the industry introduced in 2012 in the form of self-regulation. These measures address the demand for loans: First, the obligation that mortgage borrowers have to supply a minimum amount of own funds. Second, the obligation that part of the loan has to be repaid within a set period if the loaned amount constitutes more than two-thirds of the property value.

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<sup>24</sup> Cf. Smets (2014).

<sup>25</sup> Macroprudential instruments are, for example, a component of Basel III, the post-financial crisis amendment to the global minimum standards in bank regulation issued by the Basel Committee for Banking Supervision of the Bank for International Settlements, cf. BCBS (2010).

Along with the CCyB, these measures have helped to reduce momentum on the credit and real estate markets in the last three years (cf. slide 26).<sup>26</sup> But it is still too early to give the all-clear. It remains to be seen how sustainable the cooling of price momentum in the real estate market is overall. Imbalances remain in the real estate and mortgage markets. Price momentum in the residential investment property segment remains high. There are also signs of renewed price rises in the owner-occupied segment. At the same time, lending rates are still extremely favourable. As a result, the incentives for households, banks and investors to take excessively high risks in the mortgage and real estate markets remain strong.

The following conclusion can therefore be drawn: Macroprudential instruments have become a key instrument in the toolbox of central banks and regulators – and rightly so, in my opinion. They facilitate the targeting of specific risks in the financial system. At the same time, however, it would be presumptuous to assume that these macroprudential instruments might be able to curb all risks to financial stability.

## Conclusion

Ladies and gentlemen, let me now wrap up. Credit is good, debt is bad – how can we explain this widespread public ambivalence to lending? Stephen Cecchetti sums it up as follows: *“Debt is a two-edged sword. Used wisely and in moderation, it clearly improves welfare. But, when it is used imprudently and in excess, the result can be disaster”* (cf. slide 27).<sup>27</sup> I myself have compared lending not with a double-edged sword, but with food. A balanced diet is essential for survival. Excessive and unhealthy eating, however, can become a problem. Judicious borrowing and lending is an essential foundation of a flourishing economy. Excesses on the credit market, by contrast, can lead to crises and, as a result, cause extensive damage to the economy as a whole. It is therefore important that banks, households and companies always exercise sufficient caution and restraint at the ‘credit buffet’. Equally, it is just as important that the SNB carefully analyses developments on the credit market and makes optimal use of the tools at its disposal in order to mitigate any risks to financial stability as far as possible.

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<sup>26</sup> The overall subdued economic growth in Switzerland over the last two years and lower net immigration are also explanations for the recent restrained momentum on the credit and real estate markets.

<sup>27</sup> Cecchetti et al. (2011). The International Monetary Fund (IMF) came to a similar conclusion regarding household debt in its latest financial stability report: Household borrowing promotes growth in the short term. In the medium term, however, too high a level of household debt reduces economic growth (IMF, 2017).

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# Credit, debt and growth

Fritz Zurbrügg  
Vice Chairman of the Governing Board  
Swiss National Bank

Collegium generale  
Berne, 1 November 2017

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



# Debt vs. credit

Debt: *debere* = to owe

Credit: *credere* = to believe, trust  
*creditum* = that which is entrusted in good faith

# Contents

Part 1: Why are loans useful from an economic perspective?

Part 2: Under what circumstances is lending detrimental to an economy?

Part 3: What role do central banks play in the credit cycle?

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# Part 1: Why are loans useful from an economic perspective?

# Loans: Commonplace since ancient times

A Mesopotamian clay tablet with debt details from around 3000 BCE



Source: [www.openthemagazine.com](http://www.openthemagazine.com)

# Loans fulfil two basic functions

**Borrowers:** Loans enable borrowers to have future income at their disposal now

Example: Start-up company

Example: Buying a house

Example: Government debt

**Creditors:** Loans allow creditors to make optimal use of their available capital

Example: Investments of an entrepreneur

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Part 2: Under what circumstances is lending detrimental to an economy?

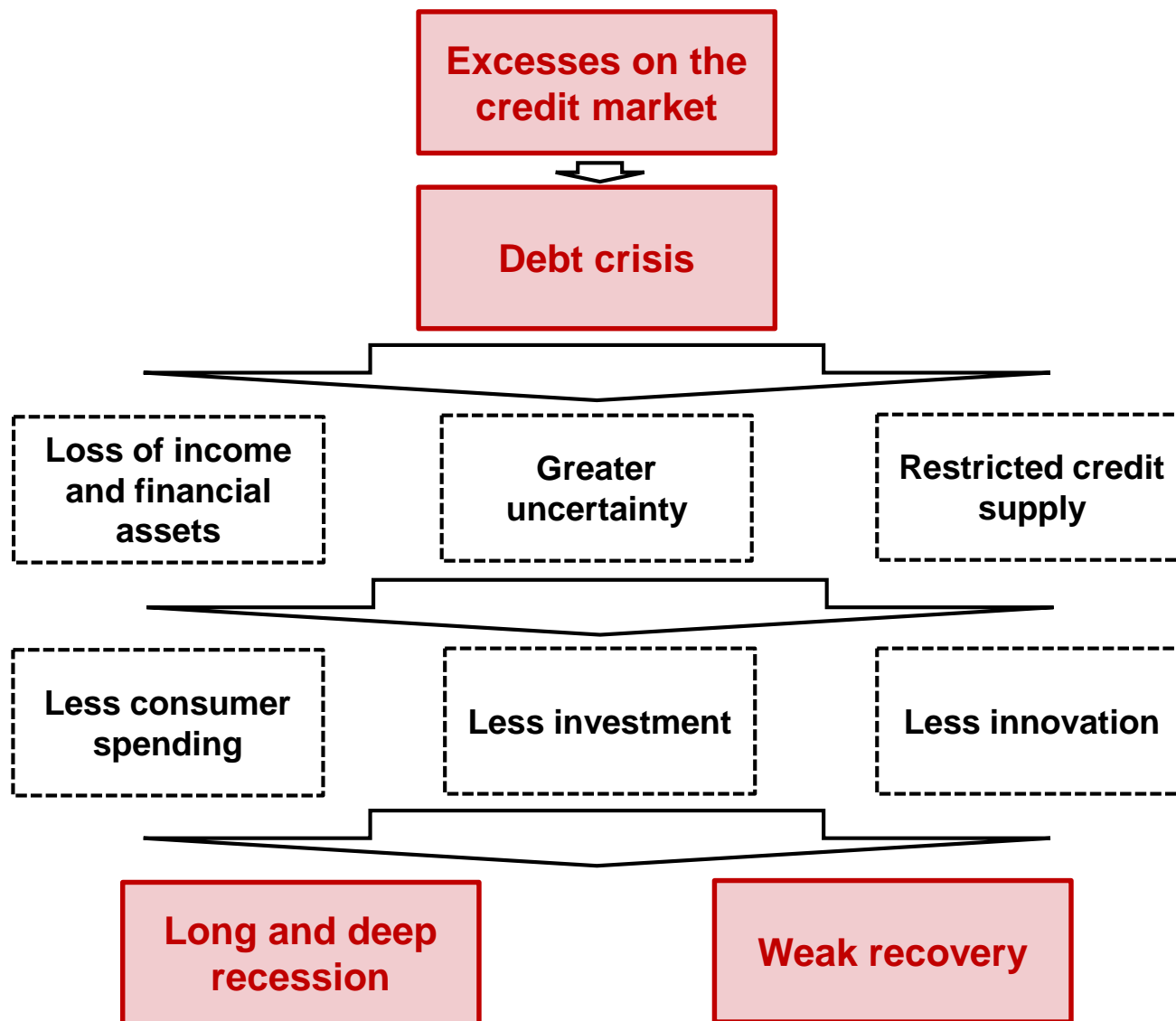
# Credit risk



CartoonStock.com



# Credit as a burden for an entire economy



# Credit as a burden for an entire economy – excessive risk-taking

**Macroeconomic environment**

**Upturn**

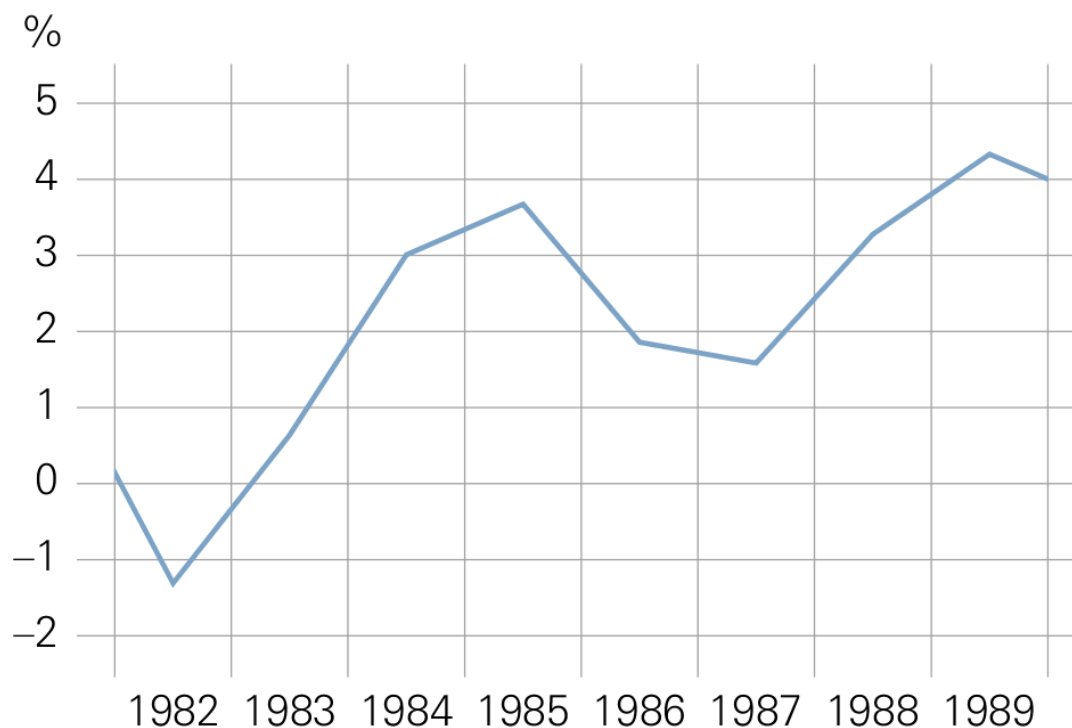
**Low interest rates**

**Asset prices**

**Systemic risks**

**Distorted expectations**

## SWISS ANNUAL GDP GROWTH



Sources: SNB, SECO

# Credit as a burden for an entire economy – excessive risk-taking

Macroeconomic environment

Upturn

Low interest rates

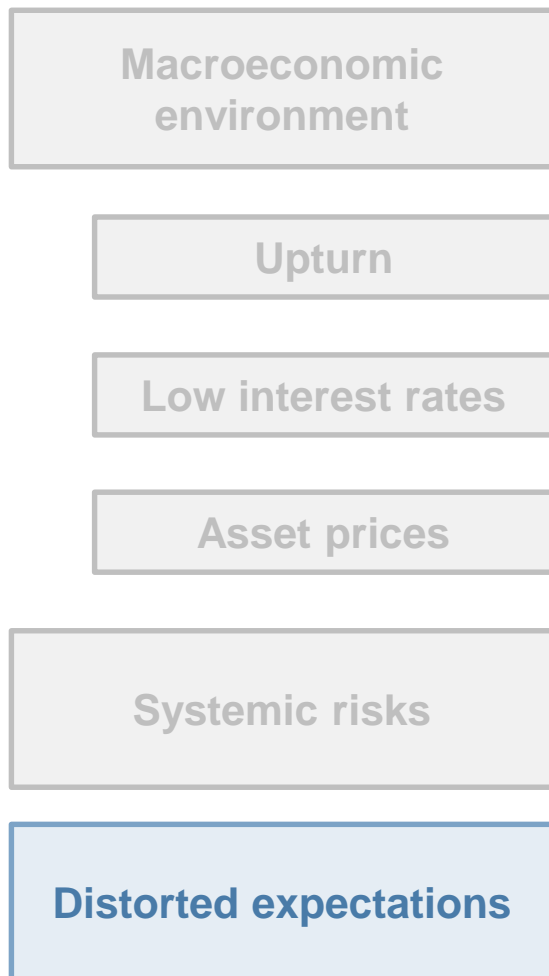
Asset prices

**Systemic risks**

Distorted expectations



# Credit as a burden for an entire economy – excessive risk-taking



# Credit as a burden for an entire economy – excessive risk-taking

Macroeconomic environment

Upturn

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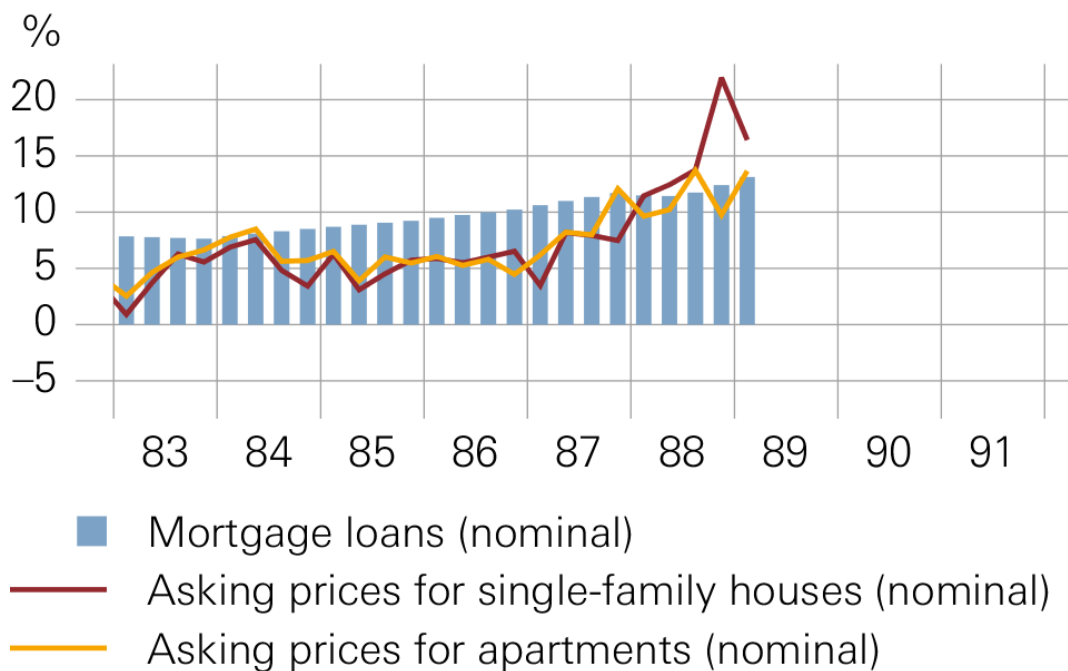
Asset prices

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## SWISS MORTGAGE AND REAL ESTATE MARKETS

Year-on-year change in percent



Sources: SNB, Wüest Partner

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Macroeconomic  
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Upturn

Low interest rates

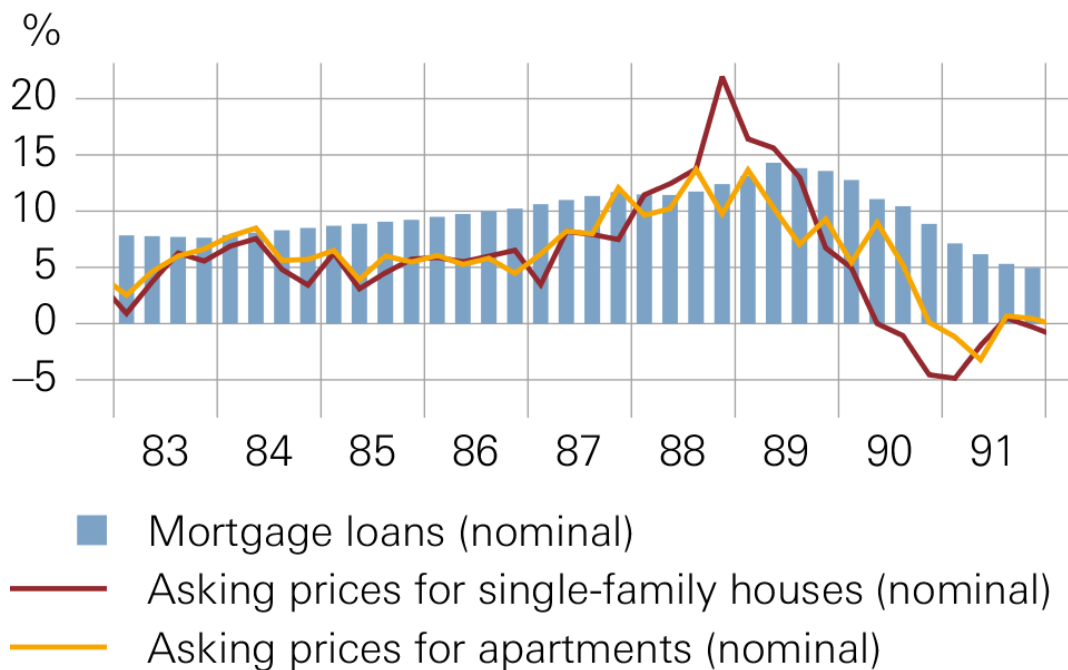
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# Credit as a burden for an entire economy

Macroeconomic  
environment

Upturn

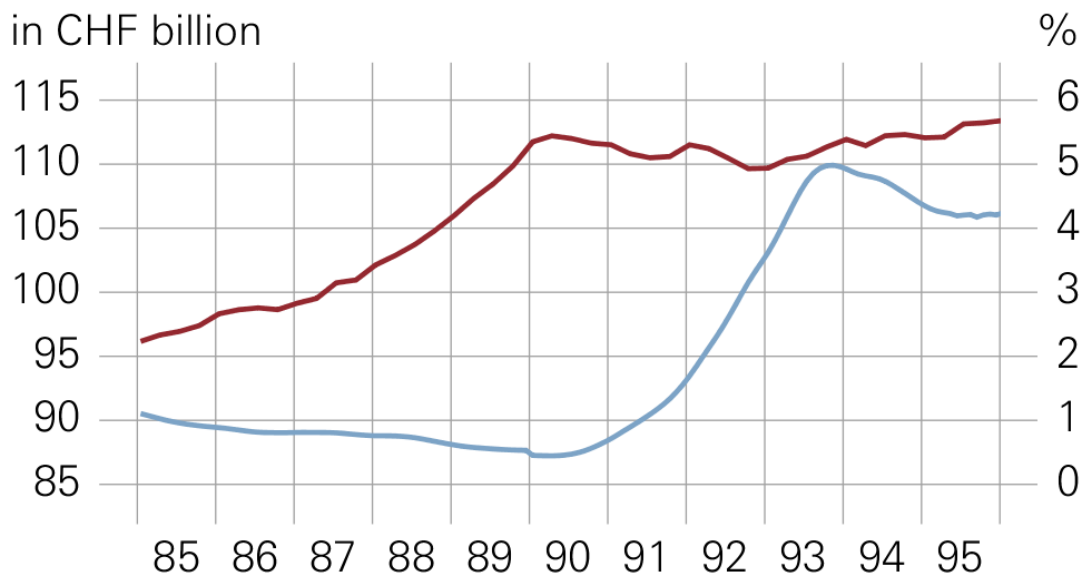
Low interest rates

Asset prices

Systemic risks

Distorted expectations

## SWISS REAL ESTATE CRISIS 1989/1990: ECONOMIC DEVELOPMENT



— Unemployment rate (seasonally adjusted, rhs)  
— GDP (real)

Sources: SNB, SECO

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## Part 3: What role do central banks play in the credit cycle?

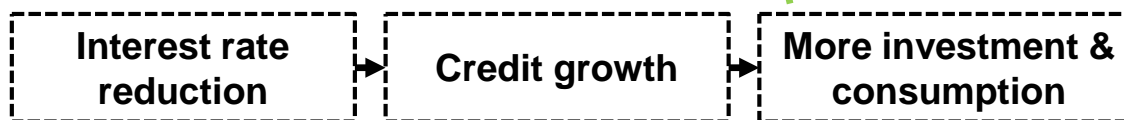


# Price stability vs. financial stability

## NATIONAL BANK ACT

### Article 5: Tasks

<sup>1</sup> The National Bank shall pursue a monetary policy serving the interests of the country as a whole. It shall ensure price stability. In so doing, it shall take due account of economic developments.



<sup>2</sup> Within this framework, it shall have the following tasks:

...

e. It shall contribute to the stability of the financial system.

# Price stability vs. financial stability

## Current situation in Switzerland

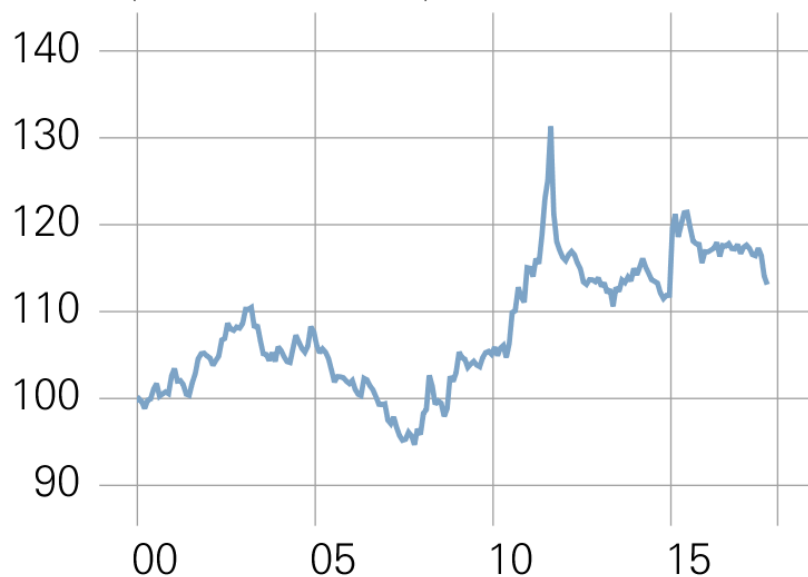
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### SWISS FRANC REMAINS HIGHLY VALUED

Real, effective exchange rate, CPI-based

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Index (Jan 2000 = 100)



Source: SNB

# Price stability vs. financial stability

## Current situation in Switzerland

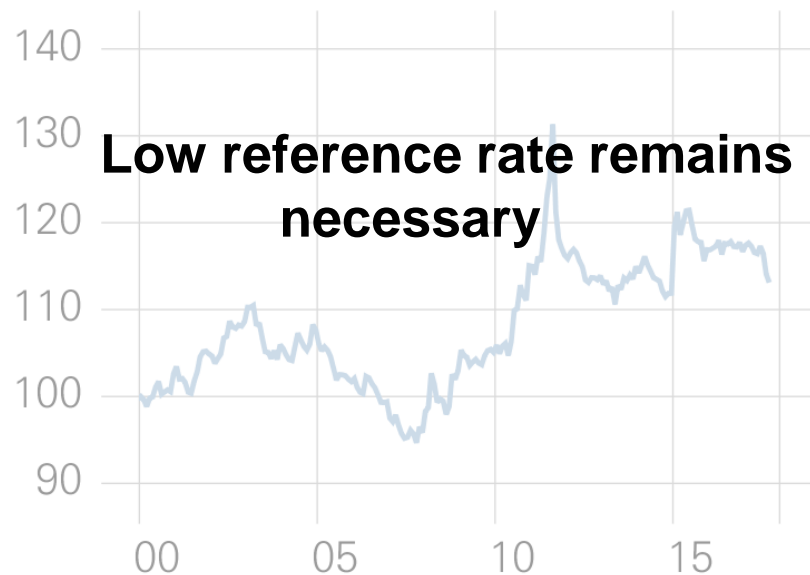
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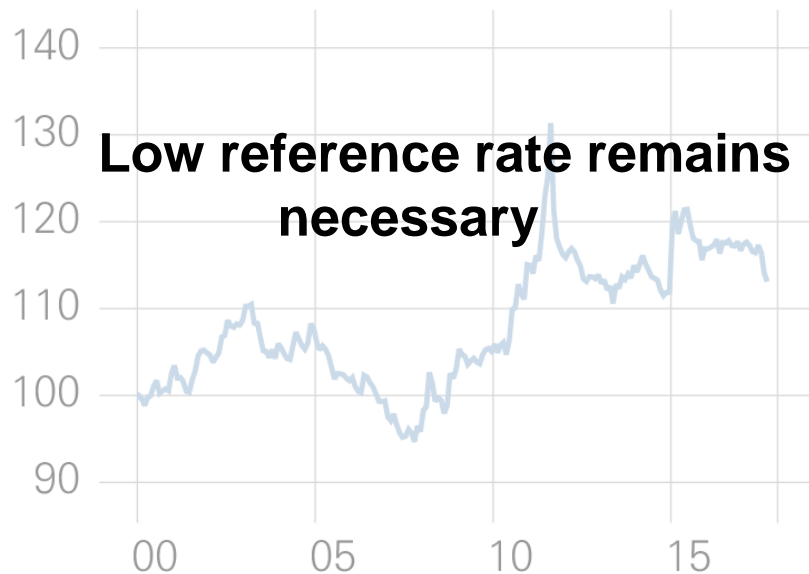
# Price stability vs. financial stability

## Current situation in Switzerland

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Real, effective exchange rate, CPI-based

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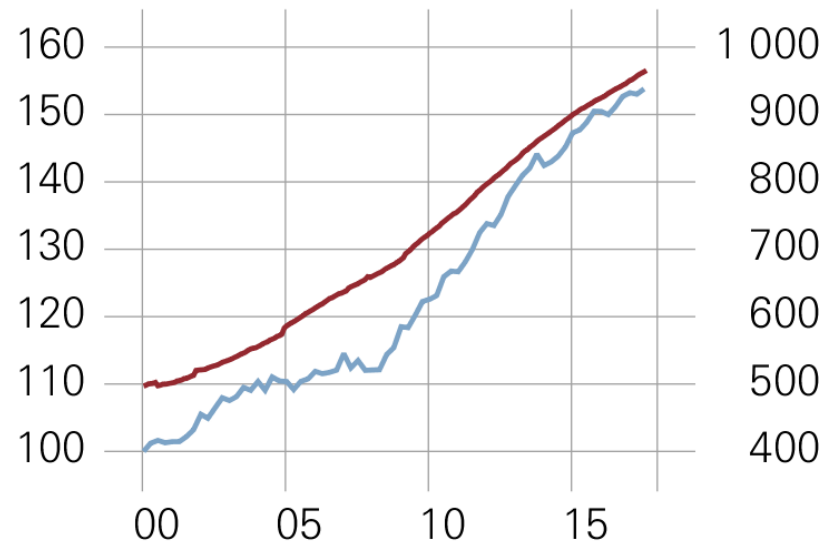


Source: SNB

### UPTURN IN REAL ESTATE AND MORTGAGE MARKETS

Index (Q1 2000 = 100)

in CHF billion



— Asking price of single-family houses (real)  
— Mortgage loans (rhs)

Sources: SNB, Wüest Partner

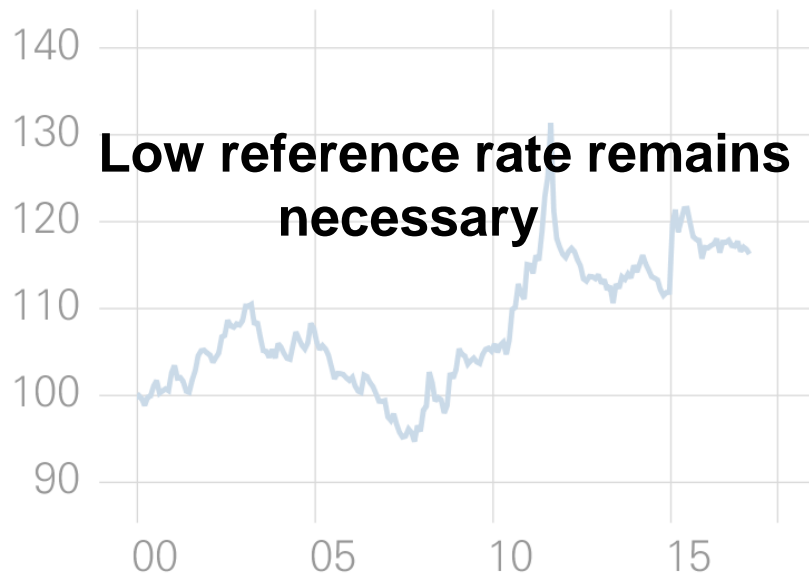
# Price stability vs. financial stability

## Current situation in Switzerland

### SWISS FRANC REMAINS HIGHLY VALUED

Real, effective exchange rate, CPI-based

Index (Jan 2000 = 100)



Source: SNB

### UPTURN IN REAL ESTATE AND MORTGAGE MARKETS

Index (Q1 2000 = 100) in CHF billion

**Low interest rate environment promotes ...**

- ... a build-up of imbalances:

$$2000: \frac{\text{Mortgage loan volume}}{\text{GDP}} * 100 = 110\%$$

$$2017: \frac{\text{Mortgage loan volume}}{\text{GDP}} * 100 = 145\%$$

- ... risk appetite among banks

— Asking price of single-family houses (real)  
— Mortgage loans (rhs)

Sources: SNB, Wüest Partner

# Should the interest rate tool be used to curb excesses on the credit market?

## **NATIONAL BANK ACT**

### **Article 5: Tasks**

<sup>1</sup> The National Bank shall pursue a monetary policy serving the interests of the country as a whole. It shall ensure **price stability**. In so doing, it shall take due account of economic developments.

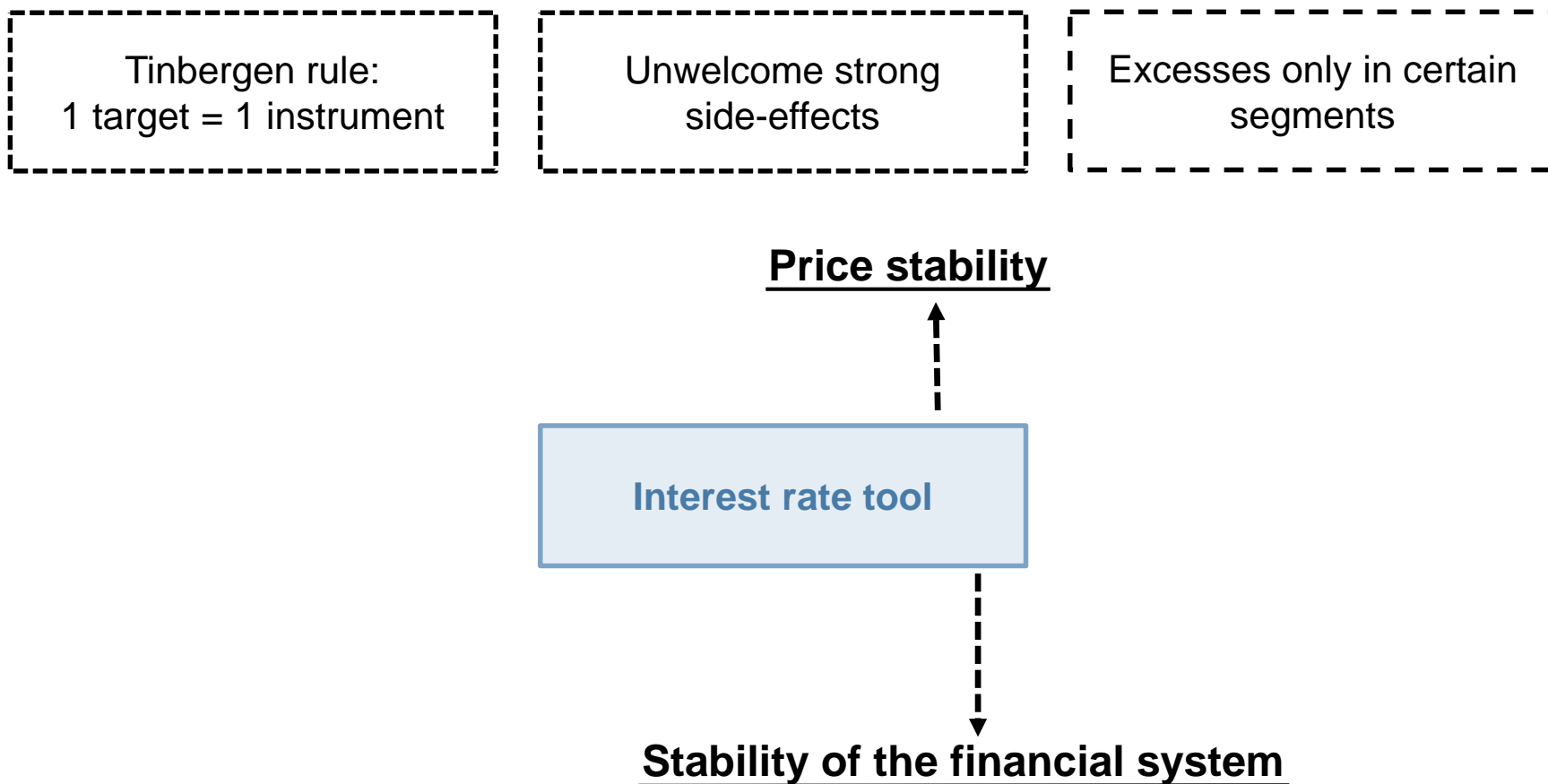


<sup>2</sup> Within this framework, it shall have the following tasks:

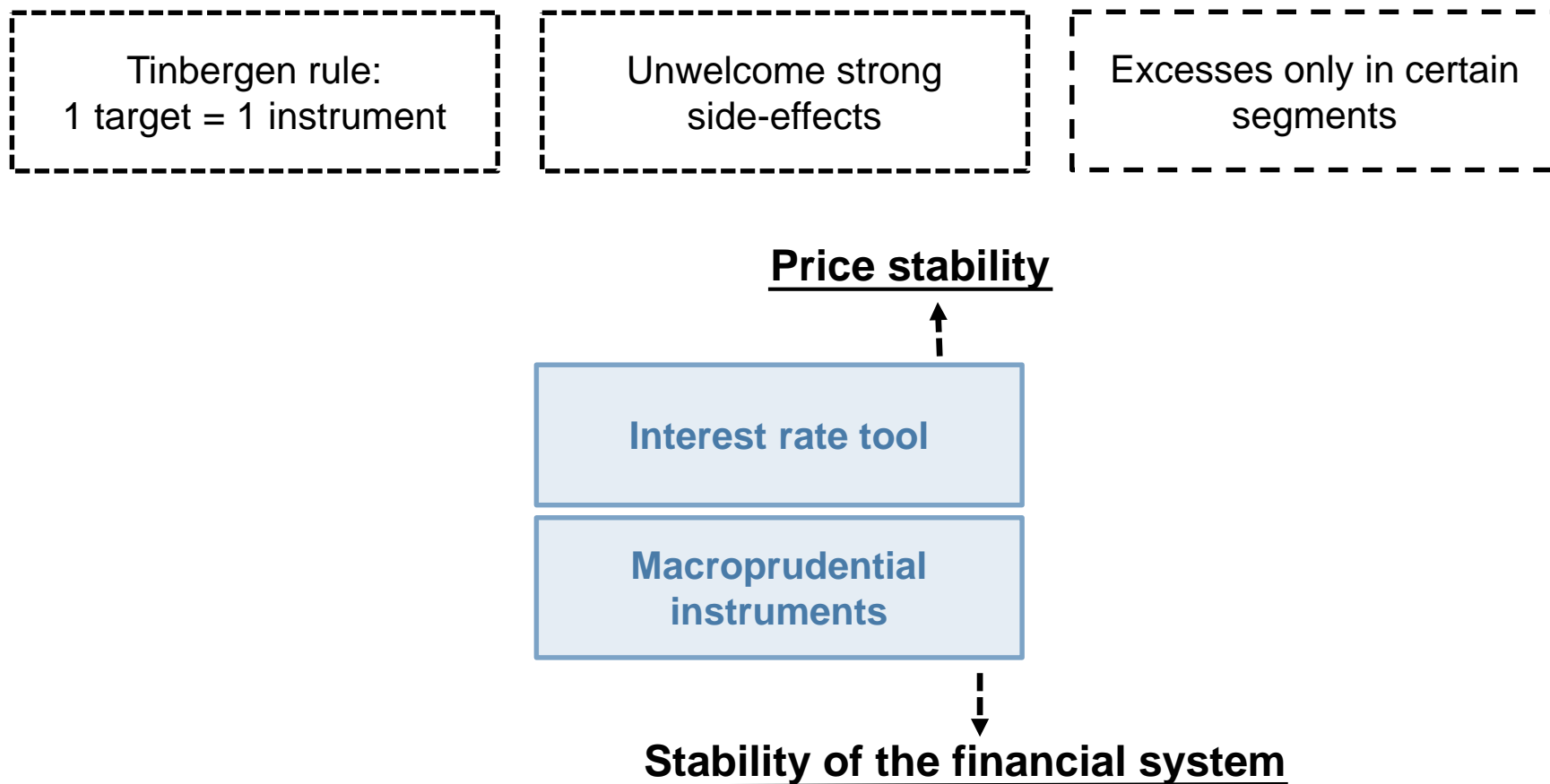
...

e. It shall contribute to the **stability of the financial system**.

# Should the interest rate tool be used to curb excesses on the credit market?



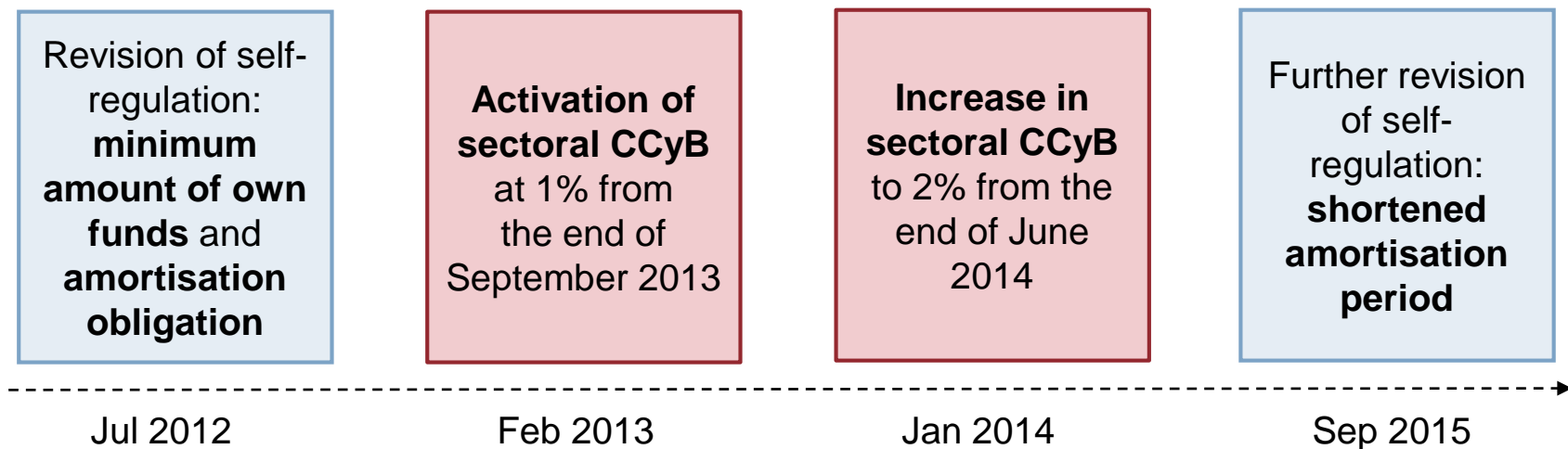
# Macroprudential instruments as a target-oriented alternative to the interest rate tool





# Macroprudential instruments

## SWITZERLAND AS AN EXAMPLE



■ Federal Council and SNB      ■ Swiss Bankers Association

Source: SNB

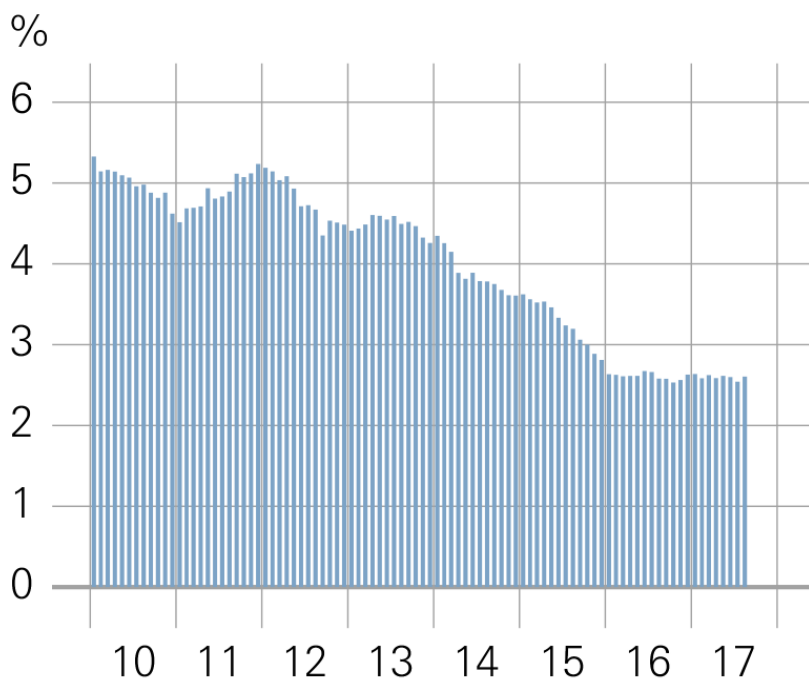
CCyB = Countercyclical capital buffer

# Macroprudential instruments

Slower momentum on the Swiss mortgage and real estate markets

## MORTGAGE LOANS

Year-on-year change, nominal



Source: SNB

## PRICES FOR SINGLE-FAMILY HOUSES

Year-on-year change, real, transaction prices



Sources: SNB, Wüest Partner

# Conclusion

“Debt is a two-edged sword. Used wisely and in moderation, it clearly improves welfare. But, when it is used imprudently and in excess, the result can be disaster.”

Cecchetti et al. (2011).