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FX MONTHLY

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Rising hedging costs: what to do?



Cengiz Temel, Managing Partner
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The abolition of the EURCHF minimum exchange rate and the introduction of negative interest rates by the Swiss National Bank on 15 January 2015 had far-reaching consequences for Swiss investors that are still being felt. Not least among them is the increasing cost of hedging currency risks. These costs have continued to rise in the meantime. How can investors best handle these higher hedging costs?

Interest rate differentials and their significance for hedging

Currency hedging implies that the currency of the underlying foreign investment is sold through a forward foreign exchange contract to offset its appreciation or depreciation. The price difference between a forward exchange rate and the corresponding spot rate equals the difference between the two interest rates of the countries involved.

In the context of currency hedging, this means that those investors who must hedge the higher-yielding currency – relative to the interest rate level of the home currency – will incur hedging costs. And for Swiss investors, that currency hedging is currently always associated with costs.

Hedging costs – when is the pain threshold reached?

A comparison of the four largest foreign currency positions that Swiss investors typically hold in their portfolios shows the following annualized hedging costs as of mid-January 2018 (based on 3-month forward rates):

- USD: 2.64%
- EUR: 0.38%
- GBP: 1.4%
- JPY: 0.68%

In concrete terms, for example, the hedging costs for a Swiss investor with a foreign currency portfolio of USD 100 million amount to a considerable CHF 2.64 million. The situation was not always so precarious. A historical analysis shows that interest rate differentials vary substantially over time (see graph). Thus, the period after the 2007 financial crisis and before the end of the EUR minimum exchange rate was a phase of very low hedging costs. This was due to the fact that central banks implemented converging interest rate policies at that time. In the course of today's diverging interest rate policies, the hedging costs have been rising and, we think, will probably continue to do so – though we note that we have not yet reached historical highs.

Alternative approaches for investors

Unfortunately, there is no single panacea to counter the issue of rising hedging costs. Rather, meeting the problem requires balancing different approaches and weighing their implications for the returns and risk structure of each investor's portfolio. The following strategies can be considered:

1. Adjusting the strategic hedge ratio

Here, the strategic hedge ratio is reduced on a portfolio or investment level with respect to the risk/return profile of the investor.

2. Dynamic hedging

With this active approach, the designated currency overlay manager tries to achieve extra returns on basis of the underlying currency risks and in general concordance with the strategic hedge ratio.

3. Asymmetric hedging via options

Currently, with the very low implied volatility, another alternative is the use of options. Although their purchase involves additional costs, it opens up the possibility of continuing to benefit from any appreciation in foreign currency positions.

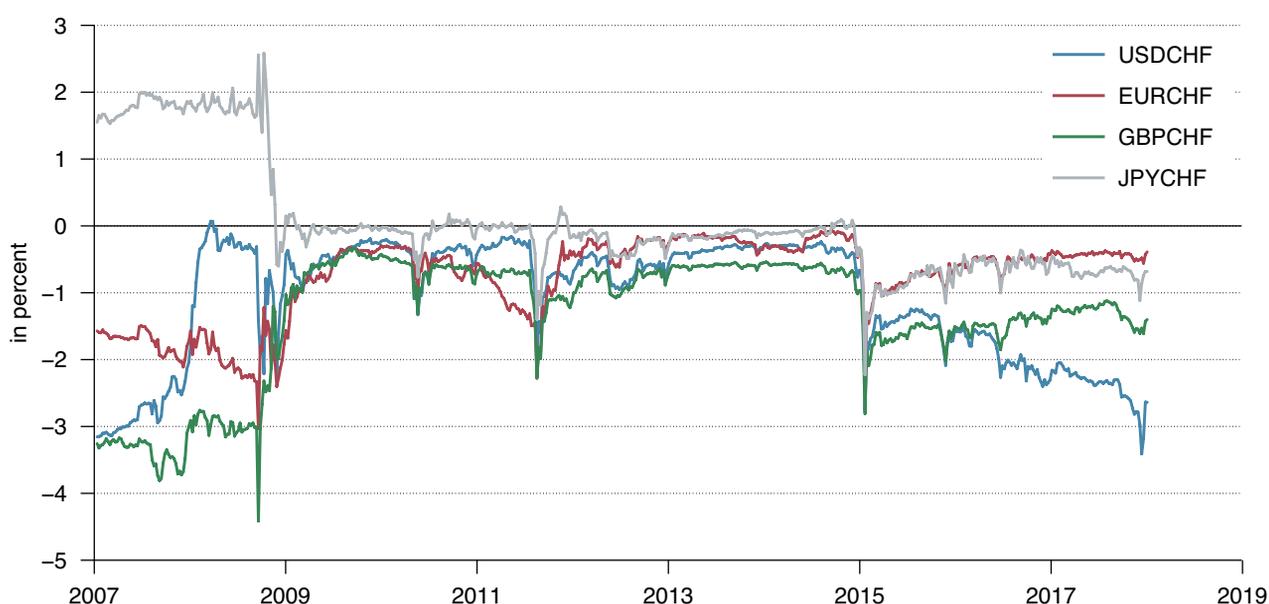
4. Tenor management

Through active management of the hedge frequency (1 month, 3 months, etc.), the hedging costs can be optimized, with the potential risk of adverse interest rate developments.

Bottom line

Today's divergent interest rate policies will continue to fuel the discussion about hedging costs for Swiss investors. QCAM Currency Asset Management's specialists are ready to advise you on the right strategy for you. Feel free to contact us and we will gladly provide you with our overview of current interest rate differentials.

Annualized hedging costs on basis of 3-month forward rates



Source: QCAM Currency Asset Management

The macro perspective

A new year and some new signals

There has been a strong acceleration of growth in the Eurozone, as the region finally begins to catch up. Global growth indicators show a growth rate of around 4.5 percent over the next few quarters, which would be the highest in the past seven years. With growth increasing above potential, inflation should begin to pick up, which will impact central bank interest rates and bond yields.

A pick-up in inflation expectations

The new year has delivered fresh data showing that inflation recently edged higher in the US, Japan and Switzerland.

The core US Consumer Price Index, which excludes food and energy, accelerated by 0.3% month-over-month in December 2017 – the fastest monthly rate increase since August 2016. If it were sustained over the course of the year, this rate would yield an annualized rate of inflation of 3.3%. December's rate was above market expectations and it has reinforced market expectations that the US Fed has more arguments to continue on its path towards higher interest rates.

Viewed in an annualized context, however, the US core CPI rate in December appeared rather less dramatic, being up only 1.8% year-over-year. Adding in the more volatile components of inflation – energy prices rose by 6.9 percent and food prices increased by 1.6 percent year-over-year – the all-items US CPI increase stood at 2.1 percent year-over-year, after a modest +0.1 percent month-over-month increase in December.

The path to higher rates

It is worth noting here that the Fed's target of 2 percent inflation looks at another index, the price index for personal consumption expenditures, or PCE. It is a broader measure of inflation in the economy and it currently trails both CPI and core CPI by about 0.3 percentage points. According to the PCE index, which currently shows a year-over-year inflation rate of 1.7 percent, the Fed has not yet reached its inflation target.

Besides inflation, the Fed's other mandate, granted by Congress, is to support "maximum employment." In December, the Federal Open Market Committee, the branch of the Fed that oversees monetary policy, estimated the "longer-run normal rate of unemployment" at between 4.3 and 5.0 percent, with a median value of 4.6 percent. The current unemployment rate of 4.1 percent is thus below this "normal" range and there are many reports in the US media about the difficulties companies face in finding suitable workers. The tighter US labour market has not yet resulted in a significant rise in wages, however. Average earnings were up 2.5% in December, broadly in line with the level posted throughout 2017.

While the federal funds rate currently ranges from 1.25 to 1.50 percent, individual FOMC members have published their expectations that the rate will move between 1.1 and 2.6 percent this year. In other words, while some FOMC members expect rates to be cut, others are looking for fed fund rates to increase by more than 100 basis points this year. Most members are in the 1.9 – 2.4 percent range, though, implying an increase of around 75 basis points.

Growing above potential

The US, the Eurozone and Japanese economies are currently growing above their potential. The Fed estimates US potential growth at 1.8 percent, as compared to current levels of around 2.5 percent. In the Eurozone, real GDP growth was 2.6 percent in the third quarter, the most recent quarter for which we have data, and in Japan, where the potential growth rate is estimated by the Bank of Japan at around 1%, the most recent quarterly GDP figure was 2.1%. While higher growth is good news, it also means that the chances these economies can continue growing above their potential over the next couple of years are fading.

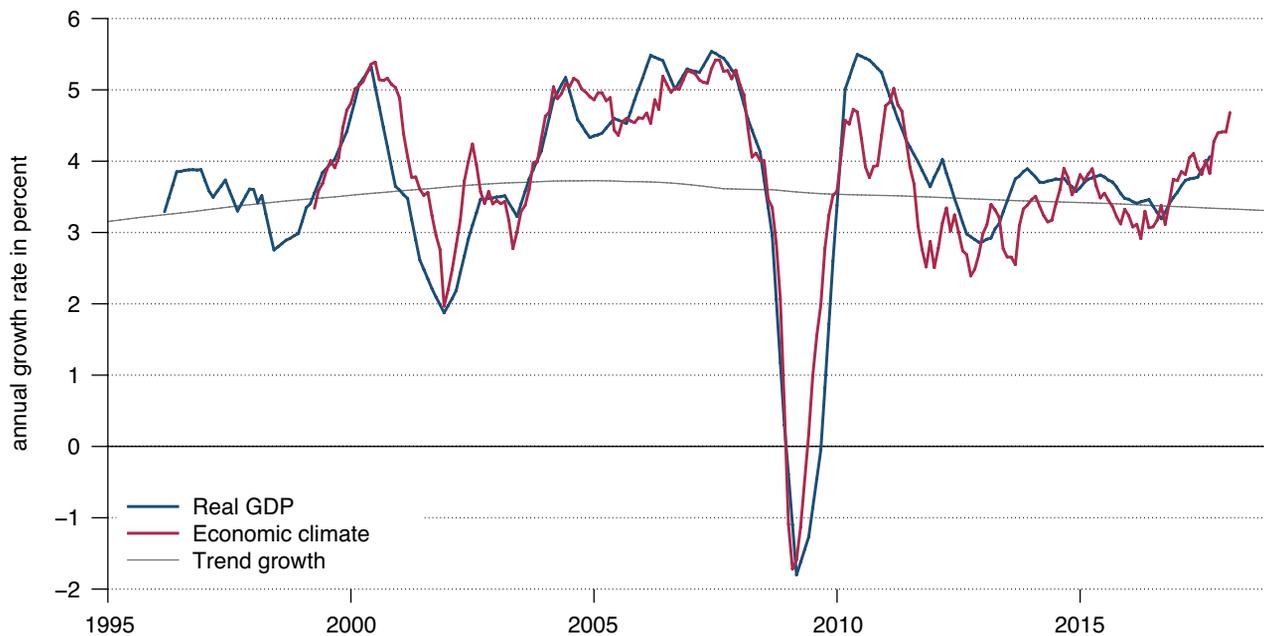
The impact of the US tax cuts

In the US, where all eyes are watching to see how the economy will react to the recent tax cuts, we do not anticipate any significant macroeconomic impact in 2018. Our view is based on empirical research, which shows that the tax multiplier, which estimates how much GDP will be impact-

ed by fiscal expansion, largely depends on where an economy is in terms of the business cycle. Under the right conditions, an appropriately targeted fiscal stimulus can have a big impact, for example, during a recession. But during phases of a cyclical upswing or at the peak of the business cycle, when interest rates are rising, the net impact can be a lot less, or even negative.

Given that the US is currently in a phase of strong cyclical growth, we do not anticipate any short-term growth impulses for the US economy from the recent tax measures. We do, however, expect a deteriorating government deficit situation. We project the US deficit to exceed 6 percent of GDP by 2027. Longer term, therefore, the US will need to find new sources of tax revenues to close that gaping fiscal deficit. The alternative would be for the government to simply spend less, but that seems difficult to do, which is why the debt ceiling keeps getting raised – no matter which party is in power.

Sentiment indicator suggests highest global growth in seven years



Source: Thomson Reuters Datastream, Wellershoff & Partners

FX market talk

Central banks growing less dovish

The start to the new year saw the US dollar continue its weakening trend. This weakness is partially driven by evidence of stronger economic growth in Europe and Japan, suggesting that monetary policy is likely, over time, to tighten gradually in these regions, too.

The euro returns to its PPP

In the opening weeks of the new year, the euro hit a three-year high against the US dollar. The weakening trend of the dollar against the euro started just over a year ago, when it looked as though the two currencies were heading for parity. This was, however, the point at which another type of parity – purchasing power parity – kicked in. Just over a year ago, our PPP estimates suggested that EURUSD should be around 1.26, compared to the spot rate at the time of 1.05 – an undervaluation of the euro by around 16%.

While we know that currencies can deviate from their PPP levels for extended periods, we also know that extreme deviations from to PPP often provide opportunities.

Our current PPP calculation for EURUSD is 1.276 – much closer to where EURUSD has traded thus far in 2018. The near-elimination of the PPP differential no longer allows us to make the case that the euro is undervalued against the US dollar. What we can see from the chart, though, which goes back to 1985, is that the spot rate rarely hovers around its PPP value for long. It tends to eventually return to its fundamental value, like a pendulum returning to its equilibrium point. We also see from

the chart that when the currency touches the PPP line, it either continues its journey and overshoots, or it temporarily bounces back to its previous state of under- or over-valuation.

Growth momentum currently supports the euro

The stronger euro has coincided with the excellent growth numbers and healthy leading indicators for the Eurozone economy. Markets interpreted the minutes of the ECB's policy meeting in December as suggesting less need for the central bank to be overly accommodating. The minutes noted the "robust pace of economic expansion in the euro area" and the "favourable financing conditions," with the drivers of growth "becoming increasingly self-supporting," further stating that, "the expansion had become increasingly broad-based across countries." Thus the Eurozone does not appear to be a region that needs an exceptionally easy monetary policy. In fact, it has been this way for quite a while. The ECB's assessment sounded like a statement encouraging market participants to bring forward their expectations for the bank to start hiking interest rates.

Japanese hints

The ECB minutes were released just a few days after the Bank of Japan unexpectedly reduced its monthly purchases of long-term domestic bonds. This focused the spotlight on the Japanese economic recovery and raised questions about whether the BoJ might not also be preparing to become a bit more restrictive in terms of its accommodating monetary policy.

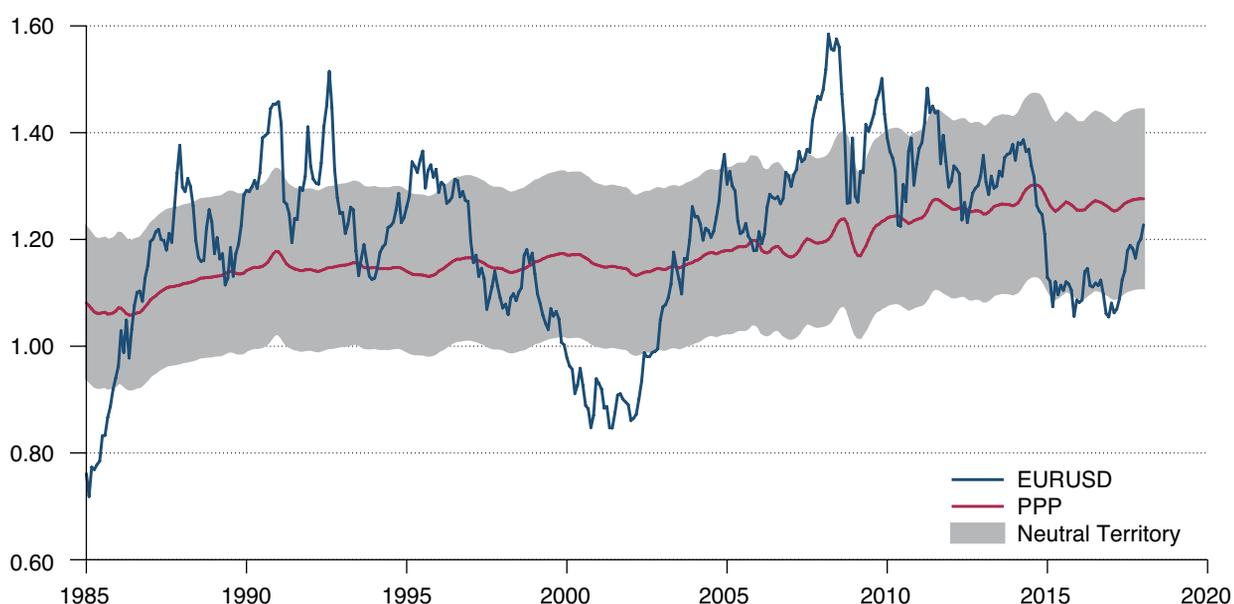
In January, the BoJ issued an assessment of the Japanese economy that appeared to be its most optimistic in ten years. The report pointed out that the economic recovery appeared to be broadening and that inflation was again getting closer to the bank's 2 percent target. Three months ago core inflation was close to zero, but now the BoJ reported that it was hovering around 1 percent. In the third quarter of 2017, the most recent quarter for which we have GDP data for Japan, the economy grew at an annualized 2.5 percent, the seventh consecutive quarter of growth. Not surprisingly, therefore, FX markets have become more sensitive to signals of a potential change in monetary policy, given how far the Japanese yen has deviated from its PPP value against the US dollar.

Our PPP estimate for USDJPY is 86, implying that the yen is currently undervalued by around 20 percent against the US dollar. While the BoJ's ultra-loose monetary policies are helping to keep the yen very cheap, we know that such extreme deviations from PPP are not sustainable over the longer term.

Brexit and Sterling

While, the British pound has made up some of its losses against the USD since the Brexit referendum in June of 2016, this recovery is also a reflection of the dollar's weakness against the euro. Our PPP estimate for GBPUSD is 1.60, for EURGBP 0.79, and for GBPCHF 1.53. This implies that Sterling is currently undervalued by about 13 percent against the US dollar and the Swiss franc and by around 10 percent against the euro. Placing a bet that Sterling will close these gaps further over the coming year would require that an investor is prepared to ignore the heightened volatility likely to accompany the UK's ongoing negotiations with the EU, and the potentially binary nature of the outcome.

Past Over-/Undervaluations of the Euro against the US-Dollar



Source: Thomson Reuters Datastream, Wellershoff & Partners

Economic activity

According to the most recent survey data, the global economy has started the year with solid growth rates. In this context, the Eurozone and the UK appear to have been key growth drivers. Sentiment has also improved in the emerging markets over the past month. In the US, however, the ISM Composite Index declined due to lower confidence in the services sector. But the ISM Manufacturing Index recovered to stand at 59.7 points in December. Overall, the data points to a continuation of the growth momentum, suggesting that a global growth rate of around 4.7 percent was probably attained in 2017.

The Eurozone is currently delivering the biggest boost to the global upswing, and the sentiment indicators collected by the European Commission stood at 116 in December, the highest level since early 2000. This strong sentiment level was reflected across all sectors. Both consumer sentiment and the economic situation of households were judged more optimistically. Against the backdrop of the improvement in the labour market data, this upbeat consumer sentiment data is also backed by fundamental data. Inflation expectations was the only component that remained stable.

Growth overview

| | Trend growth ¹ | Real GDP growth ² | | | | W&P economic sentiment indicators ³ | | | |
|---------------------------------------|---------------------------|------------------------------|---------|---------|---------|--|---------|---------|---------|
| | | Q2/2017 | Q3/2017 | Q4/2017 | Q1/2018 | 9/2017 | 10/2017 | 11/2017 | 12/2017 |
| United States | 1.7 | 2.0 | 2.2 | 2.3 | - | 3.7 | 3.6 | 3.3 | 3.2 |
| Eurozone | 1.0 | 2.1 | 2.4 | 2.8 | - | 3.0 | 3.1 | 3.2 | 3.4 |
| Germany | 1.4 | 2.1 | 2.3 | 2.8 | - | 3.4 | 3.7 | 3.7 | 4.0 |
| France | 0.7 | 1.2 | 1.9 | 2.3 | - | 2.0 | 1.8 | 2.0 | 2.3 |
| Italy | 0.2 | 1.3 | 1.5 | 1.7 | - | 1.7 | 1.9 | 1.9 | 1.9 |
| Spain | 1.6 | 3.0 | 3.1 | 3.1 | - | 2.6 | 2.7 | 2.8 | 2.6 |
| United Kingdom | 1.8 | 2.1 | 1.9 | 1.8 | - | 2.4 | 2.6 | 2.4 | 2.9 |
| Switzerland | 1.5 | 0.6 | 0.5 | 1.2 | - | 2.3 | 2.2 | 2.6 | 2.6 |
| Japan | 0.4 | 1.3 | 1.7 | 2.1 | - | 2.6 | 2.6 | 2.7 | 2.8 |
| Canada | 1.6 | 2.3 | 3.6 | 3.0 | - | 1.1 | 0.9 | 1.0 | 1.4 |
| Australia | 2.4 | 1.8 | 1.9 | 2.8 | - | 2.6 | 2.5 | 2.4 | 2.5 |
| Brazil | 1.4 | -0.5 | 0.8 | 1.4 | - | 2.0 | 2.1 | 3.6 | 3.0 |
| Russia | 0.1 | 0.5 | 2.5 | 1.8 | - | 2.1 | 2.1 | 1.8 | 2.2 |
| India | 7.7 | 6.1 | 5.7 | 6.3 | - | 7.2 | 7.2 | 7.3 | 7.6 |
| China | 7.4 | 6.9 | 6.9 | 6.8 | - | 6.9 | 6.8 | 6.7 | 7.0 |
| Advanced economies⁴ | 1.4 | 2.2 | 2.1 | 2.4 | - | 3.5 | 3.6 | 3.4 | 3.5 |
| Emerging economies⁴ | 6.0 | 5.1 | 5.3 | 5.6 | - | 5.3 | 5.3 | 5.4 | 5.7 |
| World economy⁴ | 3.5 | 3.7 | 3.7 | 4.0 | - | 4.4 | 4.4 | 4.5 | 4.7 |

¹ Current year-on-year trend growth rate of real GDP, in percent, according to the proprietary trend growth model of Wellershoff & Partners.

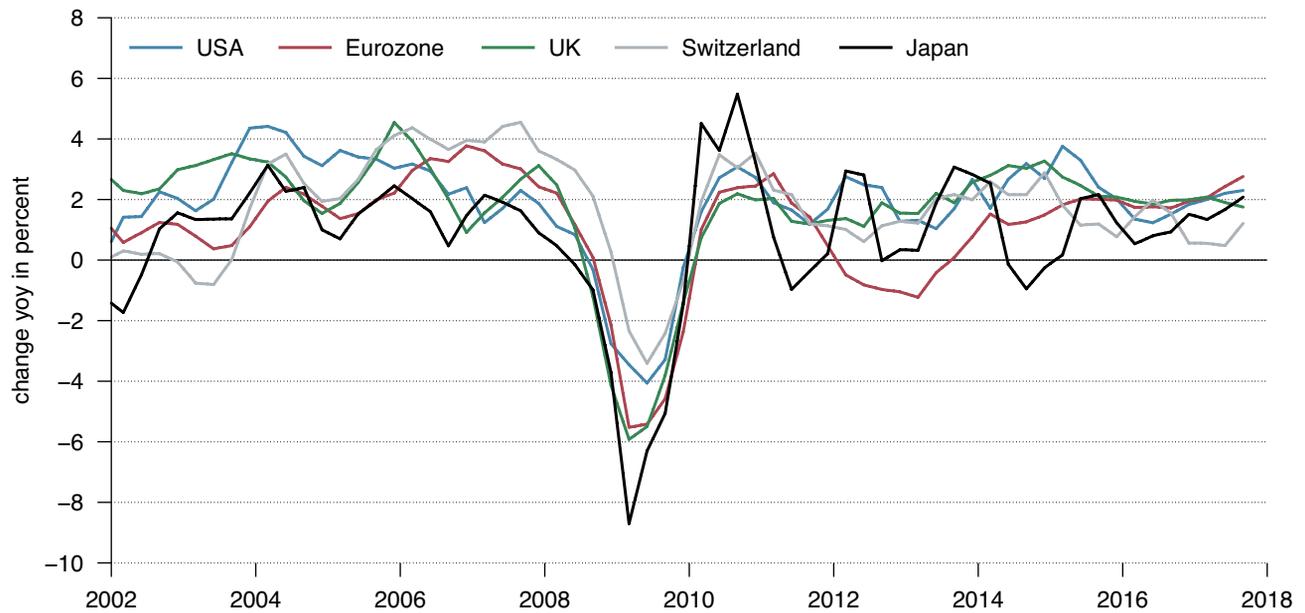
² Year-on-year growth rate, in percent.

³ Wellershoff & Partners economic sentiment indicators are based on consumer and business surveys and have up to 6 months lead on the year-on-year growth rate of real GDP.

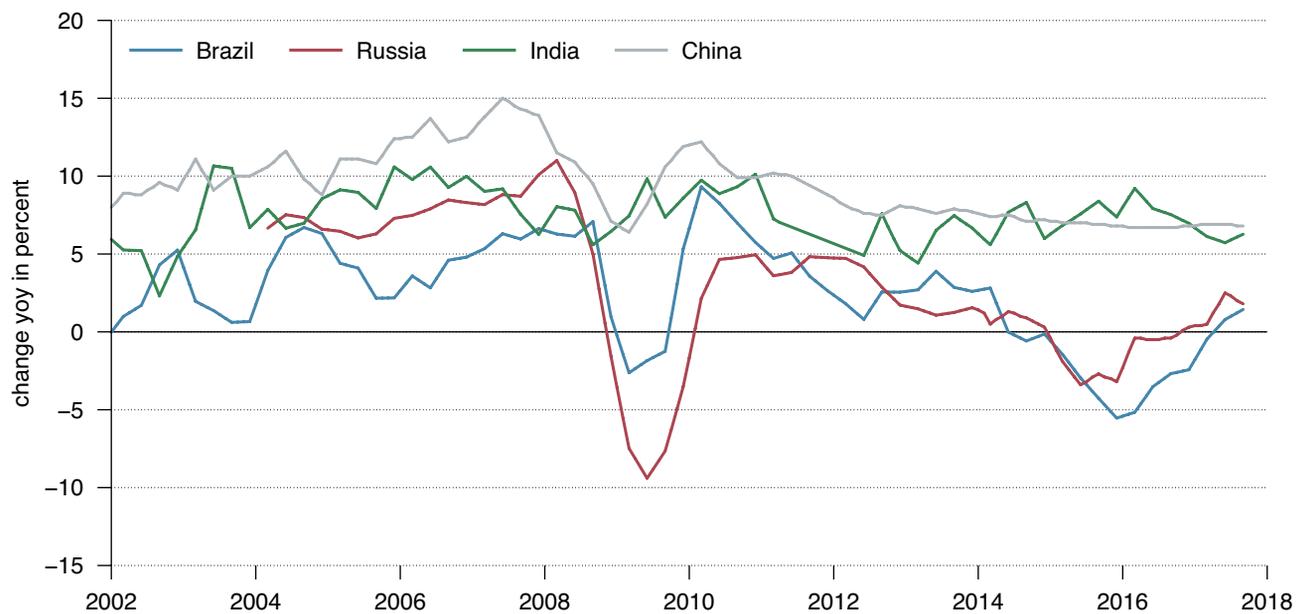
⁴ Calculations are based on nominal GDP weights derived from purchasing power parity exchange rates.

Source: European Commission, Penn World Table, Thomson Reuters Datastream, Wellershoff & Partners

Economic growth in advanced economies



Economic growth in emerging economies



Source: Thomson Reuters Datastream, Wellershoff & Partners

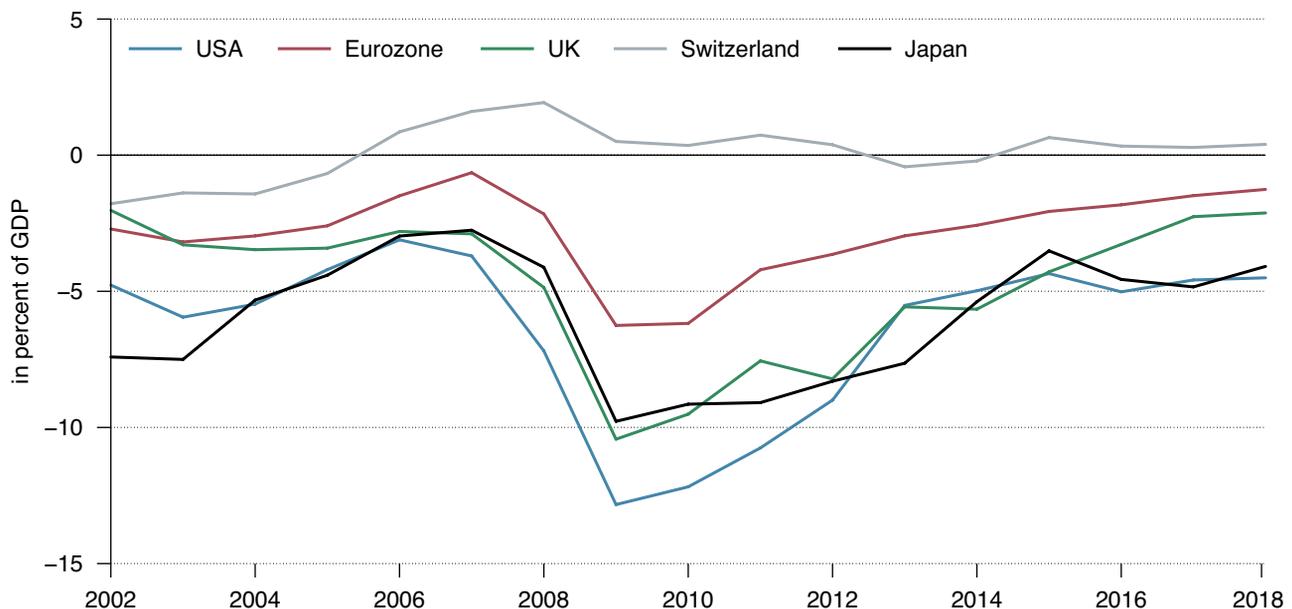
Economic indicators

Overview

| | Global GDP share ¹ | | Current account ² | | Public debt ² | | Budget deficit ² | | Unemployment rate ³ | |
|-----------------------|-------------------------------|---------|------------------------------|---------|--------------------------|---------|-----------------------------|---------|--------------------------------|---------|
| | Ø 5 years | Current | Ø 5 years | Current | Ø 5 years | Current | Ø 5 years | Current | Ø 5 years | Current |
| United States | 23.5 | 23.9 | -2.3 | -2.6 | 105.4 | 106.1 | -4.9 | -4.5 | 5.6 | 4.1 |
| Eurozone | 16.3 | 16.0 | 3.6 | 4.0 | 108.9 | 107.1 | -2.2 | -1.3 | 11.1 | 8.7 |
| Germany | 4.7 | 4.7 | 7.8 | 8.0 | 78.8 | 69.1 | 0.5 | 1.5 | 6.4 | 5.5 |
| France | 3.4 | 3.3 | -1.0 | -1.7 | 119.7 | 124.6 | -3.6 | -2.8 | 9.9 | 9.4 |
| Italy | 2.6 | 2.4 | 2.0 | 2.9 | 155.4 | 155.2 | -2.6 | -1.6 | 12.1 | 11.2 |
| Spain | 1.7 | 1.7 | 1.4 | 1.6 | 114.8 | 116.0 | -5.2 | -2.4 | 23.1 | 16.7 |
| United Kingdom | 3.6 | 3.2 | -5.3 | -4.4 | 113.8 | 120.3 | -4.2 | -2.1 | 5.7 | - |
| Switzerland | 0.9 | 0.8 | 10.2 | 10.7 | 44.8 | 43.6 | 0.1 | 0.4 | 3.2 | 3.3 |
| Japan | 6.3 | 6.0 | 2.5 | 3.9 | 215.6 | 223.3 | -5.2 | -4.1 | 3.5 | 2.7 |
| Canada | 2.2 | 2.1 | -3.1 | -2.9 | 88.9 | 87.7 | -1.3 | -1.8 | 6.9 | 5.7 |
| Australia | 1.8 | 1.8 | -3.0 | -2.4 | 37.1 | 42.3 | -2.6 | -1.8 | 5.9 | 5.4 |
| China | 14.2 | 15.5 | 1.9 | 1.2 | 42.0 | 50.8 | -2.4 | -3.7 | 4.1 | - |
| Brazil | 2.8 | 2.6 | -2.7 | -1.8 | 71.3 | 87.7 | -7.4 | -9.3 | 8.4 | 12.0 |
| India | 2.8 | 3.1 | -1.2 | -1.5 | 69.0 | 67.1 | -6.8 | -6.2 | - | - |
| Russia | 2.2 | 1.8 | 2.8 | 3.2 | 15.5 | 17.7 | -2.3 | -1.5 | 5.4 | 5.1 |

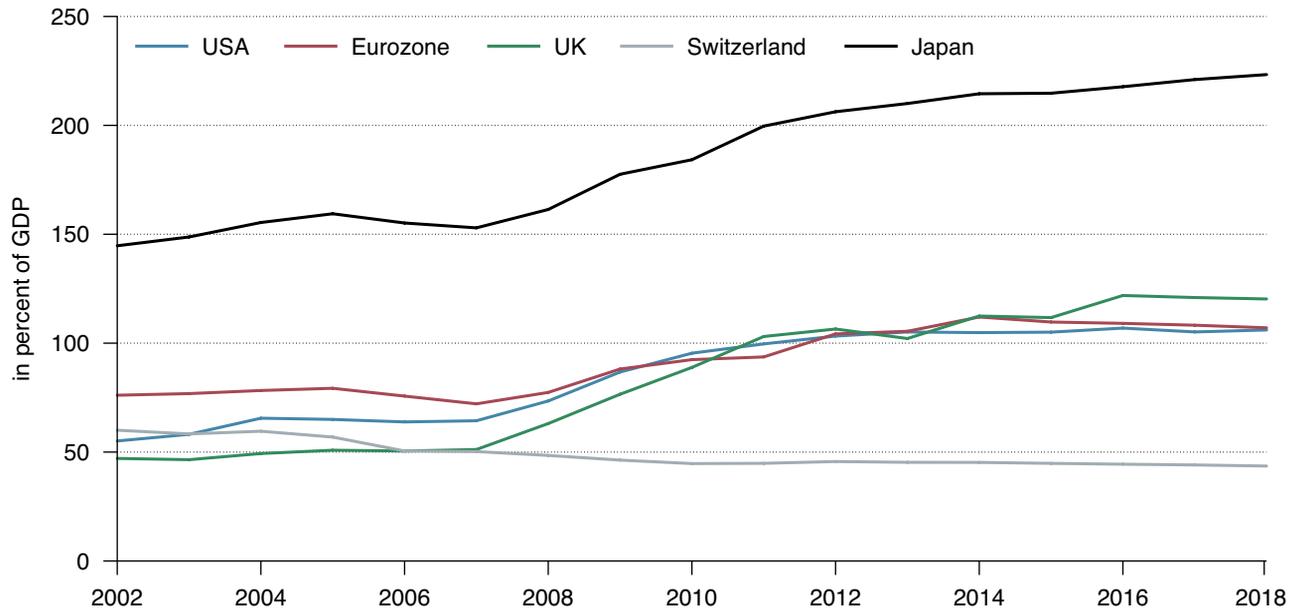
¹ In percent; calculations based on market exchange rates. ² In percent of nominal GDP. ³ In percent.

Budget deficits in advanced economies

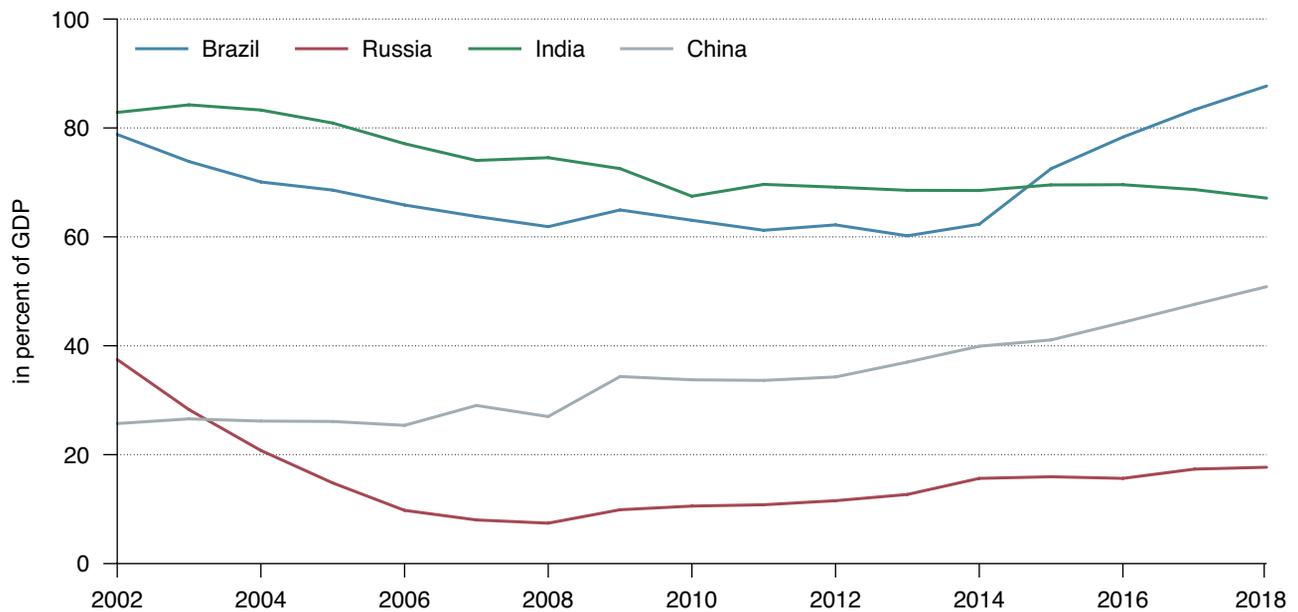


Source: Thomson Reuters Datastream, Wellershoff & Partners

Public debt in advanced economies



Public debt in emerging economies



Source: Thomson Reuters Datastream, Wellershoff & Partners

Inflation

The flat inflation expectations do not surprise us, given that inflation in the Eurozone has not managed to keep pace with the improvements in economic growth. Hence, Eurozone inflation slowed to 1.4 percent and core inflation held steady at 0.9 percent. That inflation continues to stay well below the ECB's 2 percent upper target is one of the reasons why the central bank says it wants to stick with its expansive monetary policy. The ECB is continuing its bond-purchasing program of EUR 30 billion per month in 2018, thereby keeping its foot on the accelerator in an attempt to push inflation higher.

The situation is rather different in Switzerland, where year-over-year inflation was at 0.8 percent in December, while the month-over-month rate was unchanged. Domestic inflation increased by 0.3 percent month-over-month, whereas the prices of imported goods rose by 2.4 percent. The impetus for this higher inflation is unsurprising given the depreciation of the Swiss franc and the impact of higher oil prices. The core inflation rate was 0.6 percent and the average inflation rate for the year was 0.5 percent. These numbers would give the Swiss National Bank sufficient room to maneuver should it decide to start raising interest rates before the European Central Bank does.

Inflation overview

| | Ø 10 years ¹ | Inflation ² | | | | Core inflation ³ | | | |
|---------------------------------------|-------------------------|------------------------|---------|---------|---------|-----------------------------|---------|---------|---------|
| | | 9/2017 | 10/2017 | 11/2017 | 12/2017 | 9/2017 | 10/2017 | 11/2017 | 12/2017 |
| United States | 1.7 | 2.2 | 2.0 | 2.2 | 2.1 | 1.7 | 1.8 | 1.7 | 1.8 |
| Eurozone | 1.4 | 1.5 | 1.4 | 1.5 | 1.4 | 1.1 | 0.9 | 0.9 | 0.9 |
| Germany | 1.3 | 1.8 | 1.6 | 1.8 | 1.6 | 1.8 | 1.6 | 1.6 | 1.6 |
| France | 1.1 | 1.0 | 1.1 | 1.2 | 1.2 | - | - | - | - |
| Italy | 1.4 | 1.1 | 1.0 | 0.9 | 0.9 | 0.7 | 0.5 | 0.4 | 0.4 |
| Spain | 1.4 | 1.8 | 1.6 | 1.7 | 1.1 | 1.2 | 0.9 | 0.8 | 0.8 |
| United Kingdom | 2.4 | 3.0 | 3.0 | 3.1 | - | 2.7 | 2.6 | 2.7 | - |
| Switzerland | 0.1 | 0.6 | 0.7 | 0.8 | 0.8 | 0.5 | 0.5 | 0.6 | 0.7 |
| Japan | 0.3 | 0.7 | 0.2 | 0.5 | - | 0.2 | 0.2 | 0.3 | - |
| Canada | 1.6 | 1.5 | 1.4 | 2.1 | - | 0.8 | 0.9 | 1.3 | - |
| Australia | 2.4 | 1.8 | - | - | - | 1.9 | - | - | - |
| Brazil | 6.1 | 2.5 | 2.7 | 2.8 | 3.0 | 3.8 | 4.0 | 3.9 | 3.8 |
| Russia | 8.7 | 3.0 | 2.7 | 2.5 | 2.5 | 2.8 | 2.5 | 2.3 | 2.1 |
| India | 7.7 | 3.3 | 3.6 | 4.9 | 5.2 | - | - | - | - |
| China | -0.3 | -0.3 | -0.2 | -0.6 | 1.5 | 2.3 | 2.3 | 2.3 | 2.2 |
| Advanced economies⁴ | 1.5 | 1.8 | 1.6 | 1.8 | 1.7 | 1.4 | 1.3 | 1.4 | 1.4 |
| Emerging economies⁴ | 3.4 | 1.1 | 1.2 | 1.3 | 1.6 | 2.5 | 2.5 | 2.5 | 2.4 |
| World economy⁴ | 2.3 | 1.5 | 1.5 | 1.6 | 1.7 | 1.7 | 1.6 | 1.6 | 1.6 |

¹ Average annual consumer price inflation, in percent.

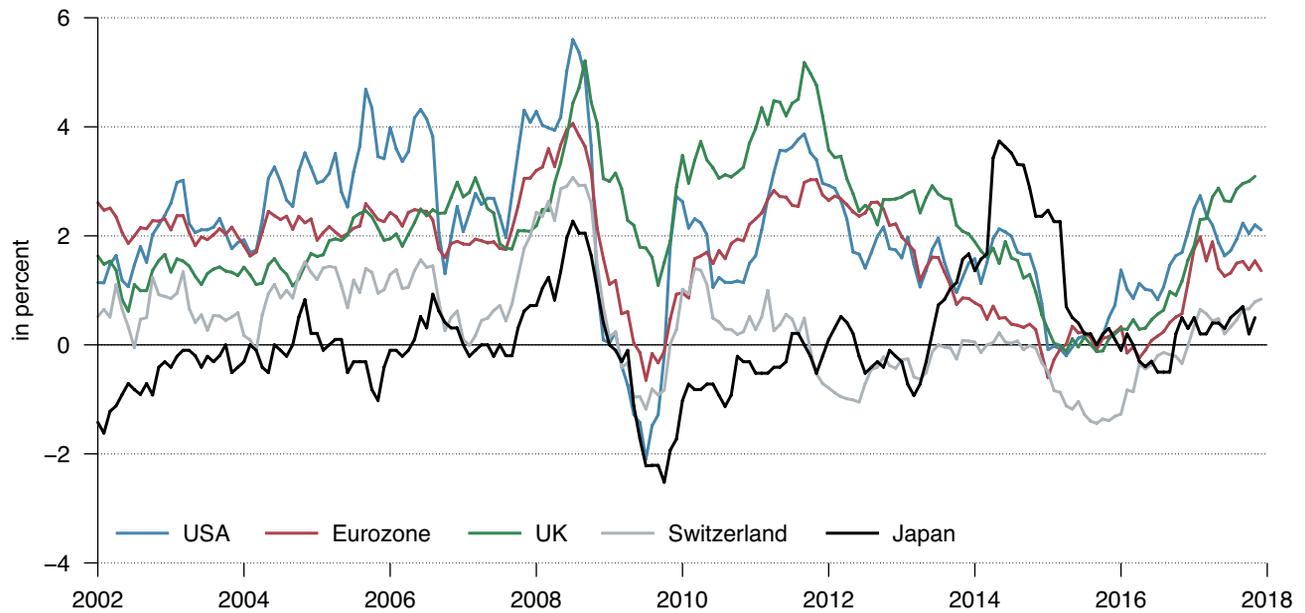
² Year-on-year change of the consumer price index (CPI), in percent.

³ Core inflation is a measure of inflation that excludes certain items that can experience volatile price movements, such as energy and certain food items; year-on-year change of the core consumer price index, in percent.

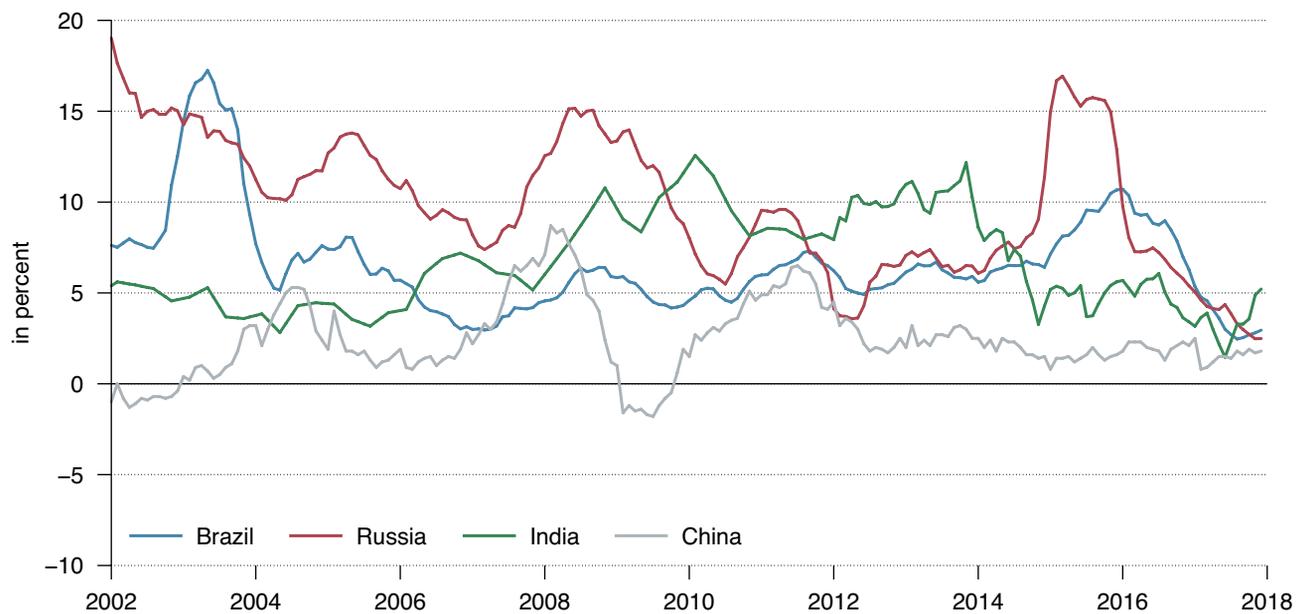
⁴ Calculations are based on nominal GDP weights derived from purchasing power parity exchange rates.

Source: Thomson Reuters Datastream, Wellershoff & Partners

Consumer price inflation in advanced economies



Consumer price inflation in emerging economies



Source: Thomson Reuters Datastream, Wellershoff & Partners

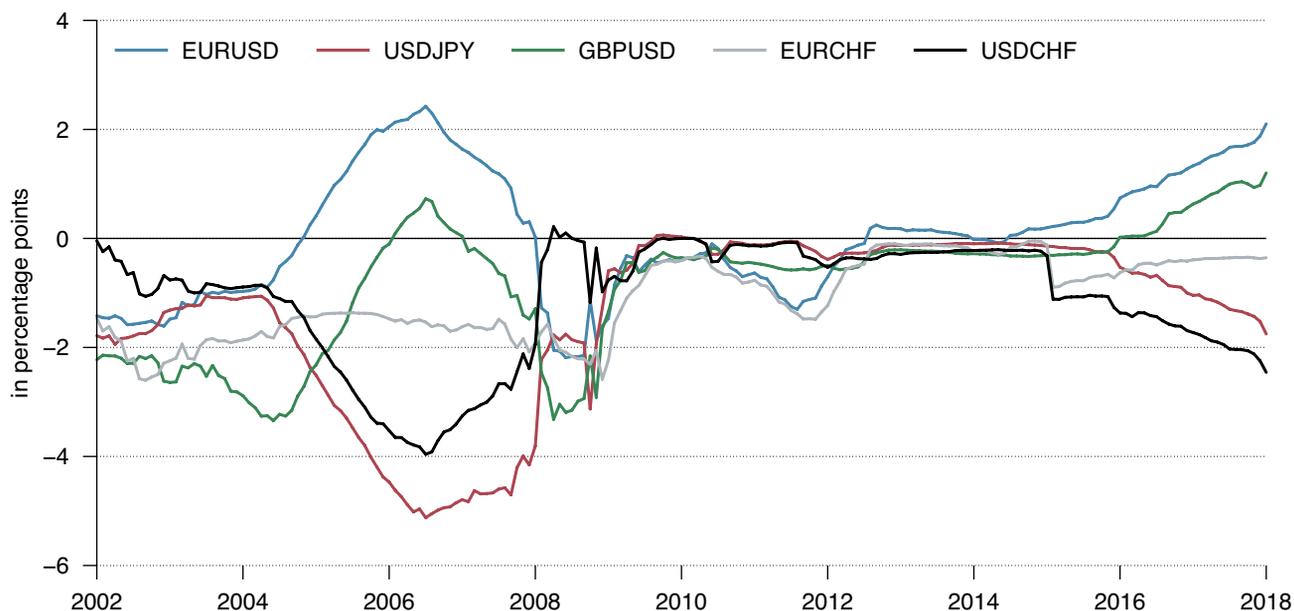
Interest rates

Interest rate differentials overview

| | Current exchange rate | Interest rate differentials 3 months ¹ | | | | Interest rate differentials 12 months ¹ | | | |
|--------|-----------------------|---|------------|-----------|------------|--|------------|-----------|------------|
| | | Current | 1 year ago | Ø 5 years | Ø 10 years | Current | 1 year ago | Ø 5 years | Ø 10 years |
| EURUSD | 1.227 | 2.09 | 1.33 | 0.65 | -0.04 | 2.43 | 1.78 | 0.90 | 0.12 |
| USDJPY | 110.5 | -1.75 | -1.05 | -0.51 | -0.51 | -2.06 | -1.57 | -0.81 | -0.76 |
| GBPUSD | 1.380 | 1.20 | 0.67 | 0.08 | -0.40 | 1.40 | 0.93 | 0.15 | -0.37 |
| EURCHF | 1.182 | -0.36 | -0.42 | -0.37 | -0.68 | -0.26 | -0.42 | -0.40 | -0.77 |
| USDCHF | 0.963 | -2.46 | -1.75 | -1.02 | -0.64 | -2.70 | -2.20 | -1.30 | -0.88 |
| GBPCHF | 1.330 | -1.26 | -1.08 | -0.94 | -1.04 | -1.30 | -1.27 | -1.14 | -1.25 |
| CHFJPY | 114.7 | 0.70 | 0.70 | 0.51 | 0.13 | 0.64 | 0.63 | 0.49 | 0.12 |
| AUDUSD | 0.797 | 0.22 | -0.47 | -1.48 | -2.48 | 0.57 | 0.18 | -0.95 | -1.93 |
| USDCAD | 1.241 | -0.07 | -0.07 | 0.53 | 0.53 | -0.14 | -0.48 | 0.28 | 0.29 |
| USDSEK | 8.019 | -2.17 | -1.72 | -0.52 | 0.32 | -2.39 | -1.88 | -0.69 | 0.16 |
| USDRUB | 56.4 | 5.08 | 8.33 | 9.36 | 8.25 | 4.83 | 7.40 | 8.78 | 8.28 |
| USDBRL | 3.199 | 6.45 | 11.42 | 11.13 | 10.28 | 4.70 | 9.34 | 10.27 | 9.96 |
| USDCNY | 6.442 | 2.96 | 2.68 | 3.50 | 3.06 | 2.55 | 1.91 | 3.08 | 2.69 |
| USDTRY | 3.794 | 12.85 | 9.89 | 9.78 | 9.74 | 12.94 | 10.14 | 9.63 | 9.89 |
| USDINR | 63.46 | 7.47 | 7.47 | 8.67 | 7.74 | 4.45 | 4.57 | 6.53 | 5.89 |

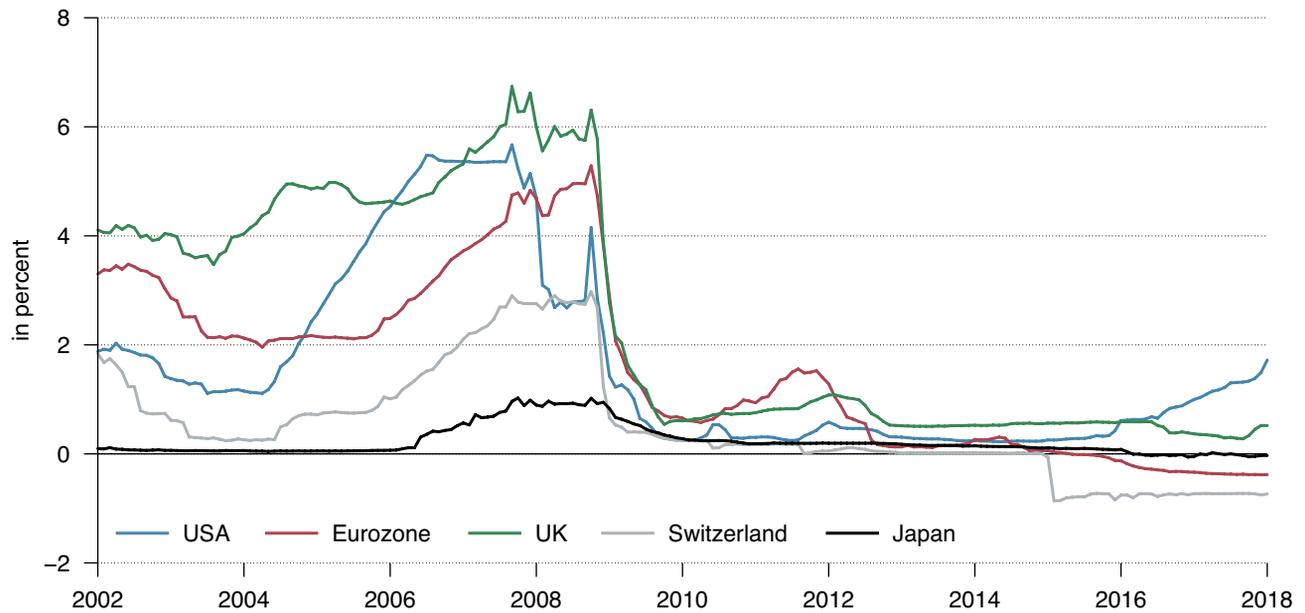
¹ The gap in interest rates between the second currency and the first one, in percentage points; e.g. US dollar minus euro for EURUSD.

Interest rate differentials

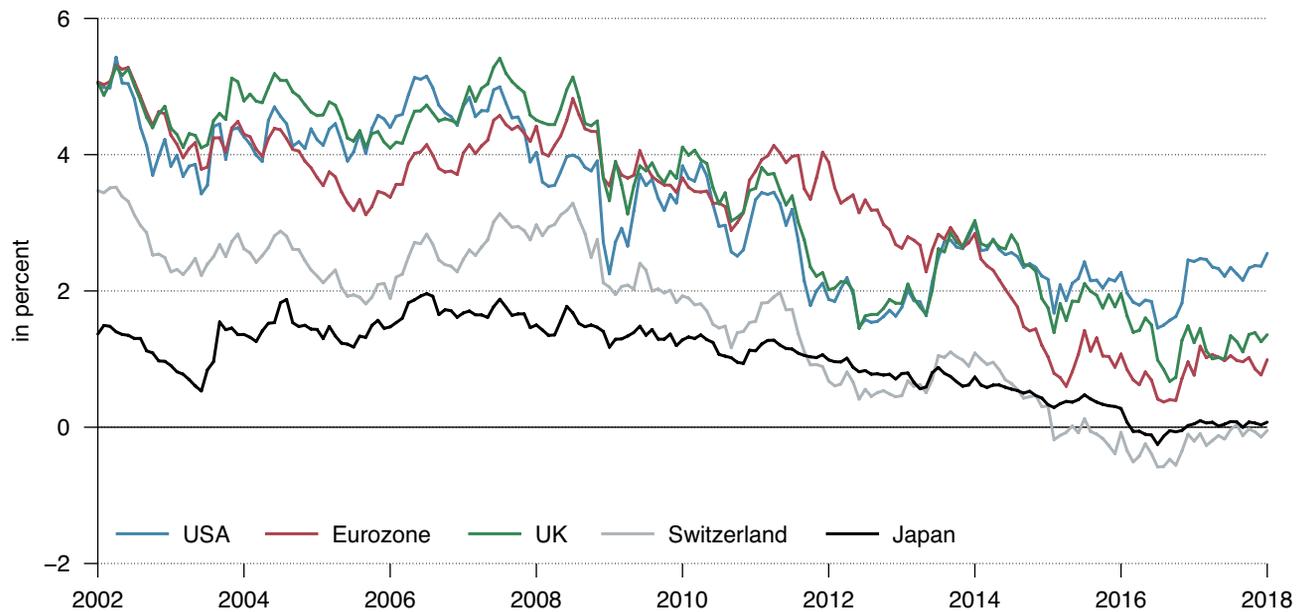


Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

3-month Libor



10-year government bond yields



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

FX markets

The theme of US dollar weakness continued into the opening weeks of 2018, taking the US dollar to a three-year low against the euro. The undervaluation of the euro against the US dollar has now narrowed to around 4 percent in terms of our PPP calculations. That is quite a change from the more than 16 percent gap that existed a year ago. Based on our data, below, the currency pairs that still show large PPP gaps relative to the US dollar include the Russian ruble, the Turkish lira and the Japanese yen. The British pound and the Brazilian real are also cheap against the US dollar, when compared to their respective PPP values.

At the other end of the spectrum, the Swiss franc and the Chinese renminbi appear broadly in line with their USD PPP valuations. Over the past year, the CNY has weakened by around 7 percent against the USD, reflecting dollar weakness against the currencies in the CNY currency basket. All things being equal, this means that the stronger CNY will have absorbed part of the increase in oil prices, helping to keep a damper on Chinese inflation. And inflation differentials, we note, are the drivers of PPP changes. Moreover, with the gross level of China's foreign exchange holdings having increased throughout 2017, this has reinforced the market signal to locals that switching out of the CNY into USD is not always a winning move.

FX overview

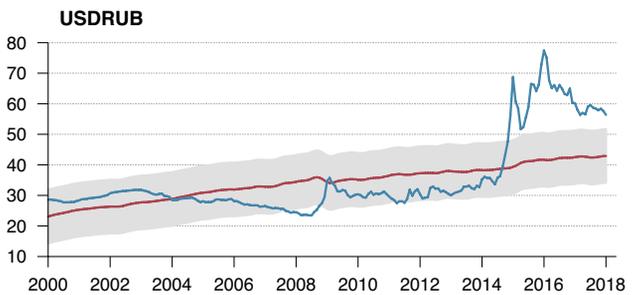
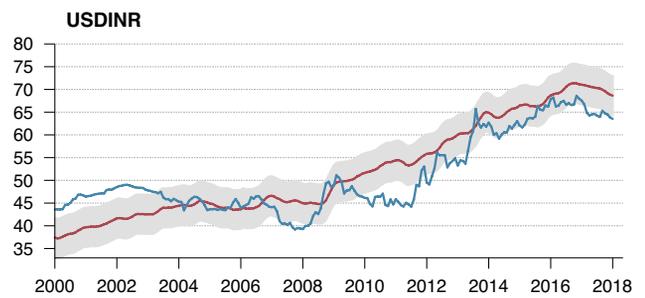
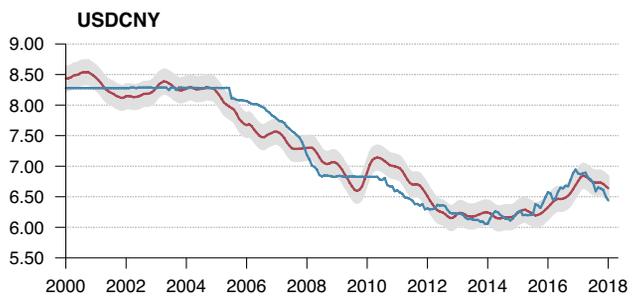
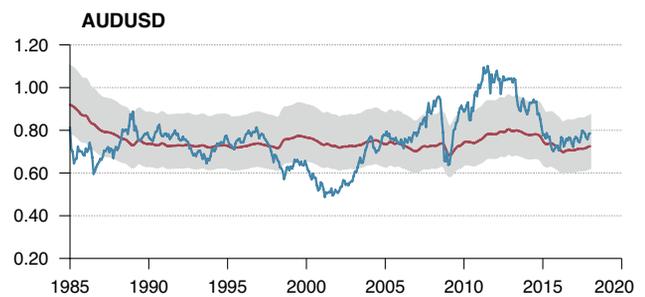
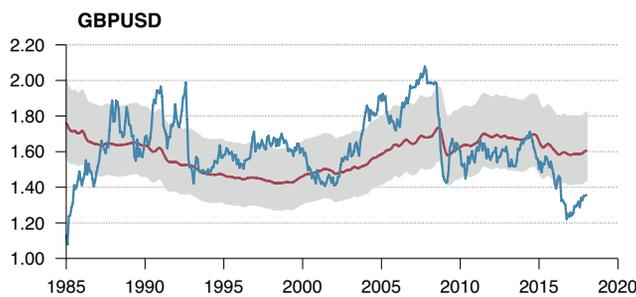
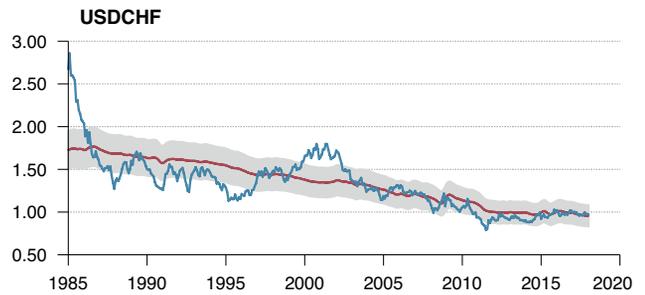
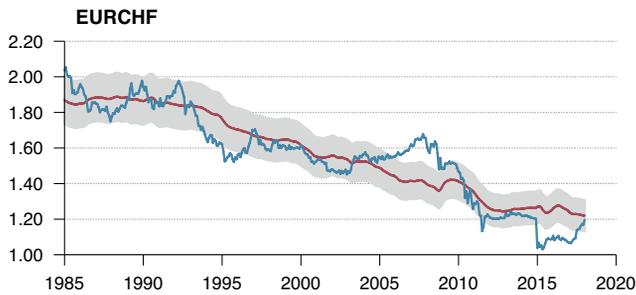
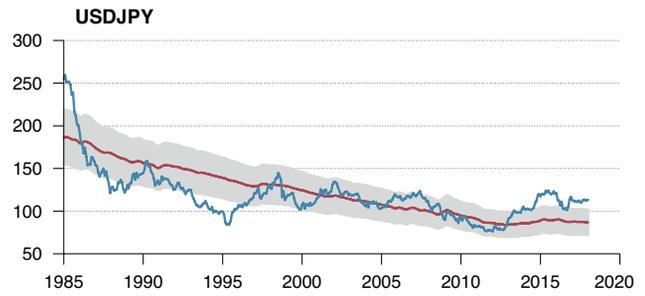
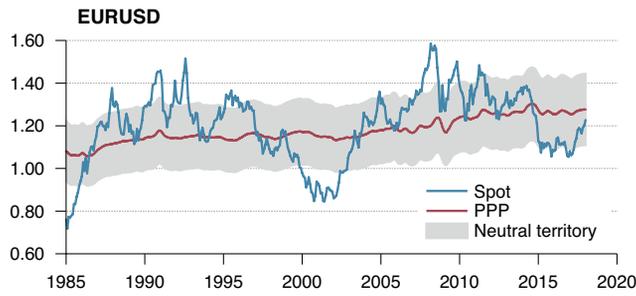
| | Current exchange rate | Performance ¹ | | | | Purchasing Power Parity ² | | |
|---------|-----------------------|--------------------------|----------|--------|---------|--------------------------------------|-------------------|------------------------|
| | | YTD | 3 months | 1 year | 5 years | PPP | Neutral territory | Deviation ³ |
| EURUSD | 1.227 | 2.2 | 4.4 | 15.5 | -8.1 | 1.28 | 1.11 - 1.44 | -3.8 |
| USDJPY | 110.5 | -1.9 | -1.6 | -3.9 | 24.7 | 86.8 | 71.9 - 101.8 | 27.3 |
| GBPUSD | 1.380 | 2.0 | 4.8 | 13.3 | -14.2 | 1.61 | 1.44 - 1.82 | -14.0 |
| EURCHF | 1.182 | 1.0 | 2.7 | 10.2 | -4.5 | 1.22 | 1.13 - 1.31 | -3.1 |
| USDCHF | 0.963 | -1.1 | -1.7 | -4.6 | 3.8 | 0.96 | 0.83 - 1.08 | 0.8 |
| GBPCHF | 1.330 | 0.9 | 3.0 | 8.1 | -10.9 | 1.53 | 1.32 - 1.74 | -13.4 |
| CHFJPY | 114.7 | -0.8 | 0.1 | 0.7 | 20.0 | 90.8 | 76.9 - 104.8 | 26.3 |
| AUDUSD | 0.797 | 1.9 | 1.8 | 6.4 | -24.4 | 0.73 | 0.62 - 0.87 | 9.9 |
| USDCAD | 1.241 | -1.0 | -1.3 | -5.4 | 26.1 | 1.19 | 1.09 - 1.29 | 4.1 |
| USDSEK | 8.019 | -2.1 | -1.7 | -10.1 | 23.7 | 7.12 | 6.16 - 8.07 | 12.7 |
| USD RUB | 56.4 | -2.1 | -1.9 | -5.7 | 86.2 | 42.9 | 34.2 - 51.6 | 31.4 |
| USDBRL | 3.199 | -3.6 | 0.6 | -0.4 | 57.0 | 2.74 | 2.2 - 3.27 | 16.9 |
| USDCNY | 6.442 | -1.1 | -2.6 | -6.6 | 3.7 | 6.64 | 6.44 - 6.83 | -3.0 |
| USDTRY | 3.794 | 0.1 | 3.4 | 0.9 | 114.6 | 2.95 | 2.67 - 3.23 | 28.7 |
| USDINR | 63.46 | -0.6 | -2.3 | -7.0 | 16.2 | 68.6 | 64.4 - 72.9 | -7.5 |

¹ Performance over the respective period of time, in percent.

² Purchasing power parity (PPP) is estimated based on the relative development of inflation rates in two currency markets; the neutral territory is determined by +/- 1 standard deviation of the historical variation around the PPP value.

³ Deviation of the current spot rate from PPP, in percent.

Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners



Source: Thomson Reuters Datastream, Wellershoff & Partners

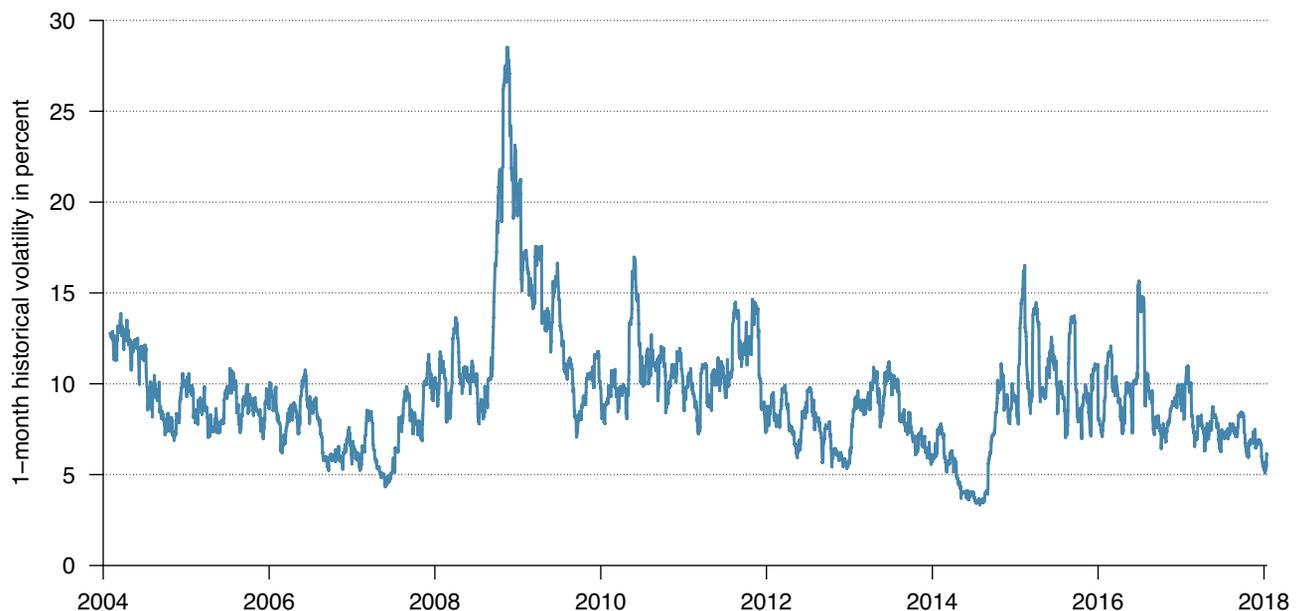
FX volatility

FX volatility overview

| | Current exchange rate | Volatility 3 months ¹ | | | | Volatility 12 months ¹ | | | |
|--------|-----------------------|----------------------------------|---------|------------------------|-------------------------|-----------------------------------|---------|------------------------|-------------------------|
| | | Historical | Implied | Ø 5 years ² | Ø 10 years ² | Historical | Implied | Ø 5 years ² | Ø 10 years ² |
| EURUSD | 1.227 | 6.0 | 7.2 | 8.6 | 10.6 | 6.9 | 7.3 | 8.9 | 10.9 |
| USDJPY | 110.5 | 6.6 | 7.5 | 9.9 | 11.0 | 8.1 | 8.2 | 10.2 | 11.4 |
| GBPUSD | 1.380 | 7.0 | 7.3 | 8.5 | 9.9 | 8.0 | 7.8 | 8.9 | 10.5 |
| EURCHF | 1.182 | 5.1 | 5.2 | 5.8 | 6.5 | 5.1 | 5.5 | 6.3 | 7.0 |
| USDCHF | 0.963 | 6.5 | 6.9 | 8.8 | 10.6 | 7.0 | 7.5 | 9.3 | 10.9 |
| GBPCHF | 1.330 | 7.6 | 6.6 | 8.8 | 10.3 | 8.3 | 7.4 | 9.2 | 10.7 |
| CHFJPY | 114.7 | 5.8 | 6.6 | 9.9 | 11.6 | 7.3 | 7.2 | 10.5 | 12.2 |
| AUDUSD | 0.797 | 7.0 | 7.6 | 10.0 | 12.4 | 7.9 | 8.5 | 10.5 | 12.9 |
| USDCAD | 1.241 | 7.4 | 7.3 | 7.9 | 9.8 | 7.4 | 7.3 | 8.2 | 10.2 |
| USDSEK | 8.019 | 8.2 | 8.3 | 9.9 | 12.5 | 8.5 | 8.6 | 10.3 | 12.8 |
| USDRUB | 56.4 | 9.1 | 9.5 | 16.2 | 14.5 | 10.6 | 11.1 | 16.5 | 15.6 |
| USDBRL | 3.199 | 10.6 | 11.6 | 14.9 | 15.5 | 13.1 | 13.9 | 15.4 | 16.1 |
| USDCNY | 6.442 | 3.4 | 4.7 | 3.5 | 3.2 | 3.1 | 5.0 | 4.4 | 4.8 |
| USDTRY | 3.794 | 11.3 | 11.9 | 12.2 | 13.2 | 11.2 | 13.3 | 13.4 | 14.4 |
| USDINR | 63.46 | 4.1 | 5.1 | 7.9 | 9.5 | 3.9 | 6.5 | 9.1 | 10.5 |

¹ Annualized volatility, in percent. ² Average of implied volatility.

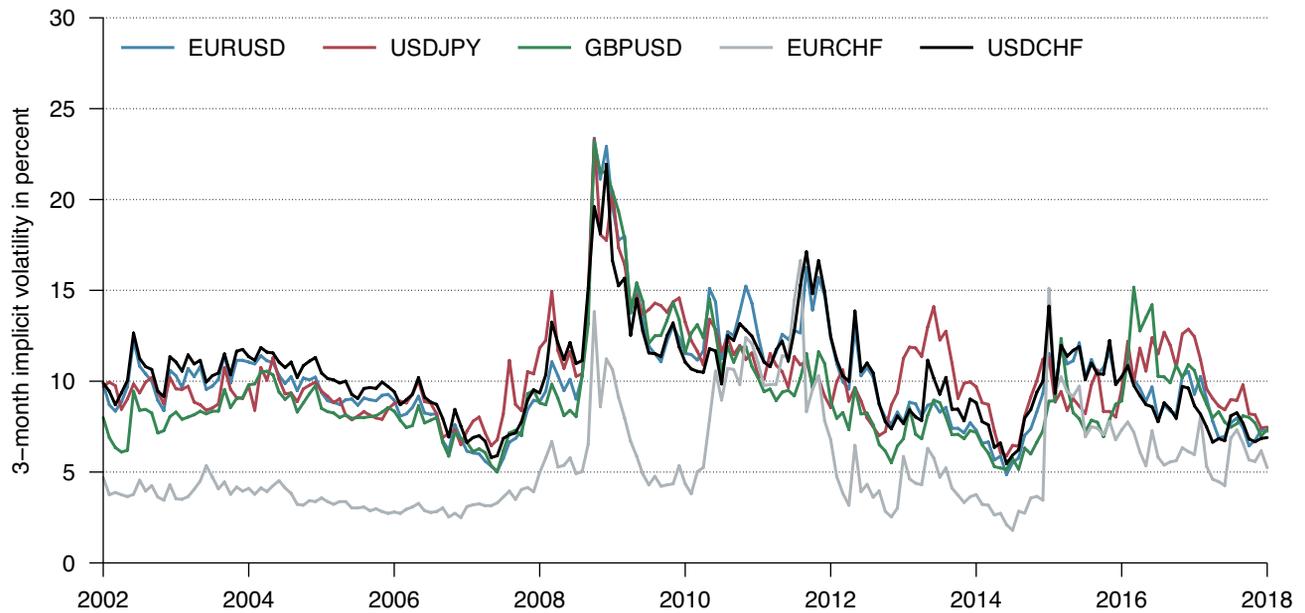
QCAM volatility indicator³



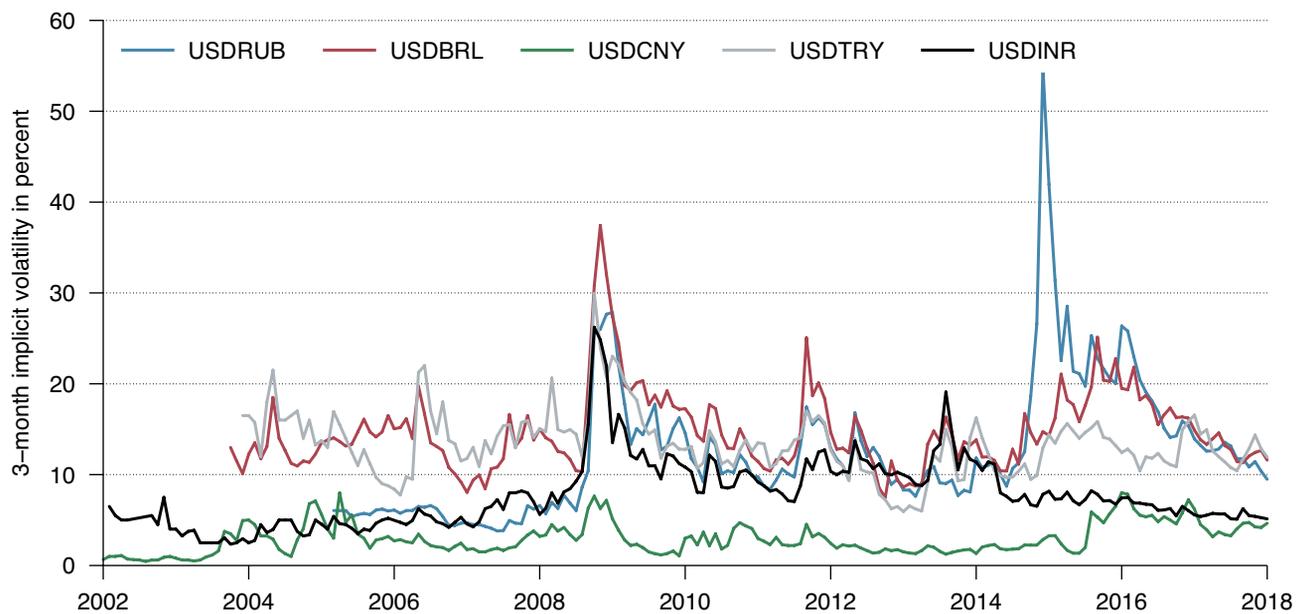
³ The QCAM volatility indicator measures general volatility in global FX markets; the indicator is based on historical volatility of the main exchange rates, which are weighted by trading volume.

Source: Bloomberg, Thomson Reuters Datastream, QCAM Currency Asset Management, Wellershoff & Partners

Implicit volatility



Implicit volatility



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

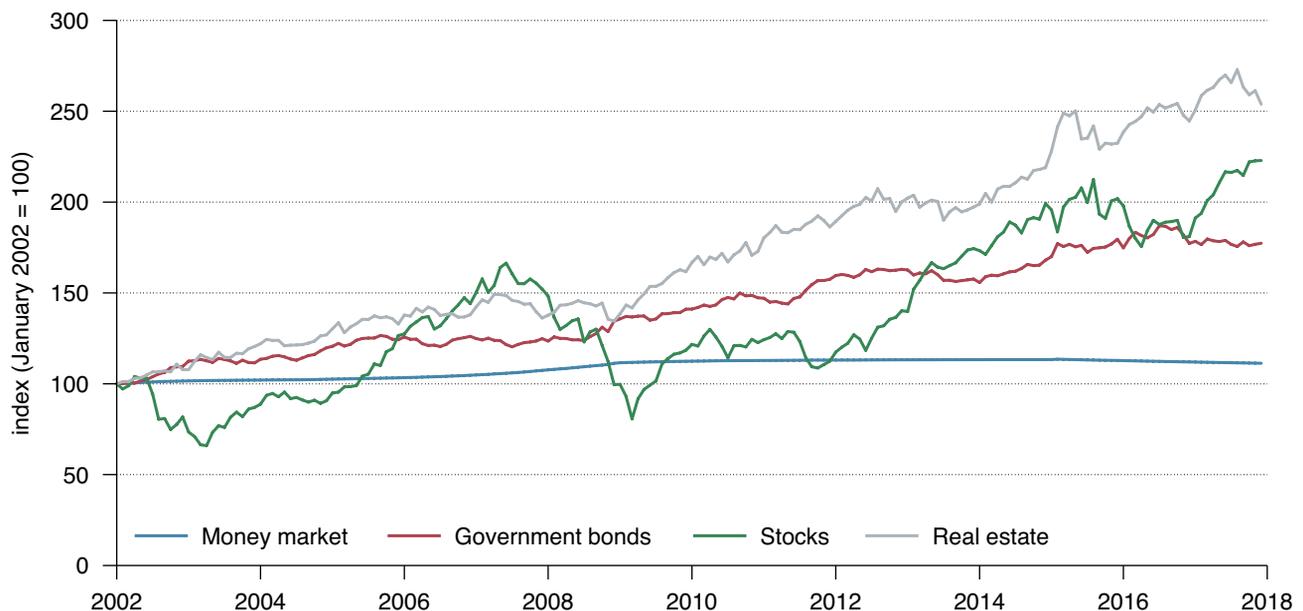
Financial markets

Performance overview

| | Performance in either local currency or USD ¹ | | | | Performance in CHF ¹ | | | |
|------------------------------|--|----------|--------|---------|---------------------------------|----------|--------|---------|
| | YTD | 3 months | 1 year | 5 years | YTD | 3 months | 1 year | 5 years |
| Swiss money market | 0.0 | -0.2 | -0.7 | -1.8 | 0.0 | -0.2 | -0.7 | -1.8 |
| Swiss government bonds | -1.2 | -0.8 | -1.9 | 9.0 | -1.2 | -0.8 | -1.9 | 9.0 |
| Swiss corporate bonds | -0.6 | -0.6 | -0.7 | 9.1 | -0.6 | -0.6 | -0.7 | 9.1 |
| Swiss equities (SMI) | 1.7 | 2.9 | 16.6 | 53.1 | 1.7 | 2.9 | 16.6 | 53.1 |
| European equities (Stoxx600) | 2.2 | 2.2 | 12.3 | 64.1 | 3.2 | 4.9 | 23.5 | 56.9 |
| UK equities (Ftse100) | 1.1 | 4.0 | 10.1 | 53.5 | 1.8 | 6.4 | 18.8 | 36.7 |
| Japanese equities (Topix) | 3.6 | 9.5 | 24.5 | 134.8 | 4.1 | 9.4 | 23.3 | 93.5 |
| US equities (S&P 500) | 4.3 | 9.4 | 25.0 | 110.0 | 2.9 | 7.8 | 19.3 | 117.3 |
| Emerging markets equities | 4.5 | 8.0 | 38.6 | 29.7 | 3.2 | 6.4 | 32.3 | 34.2 |
| Global equities (MSCI World) | 4.3 | 8.7 | 25.7 | 80.5 | 3.0 | 7.1 | 20.0 | 86.7 |
| Swiss real estate | 0.2 | 2.5 | 5.8 | 34.0 | 0.2 | 2.5 | 5.8 | 34.0 |
| Global real estate | -1.9 | 0.1 | 7.4 | 35.0 | -3.2 | -1.3 | 2.6 | 39.7 |
| Commodities | 0.7 | 3.8 | 0.2 | -36.6 | -0.6 | 2.3 | -4.3 | -34.4 |
| Brent oil | 5.2 | 21.6 | 26.6 | -36.7 | 3.8 | 19.8 | 20.9 | -34.5 |
| Gold | 2.9 | 4.5 | 12.2 | -20.2 | 1.5 | 3.0 | 7.2 | -17.4 |

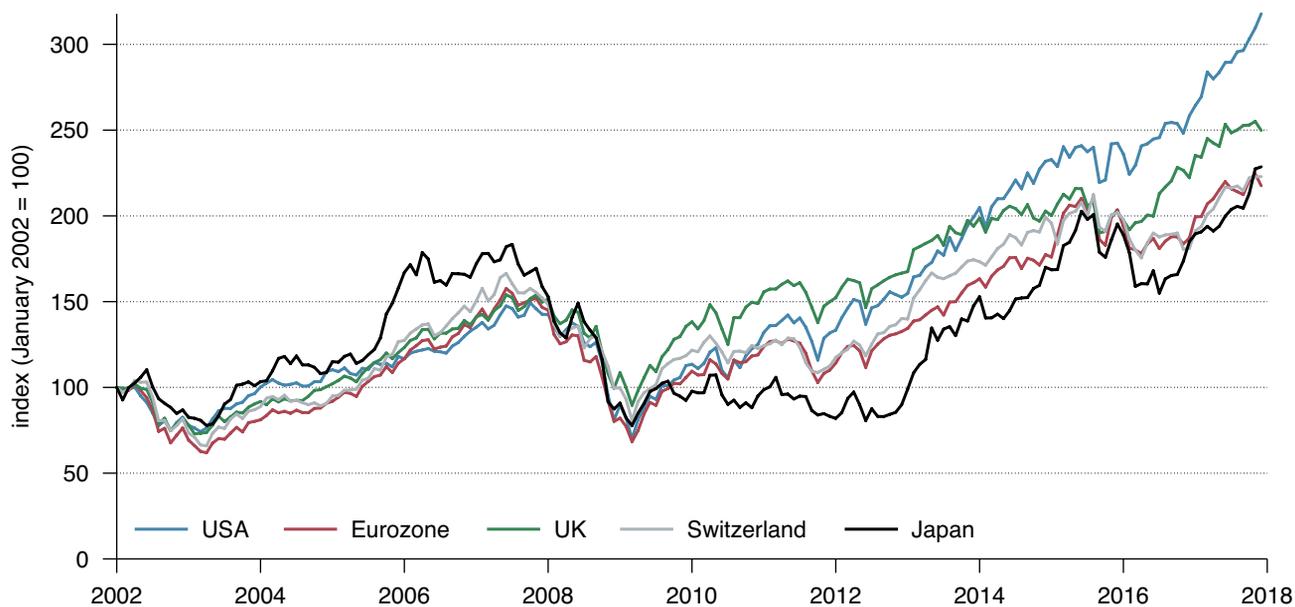
¹ Performance over the respective period of time, in percent.

Performance of selected Swiss asset classes

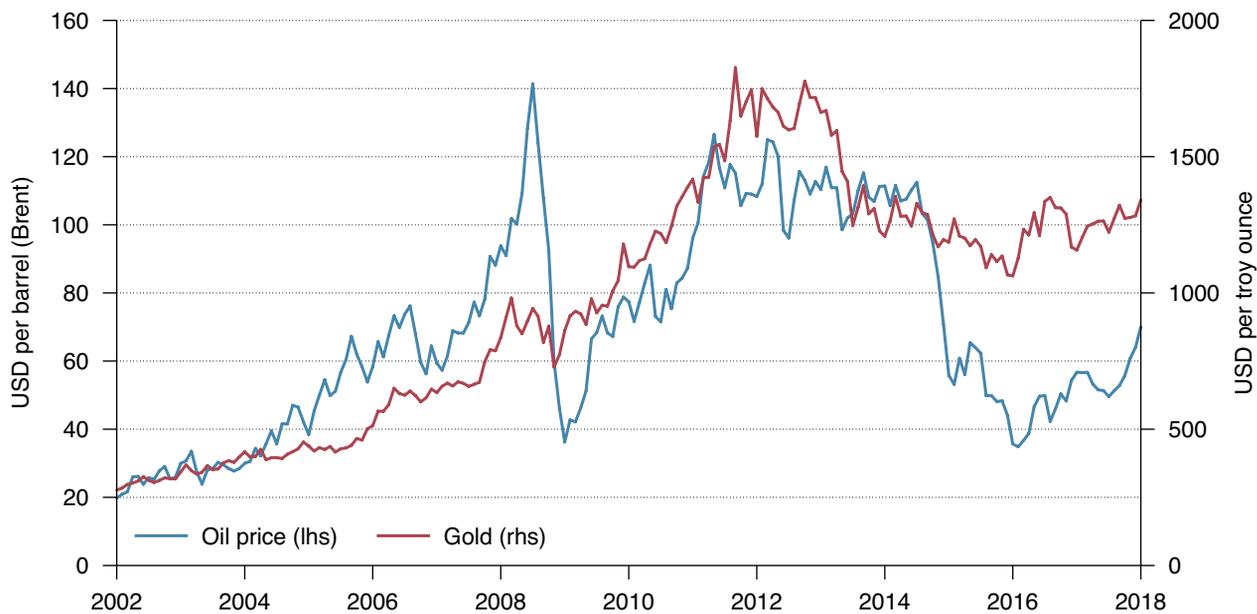


Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

Performance of selected equity markets (in local currency)



Performance of selected commodity prices



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

Number of the month

1.28 USD

According to our purchasing power parity estimates, the value of the euro against the US dollar is currently 1.28. The euro's PPP value has been gradually rising. When the euro was introduced as a unit of account, on 1 January 1999, its PPP value versus the dollar was just 1.16. This means that over this period of time, the US dollar has actually been the more inflationary of the two currencies.

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